

ABSTRACT

Title of Dissertation: COMPREHENSION AND LEARNING
FROM SOCIAL STUDIES TEXTBOOK PASSAGES
AMONG ELEMENTARY SCHOOL CHILDREN
IN KOREA AND THE UNITED STATES

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Earlier research has shown that cultural schemata affect readers' comprehension from an expository text (e.g., Carrell, 1984, 1987; Swales, 1990). Previous research also suggested that there are shared features of well-designed text across cultures (Chambliss & Calfee, 1998) and that reader characteristics like background knowledge affect text comprehension (e.g. McKeown, Beck, Sinatra, & Loxterman, 1992; McNamara, Kintsch, Songer, & Kintsch, 1996). However, little research has shown the relations among culture, text design, and reader characteristics.

Accordingly, I first analyzed four US and Korean social studies textbook passages about two topics. Then, 63 Korean and 57 US 10-year-olds read in their own language one of the four passages that differed in topic and country of origin counterbalanced to insure that all passages were read by an equal number of students. Students completed perceived and demonstrated knowledge and individual interest measures before and after reading, and main ideas, conceptual understanding, free drawing, problem-solving, and situational interest measures after reading. I analyzed the large-group data with either mixed or between-subjects ANCOVA with background knowledge as a covariate.

Additionally, four protocol students from each country thought aloud as they read one of

the four passages and answered some interview questions after reading, which I qualitatively analyzed.

The results of this study suggest that although cultural schemata made differences in the design of a text about the same topic, children's comprehension was not affected by cultural differences in text design. It did not matter whether a text was from their own or the other country. Rather, the comprehension of children from both countries was affected by their own background knowledge about the topic and whether a particular text was familiar with realistic examples, had interest-enhancing but not seductive features, had explicit statements or signals, and had features that facilitate active engagement such as why and how questions. More importantly, all of these textual features in comprehensible texts were coherently structured around main ideas. These findings indicate that comprehension and learning from text depends on the effective interplay between well-designed text and a reader who brings a certain level of background knowledge to text.

COMPREHENSION AND LEARNING FROM SOCIAL STUDIES TEXTBOOK
PASSAGES AMONG ELEMENTARY SCHOOL CHILDREN IN KOREA AND THE
UNITED STATES

by

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DEDICATION

To my family

KyoungSoo, Yuhnu, and Jiwoo Park.

Thank you for your enduring love.

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CHAPTER ONE

Statement of the Problem

Unfortunately, very little is known about how culture affects the design of elementary school textbook passages and children's reading comprehension and learning from expository text. What is known is that at least for adult readers, culture plays a significant role in text comprehension. Earlier research showed that adult readers are likely to understand and remember text with culturally familiar content and form better than culturally unfamiliar text (e.g., Carrell, 1984, 1987; Kintsch & Greene, 1978; Pritchard, 1990). Researchers in various fields also have agreed that culture is an essential topic for the better understanding of human behavior, thought, and communication within and across cultures (e.g., Bakhtin, 1986; Nisbett, 2003; Swales, 1990; Vygotsky, 1978; Whorf, 1956).

However, there is an ongoing debate over cultural differences in expository text structures and their effect on reading comprehension and learning. Some researchers have proposed that a preferred writing style from one culture to another might result from different cultural thought patterns (e.g., Kaplan, 1966), while others have provided evidence for universal features of expository writing across cultures (e.g., Cahill, 2003; Mohan & Lo, 1985). However, this debate has occurred mostly around adult genres written by adults for other adult readers. Genres for children have not been the focus of the research on either the culture-dependent or culture-independent nature of thought patterns and expository text. Literacy skills are not acquired naturally but through schooling (Connor, 1996), and there are similarities and differences in awareness and use of rhetorical patterns between children and adults (Chambliss & Murphy, 20002; Taylor

& Samuels, 1983). Taken together, we cannot generalize research findings on adult readers to children and therefore, more research should address the cultural features in children's genres and their influence on children's comprehension and learning.

In this vein, elementary school textbook passages can be a unique and valuable resource for research on cultural influences on written communication. Textbooks are written by adults who are experts in academic discourse communities in collaboration with experts in other discourse communities such as editors and illustrators, and intended to be read by children for the purpose of teaching and learning (Chambliss & Calfee, 1998). Whether it is intentional or incidental, children, who are cognitive and cultural apprentices (Rogoff, 1990), are likely to learn not only the content of those textbooks but also the underlying values, logic, and writing styles that have been written into the textbooks as well.

Textbooks provide the cognitive and cultural resources to teach children the content and form of their culture. If genres are indeed developed, acquired, and used for the purpose of communication within a community, and novice members learn genre skills through repeated tasks using exemplars of genres from expert members of their community (Swales, 1990), textbook passages could provide novice members of a community with the appropriate tasks and text needed to learn valued genres. In addition, most studies about the effect of text designs or text characteristics tend to use specially constructed expository passages for experimental purposes and naturally occurring text for comparative purposes (Beck, McKeown, Sinatra, & Loxterman, 1991). Therefore, it could be meaningful to design a comparative study using passages selected directly from the actual textbooks used in two countries rather than specially constructed passages, in

that these passages are representative of the kind of expository text genre that elementary school children in the two countries are often exposed to now and will be in the future.

Cross-country studies rather than studies on participants from a single country are necessary in order to have a deeper understanding of the effect of culture on learning from genres that children are often exposed to in the school context. Each community tends to develop unique genres (Swales, 1990), and people from different cultures tend to have different background knowledge (Bartlett, 1932). Therefore, by conducting a cross-country study on elementary school students of different cultural and linguistic backgrounds, I investigated how different cultural communities have developed educational genres with unique content and form for their novice members, and how the culturally familiar or unfamiliar materials could affect students' comprehension and learning.

My previous research suggests that cross-country studies on text design and students' learning would benefit teachers and students across cultures and improve cross-cultural communication through written language in general (Huh & Chambliss, 2009). I have analyzed and compared social studies textbooks for elementary school students from Korea and the United States. The results showed that the US and Korean social studies textbooks have markedly different features in terms of the rhetorical structures, content, and text-picture relations. It is important to figure out how such different features affect students' comprehension and learning when students from the two countries read a culturally familiar or unfamiliar text. In other words, it is crucial to ask what the different as well as shared characteristics of textbooks across different cultures and countries are that affect comprehension and learning and whether culture-dependent or culture-

independent features of text design have the greatest impact on comprehension and learning. This question can best be answered through a cross-country study. Therefore, in this study, I first compared social studies textbook passages for 10-year-olds in Korea and the United States that were written for the same purpose to explain the concepts about the same topic. Then, I compared Korean and American 10-year-olds' comprehension and learning from either their own country's textbook passage or the other country's textbook passage. This study was an important initial step in deciphering the intricate relations among language, culture, and thought.

Rationale

In the following two sections, I present the rationale for my study: (1) culture and written communication and (2) the importance of text design for comprehension and learning. I begin by discussing why it is important to examine relations between culture and written communication. Then, I discuss why text design matters in comprehension and learning from expository text.

Culture and Written Communication

I briefly look into two necessary concepts that set the stage for this study: a relevant definition of culture and the rationale for considering culture in written communication. Following the definition of culture, I present the background and rationale for the impact of culture in written communication gleaned from four areas of research: the Sapir-Whorf hypothesis, culture-inclusive psychology, sociocultural theory, and theory about genres.

What is Culture?

In order to answer what role culture plays in written communication, we must understand first what culture is. Culture has been studied in various fields to explain the diversity of human thought and behavior, resulting in a variety of definitions (e.g., Kroeber & Kluckhohn, 1963). Since the purpose of this study was to examine the influence of culture on the design of two countries' social studies textbook passages and Korean and US children's comprehension, I focused on the definitions of culture that could provide a general view of the effect of culture on human thought and written communication in a broader context like a national language community.

As a result, I excluded the definitions of culture used in fields like organizational psychology and management studies that tend to provide a narrower view of culture within an institution or a group, or cultural studies that focus on political, economic, or social structures within a given culture from the specific perspective of critical literacy or literary criticism. Instead, I mostly narrowed down to the definitions of culture from the perspective of cultural anthropology, cultural psychology, and applied linguistics, which emphasize an individual's thought patterns and language use embedded within and affected by the society in which they live and shared thought patterns, symbols, and values rather than material artifacts or tools.

Goodenough (1964) defined culture as "whatever it is one has to know or believe in order to operate in a manner acceptable to its members" (p. 36). He maintained that the essence of culture is not material things but the forms and models that people use for perceiving and dealing with their circumstances. In addition, Brooks (1975) viewed culture as a link between an individual's thought patterns and acceptable group thought

patterns. These definitions clearly suggest that an individual's thought patterns are situated within group thought patterns shared by the community to which an individual belongs.

Overall, these definitions seem to converge into Connor's (1996) definition, "a set of rules and patterns shared by a given community" and the importance of these rules and patterns for the purpose of communication (Swales, 1990). By using a flexible term, "community", this definition allows us to view culture as complex, dynamic, and fluid rather than simple and fixed. Both Connor and Swales emphasized that a person can belong to various communities including an ethnic group, national language group, and various academic discourse communities. However, in this study, I operationally defined culture as the dominant national culture that is characterized by the shared language, traditions, rules, patterns, and values that set its members apart from members of other national cultures.

If each community develops genres with unique content, form, and style for communicative purposes (Swales, 1990), the Korean culture and the US culture that have different languages, traditions, rules, patterns, and values are likely to develop genres with unique features that reflect such cultural traits. If so, it is important to understand how being a member of a certain cultural community affects an individual's written communication with people of the same or different cultural background.

Why does Culture Matter in Written Communication?

To answer this question, it is essential to examine the interrelations among language, thought and culture. These interrelations have been investigated in various areas with different foci: the Sapir-Whorf hypothesis, culture-inclusive psychology,

sociocultural theory, and theory about genres. These areas of research do not necessarily deal with all three of the components to the same degree. Nevertheless, a converging theme emerges from what researchers from different methodological and conceptual perspectives have proposed about the interrelations among language, thought and culture. This theme in turn provided the rationale for considering culture as a critical factor in written communication. I do not examine these fields in depth as beyond the purpose of this chapter. Instead, I briefly present how each field could shed light on the impact of culture on written communication.

The Sapir-Whorf hypothesis. This hypothesis adds a valuable perspective for explaining difficulties with cross-cultural communication. According to the Sapir-Whorf hypothesis, languages influence the thought and worldview of those who speak them. In a comparison of English and the Hopi language, Whorf (1956) found that these two languages differ in how verbs express duration and time. He concluded that the native speakers of English and Hopi have different concepts about duration and time. Since Whorf's work, linguists have provided evidence that "culture-specific world views are reflected in language" (Brown, 1993, p 185). For example, in a study of the Shona and the Bassa language and people, Gleason (1961) showed that color words may shape people's thinking about color, and therefore, people of different languages may vary in the degree to which they discriminate color (see Lucy, 1996 for other studies).

However, the Sapir-Whorf hypothesis has been widely criticized. For example, Wardhaugh (1976) argued for linguistic universality as opposed to linguistic relativism. His claim is that every language provides its speakers with a tool to make any observations about the world and talk about anything, because of the existence of

metalanguage in any language. Fishman (1977) also criticized the Sapir-Whorf hypothesis, taking the example of bilinguals who have no problems in using and thinking in both languages and switching between them.

Despite these criticisms, Connor (1996) noted that proponents of the Sapir-Whorf hypothesis have increased in anthropology, linguistics, and psychology, trying to explain the impact of language on thought. For example, Bloom (1981) provided evidence that unlike English speakers, Chinese speakers tend to have trouble with the counterfactual mode, not because they cannot think and speak counterfactually, but because the Chinese language lacks linguistic patterns that facilitate the appropriate cognitive mode of counterfactual thought. Hunt and Agnoli (1991) also supported this claim. They noted that because of the absence of the subjunctive in Chinese, the Chinese rarely use counterfactual and if they do, they rely on a circumlocution that takes more time and effort to reason and speak. Hunt and Agnoli argued that every language can be translated into other languages but with some inevitable loss. According to Bakhtin (1986), in principle any language can be translated into other languages, because languages have a common logic. However, he also noted that the text and utterance, concrete expression of the language, can never be completely translatable without losing subtlety of meaning.

The idea that language influences thought serves as one of the guiding ideas for this study. However, the studies based on the Sapir-Whorf hypothesis focus on differences in smaller parts of language, such as grammatical and lexical aspects of language rather than larger text, and some studies do not seem to clarify the respective role of language and culture on thought clearly (Lucy, 1996). Nevertheless, these

scholars' conceptualization of the relationship among language, thought and culture supports the importance of considering culture in understanding written communication.

Culture-inclusive psychology. A similar relativist perspective comes from a culture-inclusive psychology. Many psychologists have worked to make culture come into the spotlight of the discipline of psychology rather than marginalized. According to Cole (1996) these psychologists contended, "so long as one does not evaluate the possible cultural variability of the psychological processes one studies, it is impossible to know whether such processes are universal or specific to particular cultural circumstances." (p. 2) Cole referred to such psychology as a culture-inclusive psychology and explained that there are two approaches, cross-cultural psychology (e.g., Segall et al., 1990) and cultural psychology (e.g., Shweder, 1991). Cultural psychologist, Shweder, argued that cultural psychology is a new discipline, whereas cross-cultural psychology is a sub discipline of general psychology. Regardless of the different approaches, these scholars commonly emphasized the necessity of studying culture within cognitive psychology (Cole, 1996; Matsumoto, 2001; Nisbett, 2003; Shweder, 1991). Although they dealt with language only tangentially, it is relevant to pay attention to their studies, considering that written communication requires various cognitive processes, such as reasoning.

In his book about cross-cultural psychology, Matsumoto (2001) compared the relation of culture and human behavior to that of operating systems and computer software in that culture plays a significant role in what human beings think and how they act, although it is mostly invisible and unnoticed like a computer's operating system. Matsumoto argued that early cross-cultural studies have already documented cultural differences in various cognitive processes, and therefore it is time to develop a universal

theoretical framework of cross-cultural studies to explain the origins of such cultural differences.

Shweder (1991) emphasized the complexity and flexibility of culture. He argued that the human mind and culture are seamlessly interconnected and interdependent and they “get dialectically constituted and reconstituted through the intentional activities and practices that are their products, yet make them up.” (p.101) Shweder thought that the relations between the human mind and culture are inseparable, dynamic, nonlinear, circular, and dialectical, and they create each other. Therefore, like Sapir (1929), he contended that people in different societies live differently with distinct world views that affect their cognitive processes. However, he also emphasized that the differences in thought process should not be explained by deficits in cognitive skills, linguistics resources, or intellectual motivation, as the proponents of the Sapir-Whorf hypothesis also claimed (Bloom, 1981; Hunt & Agnoli, 1991).

Similarly to Shweder (1991), Nisbett (2003) also challenged the assumption that people’s thinking processes are the same everywhere, and maintained that cognitive theories and models based on the studies of one cultural group (e.g., Americans) cannot equally apply to people from different cultures (e.g., East Asians). Nisbett discussed widely ranging aspects of cultural differences in thought processes and their probable origins. For example, he argued that Westerners (e.g., European Americans) tend to categorize objects by applying a set of rules and attributes and favor decontextualization, while Easterners (e.g., Chinese, Korean, and Japanese) are more likely to organize the world based on relationships and similarities and favor integration.

For example, in a cross-cultural study, Nisbett and his colleagues (2003) asked Chinese and American college students to categorize word triplets (e.g., panda, monkey, and banana) according to which two of the three are most related. To clarify the respective role of culture and language in thought pattern, two groups of Chinese students (bilinguals from China and Taiwan and bilinguals from Hong Kong and Singapore) were tested either in Chinese or in English. The results revealed an effect of culture on thought independent of language, because both of the Chinese groups categorized words according to relationships (monkey and banana) irrespective of the test language, while the American students categorized words according to taxonomic rules (monkey and panda). They also identified an effect of language independent of culture only among the Chinese students from China and Taiwan. They were more likely to use relationships for grouping when tested in Chinese, while more likely to group words by taxonomic rules when tested in English. However, there was no significant effect of language among the bilinguals from Hong Kong and Singapore. Although these studies did not deal with text comprehension directly, they shed light on this study because they clearly showed the role of culture in human thought and possible origins of difficulties with cross-cultural communication.

Sociocultural theory. The sociocultural perspective on language and literacy development provides another perspective on the relations among language, thought and culture. The work of Vygotsky (1978, 1986) has heavily influenced literacy research from a sociocultural perspective, even though he dealt with oral speech rather than written speech. Vygotsky (1978) viewed children's cognitive development as cultural in that it is embedded in a sociocultural context where children interact with adults or other

children. In other words, as Rogoff (1990) mentioned, adults are the cultural agents, and children are the cultural apprentices who through guided participation learn the cognitive and communicative functions and social meanings of symbols shared in their culture.

Vygotsky (1986) recognized the essential role of language in the sociocultural development of cognition. He argued that thought is mediated externally by signs and internally by meanings, and direct communication between minds without involving any signs is impossible. In differentiating external and internal speech, he explained that these two types of speech differ in form and process. Children first develop external speech, a process of putting thought into words for social interaction, and gradually develop internal speech, a process of turning words into thought. All this invisible inner working of thought and language takes place within a sociocultural context and develops through social interaction. Vygotsky viewed language as one of the psychological tools for thought that not only facilitates but also transforms mental processes (Wertsch, 1985). John-Steiner, Panofsky, and Smith (1994) argued that such psychological tools are cultural because they are “products of sociocultural evolution” and individuals acquire them through social interaction.

Lee (1995) provided the empirical evidence for the power of such psychological tools acquired through social interaction, arguing that the different sociocultural context of language development may do disservice to minority students in mainstream classrooms. In a way to deal with the problem, Lee offered an instructional model called culturally based cognitive apprenticeship. Six classes of African American high school seniors participated in her intervention study. Four of the six classes got the culturally based cognitive apprenticeship, learning literary interpretation skills based on their prior

knowledge and as a scaffold, signifying, one of the African American social discourse forms.

Using signifying and African American short stories and gradually releasing the responsibility to the students, Lee (1995) and other teachers were able to make visible the complex cognitive strategies and tacit knowledge that these students already possessed to teach them how to interpret the mainstream canonical literary texts. Both quantitative and qualitative analyses supported the advantage of tapping into what students bring from their sociocultural community and helping them consciously use these strategies and knowledge in school contexts. The students in the experimental groups had a greater gain from pre- to post-test of their understanding of literary texts than those in the control groups. The qualitative analysis of instructional discourse also showed that students' perception of signifying changed from a tool of a popular culture and a social discourse to a psychological tool used within literary texts.

Lee (1995) suggested that African American students have difficulty with metaphor in canonical literary texts, not because they lack cognitive ability to understand and use it, but because they are not aware that their social discourses like signifying involve similar literary skills. Although canonical metaphor and signifying require the same cognitive process, this commonality is not easily recognizable for those who have acquired psychological tools like language in a different sociocultural context, because the same cognitive process may be represented in different linguistic form, depending on the sociocultural context where it occurs.

Lee's (1995) work suggests that a sociocultural perspective is critical in understanding meaning making through text. Sociocultural theorists argue that a

sociocultural context is the fundamental concept to understand language use, because all individuals are situated “within social groups within societies and cultures” and meaning making occurs only within this context (John-Steiner, Panofsky, & Smith, 1994, p. 38). Therefore, without understanding the sociocultural context where text is written and read for a certain communicative purpose, written communication between an author and a reader would not be effective.

Theory about genres. In this study I examined how textbook passages of the same genre are designed differently across cultures and how such cultural differences in the same genre, if any, could affect children’s comprehension and learning. To address these issues, I intentionally selected four passages from Korean and US social studies textbooks that were written for the same purpose: to explain. Therefore, discussing genre is necessary and crucial for this study. In this context, what scholars (e.g., Bakhtin, 1986; Chapman, 1999; Swales, 1990) proposed about genres provides a strong rationale and overarching framework for this study. Although these scholars did not foreground culture, their emphasis on the importance of genres in human communication suggests a critical role of culture in written communication and supports why it is important to examine children’s learning from elementary school textbook passages.

According to Bakhtin (1986), language plays an essential role in diverse areas of human activity and communication. Language is embodied in various forms of concrete utterances, and each area develops unique but stable types of utterances, or “speech genres,” containing specific content, style and structure. He noted that speech genres are essential in understanding human activity and communication, because they play a mediational role between language and life. Particularly, Bakhtin emphasized the

importance of secondary genres (primarily written and complex cultural communication) such as scientific research genres as opposed to primary genres (e.g., everyday rejoinders), because these written genres make human communication much more complex, reflecting “the interrelations among language, ideology, and world view” (p. 62). Because genres are “the drive belts from the history of society to the history of language” (p. 65), understanding how genres have been developed and used in a language community and culture is the key for successful communication within and across communities.

Bakhtin (1986) contended that every utterance is dialogic in nature because any utterance is pronounced for a communicative purpose within a social context and is a part of a complex chain of other utterances. Once an utterance has been pronounced, it does not belong to its speaker or writer any more. Speech genres are socially constructed and intended for “actively responsive understanding” (p. 68) from others whether immediate or delayed. These socially constructed genres of utterances serve as an interpretive framework for people in a communicative event.

Drawing on Bakhtin’s (1986) concept of genres, Chapman (1999) viewed genres as “social actions situated in particular types of contexts within a discourse community” (p. 471) and “cultural resources” and “cognitive tools”. Chapman contended that people who are learning genres are not simply learning rules and formulas by repeating a mechanical algorithm. Rather, they are learning how to participate in a discourse community through interaction with others.

Swales (1990) provided a framework to understand human communication based on the definitions of discourse communities, genres, and tasks. First and foremost,

Swales' emphasis on the communicative purpose of genre development has significant implications for this study, serving as a common thread for the study and helping explain why and how people communicate with each other more or less successfully through texts. Swales viewed discourse communities as "sociorhetorical networks that form in order to work towards sets of common goals" (p. 9). It is within a discourse community that genres are developed and used for communicative purposes. In order to obtain communicative competence within their community, members of a discourse community acquire conventions of genres by engaging in goal-oriented activities, or "tasks" that involve cognitive and communicative procedures and appropriate texts and by interacting with others, especially expert members. Because of this process of establishing, learning and using genres, Swales maintained that genres belong to a community, not to individuals.

Because genres are properties of a community, cross-cultural or cross-disciplinary communication seems hard without understanding how genres are used within a community and what conventions and communicative purposes its members share together. Swales' notion of genre development situated within a specific community for communicative purposes suggests that there may be a variation of genres across communities or cultures that influence communicative effectiveness across cultures.

As Bakhtin (1986), Swales (1990), and Chapman (1999) suggested, genres are an essential concept for understanding how human beings use language for communication. Moreover, considering that genres are developed and embedded within communities and learned through immersing in tasks and texts relatable to such genres, it could be difficult

to improve communication within and across cultures without attending to how culture affects written communication where genres serve as an essential tool.

Obviously, the researchers whose ideas I have introduced above vary in their specific interest and theoretical background. Nevertheless, they seem to have the shared view of the human as a social and cultural being. They suggest that by belonging to different communities or cultures, people tend to have different conventional expectations that they use to communicate with one another through language. A converging theme is that the effectiveness of communication across cultures, languages, or disciplines depends on the degree of shared expectations of communication. Without understanding such shared knowledge and expectations within a community, communication through written text may be less successful.

Cultural Differences and Written Communication Styles in Korea and the US

Clyne (1987, 1994) suggested that the differences in rhetorical structures and expectations and conventions about communication result from the culture that is reproduced through educational systems rather than informal uses of language. Clyne (1994) maintained that language is the manifestation of a culture, and that cultural values system actually underlies how people think, act, and communicate. In this vein, it is essential to compare the cultural values of Korea and the US in order to examine how these values underlie the content and rhetorical patterns of each country's social studies textbook passages and how these differences may affect students' comprehension and learning.

In doing so, two related classification systems of cultures are particularly useful to show the cultural difference between Korea and the U.S. First, Hall's (1976)

classification of high context culture and low context culture gives a valuable perspective. According to Hall, in high context cultures, many things are left unsaid, because information can be communicated without explicit verbal expression. In these cultures, which are homogeneous and closely knit, people share background knowledge and expectations that they can use to make inferences relatively easily without explicit verbal messages. Meaning lies in the context rather than the verbal expression alone. On the other hand, in low context cultures, people rely on words more than context in communication, because people in these cultures have a wide variety of backgrounds. Hall categorized most Eastern cultures such as the Korean culture as high context cultures, and Western cultures such as the U.S. culture as low context cultures.

Another useful classification of culture, individualism (American culture) and collectivism (Korean culture), may also explain cultural differences between Korea and the US. In a review of research on collectivism and individualism, Triandis (2001) mentioned that these two types of cultures differ in many ways. For one thing, people in individualist cultures tend to define the self as independent of others, while those in collectivist cultures tend to define the self as interdependent of others. In collectivist cultures harmony is emphasized and the group is valued rather than the individual, while in individualist cultures competition is emphasized and the individual is valued rather than the group. In-group relationships in collectivist cultures are tighter than in individualist cultures.

These differences result in different communication styles between individualist and collectivist cultures. For example, languages used in individualist cultures seem to require the use of “I” and “you”, while languages in collectivist cultures tend to require

the use of “we” (Kashima & Kashima, 1998). More importantly, in collectivist cultures, ambiguity and indirectness are common in communication because face-saving and harmony are valued. Relationships should not be hurt due to direct and straightforward expression. In addition to the verbal message, people in these cultures are expected to read what the other “really” means through nonverbal messages. On the other hand, in many individualist cultures, it is important to say exactly what one means even if harmony is threatened.

These general differences in Korean and American communication styles have been also identified in the writing styles demonstrated in Korean and English texts. Kaplan (1966) argued that people in different cultures have unique logic and thought patterns, which result in different writing styles. Based on English essays written by English as Second Language (ESL) students, he characterized East Asian writing styles, including Korean, as circular and indirect, compared to linear and direct writing style in English. Hinds (1990) named the East Asian writing styles including Korean, “quasi-inductive”, which means that ideas develop neither deductively nor inductively. He contended that in expository prose in some languages like Korean, the thesis statement is not clearly presented, leaving conclusions up to readers. Hinds maintained that one unique characteristic of Korean writing style like other East Asian writing styles is a delayed introduction of topic. According to him, writers in these languages often imply the topic rather than present it explicitly. Hinds’ claim about the East Asian writing styles corroborates Kaplan’s idea that in expository prose in these languages, the topic is not directly mentioned and rather is approached tangentially (See Figure 1).

Hinds (1987) proposed a new typology of languages in order to explain this indirect and non-linear writing style of East Asian languages compared to the direct and linear English writing style. He classified East Asian languages into reader-responsible languages and English into a writer-responsible language. In writer-responsible languages like English, writers are expected to explicitly express what they mean and provide readers with enough information to make themselves understood. On the other hand, in reader-responsible languages like Korean, readers are responsible for filling in any information gap and drawing their own conclusions. This different reader-writer relationship may be deeply rooted in the nature of their cultures as either a high context or low context culture.

The general differences in Korean and English written communication styles are shown in Figure 1. Ahn (1998) presented diagrams that symbolically summarize the preferred written communication styles of Korean speakers and English speakers. These diagrams suggest the possible interrelations among language, culture, and thought reflected in the written communication styles of the two groups. As Ahn mentioned, language, thought, and culture in these diagrams are not depicted in order based on any form of hierarchy. Ahn intentionally depicted the Korean written communication style using circles and the English written communication styles using straight lines. In chapter 2, I discuss some important empirical studies that show the difference in the Korean and English written communication styles.

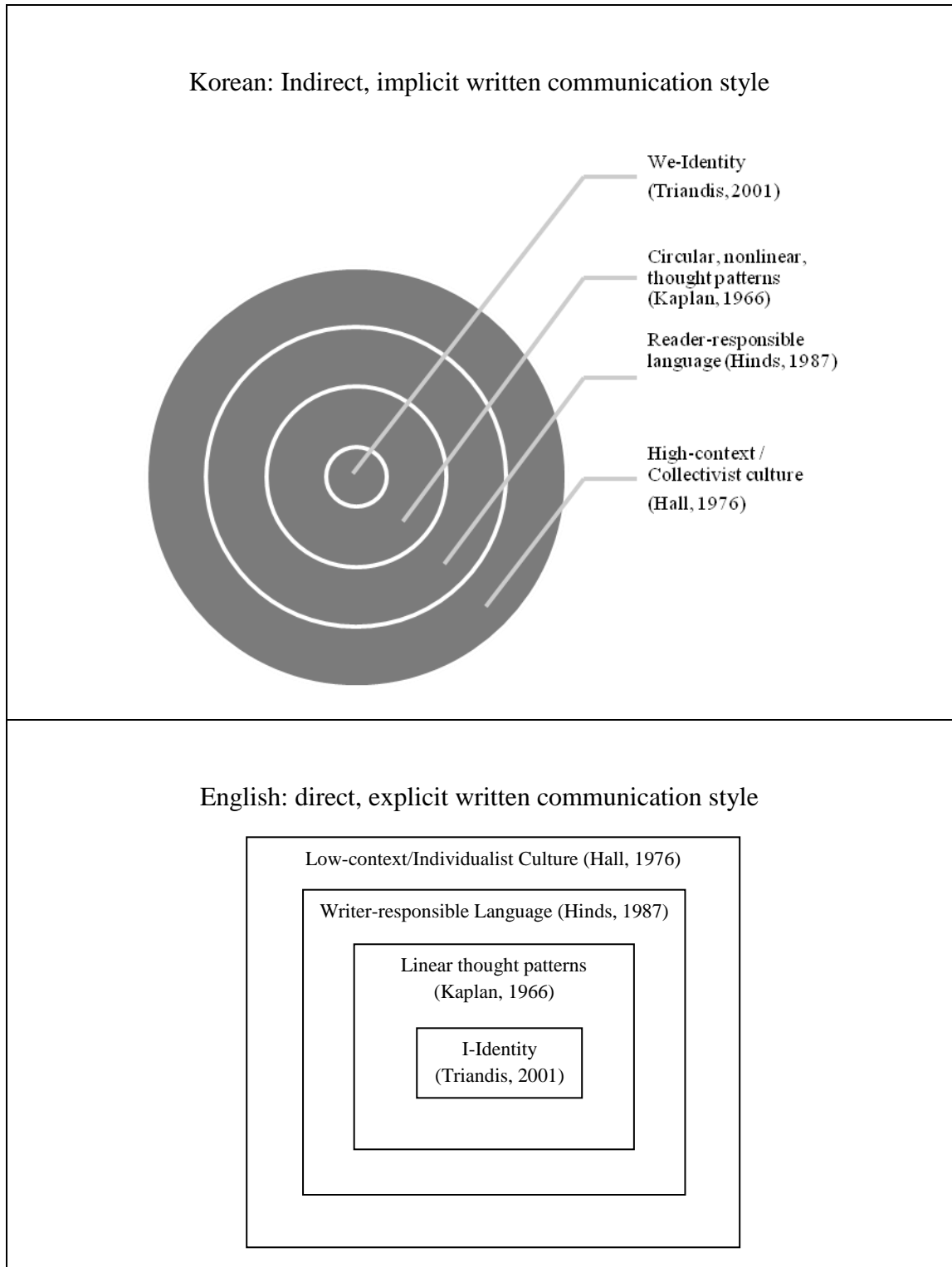


Figure 1. The preferred written communication styles of native speakers of Korean and English, adapted from Ahn (1998)

Text Design and Children's Comprehension and Learning from Expository Text

In this section, I discuss why text design is important for learning. First, I briefly discuss the challenges that children may face with their content area textbooks like social studies. Then, I present the idea that text design is the key to improve the quality of textbooks for learning and to help children cope with the challenges. In doing so, I also discuss the importance of considering reader characteristics in text design.

Challenges with Content Area Textbooks

Although textbooks are only one of the resources for teaching and learning in content area instruction, they have been the dominant medium to fulfill the curricular goals in most U.S. and Korean classrooms. Over two decades ago, Goodlad (1984) found textbook reading to be one of the most common assignments by teachers. More recently, Fordham, Wellman, and Sandmann (2002) maintained that textbook reading is still common in classrooms. Researchers have estimated that about 70 to 90 percent of social studies instruction relies on textbooks (Woodward & Elliot, 1990; Chambliss & Calfee, 1998). Textbooks play a leading role in teaching and learning in Korean classrooms as well. In the highly centralized Korean education system, at least every elementary school student and teacher uses the same series of textbooks for teaching and learning (Yi, 2000). In both Korea and the United States, content area textbooks have been the core of the curriculum and main resource of information in school settings. They have been the teachers' primary, or in many cases, sole type of instructional materials. Students also heavily rely on textbooks, though teachers are an important source of new knowledge for them as well.

Considering this critical role of textbooks in content area instruction in both Korea and the U.S., it is worth questioning what happens if students have difficulty reading these textbooks. It is clear that students' academic achievement depends on how comprehensible the textbooks are. Without comprehending the content of textbooks, no learning would occur without significant instructional intervention. Not surprisingly, there has been criticism of the quality of textbooks and discussion about how to improve them in both Korea and the U.S. (e.g., Chambliss & Calfee, 1998; Yi, 2000).

Content area textbooks have been criticized for their poor organization and insensitivity to individual students' reading level, prior knowledge, or interest (Allington, 2001; Anderson & Armbruster, 1984; Anderson, Shirey, Wilson, & Fielding, 1986; Armbruster, 1988; Budiansky, 2001; Chall & Conard, 1991). The aggravated reading difficulties and increasing reading requirements by content area textbooks are manifested in the phenomenon called the "fourth-grade slump." Chall (1983) used the "fourth-grade slump" to describe her finding that students from low income families remain at the national average of reading scores until third grade, but their scores tend to drop suddenly when they move into the fourth grade, and the gap becomes wider as they proceed throughout the school. Chall explained that this phenomenon might result from the increasing demands of reading, especially in the fourth grade when students begin to rely heavily on textbooks to learn subjects like science and social studies. If so, what reading requirements do the textbooks add between third and fifth grade? What characteristics of textbooks could help or hinder elementary students to comprehend and learn from text? Are they similar or different across countries? This study started from these questions.

Researchers suggested that challenges with content area textbooks result from both students and textbooks. Some researchers pointed out that there is a mismatch between the difficulty level of textbooks and students' reading level (Allington, 2001; Budiansky, 2001; Chall & Conard, 1991). Other researchers argued that elementary students have been less exposed to expository text (Dreher, 2000; Dreher, 2002; Saul & Dieckman, 2005). Difficulty with expository text due to less exposure becomes more serious as students move into upper grades, since the main materials that they read in their content lessons are often textbooks that are typically expository texts. Thus, textbooks may be a huge challenge to the students who are comfortable with narrative texts, but who have had much less opportunity to become comfortable with expository texts.

Students may not be comfortable and familiar with textbooks that are mostly exposition, because their unfamiliar content, vocabulary, and text structure are different from those of narrative texts. Compared to narrative texts, expository texts tend to contain more abstract and technical vocabularies that students may not often encounter in their everyday lives. Also, expository text structures are varied and different from the familiar narrative text structure. In addition, expository texts often require rich world knowledge (Allington, 2001; Hirsch, 2003).

Furthermore, emphasizing the importance of text design, Chambliss and Calfee (1998) maintained that content area textbooks in the U.S. are often too comprehensive to facilitate a deeper understanding of big ideas in the domains. They also argued that poorly written textbooks with incoherent organization and lack of connection to readers' experience and interest would be not comprehensible and not contribute to learning.

More than a decade after Chambliss and Calfee (1998), these problems of textbooks seem to remain. More recently, Brophy and Alleman (2002) and McGuire (2007) also noted that social studies textbooks are still full of disconnected facts rather than tightly organized around big ideas, focusing on broader coverage of content rather than deeper understanding of key ideas in domains. McGuire argued that such textbooks would contribute to reinforcing the misconception of the social studies subject as memorization of disconnected facts.

In short, young readers have relatively less experience with expository text that is common in content area textbooks. These textbooks could cause difficulties because of the unique text structure, technical vocabulary, and complex concepts. Poorly designed textbooks could add more challenges to such inherent difficulties from children's reading experience and the nature of expository text. Therefore, the design of textbooks is crucial in children's comprehension and learning from expository text.

Text Design for Comprehension and Learning from Expository Text

Text design is crucial for comprehension and learning from text. How well a text has been designed can affect both how a reader comprehends the text (e.g., Chambliss, 1995) and what the reader learns (e.g., Hynd, McWhorter, Phares, & Suttles, 1994). Drawing on earlier comprehension studies, Chambliss and Calfee (1998) proposed the three key components of well-designed text that can facilitate comprehension and learning: coherent text structure, rendering unfamiliar content familiar by connecting to readers' experiences, and interest-enhancing features.

First of all, coherent text structure can help a reader comprehend and learn from text. Earlier research showed that young children have awareness of text structures even

if their awareness might be immature (e.g., Englert & Hiebert, 1984). Research showed that if they can use such awareness to identify the text structure employed by the author, their comprehension can be enhanced. In this sense, the coherent organization of ideas can contribute to comprehensibility of text and children's learning from text (e.g., Beck, McKeown, Sinatra, & Loxterman, 1991; Loxterman, Beck, & McKeown, 1994).

Chambliss and Calfee (1998) also argued that well-designed textbooks would be comprehensible and present a sound curriculum. They emphasized that in order to enable readers to learn from text, the content should be coherently structured around big ideas of each academic discipline rather than disconnected or encyclopedic information. McGuire (2007) also contended that the goal of social studies curriculum is to help students understand the powerful ideas, make personal meaning from them, apply such knowledge and skills and take actions in real life, rather than simply remember a wide range of disconnected facts. This idea seems to suggest that comprehension of important ideas and relevant details can lead to learning. Such learning from social studies text may occur when students are able to apply newly acquired knowledge and skills in a new context and take actions in real life.

In addition, since comprehension occurs when readers actively interact with text, it is important whether information in a text is presented in an accessible way to young readers. Thus, text should be designed with careful consideration of what readers are likely to bring to it. Connecting to readers' prior experiences, knowledge, and interest can increase the comprehensibility of text and learning (e.g., Hidi, 2001; Rowan, 1990; Wade, Buxton, & Kelly, 1999). Previous research also suggested that well-constructed pictures can help readers learn from text (e.g., Carney & Levin, 2002). Therefore, for the purpose

of this study, four components of text design were taken into account in terms of comprehensibility, leading to learning. These components include coherent text structure, connection to readers' background knowledge (familiarity), interest-enhancing features, and text-picture relations. Further discussion of each component of text design is presented in chapter 2, based on empirical studies.

In conclusion, these textual characteristics play critical roles in comprehension and learning. However, they are necessary but not sufficient. Readers' comprehension and learning from text relies on not only the text design but also various reader characteristics, such as their cultural schemata for written communication, background knowledge, and interest. Thus, what characteristics a reader brings to the text and how culture affects written communication between an author and a reader should be considered together with the text design. Considering all these different contributors to written communication, in the following section, I present the conceptual framework for comprehension and learning from text in a cultural community (See Figure 2).

Summary

Clearly, researchers have demonstrated that culture matters in written communication and that text design and reader characteristics like prior knowledge and interest also play a significant role in comprehension and learning. What have not yet been addressed by research are how culture is reflected in text design and how the relations among culture, text design, and reader characteristics affect comprehension and learning from text. In this study, I investigated these relations and their influence on comprehension and learning. To this end, I compared Korean and the U.S. social studies textbook passages from a cross-cultural perspective and examined Korean and U.S.

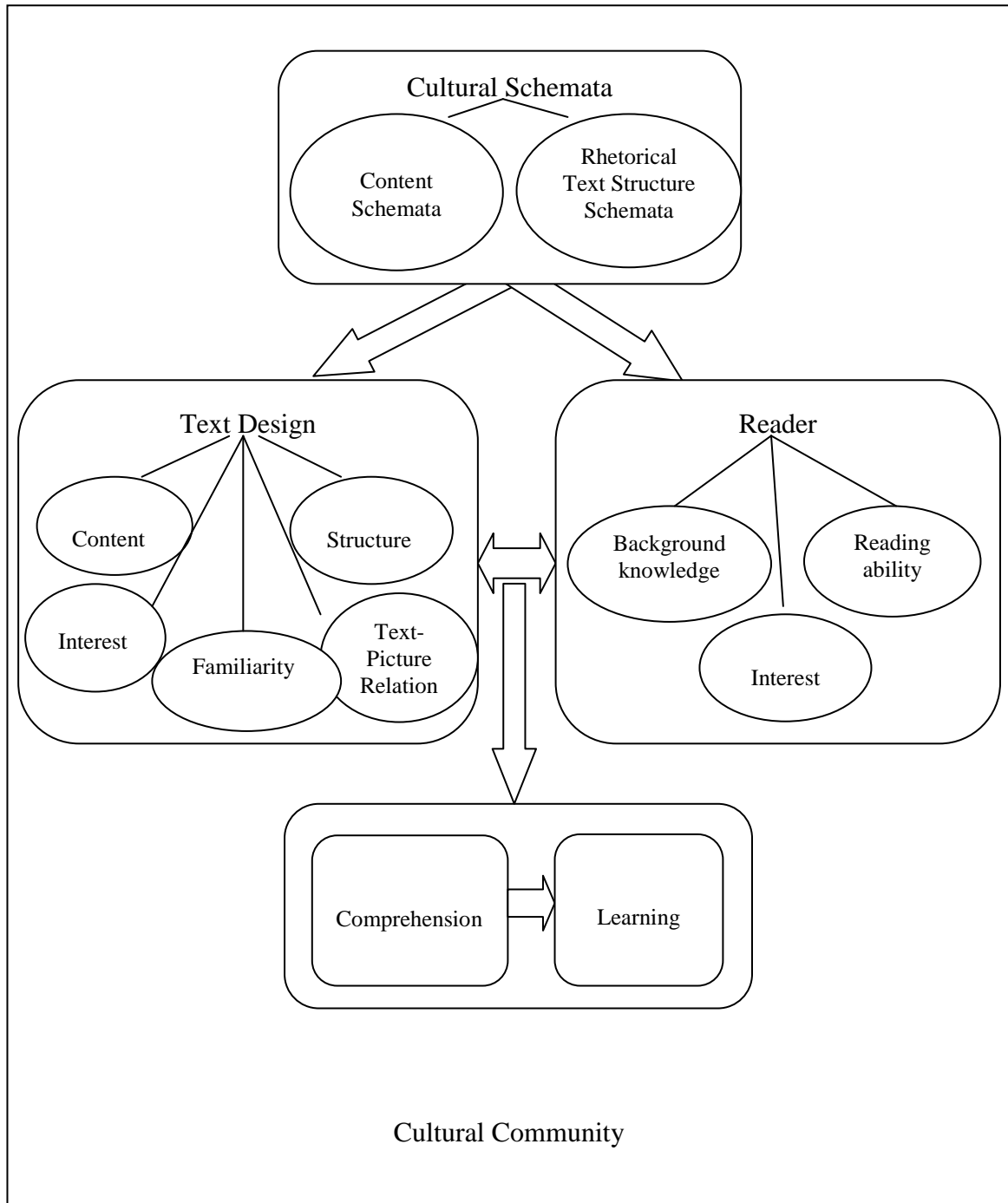


Figure 2. The relations among culture, text design, a reader, and comprehension and learning

elementary school students' comprehension and learning from culturally familiar and unfamiliar textbook passages. The findings of this study have implications for the development of instructional materials, and research and pedagogy on reading and writing expository text. In other words, the outcomes of this study shed light on social studies textbook design and instruction in many countries including Korea and the U.S., and lay the groundwork for more extensive cross-country studies.

Figure 2 shows my conceptual framework for the relations among culture, text design, a reader, and comprehension and learning. I conceptualize that cultural schemata that members of a cultural community share for communication affect both text design and readers themselves. The interplay between a text and a reader is situated within a cultural community where its members share cultural schemata on written communication. Thus, the cultural schemata affect how text is designed as well as how readers read and what they learn.

First, certain cultural schemata may be reflected in the design of textbook passages in various ways: content, structure, interest value, familiarity value, and text-picture relations. The readers' cultural schemata also affect what and how they comprehend and learn from text. In addition, comprehension and learning are also affected by other reader characteristics: reading ability, background knowledge, and interest.

By conducting a cross-country study, it is possible to understand better how culture makes differences in text design and readers' interactions with text, which in turn affects their comprehension and learning from expository text. Instructional activities are not part of this study, although they also play an important role in comprehension and

learning from textbook passages. In the following sections, I present the specific research questions and research approach to answer them.

The Research Questions

Based on the idea of intricate interrelations among language, thought, and culture that are reflected in the elementary social studies textbook passages, I posed the overall research question: How are different cultural schemata reflected in text design and how do such different text design and reader characteristics influence children's comprehension and learning from social studies textbook passages about two different topics? To answer this overarching research question, I conducted an analysis of four textbook passages, and collected and analyzed quantitative and qualitative data from 10-year-olds in Korea or the United States reading either a textbook passage from their own country or a translation from the other country. The following research questions guided the text analysis and analyses of the children's data. I posed the following research questions respectively for the text analysis, quantitative analyses of large group paper-and-pencil data, and qualitative analyses of protocol students' think-aloud and interview data.

1. Text analysis
 - a. How do the passages from the US and the Korean textbooks differ in text design?
 - b. What do the differences in text design suggest about differences in cultural schemata?
2. Quantitative analyses of large group data

- Overarching question: To what extent do different text topic, text origin, and reader characteristics (country of origin and background knowledge) affect young readers' comprehension, knowledge, and interest independently of each other and in interaction with each other?
- Subsidiary questions:
 - a. Text topic: Economics/choices or Civics/community involvement
To what extent do texts on two different topics differentially affect young readers' comprehension, knowledge, and interest regardless of text origin and readers' country?
 - b. Text origin: Korea or US
To what extent do textbook passages from Korea and the US differentially affect young readers' comprehension, knowledge, and interest regardless of topic and readers' country?
 - c. Reader characteristics: readers' country (Korea or US) and background knowledge
To what extent do young readers from Korea and the US comprehend and learn from their reading differently and have different interests regardless of text topic or text origin?
How does young readers' background knowledge affect their comprehension, knowledge, and interest?
 - d. Interaction: differential effects of text topic, text origin, and readers' country

To what extent do the text topic and the text origin interact? For example, does the Korean text on Economics/choices affect young readers' comprehension and learning differently than the US text on Economics/choices regardless of the readers' country?

To what extent do the text topic and the young readers' country interact? For example, do the Korean readers comprehend Economics/choices text better than Civics/community involvement text, while the US readers comprehend Civics/community involvement text better than Economics/choices text regardless of the text origin?

To what extent do the text origin and the young readers' country interact, suggesting the effect of cultural schemata? For example, does the Korean text facilitate the comprehension of Korean children more than the US text, and vice versa regardless of topic?

To what extent do the topic, the text origin, and the young readers' country interact? For example, does the Korean text facilitate the comprehension of Korean children for the Economics/choices text but not for the Civics/community involvement text, while the reverse is the case for US children?

3. Qualitative analyses of protocol students' data
 - a. What patterns characterize young readers' strategy use and various aspects of text design and reader characteristics?

- b. How do those patterns illuminate the effect of text origin, text topic, readers' country and background knowledge on the strategy use, comprehension, and learning from the text?

The Research Approach

This study provides a picture of how cultural schemata might influence the design of social studies textbook passages from different countries and how text design and reader characteristics might affect children's comprehension and learning from text. To answer this overarching question, I first analyzed the four textbook passages from the two countries from a cross-cultural perspective, comparing them in several aspects such as content, structure, interest and familiarity values, and text-picture relations. Then, I quantitatively analyzed the responses to the comprehension and transfer measures as well as knowledge and interest measures that every participant provided through the pencil-and-paper test. By pulling these measures apart and analyzing them separately, I could answer the overarching question and subsidiary questions for the quantitative component.

Finally, the qualitative analysis of protocol students' think aloud and interview would provide rich data that could help answer the questions for the qualitative component as shown above. Especially, the qualitative component would extend the results of text analysis and quantitative analysis by adding the exploration about strategy use and enabling triangulation of data from different sources. These three steps of the study together could illuminate the relation among culture, text design, readers, and comprehension and learning.

In sum, the first step to answer the overarching research question was a text analysis from a cross-cultural perspective and the result was presented in chapter 4. The

second step was to collect data from the large group of participants in Korea and the U.S. These participants in the two countries went through the same procedures. Every student read either a passage from their own country or a translation of a passage from the other country about one of the two social studies topics, and responded to comprehension, transfer, and situational interest measures after reading. They also responded to knowledge and individual interest measures before and after reading. The quantitative outcome of the second step was presented in part 1 of chapter 5. The third step was to collect data from protocol students. They provided think-aloud protocols and semi-structured interview data in addition to the responses to the other measures. The qualitative outcome of the third step was presented in part 2 of chapter 5.

Definitions

Before providing the related literature review and describing the study in detail, I present how I used various terms in the context of this study. The following definitions are pertinent to my study:

1. Culture is shared knowledge and expectation of patterns and rules that its members use for communication and serves as the framework for interpretation of any communication (Swales, 1990; Connor, 1996). Despite its complexity and flexibility, in this study, culture is limited to the dominant national culture that is characterized by the shared language, traditions, rules, patterns, and values that set its members apart from members of other national cultures. Therefore, in this study, cultural communities refer to the two countries, Korea and the United States, that have different national languages, rules, patterns, traditions, and values.

2. Schemata refer to well-integrated networks of previously acquired knowledge (Adams & Collins, 1979; Bartlett, 1932; Rumelhart, 1980), consisting of two components.
 - a. Content schemata are background knowledge of the content of the text that includes facts, concepts, and procedures (Carrell, 1987; Swales, 1990).
 - b. Formal schemata are background knowledge and expectations of rhetorical structures of different types of texts (Carrell, 1987; Carrell & Eisterhold, 1988; Swales, 1990). In other words, they refer to rhetorical text structure schemata.
3. Genres are “relatively stable types of utterances” ((Bakhtin, 1986, p. 60) that are developed, learned, and used for the communicative purposes within a community. Repeatedly interacting with each other through appropriate texts and tasks, members of the community establish and share unique conventions of genres in terms of content, structure, and style (Chapman, 1999; Swales, 1990).
4. Textbooks are primary instructional materials used in schools that contain the subject matter content and related activities (Chambliss & Calfee, 1998). Among various accompanying materials, textbooks refer to only the student edition in this study.
5. Text design refers to how content in text and pictures are organized in a single textbook passage or a book or a whole series to inform, argue, or explain (Chambliss & Calfee, 1998).
 - a. Text refers only to written text among many forms of human communication in the context of this study (Bakhtin, 1986).

- b. Picture refers to various types of visual representations of a person, object, or scene, including photographs, drawings, paintings, diagrams, typographical features like underlining and highlighting (Benson, 1997).
- c. Expository text is text that an author writes to inform, argue, or explain so that readers can learn from it (Chambliss & Calfee, 1998; Weaver & Kintsch, 1991). Textbooks, newspapers, essays, reports, and research articles are typical examples of expository text (Chambliss & Calfee, 1998).
- d. Text structure refers to the overall rhetorical patterns or organizational structures of text that provide an undergirding linkage that holds sentences, paragraphs, and the whole text together (Chambliss & Calfee, 1998).
 - i. Rhetorical text structures are writing patterns that an author chooses to organize information according to purposes: to inform, to argue, or to explain (Calfee & Chambliss, 1987; Chambliss & Calfee, 1998).
 - ii. Explanatory text structure is a type of rhetorical pattern whose purpose is to explain difficult concepts or phenomena to lay readers, filling the gap between lay readers and experts through logical order of subexplanations of definition, example, analogy, and expert models (Chambliss & Calfee, 1998; Rowan, 1988, 1990).

- iii. Graphic representation of text structure refers to diagrams that depict the structural patterns the author uses to organize sentences, paragraphs, and a whole text (Chambliss & Calfee, 1998).
6. Comprehension is understanding powerful ideas and important details in text and constructing a coherent mental representation of what the text is about by making meaning from text, based on various text features and prior experience and knowledge (Applebee, 1978; Kendeou, van den Broek, White, & Lynch, 2007; McGuire, 2007). In this study, I restrict it to text-based comprehension (Kintsch, 1998; O'Reilly & McNamara, 2007)
7. Learning occurs when students can apply or transfer their knowledge gained from text to solve a problem in a new everyday context (Brophy & Alleman, 2002; McGuire, 2007). Learning in this study refers to transferring what students comprehend from text to a similar but new context. Therefore, learning in this study refers to the situation model in the Comprehension and Integration Model (Kintsch, 1998; O'Reilly & McNamara, 2007).
8. Interest is positive or negative feeling that individuals have about a topic, person, object, text, and so on. It could come from both readers themselves and specific text characteristics (Alexander & Jetton, 2000).
 - a. Individual interest is topic-specific, personal preference. It develops slowly over time and is relatively stable and long lasting (Hidi, 2001; Krapp, 1999, 2000; Schiefele, 1998; Wade, Buxton, & Kelly, 1999).

- b. Situational interest is environmentally evoked interest by text characteristics, audio/visual stimuli, or social activities. It may or may not be long lasting (Hidi, 2001; Hidi & Baird, 1986).
9. Knowledge in this study refers to readers' background knowledge about certain domain-related content, concepts or principles (i.e., topic knowledge) (Alexander & Jetton, 2000).
- a. Perceived Knowledge is the extent to which readers perceive that they know about a topic or concept (Buehl, Alexander, Murphy, & Sperl, 2001; Chambliss, Torney-Purta, & Richardson, 2008).
 - b. Demonstrated Knowledge is the extent of knowledge that readers are actually able to show about a topic or concept (Langer, 1984; Ozuru, Dempsey, & McNamara, 2009).

Overview

This study examined how culture made differences in the design of social studies textbook passages for children and how different text design and reader characteristics such as background knowledge affected children's comprehension and learning from those passages. For this purpose, I designed this study, involving comparable textbook passages from Korea and the US and 10-year-olds from the two countries.

Chapter 2 consists of two major reviews of studies that support the rationale provided in chapter 1. In the first section, I explored the relations between culture and written communication. In doing so, I discussed empirical research based on schema theory and contrastive rhetoric theory, followed by studies on Korean writing style in comparison to English writing style. Next, I reviewed research on each of the four factors

that should be taken into consideration for good text design: text structure, background knowledge, interest, and text-picture relations.

Chapter 3 provides the details of this study. I first presented the overall design and timeframe of this study. I then explained how participants were selected for the study, followed by information about text selection and translation. Next, I presented instrumentations I developed to measure children's comprehension, learning, knowledge, and interest, followed by how I scored and analyzed each measure and inter rater agreement for the quantitative data.

Chapters 4 and 5 present the results of this study. Chapter 4 provides the results of the text analysis, including how each text was analyzed and what differences the two countries' textbook passages showed. Chapter 5 consists of two parts. Part 1 presents the outcomes of the quantitative analyses of the data from the large group paper-and-pencil test, while Part 2 presents the outcomes of the qualitative analyses of the think aloud protocol and interview data from the protocol students.

Finally, chapter 6 presents the overall discussion of the results from the three components of this study in terms of the overarching and subsidiary research questions. In doing so, I also discuss the implications and limitations of this study as well as directions for future research.

CHAPTER TWO

Review of Literature

As discussed in Chapter 1, culture influences various spheres of human life, including human thought, behavior, and communication (e.g., Bakhtin, 1986; Matsumoto, 2001; Nisbett, 2003; Swales, 1990; Vygotsky, 1978). Among those spheres, this study focuses on the influence of culture on written communication through expository text. Written communication occurs between an author and a reader through the medium of written text. As shown in figure 2, norms of such written communication lie in a specific cultural community. Genres with unique content, structure, and style are cultural products of a community and therefore, they belong to the community rather than an individual writer or reader (Bakhtin, 1986; Chapman, 1999; Swales: 1990). Admitting individual stylistic differences in writing, readers and writers in the same cultural community tend to have shared expectations of norms and conventions of written communication to some extent. If this is the case, social studies textbooks whose primary purpose is to teach young children knowledge and skills that are important to their society are highly likely to reflect the effect of culture on written communication style as well as specific content and underlying values. Therefore, it is important to understand how culture is reflected in the design of social studies textbooks and how these culturally influenced instructional materials could affect the comprehension and learning of children of different cultural backgrounds.

However, I posit that there are not only culture-dependent but also culture-independent features that may make text more or less comprehensible to young readers. In this section, I present the review on the two different but related areas of research to

support this speculation and the questions that I explored through this study. In the first part of the review, I discuss the effect of culture on written communication in general based on the two related theories: schema theory and contrastive rhetoric, followed by the review on the studies about the unique writing styles in Korean compared to the English writing style. This topic, culture and written communication, served as an overarching theme for this study. On the other hand, the second section of the review centers around the components of text design and reader characteristics that contribute to text comprehensibility and could be considered culture-independent. Among such text and reader characteristics, I focused on the studies on the four components: text structure, background knowledge, interest, and text-picture relations.

The Effect of Culture on Written Communication

In this section, I review two strands of research that help illuminate how culture could affect written communication: cross-cultural studies based on schema theory and cross-cultural studies based on contrastive rhetoric theory. Finally, I review contrastive rhetoric studies focusing on the Korean writing style. These bodies of research would provide a balanced view of the role of culture in written communication within and across cultures.

Culture-specific Schemata and Text Comprehension

Schemata are central to the theory of memory and learning developed by cognitive psychologists. Bartlett (1932) introduced the notion of schemata and showed their role in reading and remembering information. In several experiments, he found that when the elements of a story match what readers and listeners know about stories, they tend to eliminate the incongruent elements from memory, or change what they remember

to more familiar forms. In a subject's repeated reproduction of a story or serial reproduction from one person to another, his subjects transformed North American Indian tale with an unfamiliar story structure more than they transformed texts with familiar descriptive and argumentative structures. Bartlett attributed such transformations to "the influence of social conventions and beliefs current in the group to which the individual subject belonged" (p. 118).

Since Bartlett (1932), various studies have been conducted from a schema-theoretic view of reading comprehension. Although many of these studies did not deal with schemata from a cross-cultural perspective, what these researchers have proposed about the influence of culture-specific schemata on text comprehension is noteworthy. For example, Kintsch and Greene (1978) partially replicated Bartlett's study, producing similar results about the effect of culture-specific schemata on reading and recall. In their study, 183 American college students read two stories from Decameron and two Alaska Indian stories, and wrote a summary for each. Readers wrote better summaries of stories for which they had an appropriate schema than for stories for which they lacked a schema. Kintsch and Greene also used Bartlett's serial reproduction. Sixty college students participated in the task that required one student to listen to a Brothers Grimm fairy tale and an Apache Indian tale and retell each on tape. The next subject listened to the first subject's taped retelling, and the process continued until the story had been retold five times. After this serial reproduction, the Brothers Grimm fairy tale did not undergo serious distortions, while there were severe distortions in the recalls of the Indian tale. However, neither Bartlett nor Kintsch and Greene conducted cross-cultural studies, although they meaningfully showed that culture-specific schemata play a significant role

in text comprehension and remembering information. Kintsch and Greene themselves acknowledged that a cross-cultural study involving Apache subjects would have been ideal.

Some researchers conducted comparative studies on cultural schemata of subjects who belong to the same national language community but to different social groups based on religion (e.g., Lipson, 1983), area of study (e.g., Birkmire, 1985), ethnicity (e.g., Reynolds, Taylor, Steffensen, Shirey, & Anderson, 1982) and so on. For example, Reynolds et al. (1982) did a comparative study on two ethnic groups. In their study, 105 eighth-grade black and white students read an ambiguous letter written by a boy about a school incident that could be interpreted as a fight or as a case of “sounding”, a common black social discourse. As predicted, the white students who lacked cultural schemata about “sounding” tended to interpret it as a real school fight, while the black students were more likely to interpret it as a verbal play among friends. This result showed that cultural schemata could provide different interpretive frameworks for members of different subcultures, despite the considerable cultural overlap.

If different cultural schemata across subcultures make differences in text comprehension, we would expect that people from different national language communities may comprehend the same text differently as well. In that sense, Steffensen, Joag-Dev, and Anderson’s (1979) study is noteworthy. In their study, 19 Indian students and 20 American students, both attending an American university, read letters about an Indian wedding and an American wedding written in English and recalled them. The results were consistent with the general idea of schema theory as shown in Bartlett (1932) and Kintsch and Greene (1978). Subjects read the culturally familiar text more rapidly

and recalled more information. They also produced more culturally appropriate elaborations of the familiar text, contrary to more distortions of the culturally unfamiliar text. They attributed the distortions to either lack of culturally appropriate schemata about the foreign passage or intrusion of the readers' own cultural schemata. Although supporting the strong influence of cultural schemata on comprehension and remembering, this study focused on the cultural familiarity of content, not the organization of ideas. They also did not consider whether language affected Indian readers' comprehension and recall. Nisbett (2003) noted that a specific language can facilitate different thought pattern as shown in the case of bilinguals. Thus, bilingual Asian Indians might have been influenced by what language the letters were written in.

Pritchard (1990) also conducted a similar study using the same letter genre. However, Pritchard investigated whether readers use different processing strategies for culturally familiar and unfamiliar text. Thirty American and 30 Palauan 11th-grade students read letters about an American funeral and a Palauan funeral in their native language. While reading both letters, they verbally reported what strategies they used, and after reading they retold everything they could remember. The retelling result supported previous research in terms of the amount and quality of information remembered. More interestingly, the verbal reports showed that the type and frequency of strategies readers used differed depending on the cultural familiarity of the text. For the culturally familiar text, readers tended to employ more strategies to make connections among different portions of the text and use their background knowledge. Pritchard concluded that by using these strategies, readers would get a global understanding beyond a local understanding at the sentence level. On the other hand, for the culturally

unfamiliar text, readers tended to use more sentence-level strategies. They developed awareness of their progress and the problems they encountered while reading the unfamiliar text, and their effort remained at a sentence level. Pritchard concluded that failure to make connections lead to failure to have a global understanding.

Both Steffensen et al. (1979) and Pritchard (1990) used the letter genre that contained an individual's narrative about a cultural event and provided the evidence of the strong influence of cultural schemata on reading comprehension from the cross-cultural perspective. However, they did not clearly differentiate what they mean by culturally familiar or unfamiliar text, and did not provide a thorough analysis of the cross-cultural text materials used in their studies, both in terms of culture-specific content and form. Despite the shared communicative purposes of the letter genre among family members or close friends across cultures, there may be rhetorical differences of the genre across cultures that affect comprehension of letters.

It is important to take both content and form into consideration in discussing the role of cultural schemata in reading comprehension, although it may not be easy to measure the interaction between the two types of schemata. Swales (1990) suggested that content schemata and formal schemata, "background knowledge of the rhetorical structures of different types of texts" (Carrell, 1983, p 81), are acquired through prior experiences with tasks and texts within a discourse community and people in the same discourse community share these two types of schemata, contributing to recognition and use of genres for communicative purposes. Without considering both content and formal schemata, our understanding of the influence of culture on written communication is incomplete.

Carrell is one of the researchers who paid attention to these two components of schemata in text comprehension. In one of her studies, Carrell (1984) examined whether differential effect of various expository text structures exists in ESL readers similar to what Meyer and Freedle (1984) found among native English-speaking readers. In her study, 32 Spanish, 16 Arabic, 12 East Asian, and 20 Malaysian intermediate-level adults were randomly assigned to one of the four text versions: causation, problem/solution, comparison, and collection of descriptions. An immediate and a delayed written recall showed that similar to native readers, ESL readers generally performed better in their recall with the more tightly organized texts (comparison, problem/solution, and causation) than the more loosely organized text (collection of descriptions).

More interestingly, although Carrell (1984) did not find an overall significant interaction between L1 language groups and rhetorical patterns, post-hoc analyses yielded differential effects of the four rhetorical patterns on the amount of recall for the four groups. For example, unlike the other three language groups who performed lowest with the collection of descriptions, the Arabic-speaking students' performance with the collection of descriptions was equal to the problem/solution and better than the causation, although they performed highest with the comparison. Carrell attributed this difference to the transfer effect of the preferred native rhetorical patterns as shown in some research on contrastive rhetoric. The Arabic-speaking readers might perform well enough with the collection of descriptions, because of their preferred rhetorical pattern, coordinate parallelism (Kaplan, 1966).

Another interesting finding is that similar to native speakers of English, ESL readers were able to recall better when they had appropriate formal schemata that

matched the structure of a text and use that formal schemata for recall. However, most of ESL readers, especially those of a non-European cultural and linguistic background may not have the appropriate formal schemata of English, because only 21 out of 80 could use the appropriate formal schemata of English in recall, and 8 of these 21 students were Spanish-speakers. Carrell's study clearly showed that their cultural and linguistic background, at least to some extent, influences the differential effect of rhetorical patterns and the extent to which readers can recognize and use these patterns.

Carrell (1987) also investigated the simultaneous effects of both content schemata and formal schemata on ESL reading comprehension. She conducted a cross-cultural study with the 28 Muslim and 24 Catholic proficient ESL students regardless of their nationality. Half of the subjects in each group read a well-organized historical narrative with familiar religious content, while the other half read an altered and scrambled one with unfamiliar religious content. The results of recall and multiple choice questions indicated that ESL readers' comprehension was better when both content and form of the text are familiar, while they encountered more difficulties when content and form are unfamiliar. However, content schemata played a more important role than formal schemata overall, although form was a more important factor in comprehending more important information and relationships among ideas.

Carrell's study (1987) provided evidence of the interaction between content schemata and formal schemata in ESL reading. However, from a cross-cultural perspective, her grouping of ESL students seems problematic. In her study, the cultural groups were defined by their religious affiliation without considering nationality or native language. As she acknowledged, a Malaysian Catholic may share more with a Malaysian

Muslim than a Colombian Catholic. Considering what previous research showed about the variation in comprehension of different native language groups, grouping various native language groups together under one religious group seems problematic in explaining the simultaneous effects of culture-specific content and formal schemata.

Despite overall agreement on the facilitative effect of content familiarity on reading comprehension, there are a few inconsistent results as well (e.g., Roller & Matambo, 1992; Stott, 2004). For example, in the study conducted by Roller and Matambo (1992), 80 proficient Zimbabwean bilinguals (the 13th year of schooling) read the familiar Washing Clothes passage and the unfamiliar Balloon Serenade passage. They recalled the culturally unfamiliar text better than the familiar text. Roller and Matambo attributed this result to a novelty effect. Readers may recall the unfamiliar text better than the familiar text, because of the interest-enhancing value of the unfamiliarity itself. Alternatively, Roller and Matambo also speculated that despite unfamiliar content, the structure of this text might fit readers' formal schemata better, or because the unfamiliar text contained more concrete nouns, it might have been easier to recall.

Stott (2004) also found a similar novelty effect in his study about 20 Japanese university students' reading an English translation of a passage from a well-known Japanese novel. One half of the subjects knew the source of the passage, while the other half did not. The latter group recalled better. Stott postulated that by overly relying on top-down processing, readers may not pay enough attention to the text itself. Stott also pointed out that readers' content familiarity might interfere with their comprehension of an L2 version, and they might have lost interest when they were informed of the source of the passage.

Although the facilitative effect of content familiarity on comprehension is one of the most consistent findings in L1 and L2 reading research, a few inconsistencies shown in Roller and Matambo (1992) and Stott (2004) seem to suggest the necessity of considering the cultural familiarity of both content and form as well as affective factors and other textual features like vocabulary. Although previous research including both Roller and Matambo and Stott's studies showed that readers' recall or comprehension was affected positively or negatively by the cultural familiarity of text, they did not provide clear answers for why and how.

Thus, this present study would help answer whether the cultural familiarity of text would affect children's comprehension, as well as why and how cultural familiarity either does or does not have an effect, by producing not only quantitative but also qualitative data and triangulating different sources of data. In particular, think aloud protocols would help pull apart these various explanations of inconsistent outcomes in previous research.

Cultural Thought Patterns and Writing Styles: Focusing on Contrastive Rhetoric

The debate over relativist and universalist ideas on the interrelations among language, thought and culture has been a recurring issue in psychology and linguistics. Kaplan (1966) initiated contrastive rhetoric, arguing that logic and rhetoric are not universal but culture- and language-specific and such cultural thought patterns could have negative influence on ESL students' English writing. In his seminal work, he analyzed 598 English essays by the ESL students from Semitic, East Asian, and Romance language groups. He identified unique rhetorical patterns among these three groups in contrast to English rhetorical pattern. According to Kaplan, a paragraph development in English is linear in that ideas develop in a straight line from a general statement to

supporting details (deductive) or in a reverse way (inductive). In contrast, a paragraph in other languages seemed to develop in a different style that native English speakers may consider undesirable. The ESL writing samples showed that many of the sentences in paragraphs in Semitic languages (e.g., Arabic) included a series of parallel coordinate clauses, though subordination is preferred to coordination in English. Contrary to the linear and direct development of ideas in English, the paragraphs in “East Asian” languages (e.g., Chinese, Korean) tended to be indirect, circular, or spiral in that the topic was discussed from various tangential views, in terms of what it is not rather than what it is. On the other hand, those in Romance languages (e.g., French, Spanish) seemed to have much greater freedom for digression and introduction of irrelevant information than paragraphs in English. Kaplan also argued that paragraphs in Russian tended to be digressive as well, showing as an example, a translation of professional writing rather than a student sample.

Kaplan’s view led to other studies on the rhetorical patterns in various languages. Some researchers analyzed English writing by speakers of languages other than English (e.g., Ostler, 1987) as Kaplan (1966) did. Other researchers paid attention to analyzing text written in languages other than English, showing that texts in different languages develop ideas differently from native English readers’ expectations. In general, textual analysis in various languages such as German, Spanish, Korean, Chinese, Japanese, and Arabic seem to corroborate Kaplan’s idea of cultural thought patterns, showing that each language has their own preferred rhetorical pattern, different from the direct and linear pattern of English (See Connor, 1996 for a review of these studies).

For example, Hinds (1990) analyzed two newspaper articles in Japanese, one in Korean, one in Chinese, one in Thai, and one in English, published in Thailand. He suggested that the reader-responsible tendency of these languages contributes to a common writing style that he called delayed introduction of purpose and quasi-inductive in contrast to English expository writing characterized as deductive (from general to specific) or inductive (from specific to general). He argued that what appears coherent and comprehensible to native speakers of the above languages may look incoherent and confusing to English speaking readers, because of different cultural expectations about the rhetorical pattern. English-speaking readers tend to expect that the expository text is organized mostly deductively and if it is not, inductively. However, Hinds argued that the texts in these Asian languages are neither deductive nor inductive. Although they may appear inductive, they do not follow the inductive style that English-speaking readers expect.

Despite lack of representativeness of sample texts and empirical evidence about readers' comprehension, Hinds' study (1990) meaningfully suggested that the perception of coherence and comprehensibility is cultural and therefore, the traditional dichotomy between deductive and inductive style may not be valid in evaluating the coherence of texts in languages other than English. Because reader-writer communication relies on their shared cultural expectations of genres and their responsibility, written communication among people with different cultural expectations would suffer without such awareness.

However, as Kubota and Lehner (2004) reviewed, researchers did not seem to agree with the rhetorical patterns of East Asian languages (i.e., Chinese, Japanese, and

Korean), revealing some limitations of the contrastive rhetoric studies. Kaplan (1966) identified indirect and circular patterns and inclusion of tangential views as the unique writing pattern of East Asian languages. Some researchers corroborated this view (e.g., Eggington, 1987 for Korean; Hinds, 1983 for Japanese; Tsao, 1984 for Chinese) to some extent, attributing the East Asian writing style to the Classical Chinese poetry such as four-part poetry, including introduction, development, turn and conclusion. Scholars like Hinds and Tsao argued that during the third part, turn, writers in East Asian languages make their writing incoherent and incomprehensible from native English speakers' perspective, by adding indirect, digressive, or unrelated elements.

However, other scholars found counter evidence for this pattern (e.g., Cahill, 2003; Mohan & Lo, 1985). Mohan and Lo (1985) argued against Kaplan's claim that organization of ideas in expository text in Chinese and English is clearly different. From classical Chinese expository texts and works on modern Chinese compositions, Mohan and Lo found counter evidence for Kaplan's claim about the indirectness of the Chinese rhetorical pattern. Showing a few examples of classical texts with direct development of ideas including deductive and inductive style, they argued that many of such examples can be found in other classical Chinese texts. Their examination of the four works on modern Chinese composition also revealed many similarities with English expository writing conventions, including the emphasis on a direct approach.

In the same study, Mohan and Lo (1985) compared English composition instruction in Hong Kong and British Columbia. The survey of over 1400 English (L1) composition teachers in British Columbia showed that these teachers considered organization more important than grammatical accuracy, while the interview with ten

Hong Kong teachers of English revealed more orientation toward sentence-level accuracy. Such contrast was reflected in textbooks, evaluation practice, and instructional methods in Hong Kong and British Columbia. Their survey on 30 Chinese students who had studied in Hong Kong and were studying in Vancouver at the time of the survey also showed that their learning experiences with English writing in Hong Kong were mostly oriented toward accuracy and they were concerned about sentence-level accuracy, without being fully aware of their problems with organization.

Instead of differences between English and Chinese rhetorical patterns, Mohan and Lo (1985) attributed difficulties in paragraph organization of ESL students from Hong Kong to their general writing ability and their experience with accuracy-oriented English composition instruction. They suggested that there is a universal developmental pattern in academic discourse. That is, in both L1 and L2, discourse organization develops later than sentence-level accuracy and can be affected by composition instructions. Mohan and Lo indicated that more consideration should be taken into subjects' literacy level in L1 and L2 and their educational experience as well as this developmental aspect of academic writing. According to Swales (1990), schools in any culture serve as important discourse communities within which students acquire appropriate knowledge and skills of genres through repetitive tasks and appropriate text, and are inducted into the mainstream culture. Whether rhetorical patterns are different across cultures or not, it seems that schooling plays a critical role in genre-related skills and knowledge and conventional expectation of written communication.

Similarly, Cahill (2003) also argued that East Asian writing style is not as different from English writing style as some contrastive rhetoric scholars argued.

Reviewing native Chinese and Japanese scholars on classical and modern rhetorical styles of each language and writing pedagogy, Cahill found that Chinese and Japanese rhetorical patterns varied including three-part or four-part patterns and deductive and inductive style, and none of these scholars view turn as a digression as contrastive rhetoric scholars generally do. Cahill concluded that turn is not a digression but similar to amplification in the Western rhetoric, developing the writing further by various means. Therefore, he argued that rhetorical structures in East Asian languages are not completely different from English rhetorical structure. The difficulty with expository writing in English as a second language may be due to sheer difficulty with learning academic writing in any language rather than different cultural thought patterns.

Kaplan (1966) and other researchers like Hinds (1987) argued that indirect rhetorical styles of East Asian languages might hinder the speakers of these languages from communicating through written language with native English speakers who would expect direct rhetorical styles. On the other hand, researchers like Mohan and Lo (1985) and Cahill (2003) contended that every language group use various rhetorical patterns and East Asian rhetorical patterns are not as different from English rhetorical patterns as scholars like Kaplan argued. If ESL students have difficulty in written communication with English speakers, it may be due to developmental issues in writing that occur in every language as well as the influence of educational experiences. These inconsistent results of the rhetorical styles of East Asian languages show that in order to better answer whether there are cultural differences in thought patterns and rhetorical styles, a study on culture should be more rigorously designed and culture should be examined in its relation to language and thought, due to its dynamic, complex and fluid nature.

As shown in these counter evidences for Kaplan's initial idea, contrastive rhetoric has been criticized for its narrow and simplistic view, overgeneralization, stereotyping and cultural insensitivity (e.g., Kubota, 1999, 2001; Scollon, 1997; Spack, 1997; Zamel, 1997). Methodological limitations seem to make the findings of some contrastive rhetoric studies even less valid. Although text analysis plays a critical part in contrastive rhetoric studies, the type of texts used in studies is often identified as a problem (Grabe, 1987; Leki, 1991) and many studies seem to provide only an informal discussion of the example texts rather than an objective and rigorous analysis of texts (e.g., Kaplan, 1966; Hinds, 1987, 1990). It matters whether comparable and representative texts are used in cross-cultural studies and how they are analyzed to yield valid results.

As Kubota and Lehner (2004) noted, it is fallacious to compare modern English writing style with classical writing styles of other languages, ignoring the dynamic nature of language. It is also inappropriate to compare student essays with published texts (e.g., Ostler, 1987). Only one or two newspaper articles cannot be representative of expository text in a given language (Hinds, 1987, 1990). It is also problematic to identify rhetorical patterns among English expository essays written by ESL students who belong to various academic discourse communities (Kaplan, 1966), considering that members of a discourse community use a unique set of genres for communicative purposes to achieve their goals (Swales, 1990). The seemingly same genres differ in their content, form, and style when used in different discourse communities. For example, expository text may have different characteristics when used in different academic discourse communities such as humanities and natural science. In addition, considering dynamic cultural and academic exchange, it is important to examine how the membership of a language

community and an academic discourse community overlaps, affecting written communication.

Some scholars addressed this issue of interplay between a language community and an academic discourse community (e.g., Clyne, 1987; Eggington, 1987). Clyne (1987) investigated this interplay, analyzing 52 texts in linguistics and sociology, 17 in German and 9 in English by German scholars, and 26 in English by English scholars. Clyne examined linearity, symmetry, hierarchy, and continuity as well as the position of definitions and advance organizers and the integration of data that are considered important for coherence from the perspective of linear rhetorical style. Clyne found that German scholars' texts showed more digressiveness, a greater tendency to asymmetry and discontinuity than English scholars' texts. Clyne argued that although both texts might contain some digressiveness, the digressiveness in German is functional to provide theory or additional information, while the digressiveness in English results from poor planning or failure to be concise. English scholars placed graphic organizers and definitions earlier in a paper and embedded more data in the text than German scholars did. Despite the awareness of English discourse patterns, English texts by German scholars tended to follow German cultural discourse patterns. In addition, Clyne found that the presence of disciplinary discourse patterns across the cultures was not substantial, although sociological and linguistic texts seemed to differ in hierarchy and the position of advance organizers and definitions.

Clyne (1987) attributed these structural differences in the same disciplines across cultures to different intellectual traditions and attitudes toward learning and content, including reader-writer responsibility. He further speculated that without this

understanding, German texts may look digressive to English-speaking readers, while English texts may seem to be written from a limited perspective to German-speaking readers. Clyne argued that different cultural norms for academic interaction and writing would create miscommunication between scholars from different cultures, and therefore it is necessary for scholars to have awareness of the cultural basis of different discourse patterns across languages and cultures.

Written Communication Styles in Korean and English

The difference in written communication styles in Korean and English was briefly discussed in chapter 1. In this section, I provide the findings of empirical studies on this topic, from the perspective of contrastive rhetoric. First, the Korean and English languages differ structurally, which may partially make differences in written communication styles. Chang (1983) conducted a contrastive analysis of Korean and English languages. He presented three typological differences between Korean and English languages: word order, speech levels (system of honorifics), and ellipsis. First, the Korean word order follows SOV (Subject Object Verb), while the English word order follows SVO. Korean is a postpositional language and postpositional particles serve as case markers, while English is a prepositional language without formal case markers except for personal pronouns. Because of the presence of formal case markers, word order is relatively free in Korean, while it is relatively fixed in English. Second, Korean has six speech levels, depending on interpersonal relationships between the speaker (writer) and the listener (reader), relative to their status and solidarity. Third, Korean is a more elliptical language than English. Information understandable from a discourse context can easily be deleted, although this ellipsis is more common in spoken language

than in written communication. As Chang noted, some differences (e.g., word order) are more grammatical, while others (e.g., honorifics) seem to be better understood from a sociocultural perspective.

In addition to the structural differences of both languages, the Korean thought patterns and writing styles have been also studied from the perspective of contrastive rhetoric. As mentioned in chapter 1, the starting point was Kaplan's (1966) claim that Korean writing style is circular and indirect in developing ideas just like the other East Asian languages. However, few Western scholars have conducted an empirical study on the Korean written communication style, since Kaplan. Eggington (1987) is one of the few Western researchers who did so. As Clyne (1987) did, Eggington (1987) also examined the complex interplay among language, thought and culture, considering the relations between a national language community and an international academic discourse community. He suggested that rhetorical patterns of a language group are not fixed. Drawing on the previous research on rhetorical patterns of journal articles by Korean scholars in English and Korean, Eggington attended to the existence of two types of rhetorical patterns in Korean scholars' expository writing: traditional Korean rhetorical style (non-linear) and English-influenced rhetorical style (linear). He maintained that Korean scholars who have studied at English-speaking universities tend to exhibit linear rhetorical patterns in their writing in English and Korean. Eggington provided evidence that such English-influenced style might hinder effective written communication between these US-educated scholars and their Korean readers who are more familiar with traditional non-linear rhetorical pattern.

In Eggington's (1987) study, 37 Korean adults were asked to read two passages from a Korean Journal about public administration. One passage reflected the traditional Korean rhetorical pattern, while the other passage followed a linear pattern. In the delayed written recall, the subjects remembered significantly more information from the passage with the traditional non-linear pattern, while there was no significant difference in the immediate written recall.

This finding clearly shows that an individual may employ conventions from both the national language community and the international academic discourse community they belong to, suggesting that the interplay among language, thought and culture is more complex than we may expect. However, such interplay can cause breakdowns in communication between readers and writers if their expectations of rhetorical pattern differ. It is necessary to consider various contextual aspects to understand the rhetorical patterns of expository text in a certain language. Genres are not fixed. Admitting that there is a certain degree of stability of genres within a community, it is also important to consider that genres are flexible and evolving over time (Bakhtin, 1986; Chapman, 1999; Swales, 1990).

However, as is the case with the studies of East Asian languages, Korean scholars also yielded inconsistent results of the Korean written communication styles and thought patterns, suggesting the complex nature of the contemporary Korean writing styles. Some Korean researchers confirmed the difference between English writing styles and Korean writing styles identified by the Western researchers (Eggington, 1987; Hinds, 1987, 1990; Kaplan, 1966), including indirect or circular approach to theme, delayed introduction of topic, or inductive approach. For example, Ok (1991) found that the English newspaper

articles published in Korea were very different from those published in the U.S. Among the 15 English articles published in Korea, only two articles developed ideas deductively and ten articles followed the traditional Korean four-part pattern of introduction, development, turn, and conclusion. This finding seems to suggest that language does not matter in how to write newspaper articles.

However, Choi (1988) found that Korean writing style is not in sharp contrast to English writing style and language does matter. Choi examined text structures of 11 argumentative essays written in English by three native speakers of English and either in Korean or in English by six native speakers of Korean. Both English speakers and Korean speakers were graduate students in an American university. The result showed both differences and similarities between essays by Americans and essays by Koreans. First, although one out of the five English essays of Korean speakers showed the non-linear structure, the overall text structure of English essays by Korean speakers resembled that of essays by Americans rather than that of Korean essays by Koreans. However, Korean essays by Korean speakers were structurally nonlinear as opposed to linear idea development in English essays. This difference in Korean essays and English essays by Korean speakers suggests that language may influence what rhetorical patterns Korean writers chose, as Nisbett (2003) noted among Chinese-English bilinguals. Choi also found that the English and Korean argumentative texts are similar in that they have in common the three basic components of claim, justification and conclusion. She speculated that there might be universal features of argumentative texts across cultures and languages.

These inconsistent results about the Korean writing styles may be due to the different genres and participants involved in Ok's (1991) and Choi's (1988) studies. However, even with the similar genre and similar group of participants, two Korean scholars produced different results. Ahn (1998) confirmed Kaplan's claim about indirectness of Korean writing style, while Ryu (2006) yielded both consistent and inconsistent results with such claim.

Ahn (1998) gave questionnaires to 26 native speakers of English who taught English at Korean universities in order to find out their perceptions of Korean college students' English writing. The respondents agreed that Korean students are not skilled enough in paragraph development and tend to ramble from one idea to another. They suggested that paragraph organization should be emphasized more and Korean students need to be aware of the difference between Korean and English writing style. Based on this insight, Ahn asked 30 Korean college students to write an essay on teenagers' TV watching in a classroom for 50 minutes without any reference books like a dictionary. Two native speakers of English chose six best writing samples that are relatively readable without serious grammatical errors and six other native speakers of English commented on each of the six samples. Their comments confirmed what Kaplan (1966) and Hinds (1987, 1990) proposed about Korean writing style such as indirect approach to theme, preference to inductive development of ideas, and delayed introduction of topic.

Similarly to Ahn (1998), Ryu (2006) asked 27 Korean college students to write an essay on the relation between mental and physical health. Unlike Ahn, he gave this as home assignment, and his students were encouraged to use a dictionary and did not have time limit in order to reduce the possibility that grammatical errors hinder the readability

of the writing samples. In contrast to the claim that Korean rhetorical pattern is inductive or quasi-inductive or the introduction of a topic is delayed (e.g., Hinds, 1990), he found that 23 out of 27 students approached the theme deductively, putting their thesis statement at the beginning of their essays. He attributed this trend mostly to students' educational experience about composition both in Korean and in English. According to Ryu, in order to take a composition test, a part of the college entrance exam in Korea, most students had intensive training on Korean composition throughout their high school years. These intensive training tended to emphasize the deductive reasoning and clear presentation of their ideas. In addition, all of these students got certain level of English composition courses by native speakers of English and textbooks based on the Western rhetoric styles.

However, he also found that only 12 out of the 23 essays that have deductive patterns could follow linear and straightforward English writing style and be considered coherent from English speakers' perspective. The rest of the essays contained deviations from the English rhetorical pattern, making them look incoherent to English-speaking readers. He speculated that it might be due to both the influence of the traditional Korean thought patterns and the developmental nature of writing. He argued that although the traditional thought patterns or writing styles still influenced contemporary Korean writing style, it is overgeneralization to say that Koreans develop ideas inductively or quasi-inductively and approach theme indirectly. His study seemed to show that there exist both the traditional Korean writing style and English-influenced writing style in the contemporary Korean students' writings, which Egginton (1987) also noted in Korean scholars' professional writings. Also, as Mohan and Lo (1985) argued, some of these

differences in expository writing may be due to the developmental nature of writing or to influence of educational experiences and specific language in which they wrote essays.

These inconsistent results about the contemporary Korean writing styles suggest that further research is required on different genres and populations. As shown in the studies reviewed above, most studies about Korean writing styles involve adult writings whether they are newspaper articles, journal articles, and student essays. In addition, most studies focus on paragraph organization of expository text written for the purpose to argue an author's ideas rather than explain difficult concepts or provide information. In that sense, this study on Korean Elementary students who read passages from Korean and American textbooks would be a valuable addition to the body of literature on Korean thought patterns and writing styles, expanding the genres and populations, considering that elementary school textbooks are written by professional adults for young readers for instructional purposes.

Reviewing the studies in the areas of cultural schemata and contrastive rhetoric shows that the topic of culture itself is very elusive and complex, involving a wide array of factors. Nevertheless, the review also reveals some converging ideas about the relationships between culture and written communication. First, most importantly, the review reveals that linguistic and cultural relativity and universality are not necessarily mutually exclusive concepts from the perspective of the communicative function of language and written text. There are universal properties in language, thought and culture that bind us all together as human beings, making cross-cultural communication possible. However, communication is not always successful due to cultural differences. People share conventional expectations of communication within a culture where they have been

cognitively apprenticed through interaction with others. These shared expectations or schemata serve as a communicative framework for an individual (e.g., Bartlett, 1932; Swales, 1990).

Second, most contrastive rhetoric research shows that the perception of coherence differs across cultures, because each culture has some different thought patterns and preferred writing styles. If it should be that readers' cultural expectations determine whether they find a given text to be coherently written (e.g., Eggington, 1987; Hinds, 1987), cross-cultural written communication may become harder if this perception is markedly different across cultures. However, as shown in different claims about writing style of East Asian languages (e.g., Cahill, 2003; Mohan & Lo, 1985), inconsistent claims about the rhetorical patterns of a certain group suggest that we need more studies that are rigorous and culturally sensitive. In doing so, it is necessary to use comparable genres and their representative texts within each culture and to consider various cultural aspects beyond a narrow linguistic view.

Third, schema-theoretic studies show that readers with different cultural backgrounds have different culture-specific schemata (e.g., Bartlett, 1932; Kintsch & Greene, 1978). Therefore, the degree to which a text matches the cultural schemata of readers can have a significant effect on reading rate (e.g., Steffensen, Joag-Dev, & Anderson, 1979), interpretation of text (e.g., Reynolds, Taylor, Steffensen, Shirey, & Anderson, 1982), quantity and quality of remembering (e.g., Kintsch & Greene, 1978; Steffensen, Joag-Dev, & Anderson, 1979), comprehension strategies (e.g., Pritchard, 1990) and so on. Most researchers seem to agree that cultural familiarity with content facilitates reading comprehension. Readers seem to read the culturally familiar text faster

and remember it better. They also tend to produce more culturally appropriate elaborations with culturally familiar text, while they produce more culturally inappropriate distortions with culturally unfamiliar text (e.g., Steffensen, Joag-Dev, & Anderson, 1979). In addition, readers are more likely to use sentence-level strategies with culturally unfamiliar texts, while more likely to make connections with culturally familiar texts (Pritchard, 1990).

However, a few inconsistent results about content familiarity (e.g., Roller & Matambo, 1992; Stott, 2004) indicate that future research should address the independent effect and interaction of readers' content schemata and formal schemata as well as the interaction between reader-based factors (i.e., schemata) and textual factors (e.g., vocabulary, text structure). Carrell's studies (1984, 1987) have shown that not only content schemata but also formal schemata might be culturally determined, at least to some extent. When both content and form of a given text match readers' content and formal schemata, they are likely to comprehend and remember it better.

Fourth, most of the contrastive rhetoric and cross-cultural studies about cultural schemata seem to deal with proficient adults rather than children or adults with varying language proficiency, making it hard to generalize their findings to other populations. Research (e.g., Mohan & Lo, 1985) shows that awareness and use of rhetorical patterns develops late, and as "cultural and cognitive apprentices," children are learning their culture's genres (e.g., Chapman, 1999). If what they encounter is quite different from culture to culture, we could speculate that the texts they encounter may lead them to develop different adult genres. Therefore, more cross-cultural literacy research should involve children and various genres they are encountering and learning in their culture. In

addition, future research needs to address the effect of varying degree of L1 or L2 proficiency in examining the impact of culture on written communication.

In conclusion, we have evidence about the importance of culture in understanding written communication within and across cultures, at least for proficient adult readers. What we need is more rigorous research on various genres and populations. In doing so, reconceptualization of culture is necessary. Culture is constantly changing, dynamic, and fluid rather than discrete or remaining homogeneous. Even a culture in relative isolation may be changing over time gradually. Today people in different cultures are interdependent on one another more than ever, and cultural exchange occurs commonly, inevitably involving cross-cultural communication. Researchers can contribute to the improvement of such communication by paying attention to the role of culture and collaborating with other researchers in international academic communities. It is obvious that well-designed cross-cultural studies would benefit cross-cultural communication through written text in general as well as communication in the classrooms where students of diverse cultural and linguistic backgrounds interact with each other and with teachers. Therefore, this study would have implications both for cross-cultural research by extending the US-focused research toward other countries and providing empirical evidence for the relations among culture, text design, and comprehension, and for practice in classrooms by suggesting more effective content-area instruction based on textbook materials.

Text Design, Reader Characteristics, and Text Comprehension

As shown in the previous section, thought patterns and writing styles may differ from one culture to another and so will the content schemata of readers and writers.

However, there are also some universal, culture-independent features that promote comprehension and learning from text. Stahl, Jacobson, Davis, and Davis (1989) proposed that some of the factors that affect readers' comprehension of an expository text result from the reader (e.g. readers' background knowledge and interest), while some result from the text (e.g., vocabulary and text structure).

However, it is inappropriate to say that one characteristic is solely intrinsic to text, while the other is intrinsic to the reader. For example, although background knowledge is what a reader brings to a text, it also matters what likely background knowledge an author assumes from his or her readers and how the author attempts to connect to such background knowledge. In addition, it is important not only whether a reader has interest in a certain topic, but also what kinds of interest-enhancing features a text contains. Indeed, comprehension of a text depends on the effective interplay between the text and a reader.

In the following section, I discuss the four common components that may make a difference in comprehension and learning from text: text structure, background knowledge, interest, and text-picture relations. I provide the separate review of each component in the following sections, admitting that these components are not independent of each other.

Text Structure

In this section, I discuss the research findings about children's awareness of expository text structures and the effect of coherent text structure on comprehension. Then I briefly discuss the importance of explanatory text structure in comprehension and learning, which all of the selected textbook passages for this study belong to.

Children's awareness of expository text structures. Researchers have explored whether young readers have enough awareness of expository text structures and if they do, how such awareness would affect their comprehension and learning from expository text (Chambliss & Murphy, 2002; Englert & Hiebert, 1984; Hare, Rabinowitz, & Schieble, 1989; McGee, 1982; Richgels, McGee, Lomax, & Sheard, 1987; Taylor, 1980; Taylor & Samuels, 1983). These researchers seem to agree that although young readers' awareness of expository text structures is at an emerging stage, those who have greater awareness understand and remember what they read better. In this section, I review some of the empirical studies that show the general patterns of children's awareness of text structure.

Englert and Hiebert (1984) investigated how children's awareness of expository text structures develops over the elementary school years, how reading ability affect their awareness in the breakdown of coherence, and whether there is differential awareness of different structures. The readers of three reading levels at two different age groups (i.e., 76 third graders and 70 sixth graders) read four different text structures (i.e., sequence, enumeration, comparison/contrast and description) to distinguish related and unrelated information to the topic.

The results showed that there was a significant main effect for reading ability on both target and distractor statements, regardless of the grade level. High-level readers were statistically more aware of text structure than low-level readers, though there was no significant difference in awareness between medium- and low-level readers. The grade level also influenced students' performance on the text structure measure. Although both third- and sixth-graders recognized the target statements at above 80% accuracy rate,

sixth-graders' awareness of distractor statements was significantly higher than that of third-graders. Thus, Englert and Hiebert (1984) concluded that young and low-level readers were mostly unaware of incompatibility of information with the prevailing text structure.

The effect of text type also was significant, indicating that children had a differential awareness of the four text structures. The students' awareness of sequence and enumeration was significantly higher than comparison/contrast and description text structures. Englert and Hiebert (1984) attributed the greater awareness of enumeration and sequence to either nature of human cognitive process or nature of students' prior experience with similar structures. The process of recognizing related details from the enumeration text structure was like filling in slots in schemata, while sequence is similar to story structure that students may have experienced more. When it comes to the other two text structures that turned out to be the most difficult text structures at both grade levels, Englert and Hiebert's result for description text structure replicated Meyer and Freedle's (1984) study with adult readers, but the result for comparison/contrast structure did not. Englert and Hiebert attributed this inconsistent result to the different measures and subjects.

In addition to these main effects, there was significant two-way interaction of text structure type and grade level only for distractor statements. The third graders recognized the distractor in sequence structure significantly better than in description structure, whereas no significant differences between any text structures were found for the sixth-graders. Englert and Hiebert (1984) argued that this interaction between text structure type and grade level suggested that students had made relatively large gains in their

awareness of the description text structure from third to sixth grade. They concluded that knowledge of various text structures was acquired differentially rather than developing simultaneously at a similar pace.

Hare, Rabinowitz, and Schieble (1989) also conducted similar experiments on the development of students' knowledge about text structure and differential awareness of four primary text structures (i.e., listing, sequence, cause/effect, and comparison/contrast). They asked students from three grade levels (75 fourth-, 78 sixth-, and 107 eleventh-graders) to read passages with different structures and identify the main ideas.

They hypothesized three things. First, students may have more difficulty with naturally occurring (less coherent) text than with contrived text (coherent text), due to the complex structure and unfamiliar content of the naturally occurring texts. Second, the position of the main idea in a text and different text structures may have differential effects on main idea identification in contrived and naturally occurring texts. Third, the explicitness of the main idea would affect main idea recognition.

In Study 1, they compared the effects of two listing text structures, simple listing texts with a main idea and supporting details (LIST) and more complex listing texts that included non-supporting ideas (LIST+). Seventy-five fourth-, 78 sixth-, and 107 eleventh-graders were randomly assigned to LIST group or LIST+ group and asked to read both third-grade texts and grade-appropriate texts with the main idea in different positions. While reading, each subject was asked to underline the main idea of each paragraph. Students who read LIST+ texts (naturally occurring or less coherent texts) identified the main idea less successfully than those who read LIST texts (contrived or more coherent texts). They also found that the main idea recognition was affected by the

position of main idea in a text. When a main idea lies in the initial sentence, identifying the main idea was easy even for the youngest students, since students had been taught to select the first sentence as a main idea through instruction. But they made an error in main idea recognition by relying on the same strategy of “select the first sentence,” even when this convention could not be applied due to the inclusion of non-supporting ideas.

In spite of the significant main effects of text and main idea position, the authors did not find the interaction between them. Overall, both for third-grade and for grade-appropriate texts, LIST+ texts hindered main idea recognition across all sentence positions. Hare and colleagues (1989) also found the same developmental pattern as Englert and Hiebert (1984) recognized in their study. In other words, for both the third-grade and the grade-appropriate texts, the correct selection of main ideas increased from fourth- to sixth- to eleventh-grade.

In Study 2, Hare and colleagues (1989) investigated students’ main idea recognition with four different structures. They hypothesized that students’ difficulty in identifying main ideas would increase from listing to sequence, to comparison/contrast, and finally to cause/effect structure. They found differential effects of the four structures, supporting their hypothesis and corroborating the pattern that Englert and Hiebert (1984) identified. Overall identifying the main idea in both comparison/contrast and cause/effect texts were more difficult than listing texts. They also found the effect of the explicitness of main ideas. All subjects performed on texts with explicit main ideas significantly better than on texts with implicit main ideas across all text structures.

Furthermore, by analyzing errors in constructing main ideas, Hare and colleagues (1989) found that incorrect constructions were observed when information in a text was

new or different from subjects' experiences, or when a text activated subjects' prior knowledge what was irrelevant to the text. Students tended to construct a main idea based on their recent, related experiences rather than text itself and to overgeneralize main ideas, making the text with compare/contrast structure look like a listing. Some students seemed to construct incorrect main ideas of compare/contrast and cause/effect text, because of unfamiliarity with these text structures. However, they found that although students tended to overgeneralize main ideas, they could construct main ideas that were consistent with the text structure except on comparison/contrast texts, suggesting that they were aware of and paid attention to text structure. This study is meaningful in that it showed how some text features related to text structure and students' prior knowledge together could make main idea recognition more or less difficult and how students often fail to transfer the skill they learned in main idea instruction to a new learning situation.

As Englert and Hiebert (1984) and Hare and colleagues (1989) did, Chambliss and Murphy (2002) also identified a developmental pattern in children's awareness of text structure and showed what text processing children might rely on to represent the global discourse structure. Chambliss and Murphy applied two types of comprehension models to describe children's representations of global discourse structure: the structure strategy (Meyer, 1985) and macroprocessing (Goldman, Saul, & Cote, 1995; Kintsch & van Dijk, 1978). According to structure strategy model, readers use textual cues and their own text structure schema to understand expository text. When the structure in the text is more complex than their own structure schema, readers tend to recall a simplified version of structure that matches their schema, just as the readers in Hare et al.'s (1989) study did.

On the other hand, according to macroprocessing model, readers rely on reoccurring concepts to construct the global discourse structure for a text.

Thirty-seven fourth graders and 27 fifth graders participated in Chambliss and Murphy's (2002) study. Three texts about Maryland, the children's state were designed to be structural replicates of each other, based on three types of textual cues: the text's global discourse structure, the surface text structure (introductions, conclusions, and topic sentences), and the content with familiarity and vividness. Children read a passage and wrote about the author's main idea and supporting details. Chambliss and Murphy categorized children's answers according to how closely their argument representations matched the templates with the claim and supporting details.

They identified two major types of representation: hierarchical and nonhierarchical representations. Chambliss and Murphy (2002) argued that each type of representation suggests different text processing that children rely on. Three different hierarchical representations were identified: accurate argument representation, inferred argument representation, and topical net. Accurate argument representations were a close match to the templates and suggested the use of the structure strategy. Only five out of 65 children produced the accurate representations. Inferred argument representations had claims and supporting details but their claims were not exact statements or close paraphrases and therefore, suggested that subjects might have inferred the argument structure, using macroprocessing. Nine children produced the inferred argument representation. Topical nets were hierarchical but did not match the argument structure. Thirty children accurately recalled the general topic and listed details but did not imply

any argument structure. Chambliss and Murphy guessed that these children may have used the general topic strategy that is a variation of structure strategy.

Finally, unlike the previous three types of representations, list and nontext were nonhierarchical representations and did not match the argument structure at all. Thirteen fourth and fifth graders simply listed details without any global structure. Chambliss and Murphy (2002) referred to this processing as default list, which may be a variation of macroprocessing. Also, there were eight nontext responses, showing no evidence that the reader had actually read the text.

Chambliss and Murphy (2002) analyzed the sets of data using the two measures: argument representations and instances of data. The analysis showed that both sets of data were related to grade and text. The results indicated that fourth and fifth graders were more likely to represent argument texts hierarchically than otherwise, although they were as likely to represent them as hierarchical topical nets as they were as arguments. However, they found that difference existed between the two grades, though not statistically powerful. A higher proportion of fifth graders' answers were categorized as inferred argument representations, and a lower proportion of their answers were categorized as nontext than the fourth-graders' answers. Chambliss and Murphy concluded that fifth graders were more likely than fourth graders to represent an argument hierarchically. They contended that this result revealed a possible developmental sequence from the list to the accurate representation of the global discourse structure, including the inferred representation and topical representation in between these two endpoints.

They also found that children seemed to rely on two types of text schemata: the argument schema and a topical schema. However, most of the children's answers revealed that they had a hierarchical topical schema with a topic-details relation rather than a hierarchical argument schema with the claim-data-warrant relation. They attributed this prevalence of a topical schema to elementary school children's greater exposure to the topical structure and limited exposure to the argument structure. Chambliss and Murphy's (2002) study added evidence to the previous research findings about the developmental trend in children's awareness and use of text structure. This study also has educational implications for research on text structure and the design of instructional materials.

Overall, the findings of prior research on children's awareness and use of text structure appear to be consistent. Several general patterns were identified across the research on young students' awareness of expository text structure. First, students who are aware of expository text structure can understand and remember what they read better than those who are less aware. Such students tend to differentiate more important information from less important, constructing main ideas appropriately and following the author's organization of information (Chambliss & Murphy, 2002; Englert & Hiebert, 1984; Hare, Rabinowitz, & Schieble, 1989; McGee, 1982; Taylor, 1980; Taylor & Samuels, 1983).

However, young students' awareness of text structure seem to be immature and at an emerging stage (Chambliss & Murphy, 20002; Englert & Hierbert, 1984). For example, the students in Englert and Hiebert's (1984) study showed partial awareness of text structure. These students were less aware of distractor sentences, so that they did not

see clearly that these distractors did not match the topic sentences. Prior studies also consistently have shown that students' awareness of text structure tends to develop as they move to upper grades. Age influences not only the degree of overall text structure awareness but also a differential awareness of different text structures. In other words, some text structures are more salient to young readers than other text structures (Chambliss & Calfee, 2002; Englert & Hiebert, 1984; Hare, Rabinowitz, & Schieble, 1989).

In addition to these general patterns of children's text structure awareness, the researchers also found that other factors might affect students' awareness of text structure. Taylor (1980) and McGee (1982) concluded that not only age but also reading ability would matter in students' awareness of text structures. According to Taylor and McGee, good readers performed better in the recall test than poor readers partly because they could use their text structure knowledge greater than poor readers. Another influential factor on text structure awareness may be text difficulty (Chambliss & Murphy, 2002; McGee, 1982). Researchers seemed to agree that if text is familiar, short, easy, and well-organized, students might use their text structure knowledge and understand expository text better.

The effect of the coherence of social studies text on comprehension. The two studies that I reviewed in this section focus on how to improve the design of social studies text so that it could contribute to students' comprehension and learning from text. In doing so, they showed the effect of textual coherence on comprehension of social studies text.

Beck, McKeown, Sinatra, and Loxterman (1991) conducted a study on the coherence of social studies text. First, they developed a tool to revise instructional texts. They referred to it as “causal-explanatory style.” They maintained that students might not process text as an author intended, because of ambiguous text features, unclear connections or dense conceptual load. In order to improve the coherence of text, they first identified the breaking points of textual coherence, by considering both what readers may be thinking at that point and what the author intended there. Then, they revised text in the way that readers may better understand the author’s intended meaning, by clarifying, elaborating, explaining, providing motivation for important information, and making connections explicit. As a result, their revised text was more coherent with a strong causal relation between events and ideas, although longer than the original one.

In their study, 40 fifth-graders read four original passages from a U.S. textbook about four events leading to the American Revolution, while 45 fourth-graders read the revised passages. After reading, children recalled what they had read and answered questions. Beck and colleagues (1991) analyzed the data both quantitatively and qualitatively. The quantitative analysis revealed that students in the revised group performed significantly better than their counterparts both in the free recall and open-ended questions. Their qualitative analysis on students’ recall and answers showed the nature of the difference in the performance between the two groups. Students who read revised text understood not only the events themselves but also their causal relation, whereas students who read original text showed confusion not only about high-order information like the cause-effect relation but also about the basic information like the agents in the actions. Therefore, Beck and colleagues argued that students who read the

revised version performed better than those who read the original text not only in quantity but also in quality of their recall and answers.

However, Beck and colleagues (1991) also pointed out that their revised text was partially successful, because although on average the revised text group comprehended better than the original text group, only a few of the revised text group showed better comprehension in quality. They attributed this partial success to interplay of different factors such as complexity of content itself, various text features, and reader variables. Thus, they concluded that the coherent text alone might not guarantee readers' comprehension and learning from text and that making all concepts explicit might not necessarily contribute to more comprehensible text all the time, if all of the above factors are not taken into account.

Loxterman, Beck, and McKeown (1994) replicated and extended the study conducted by Beck et al. (1991). They improved the textual coherence, using the same revising principle that Beck et al. used. In the first study, with more or less coherent versions of text, they examined how active engagement facilitated by thinking aloud would affect students' comprehension both alone and together with textual coherence. In the second study, they further investigated the differential effect of textual coherence depending on students' reading levels and retention of its effect.

In Study 1, 88 sixth-graders from two schools were assigned to each of the four conditions: original or revised text combined with silent reading or thinking aloud. After reading the original or revised text either silently or through thinking aloud, students recalled what they had read and answered open-ended questions individually with an examiner. The quantitative analysis of recalled ideas and correct answers revealed an

increase from original silent text (OS) to original text with thinking aloud (OT), to revised text read silently (RS), and to revised text with thinking aloud (RTA). However, the increase was not always significant. The performance in RS and RTA conditions were significantly higher than that of OS condition, which revealed the effect of revised text. On the other hand, RS and RTA did not differ significantly from each other, while performance in OTA group was significantly lower than that of RTA group, but not that of RS group. In addition, the qualitative analysis showed that active engagement and coherent text individually or together contributed to more meaningful explanations of text content given by students. OS model did not have explanations, while OTA model had one explanation. On the other hand, RS and RTA models included multiple explanations.

In Study 2, 100 sixth-graders were assigned to one of the four conditions and in each condition students were divided into two groups depending on their reading ability. Most of the procedures were identical to those in the first study except that students in the second study recalled and answered open-ended questions a week later again. The quantitative analysis revealed the same pattern of increased performance from OS to OTA, to RS, and to RTA. Therefore, the authors argued that the effect of the revised text, especially in combination with thinking aloud was replicated and lasted for a week.

Also, they found that revised text contributed to the performance of middle-level students. When compared within the same condition, the upper-level students performed better than the middle-level students within each condition. But the comparison between original and revised text conditions showed that the middle-level students who read the revised version performed similarly or better than their upper level peers who read the

original version. The same results were produced both in immediate and delayed recall test, which corroborated the lasting effect.

Based on these two studies, Loxterman and colleagues (1991) concluded that there was an obvious advantage for the more coherent text in combination with thinking aloud. They also argued that of the two treatments, textual coherence and thinking aloud, textual coherence seemed to have a greater effect on students' immediate and delayed recall, since the revised text read silently had a significant effect in many cases, while there was no significant difference between OS and OTA. They contended that though the revised text was longer and more difficult in terms of traditional readability, it was more comprehensible, because the revision was based on how people process information. They maintained that text coherence is more productive and adequate criterion for text design than readability formulas. Furthermore, they suggested that it is necessary and helpful to enhance teachers' sensitivity to the effect of text coherence on students' comprehension and learning. This sensitivity would enable them to play a better role in identifying possible text problems and helping students overcome difficulties with text.

Explanatory text. The above review supports the positive effect of coherent text on comprehension and children's developmental and differential awareness of different text structures. However, little research has addressed the effect or quality of explanatory text, especially for young readers, despite its importance. Content area textbooks are intended to explain ideas to lay readers and deepen their understanding, and all of the selected passages for this study belong to this text type. Thus, in this section, I briefly present the conceptualization of explanatory text and two empirical studies conducted under this conceptualization.

As Rowan (1988, 1990) mentioned, explaining difficult concepts to lay people is a very common and important communicative aim. We often encounter the explanatory text type in textbooks, because one of the primary goals of textbooks is to help non-expert students understand and deepen difficult concepts in a subject area. Nevertheless, the quality of such explanations in textbooks is often questionable (e.g., Anderson & Smith, 1984; Armbruster, 1984), and few studies have examined the explanatory text type with a clear definition of its goal and features. In this context, Rowan (1988) proposed a new theory that helps define this text type and identify the quality of explanatory text and its subtypes. She defines explanatory text in terms of its goal, which is promoting and deepening understanding of some phenomenon for lay readers. This goal is clearly distinguished from those of other text types such as persuading or increasing awareness of new information. The explanatory text deals with difficult concepts that lay readers cannot understand when simply stated, although they have some awareness.

From the major obstacles to full understanding of such a concept, subgoals of explanatory text arise. Rowan (1988) viewed that the difficulties in understanding concepts come from language, reality, or the reader. Consequently, the first subgoal of explanatory text is to explain the meaning of unfamiliar or difficult terms, providing definitions and examples of their use in a context in comparison to non-examples. The second subgoal is to help lay readers understand how the parts of some phenomenon are related, forming a coherent big picture. Reviewing the related research, Rowan identified text features that could highlight organizational patterns for lay readers, not only highlighting relations among ideas but also distinguishing more important from less

important ideas. Such text features include titles, headings, topic sentences, underlining, highlighting, explicit structural signals, and analogies. Rowan also suggested that to achieve this goal, it is also important to link readers' prior knowledge with unfamiliar information in a text. The third subgoal is to help readers overcome their misconception or naive theories of familiar everyday events, which are often found in subject areas like science. This subgoal can guide some scientific text that deals with counterintuitive concepts.

Under the above theory, Rowan conducted two studies about explanatory writing that give insight into how to construct and identify good explanatory text. In one study, Rowan (1990) investigated the association of the three types of knowledge (topic, discourse, and audience knowledge) with individual differences in explanatory writing skill among 169 college students. The students whose knowledge of the three types varies read an explanatory text that was designed to help lay readers understand five properties of light. Then they wrote about the properties of light for a particular audience, fifth graders who might have erroneous concepts about the reflective and refractive properties of light. Each writing was assessed in terms of the accuracy of the claims and the adaptiveness to an imagined readers' prior knowledge of this phenomenon. Correlation and regression analyses showed that both accuracy and adaptiveness in explanatory writing turned out to be related to several types of knowledge. Especially, discourse knowledge, SAT-Verbal scores, was the strongest predictor of accuracy and adaptiveness. Rowan argued that although most subjects showed low levels of adaptiveness to readers' prior knowledge, good explanatory text tended to demonstrate why rather than simply asserting the truth of claims.

Rowan, Gale, Whaley, and Tovar (2005) also used adaptiveness as the most important criterion in identifying good explanatory writing of scholars in various fields. In this study, 74 scholars from the United States, Sweden, and South Africa wrote a brief explanation of their own research to a 17-year-old before and after a 1-hour instruction on how to write an explanatory text. Rowan and colleagues analyzed each explanatory writing in terms of the adaptiveness of the explanation to the knowledge and interests of a 17-year-old. According to Rowan and colleagues, effective and well-adapted explanatory writing focuses on a lay reader's likely background knowledge and refers to it as an author explains the difficult concept. Authors can make their writing understandable to a lay reader with little knowledge by using multiple ways of explaining the core ideas: providing a clear organizational framework, and using simple, familiar terms rather than undefined, unfamiliar terms and notions. Unlike the college students, 80 percent of scholars in this study were able to produce relatively adaptive explanations before the 1-hour instruction, and with a very short intervention, their explanatory writing got better significantly.

Rowan and colleagues (2005) seem to suggest that good explanatory text presents thoughtfully prepared clues in a systematic manner so that readers who initially had little knowledge could have full understanding of an unfamiliar subject matter. They suggested that with well-adaptive explanatory writing, readers might feel as if they solve challenging but intriguing puzzles along with the author. Rowan's conceptualization of explanatory text and features of good explanatory text guided the analysis and comparison of explanatory passages selected for this study.

Background Knowledge

Earlier research has supported the notion that a reader's background knowledge affects reading comprehension across disciplines (e.g., Torney-Purta, 1991). In this subsection, I review the studies on the effect of background knowledge on comprehension. The review focuses on the relation of background knowledge to other reader characteristics or text characteristics rather than a cross-cultural perspective. In a way, this review seems to be overlapped with the review on the cross-cultural studies based on schema theory that I presented in the previous section. There is a fine line between the two bodies of research, since the influence of background knowledge on comprehension has been explored under the overarching framework of schema theory, whether it has a cross-cultural perspective or not (Stahl, Jacobson, Davis, & Davis, 1989).

The findings from some studies supported the schema theory that readers' background knowledge provides a framework for processing the text and therefore, a reader with more background knowledge is likely to comprehend a text better than a reader with less background knowledge (e.g., Freebody & Anderson, 1983; Johnston, 1984; Langer, 1984; Pearson, Hansen, & Gordon, 1979). Freebody and Anderson (1983) constructed four passages about two themes, a visit theme and a game theme. For each theme, there were familiar and unfamiliar versions. Other than topic familiarity, the two versions of each theme were identical in structure, syntax, and vocabulary. Eighty eight sixth-grade students read a familiar version of one theme and an unfamiliar version of the other theme. The results indicated that familiarity had a significant effect on the recall measure. Students were able to recall more from a familiar text than from an unfamiliar

text. Freebody and Anderson explained that schema availability made both encoding and retrieval processes easier.

Langer (1984) also provided evidence that background knowledge could positively affect the comprehension of an expository text. In her study, 161 sixth-graders were randomly assigned to one of three conditions depending on a different pre-reading activity: PReP, Motivation, and No Activity. Students in the PReP group had a group discussion of key concepts as a pre-reading activity, while students in the motivation group had a general discussion of the topic. Students in each group first completed a free association measure as a measure of passage-specific background knowledge for the two passages. Then one week later, they had a pre-reading activity (or no activity) and a repeat of the free association measure. Finally, they read the passage, and completed the comprehension measure. The results showed that background knowledge that was measured right before reading a passage was a significant and reliable predictor of comprehension. She found that the pre-reading activities had a significant effect on passage-specific knowledge for both passages, and of the two activity groups and one control group, the PReP group performed best. Langer concluded that the pre-reading activity activated available background knowledge and promoted readers to comprehend the passage and answer comprehension questions better.

However, other researchers also argued that background knowledge and comprehension are not always in a positive relation (e.g., Alvermann, Smith, & Readence, 1985; Lipson, 1983). Alvermann, Smith, and Readence (1985) showed that background knowledge activation could interfere with text comprehension rather than promote it under certain conditions. In their study, 52 sixth-graders were randomly assigned to either

the background knowledge activation group or the non-activation group. Their background knowledge was measured a month earlier, and then they had a pre-reading activity or no activity. They read compatible text that matched their existing knowledge and incompatible text that contained counter-intuitive information. For each passage, they completed various measures: free recall, a multiple-choice test, a recognition task, and a questionnaire. The results showed that background knowledge would interfere with comprehension when the text was incompatible. However, for the compatible text, there was no difference in performance between the activation group and the non-activation group.

Other researchers also showed that the effect of background knowledge on comprehension is much more complicated than the notion that the more a reader knows, the better the reader comprehends a text. According to these researchers, the effect of background knowledge may be differential depending on text characteristics like coherence and other reader characteristics such as reading skill (Birkmire, 1985; McKeown, Beck, Sinatra, & Loxterman, 1992; McNamara, Kintsch, Songer, & Kintsch, 1996; O'Reilly & McNamara, 2007; Ozuru, Dempsey, & McNamara, 2009; Voss & Silfies, 1996). In this review, I focus on the interaction between background knowledge and textual coherence.

These researchers produced mixed results about the interaction between background knowledge and textual coherence. First of all, Birkmire (1985) found a positive relation between background knowledge and textual coherence. Birkmire asked 45 undergraduate physics majors and 45 music majors to read three texts about laser annealing, musical notation, and parakeets. Reading time and recognition memory were

measured. Birkmire found that college students who had background knowledge of a given topic read sentences positioned high in the text structure faster than those low in the structure, while the reading rate of college students who did not have special background knowledge of the same topic was not affected by the position of information in the text structure hierarchy. In other words, she found that reading rate and recognition of certain text information relies on its position in a text structure and reader's knowledge of the text topic. When readers do not have any background knowledge, text structure does not affect their remembering information, whereas when readers have some related background knowledge, they read faster and remembered better information positioned high in the text structure hierarchy than information positioned low in the text structure.

McKeown et al. (1992) also had similar findings to Birkmire (1985), though they differed in their subjects, measures, and purposes of the study. McKeown, Beck, Sinatra, and Loxterman (1992) investigated the interaction between background knowledge and textual coherence. Before reading, the researchers provided 48 fifth-graders with essential conceptual background knowledge about the four events that lead to the American Revolution through a 35 minute instructional module. Then the students were assigned to either the original text or the revised text group and read about the four events silently, recalled, and answered short-answer questions. The researchers found that although background knowledge had an overall facilitative effect on comprehension, it had a differential effect on the levels of comprehension for more coherent and less coherent texts. Background knowledge helped readers of less coherent texts only with basic aspects of events, while it helped readers of more coherent texts with more complex questions. Thus, high-knowledge students benefit more from more coherent texts, and

less coherent text might prevent readers from using their prior knowledge. They concluded that of coherence and prior knowledge, coherence seemed to be the stronger contributor to understanding complex content, and the combined effect of the two would allow students to construct a more complete representation of the content described in the text.

On the contrary, McNamara, Kintsch, Songer, and Kintsch (1996) found that high-knowledge students could learn more from less coherent texts, while low-knowledge students could understand and learn better from more coherent texts. McNamara et al. referred to it as the *reverse cohesion effect* and argued that this effect took place only for situation model questions. Their study built on Kintsch's (1988) Construction-Integration (CI) model of text comprehension which suggests that textual coherence is important for text-base understanding, but for deeper understanding (situational), readers should make their own inferences to fill in the gaps and form their own macrostructure. In their study, middle school students with high or low background knowledge read one of three versions of text that differed in textual coherence. After reading, they completed text-based measures and situation-model measures. The results showed that low-knowledge readers benefited more from a maximally coherent text, while high-knowledge readers learned better from a minimally coherent text. But the advantage for the less coherent text was mostly with the situation-model measures rather than the text-base level. At the text-base level, the maximally coherent text was better for both high-knowledge and low-knowledge students. They concluded that less coherent text facilitated high-knowledge readers to be involved in the active process of

constructing the situation model by synthesizing the text-base information and their own prior knowledge.

Like McNamara et al. (1996), Voss and Silfies (1996), O'Reilly and McNamara (2007), Ozuru, Dempsey, and McNamara (2009) also based their studies on Kintsch's (1988) C-I model. Unlike McNamara et al., Voss and Silfies and O'Reilly and McNamara included another variable, comprehension skill, and investigated the interaction among comprehension skill, prior knowledge, and text coherence. Voss and Silfies (1996) prepared two fictitious historical accounts about two fictional countries. Each of the two texts had more and less coherent versions, and therefore, there were four conditions. They asked college students to read one of the four versions, answer comprehension questions, and write an essay after reading. They found that comprehension skill and prior knowledge tended to contribute to different representations of a text: text-base and situation model. They noted that learning from a more coherent text (text-base) is related to reading comprehension skill, whereas learning from a less coherent text (situation model) is related to prior knowledge. Voss and Silfies recommended that considering students' low knowledge in the elementary school years, it would be better to use more coherent text for instruction at the elementary level.

O'Reilly and McNamara (2007) looked at the same variables that Voss and Silfies (1996) did. But they tried to explain their results about interaction among these three variables in relation to both McNamara et al. (1996) and Voss and Silfies (1996). They asked college students to read a high- or a low-cohesion version of a text about biology and answer five text-base and five situation model comprehension questions. As a result, they found that comprehension skill had a mediating effect on the interaction between

prior knowledge and text coherence. They maintained that the reverse cohesion effect which McNamara et al. found, took place only among less skilled, high-knowledge readers, while skilled, high-knowledge readers would learn more from the high-coherence text. But the partial reverse cohesion effect only applied to text-based questions, not to situation model questions. According to O'Reilly and McNamara, it may be that when text is too difficult and unfamiliar, prior knowledge does not help a reader to construct the situation model. The partial effect also occurred among skilled low-knowledge readers. These readers understood both more coherent and less coherent texts better than less skilled low-knowledge readers, especially on situation model questions rather than on text-based questions.

Ozuru, Dempsey, and McNamara (2009) also supported the findings by O'Reilly and McNamara (2007) about the relation among textual coherence, reading skill, and background knowledge. In their study, college students with low and high background knowledge of biology read more coherent and less coherent biology texts. They completed measures of three different levels of comprehension: text-based, local-bridging, and global-bridging measures. The results showed that although both background knowledge and reading skill contributed to performance on comprehension questions, background knowledge had a relatively larger contribution than reading skill and that the contribution of the two was different for the type of question. The effect of background knowledge was larger on global-bridging questions that required more extensive integration of the information, while reading skill had a relatively larger contribution to text-based and local-bridging questions. For the relations among text coherence, background knowledge, and reading skill, Ozuru et al. corroborated O'Reilly and

McNamara. They found the same reversal cohesion effect that the less-skilled high-knowledge readers did not perform well with high-cohesion text. But the same effect was not found among the skilled high-knowledge readers. They performed well with high-cohesion text.

Despite the inconsistent results, there was a consistent notion that background knowledge has a powerful effect on comprehension, as long as it is relevant and accurate. In addition, when background knowledge is combined with textual coherence and high reading skill, it can have a larger contribution to comprehension and learning. However, considering these inconsistent results about the interaction among text coherence, prior knowledge, and reading skill, it seems that educators are in a dilemma as to what types of texts they should use for instruction and how to deal with the lack of text coherence in relation to student's background knowledge and reading skill. Researchers had some suggestions to deal with this dilemma.

McNamara et al. (1996) suggested that individualized and multiple versions of electronic textbooks might enable students of different background knowledge to read more relevant books to them personally rather than one version of print-based textbooks. On the other hand, Voss and Silfies (1996) noted that though it is clear that students need to improve both their reading comprehension skill and knowledge of a given topic in order to construct a situation model as well as a text-based model, it is still hard to answer what types of text should be used in instruction. But they suggested that for the low-knowledge students of the elementary school years, more coherent texts should be provided, just like the revision model that Beck et al. (1991) provided. Likewise, according to Ozuru and colleagues (2009), in educational settings, textbooks are used for

the purpose of learning new information. Accordingly, textbooks, especially science textbooks tend to deal with unfamiliar topics that students may not have an appropriate level of background knowledge about. Admitting the likelihood of readers' low background knowledge, both the quality of textbooks and readers' comprehension skill should be improved to improve readers' comprehension and learning from text.

As shown in the studies that I reviewed above, background knowledge or schemata tended to be addressed mostly in relation to literacy education and science education. However, Torney-Purta (1991) proposed in her review of the studies on social studies that schema theory and cognitive psychology could also be applied effectively to social studies education as well. She suggested that schemata are central to students' learning of the key concepts in social studies by "influencing the comprehension of text or discourse, influencing the storage and retrieval of information, and influencing problem solving" (p. 192-193). Torney-Purta's proposal with other previous research about background knowledge provides a strong rationale for considering background knowledge as one of the important reader characteristics that could influence children's comprehension and learning from social studies textbook passages in this study.

Interest

Interest is another important text characteristic as well as reader characteristic. In this section, first I briefly discuss different conceptualizations of types of interest. Then I present the research findings about characteristics that make text more or less interesting and the effect of interesting elements of text on comprehension and learning from text.

Scholars have provided two important conceptualizations of interest. First, many researchers conceptualized that interest results from individuals' interaction with their

environment, suggesting two separate categories of individual and situational interest (Kintsch, 1980; Hidi, 2001; Schank, 1979; Wade, Buxton, & Kelly, 1999). Individual interest is topic-specific, personal preference that develops slowly over time. It is relatively stable and long lasting (Hidi, 2001; Krapp, 1999, 2000; Schiefele, 1998; Wade, Buxton, & Kelly, 1999). In contrast, situational interest is elicited by the environmental stimuli including text characteristics, audio/visual stimuli, or social activities, and it may or may not be long lasting (Hidi, 2001; Hidi & Baird, 1986).

However, individual and situational interests are not dichotomous but closely interrelated categories. Hidi and Harackiewicz (2000) claimed that they play a complementary role to each other. That is, individual interest could help individuals deal with uninteresting text. On the other hand, situational interest evoked by specific text characteristics or other environmental stimuli could help individuals continue to read even when they do not have individual interest in a topic of text. Furthermore, situational interest may go beyond the momentary interest and develop into the long lasting individual interest over time (Alexander, 1997; Hidi, 1990, 2001).

Kintsch (1980) provided another meaningful conceptualization of interest. He distinguished emotional interest from cognitive interest. Emotional interest arises when readers encounter some topics that facilitate personal involving or are inherently interesting to people universally. Schank (1979) maintained that people have absolute interests in topics like death, danger, power, and sex. In contrast, cognitive interest comes from by a variety of text characteristics such as novelty, concreteness, unexpectedness, and vivid writing style that elicit visual imagery. Since this study focused on text design and reader-text interaction from a cross-cultural perspective, I focused on the research on

the effect of situational or cognitive interest on comprehension and learning. This body of research would give insight into what text characteristics elicit such interests, contributing to the overall text design for learning.

Previous research has provided empirical evidence that comprehension of both children and adults could be facilitated by interest-enhancing text characteristics (e.g., Hidi & Baird, 1986, 1988; Kintsch, 1980; Schank, 1979; Wade, Buxton, & Kelly, 1999). Among the earlier studies, the study by Hidi and Baird (1988) is one of the few studies that focus on the effect of interest on children's comprehension of expository text. Using three interest-enhancing strategies, Hidi and Baird constructed three versions of an expository text from a social studies textbook. The first version (base text) was created by inserting four interest-evoking text attributes: high activity level, character identification, novelty, and life themes. The second version (salient text) was created by the strategy of systematically inserting salient elaborations after the important ideas of the base text, while the third version (resolution text) was created by manipulating the salient text to induce a reader's need to resolve incomplete understanding of text by asking a reader a question.

Participants consisting of 44 fourth- and 66 sixth-graders read one of the three versions and produced written free recall at immediate and delayed conditions. Additionally, 36 fourth- and sixth-graders were asked to read two of the three versions and decide which one is more interesting. In comparison to the recall of a common textbook passage in their earlier study (1986), these researchers found that inserting the four interest-evoking features resulted in overall increase of recall and less forgetting from immediate to delayed recall. Elaborating the important ideas in a text contributed to

the recall of the important information for the fourth-grade students at immediate recall and the sixth-grade students at delayed recall. However, this elaboration only worked for the concrete, specific, or personally involving information rather than abstract concepts. Asking a reader to resolve incomplete understanding by asking a question did not improve any type of recall. The results also showed that the second and third changes increased readers' subjective interest, although this interest did not translate into increased recall of important information. Hidi and Baird (1988) concluded that interest-enhancing text characteristics are likely to have positive influence on overall recall but differential effect on the recall of specific information.

Wade, Buxton, and Kelly (1999) also identified text characteristics that improve recall by creating cognitive interest. By using both quantitative and qualitative methods, they took a closer examination of what text characteristics make expository texts more or less interesting, the relations among these characteristics, and how interest influenced recall. In the first experiment, 36 undergraduate students read one of the two expository texts about a high-interest topic (dinosaurs). While and after reading, they provided verbal reports on what made the text interesting and uninteresting. In the verbal protocols, Wade, Buxton, and Kelly identified five positive text characteristics that created interest: important and valued information, unexpected information, readers' connections, imagery and descriptive language, and author's connections. They also found negative characteristics that made text uninteresting, including lack of adequate explanations and background information, difficult vocabulary, lack of coherence, and lack of credibility.

In the second experiment, 73 undergraduates read one of the two texts and rated sentences for interest or for importance, while 91 undergraduates completed the free

recall task after reading one of the two texts. The rating results showed high correlation between interest and importance. The recall results also supported the convergence of interest and importance. What the readers recalled best was the information rated as both interesting and important. This correlation between importance and interest seems to raise a question which information would be recalled better between highly interesting but unimportant information (seductive details) and uninteresting but highly important information. Research on seductive details seems to provide an answer for this question in a way.

Prior studies have shown that not all interest-enhancing text characteristics would help comprehend and learn from text (e.g., Garner, Gillingham, & White, 1989; Harp & Mayer, 1997; Lehman, Schraw, McCrudden, & Hartley, 2007; Shirey & Reynolds, 1988; Wade & Adams, 1990). These researchers argued that adding highly interesting but unimportant or irrelevant information to a text would interfere with understanding and remembering the important information of the text. In the study on remembering and understanding of main ideas and important details in a scientific text, Garner, Gillingham, and White (1989) found that the seductive details have debilitating effects. Although both 20 college students and 36 seventh-graders were negatively affected by the presence of seductive details and lack of explicit structural signals of important information, the seventh-graders were more likely to be so.

Harp and Mayer (1997) also found the similar debilitating effect of seductive details on comprehension of a scientific text (explanative text about lightning). Extending Garner and colleagues (1989), Harp and Mayer examined the effect of both seductive text segments and seductive illustrations on recall and problem solving. In experiment 1, 74

college students read one of the four text versions: base text, base-plus-seductive-text, base-plus-seductive-illustrations, and base-plus-seductive-text-and-seductive-illustrations. The participants who read texts that included seductive text segments, illustrations, or both recalled fewer main ideas and performed more poorly on a problem-solving task than the base group.

In experiment 2, 85 college students rated the emotional interest (How entertaining is the material?) and cognitive interest (How much does this material help you understand the process of lightning?) of the four different portions of the text: seductive text, seductive illustration, explanative illustration, and non-seductive text. They found that seductive text and illustrations were more emotionally interesting, while non-seductive text and illustrations that explained important information were more cognitively interesting. They concluded that adding emotionally interesting elements are likely to interfere with understanding scientific explanations, while adjuncts aimed at increasing cognitive interest are likely to help readers understand scientific explanations.

More recently, Lehman, Schraw, McCrudden, and Hartley (2007) explained why seductive details might have negative effects on comprehension and learning: reduced attention, coherence disruption, and inappropriate schema construction. They examined the effect of seductive details on reading time and learning, using four outcome measures. Fifty-three college students read either the seductive-details version or the no-seductive-details version of the text. A computer program presented one sentence at a time and recorded reading time when participants moved to the next sentence. Then, the participants were asked to recall as much as they could and write an essay to explain

“why lightning is much more common in warm, moist climates than in cool, moist climates” (p. 578).

Each essay was rated in terms of holistic understanding of the causal relationships and the total number of appropriate claims. The results showed that those who read the seductive-details-text performed more poorly on both the recall and essay (deeper processing task) than those who read the no-seductive-details text. With the seductive-details-text, readers spent more time reading seductive sentences than non-seductive sentences, and tended to spend more time reading non-seductive sentences that followed seductive details in order to fix the coherence break. Lehman and colleagues argued that these findings support the view that seductive details interfere with comprehension and learning by drawing readers’ attention away from important ideas, disrupting the overall coherence of text, and facilitating inappropriate schema construction.

Text-Picture Relations

Not only text but also pictures are important elements of textbooks that affect comprehension and learning. Previous research shows that pictures can improve the quality of text materials and contribute greatly to learning from text (For a review of literature, see Carney & Levin, 2002; Levie, 1987; Levie & Lentz, 1982; Levin & Mayer, 1993; Schallert, 1980). Levie and Lentz (1982) provided a review of 55 experimental studies comparing learning from illustrated text with learning from text alone. Additionally, they also reviewed related studies on the effects of imagery, student-generated drawings, diagrams, graphic organizers, maps, and so on. They found that in general pictures have positive effects on learning from text. In the following sections, I discuss three related topics of text-picture relations: why and how pictures facilitate

learning from text, how picture effects can be maximized, and how text-picture relations can be categorized.

How and why do pictures facilitate learning from text? This question has been answered from different conceptual perspectives. First, Levie and Lentz (1982) suggested why pictures might facilitate learning from text, considering four functions: attentional, affective, cognitive, and compensatory functions. Pictures help attracting and directing readers' attention to and within the material (attentional function); they motivate readers to read and contribute to attitude changes (affective function); they help learning from text by improving text comprehension and retention (cognitive function); pictures are particularly helpful for poor readers who may not gain much from text (compensatory function).

The dual-coding theory also supports the benefit of pictures in learning from text and provides a valuable perspective to explain the cognitive function of pictures in learning from text. According to dual-coding theory, information in text is encoded, stored, and remembered in two separate but interrelated subsystems of cognition: a verbal system and an imagery system (Paivio, 1986; Sadoski, Paivio, & Goetz, 1991). By relying on both systems, readers may construct a more integrated meaning, and information processed in both verbal and imagery systems may be remembered better than information processed in only one coding system (Molinari & Tapiero, 2007; Sipe, 1998).

Sipe (1998) suggested another way to conceptualize what may go on in our heads when we process the verbal and imagery signs. Based on the semiotic theory of transmediation, Sipe explained that readers go back and forth from one sign system to

another in order to make meaning. Readers adjust their interpretation of words in terms of pictures and pictures in terms of words and this process is endless. Showing how it works, using *Where the Wild Things Are* as an example, Sipe argued that at least in picture books, pictures are as important as words in meaning making.

Maximizing picture effect on learning from text. Whatever conceptualizations apply, previous research yielded consistent results in favor of illustrated text than text only or illustration only in learning. However, not all pictures have the same positive effect on learning in any learning situations. Earlier studies show that types of pictures and text-picture relations as well as learner characteristics matter for the facilitation effect of pictures. Peeck (1993) argued that despite the potential effect of pictures that has been widely reported in research, in reality pictures in educational text often do not reach the potential, because of both nature of materials and learner characteristics. First, the nature of text matters. Research showed that readers would benefit more from pictures, when text contains complex, abstract, and unfamiliar content (Carney & Levin, 2002; Peeck, 1993). In other words, when content is concrete and easy to understand, adding pictures may be neither necessary nor beneficial in learning. The nature of pictures is also important. When pictures support and correspond to text content, they facilitate learning (Carney & Levin, 2002; Levin, Anglin, & Carney, 1987). However, pictures that are contradictory to text content or have arbitrary relations to text are not likely to have the same facilitation effect.

In the same vein, Brookshire, Scharff, and Moses (2002) emphasized the importance of overlapping and correspondence of information in text and pictures. They argued that the benefit of dual coding would work only when the similar or same

information is repeatedly represented in both text and pictures. In addition, their study provided another aspect of nature of pictures, focusing on more exterior style of pictures. In their study, 71 first and third-graders read (third-graders) or were read aloud (first-graders) one of 9 books that differ in three ways: illustration style (realistic or abstract), illustration brightness (bright or somber), and book type (text with illustrations, text only, and illustration only). Children answered 15 comprehension questions from three sources: 5 questions from text only book, 5 from text-plus-illustration book, and 5 from illustration only book.

The result showed that regardless of grade level, children performed highest with the illustrated text and lowest with illustration only book. Interestingly, they found that children tended to pay more attention to text than illustrations, and textual information was more influential in comprehension than illustrations. However, they argued that the effect of pictures on comprehension should not be overlooked, because the result showed that the illustration only group also gained considerable amount of comprehension without text, and with aid of illustrations, text-plus-illustration group performed highest.

In addition, answers to illustration preference questions showed that children liked bright illustrations significantly better than somber ones. Although there was no significant difference in the preference between photo-like realistic pictures and cartoon-like abstract pictures, Brookshire and colleagues (2002) identified a trend in favor of photo-like realistic illustrations. They also found an interaction effect. That is, as for the books with the most preferred illustration styles, children performed better in answers to text-plus-illustration questions for the text-plus-illustrations books.

Researchers also emphasized that various learner characteristics should be considered in increasing picture effect on learning from text (Peeck, 1993; Molinari & Tapiero, 2007; Levie & Lentz, 1982). First, students' individual learning styles affect how much they benefit from pictures. That is, students with an "imager" cognitive style learn more from pictures than students with a "verbalizer" style (Riding & Douglas, 1993). Some researchers also argued that low-prior knowledge readers would benefit more from pictures (Levin & Mayer, 1993; Mayer, 1997). Other researchers argued that poor readers are likely to benefit from illustrated text more than good readers do (Levie & Lentz, 1982). However, Peeck (1993) noted that although less knowledgeable and poor readers tend to rely on pictures more than knowledgeable good readers, reliance on pictures would be effective in learning only when readers could extract relevant information from pictures at the right moment.

Thus, in order to increase the picture effects in learning, teachers should provide explicit instruction or cue to attend to illustrations (Levie & Lentz, 1982; Peeck, 1993). The study by Gambrell and Jawitz (1993) provides evidence that text comprehension can be facilitated by explicit instruction or cue to attend to pictures and to create mental imagery. In their study, 120 fourth-graders were randomly assigned to one of the four conditions: instruction to create mental imagery while reading non-illustrated text; instruction to attend to text illustrations while reading illustrated text; instruction both to create mental imagery and to attend to illustrations while reading illustrated text; and instruction to remember as much as they can while reading non-illustrated text. After silent reading, students gave a free recall and answered eight text explicit and eight text implicit cued recall questions. The results showed that although the strategies of mental

imagery and attention to illustration contributed to reading performance in different ways, they resulted in highest performance in both comprehension and recall when used together. Thus, in this study, students read the written instruction to attend to not only text but also various types of pictures before they started reading a passage. Protocol students were also prompted to do think-aloud while reading pictures as well as text. Thinking aloud both text and pictures was demonstrated during modeling by the researcher and emphasized during guided and independent practice.

Classification of text-picture relations. Considering the nature of text and pictures, it is also important to analyze and compare text-picture relations in different text materials for the purpose of pedagogical practice and research. Waksman and Hanauer (2006) noted that taxonomic categorization systems would allow such analysis and comparison of text-picture relations. Scholars have proposed different taxonomies of text-picture relations (Kress & van Leeuwen, 1996; Levin, Anglin, & Carney, 1987; Schwarcz, 1982; Waksman & Hanauer, 2006). Among these classification systems, I chose the two systems proposed by Levin, Anglin, and Carney (1987) and by Waksman and Hanauer (2006) for this study. Levin, Anglin, and Carney's (1987) system is appropriate for this study, because their system was developed specifically for text-picture relations in textbooks.

On the other hand, Waksman and Hanauer's system was developed to analyze text-picture relations in six children's genres at the emergent literacy stage: children's literature, advertising, workbooks, religious and traditional literature, internet sites, and greeting cards. These six genres do not include textbooks. Though children's workbooks are a closer genre to textbooks, they are not the same as textbooks in the purpose and use.

As Waksman and Hanauer argued, text-picture relations are different from one genre to another.

Nevertheless, Waksman and Hanauer's (2006) classification system provided a valuable tool to compare text-picture relations in the two countries' textbooks. Structural relations of text and pictures in Waksman and Hanauer's system were particularly relevant to this study, because Levin et al.'s (1987) system alone could not explain all the text-picture relations in Korean textbooks. Although Levin et al.'s system assume only the hierarchical text-picture relations that information is mostly conveyed through text and pictures are only supplementary, my preliminary analysis showed that not all pictures in Korean social studies textbooks fit into this category. Some pictures seemed to play a role beyond the supplementary aid to text. As Waksman and Hanauer showed, one genre could represent more than one structural relations of text and pictures. This tendency was apparent in the two countries' textbooks. Thus, using these two classification systems together, better understanding of the text-picture relations in the two countries' textbooks was acquired.

First, Levin, Anglin, and Carney (1987) proposed five classifications of text-picture relations focusing on the functions of pictures as text adjunct in learning: 1) Decorative pictures; 2) Representational pictures; 3) Organizational pictures; 4) Interpretational pictures; and 5) Transformational pictures. Among the five, decorative pictures have no beneficial text-learning effects, whereas the remaining four have substantial effects that increase in order from representative to transformational pictures (See Table 1 for a brief description of each category or Appendix D-2).

On the other hand, Waksman and Hanauer (2006) proposed five structural relations of text and pictures: 1) Hierarchical structure; 2) Equivalent structure; 3) Symbiotic structure; 4) Autonomous Structure; and 5) Arbitrary Structure (See Table 1 for a brief description of categories). Adapted from these two systems, I analyzed and compared text-picture relations in the two countries' textbooks. The following table shows the adapted classification system for this study with the brief description of each type of picture in relation to text.

Table 1

Classification System for Text-Picture Relations in Textbooks Adapted from Levin, Anglin, and Carney (1987) and Waksman and Hanauer (2006)

Classification	Description
1.Hierarchical	Text is primary and picture is supplementary in presenting information. Text can stand alone.
Decorative	Picture doesn't have any meaningful relations to content. It is inserted for the purpose of superficial decoration only. No beneficial effect on learning from text.
Representational	Picture is a partial or complete replication of text content.
Organizational	Picture is used as a structural framework for text content to enhance coherence (e.g., graphic organizer for overview or summary of the content).

Table 1 (continued)

Classification	Description
1.Hierarchical Interpretational	Clarifiers of abstract or difficult text content
2. Equivalent	Text and picture share equal status in the representation of information. Both sources of information can stand independently and are able to convey relevant coherent information.
3. Symbiotic	Meaning can only be constructed through a consideration of the information in both text and pictures. Neither the text nor the pictures can stand alone as a single source of information.
4.Autonomous	Both the text and the pictures are independent sources of meaning and are capable of being considered in isolation. They do not provide the same information and are not necessarily coherent with each other. The relationship can be of contrast, ironic contradiction, external reference, and intertextuality.

The common message from the review in this section is that not only textual factors but also reader-based factors affect readers' remembering, understanding, and learning from expository text, and, therefore, learning from expository text should be

viewed from a more complex perspective. In addition, as researchers suggested (Chambliss & Murphy, 2002; Englert & Hiebert, 1984; Hare, Rabinowitz, & Schieble, 1989; Taylor & Samuels, 1983), educators also need to consider how to expose students to various expository text structures and how to help them use their knowledge about text structure as part of their comprehension strategies. There are two ways to make this happen. First, the quality of textbooks should be improved, reflecting the findings from these studies about text structure, background knowledge, interest, and text-picture relations. Second, it is important that teachers be aware of the issues on text coherence in relation to other textual and reader-based factors. With this enhanced awareness, they would recognize whether their given instructional materials are coherent or not and how to compensate for or take advantage of the texts for students' learning. This awareness can also enable them to provide more targeted lessons and differentiated tasks and questions depending on individual students' needs or instructional purpose.

Summary

Written communication is an interaction through written text between an author and a reader who are members of a certain cultural community. The success of this communication could depend on the extent to which they share norms and conventions of a given genre as well as how text in that genre is designed. Thus, both culture and text design separately and together could play an important role in written communication.

The review provided above supports that both culture and text design matter in children's comprehension and learning from text. Culture matters because it affects what and how an author writes as well as a reader's background knowledge of content and structure of a text. Written communication may not be effective, if there is a gap between

the author's cultural schemata reflected in a text and the reader's cultural schemata that serve as an interpretive framework for comprehension. Earlier studies have shown that readers tend to understand culturally familiar text better than culturally unfamiliar text both in terms of content and structure (e.g., Carrell, 1984, 1987; Pritchard, 1990; Steffensen, Joag-Dev, & Anderson, 1979). Readers also tend to understand culturally familiar text better, even if the text may look incomprehensible to those who have different cultural backgrounds, because the rhetorical patterns of the text matches their cultural thought patterns (e.g., Eggington, 1987; Hinds, 1990).

However, the inconsistent results about differences and similarities of writing styles across cultures (e.g., Mohan & Lo; Cahill, 2003; Choi, 1988) seem to suggest that cultural relativity and universality are not necessarily mutually exclusive concepts from the perspective of the communicative function of language and written text. Although cultural schemata affect comprehensibility of a certain text, there are also universal properties in language, thought and culture that bind us all together as human beings, making text more or less comprehensible. This notion is corroborated by the review on various aspects of text design: text structure, background knowledge, interest, and text-picture relations.

First, children's awareness of text structure and use of text structure strategy are immature and develop over time. Nevertheless, students who are aware of text structure tend to understand and remember information in a text better by being able to differentiate more important information from less important, construct main ideas appropriately, and follow the author's organization of information (Chambliss & Murphy, 2002; Englert & Hiebert, 1984; Hare, Rabinowitz, & Schieble, 1989; McGee, 1982;

Taylor, 1980; Taylor & Samuels, 1983). They also have differential awareness of different text structures, probably because of their experiences with these structures or their stage of cognitive development (Chambliss & Murphy, 2002; Englert & Hiebert, 1984; Hare, Rabinowitz, & Schieble, 1989).

Children's comprehension of expository text also seems affected by various aspects of text structure. For example, Hare, Rabinowitz, and Schieble (1989) showed that the position and explicitness of main ideas matter in main idea recognition. More importantly, Beck and colleagues showed that students who read the coherent text performed better than those who read the less coherent text not only in quantity but also in quality of their recall and answers to questions (Beck, McKeown, Sinatra, & Loxterman, 1991; Loxterman, Beck, & McKeown; 1994).

However, in order to maximize the effect of coherent text structure, various text and reader characteristics should be taken into consideration. For example, text structure awareness may differ not only by age but also by reading ability and text difficulty. According to Taylor (1980) and McGee (1982), good readers performed better in the recall test than poor readers. Researchers also suggested that if text is familiar, short, easy, and well-organized, students might use their text structure knowledge and understand expository text better (Beck, McKeown, Sinatra, & Loxterman, 1991; Chambliss & Murphy, 2002; McGee, 1982).

Second, background knowledge has a powerful influence on comprehension and learning from text, both alone and together with textual coherence and reading skill. Previous research has shown that if relevant and accurate background knowledge was activated, readers can comprehend and learn from text better (e.g., Freebody & Anderson,

1983; Johnston, 1984; Langer, 1984; Pearson, Hansen, & Gordon, 1979; Torney-Purta, 1991). However, the effect of background knowledge is differential depending on textual coherence and reading skill (Birkmire, 1985; McKeown, Beck, Sinatra, & Loxterman, 1992; McNamara, Kintsch, Songer, & Kintsch, 1996; O'Reilly & McNamara, 2007; Ozuru, Dempsey, & McNamara, 2009; Voss & Silfies, 1996). The relations among the three factors are very complex. But one clear and consistent finding is that high-skilled and high-background knowledge readers can benefit better from highly coherent text.

Third, the interest value of a text can make a difference in comprehension and learning from text as well. Previous research has provided empirical evidence that children's comprehension could be facilitated by interest-evoking text characteristics (e.g., Hidi & Baird, 1986, 1988; Kintsch, 1980; Schank, 1979; Wade, Buxton, & Kelly, 1999). However, not all interest-evoking text characteristics would help readers comprehend and learn from text. Researchers argued that both interest and importance of information in a text matter (e.g. Wade, Buxton, & Kelly, 1999). Adding highly interesting but unimportant or irrelevant information to a text would interfere with understanding and remembering the important information of the text (e.g., Garner, Gillingham, & White, 1989; Harp & Mayer, 1997; Lehman, Schraw, McCrudden, & Hartley, 2007; Shirey & Reynolds, 1988; Wade & Adams, 1990). The findings from this body of research showed that interest could be created, promoting comprehension of text in various ways: including important and valued information, presenting unexpected information, building upon readers' prior knowledge, facilitating imagery through descriptive language, and providing adequate explanations of difficult concept.

Fourth, not only text but also pictures are important elements of text design that affect comprehension and learning. However, not all pictures have the same positive effect on learning in any learning situation. The effect of pictures may differ by nature of materials, types of pictures, text-picture relations, and learner characteristics. Readers would benefit more from pictures, when text contains complex, abstract, and unfamiliar content (Carney & Levin, 2002; Peeck, 1993). Pictures have more effect on learning when they support and correspond to text content (Brookshire, Scharff, & Moses, 2002; Carney & Levin, 2002; Levin, Anglin, & Carney, 1987). Picture effect on learning from text may also differ by various learner characteristics such as learning style (Riding & Douglas, 1993), reading ability (Levie & Lentz, 1982), and background knowledge (Levin & Mayer, 1993; Mayer, 1997).

This review supports that what and how information is presented in a text really matters in helping a young reader understand the author's intended meaning and learn from the text. It also shows that culture, text characteristics, and reader characteristics, both alone and together, could affect children's comprehension and learning from text. However, considering that there is little research on children and textbooks from a cross-cultural perspective, this study could be a valuable addition for research and practice. Cross-cultural studies mostly have addressed the effect of culture on adult readers and writers rather than children. As a result, in these studies, genres are often limited to adult-generated genres for adult readers. Moreover, some of these studies yielded inconsistent results about the effect of culture on written communication and presence of cultural differences in thought patterns and writing styles.

In addition, many researchers have addressed various aspects of text design, usually focusing on one of them. Few have conducted a cross-country study on children and explanatory text from social studies textbooks, considering both text characteristics and reader characteristics in text design and comprehension. Thus, the findings from this present study would contribute to research and practice by adding a unique perspective and paying attention to the population and genre that have been less addressed.

CHAPTER THREE

Methods

The goal of this study was to examine how different cultural schemata were reflected in the design of social studies textbook passages about two topics from Korea and the United States and how such different text design and cultural schemata influenced children's comprehension and learning. To reach this goal, I conducted an analysis of four textbook passages, and collected and analyzed quantitative and qualitative data from 10-year-olds in Korea or the United States reading either a textbook passage from their own country or a translation from the other country. The following research questions guided the text analysis and analyses of the children's data.

1. Text analysis (Chapter 4: Results of Text Analysis)
 - a. How do the passages from the US and the Korean textbooks differ in text design?
 - b. What do the differences in text design suggest about differences in cultural schemata?
2. Quantitative analyses (Chapter 5: Results Part I. Large Group of Students)
 - Overarching question: To what extent do different text topic, text origin, and reader characteristics (country of origin and background knowledge) affect young readers' comprehension, knowledge, and interest independently of each other and in interaction with each other?
 - Subsidiary questions:
 - a. Text topic: Economics/choices or Civics/community involvement

To what extent do texts on two different topics differentially affect young readers' comprehension, knowledge, and interest regardless of text origin and readers' country?

b. Text origin: Korea or US

To what extent do textbook passages from Korea and the US differentially affect young readers' comprehension, knowledge, and interest regardless of topic and readers' country?

c. Reader characteristics: readers' country (Korea or US) and background knowledge

To what extent do young readers from Korea and the US comprehend and learn from their reading differentially and have differential interest regardless of text topic or text origin?

How does young readers' background knowledge affect their comprehension, knowledge, and interest?

d. Interaction: differential effects of text topic, text origin, and readers' country

To what extent do the text topic and the text origin interact?

For example, does the Korean text on Economics/choices affect young readers' comprehension and learning differently than the US text on Economics/choices regardless of the readers' country?

To what extent do the text topic and the young readers' country interact? For example, do the Korean readers comprehend Economics/choices text better than Civics/community involvement

text, while the US readers comprehend Civics/community involvement text better than Economics/choices text regardless of the text origin?

To what extent do the text origin and the young readers' country interact, suggesting the effect of cultural schemata? For example, does the Korean text facilitate the comprehension of Korean children more than the US text, and vice versa regardless of topic?

To what extent do the topic, the text origin, and the young readers' country interact? For example, does the Korean text facilitate the comprehension of Korean children for the Economics/choices text but not for the Civics/community involvement text, while the reverse is the case for US children?

3. Qualitative analyses (Chapter 5: Results Part II. Protocol Students)
 - a. What patterns characterize young readers' strategy use and various aspects of text design and reader characteristics?
 - b. How do those patterns illuminate the effect of text origin, text topic, readers' country and background knowledge on the strategy use, comprehension, and learning from the text?

Design

The overall research design was a mixed design with background knowledge as a covariate. The complete design was 2 (Topic) x 2 (Text Origin) x 2 (Readers' Country) x 2 (Time). Topic was Civics/community involvement or Economics/choices; Text origin was Korea or the US; Readers' Country was Korea or the US; Time was pre- and post-

reading. All the factors except Time were between-subject factors. Perceived knowledge, Demonstrated Knowledge, and Individual Interest were measured before and after reading. However, in the analyses, the pre-reading Demonstrated Knowledge outcomes as coded from an open-ended question were used as a covariate, and only the post-reading Demonstrated Knowledge outcomes were used as one of the measures (See below).

By using pre-reading Demonstrated Knowledge outcomes as a covariate, I controlled for the effect of background knowledge on comprehension and learning. I expected that including this covariate would allow me to examine the effect of text topic, text origin, and readers' country independently of background knowledge and the effect of background knowledge independently of text topic, text origin, and readers' country.

Within this complete design, there was one partial design that did not include a within-subject factor. This partial design applied to five outcome measures and the analysis of a sixth: comprehension and transfer measures (main idea questions, conceptual understanding question, free drawing, problem-solving question) and a situational interest measure. It also guided the analysis of the post-reading Demonstrated Knowledge outcomes. The same complete and partial design applied to the protocol students as well, although the partial design for the protocol students had two more measures: think-aloud protocols and semi-structured interview questions.

Time Frame

I conducted the present cross-country study in Korea and the US for five months. First I conducted Pilot Study I in the US during the summer. Then, from late September

to early October, I conducted another Pilot Study I and Pilot Study II in Korea. I describe the pilot studies in the Appendix I.

I conducted the main study in Korea for two weeks in October. After completing the research study in Korea, I flew back to the US for another main study. I conducted the main study with the US participants from November to the early December of the same year.

Settings and Participants

In the following section, I provide a brief description of Korean and US schools as well as the regions where these schools were located, followed by a description of participants. Admitting that selecting settings and participants was subject to site access availability, I intended to consider carefully the comparability of the two countries' settings and participants in designing and conducting the study and analyzing the data.

Settings

This study was conducted in schools located in the Southeastern region of Korea and in the Mid-Atlantic region of the United States. The Korean schools were located in a large city where over two million people live, having various jobs that could be found in any cities. This city housed various industries such as textiles and pharmaceuticals. On the other hand, the US school was located in a small town where approximately 3,000 people live. Although this town also housed some industries, it was much smaller than the Korean city in scale and population.

However, the two communities were similar in that both were not ethnically diverse. The Korean city was almost homogenous in ethnicity, while for the US city, European Americans accounted for about 95% of its population. These demographics

suggested that the participating school in this US town was less diverse ethnically than the typical US school in an urban area, rendering it more comparable to the Korean schools in terms of ethnic or cultural diversity.

Typical Korean and US schools differ but share some similarities as well. For example, most of the Korean schools are not as culturally or linguistically diverse as US schools. In Korean elementary schools, ability grouping in class is less common than in US elementary schools, and instruction is more likely to be given either to a whole class or in heterogeneous groups (Chung, 2000). The average ratio of students to teaching staff in Korean elementary schools (e.g., 24.1 as of 2008, OECD, 2010, July 9) differs from in the US elementary schools (e.g., 14.3 as of 2008, OECD, 2010, July 9). However, there are shared concerns in Korean and US schools, such as how to increase school achievement by increasing educational quality, while limiting the effect of socioeconomic status on learning (Anyon, 2005; Oh, 2008; OECD, 2010).

Participants

Why ten-year-olds? Ten-year-olds (4th grade in Korea, 5th grade in US) from Korea and the US participated in this study for several reasons. First, the correspondence between grade and age differs across countries. The first grade begins at the age of six in the U.S., while it does not start until the age of seven in Korea. The school year starts in the fall (September) in the U.S., while in Korea it starts in the spring (March). Considering this difference in the grade-age relation, choosing the same age is more appropriate for this study than the same grade level.

Moreover, since awareness of text structure may be developmental (e.g., Chambliss & Murphy, 2002; Englert & Hiebert, 1984; Hare, Rabinowitz, & Schieble,

1989) and social studies is not often taught in the primary grades, it is appropriate to choose a higher age group from both countries. The highest age in Korean elementary schools is 12 years old (6th grade), while in America, the highest age is 10 (5th grade) or 11 years old (6th grade). Choosing 11 year olds was inappropriate because in some US schools, 6th grade (11 year olds) is considered middle school.

Choosing 10-year-olds is also appropriate in relation to the selected passages for this study. Korean passages are from the second book (fall semester) for 9-year-olds and the first book (spring semester) for 10-year-olds, while US passages are from a book for 8-year-olds. Thus it is possible to assume that 10-year-olds from both countries might have read or heard about the topics of the passages.

To verify that texts from both countries would be appropriate for 10-year-olds, I computed the readability formula for the English version of each passage, using the Flesch-Kincaid grade level available in Microsoft Word. I report the specific results below in the section on materials. Three of the passages had a readability grade level above 5.0. The fourth text, a US text, had a readability grade level of 4.6.

Korean 10-year-olds who participated in this study might have read the chosen Korean passages before, because every school in Korea uses the same books (Korean National Curriculum, 2007). One of the two chosen passages was from the book used in the previous school year, while the other is from the book that was probably used as this research was being conducted. On the other hand, US 10-year-olds who participated in this study might not have read the chosen US passages, because there is more than one social studies series in the US, and it turned out that the participating schools in this study did not use the series from which the US text passages were selected.

However, the curriculum of this Mid-Atlantic state specified topics and curricular goals in Civics/community involvement (Grade 3) and Economics/choices (Grade 4 and 5) that were similar to the chosen passages for this study (State Curriculum Framework, 2009). Note that to protect the anonymity of the site, this document does not appear in the reference list. Because this Grade 3 curriculum includes the specified topics, the participating US 10-year-olds were likely to have read and learned about the chosen Civics/community involvement and Economics/choices topics before, although they might not have read exactly the same passages. Even if there might have been any differences in background knowledge that could advantage or disadvantage children from one country over children from the other country, I controlled for background knowledge in advance by using pre-reading demonstrated knowledge as a covariate for all the statistical analyses.

For both schools, learners for whom English is not their first language did not participate in this study, because the participating classes in both schools did not have such students. But I was not able to confirm whether any students with learning disabilities participated in the study, because the US school teachers were not allowed to provide such information.

A priori power analysis. An a priori power analysis with an effect size of .25 (medium), an alpha level of .05, and a power of .80 indicated that a sample size of 10 participants per group (in total, 80) was required to detect group differences (Cohen, 1988). This means that at least 40 participants were needed from each country. In addition, four protocol students were needed from each country. Assuming that some participants might drop out or something unexpected might come up during the study and

considering class sizes, the total required number of participants was approximated to be 120 (60 per each country) (Huck, 2008). The class size in Korea ranged from 30 to 35, while the class size in America ranged from 20 to 25. Thus two Korean classes and three US classes participated in the study.

Large-group participants. For the Korean school, I collaborated with the 4th-grade head teacher. During the meeting with her, I briefly explained my research plan and shared the materials. I also explained that the data from only those students who returned consent and assent forms would be used for the research, and any information about participants would be kept confidential (See Appendix J for consent and assent forms). The teacher scheduled the best times when the students in each of the two classrooms could take a test. The two 4th-grade Korean teachers sent parental consent and student assent forms home with the students. They also provided information on each student's reading ability by checking high, mid, and low.

For the US school, I collaborated with the school's principal and 5th-grade teachers as to when the best times would be to come to test the students. As I did with the Korean head teacher, I met with the three 5th-grade teachers where I briefly presented my research plan and materials, and the teachers suggested their preferred schedule. Participating students' reading ability and other demographic information were not available because the principal did not consent to having this information collected. The three US 5th-grade teachers sent parental consent and student assent forms home with the students.

I considered as participants only children who had parental consent and had assented to the study and used their data for the analyses and reporting. In Korea, 64

fourth-grade children from two classes completed paper-and-pencil tasks in their classrooms. One of the students did not return the signed forms, and I eliminated this student's completed packet. Therefore, 63 Korean children with signed forms participated in the main study. In the US, 60 students completed paper-and-pencil tasks in their school cafeteria. Among them, the teachers gave me 57 packets completed by the students who returned the signed forms, while they kept the packets without the signed forms. Therefore, 63 Korean 4th-grade students and 57 US 5th-grade students participated in the study, and their completed packets were used for data analysis.

Protocol students. In addition to the two Korean classes and the three US classes for the paper-and-pencil tasks, I recruited another four 10-year-olds in each country for protocol students who would complete the think aloud and semi-structured interview. The four Korean protocol students attended a different school in the same city where the large group of students participated in the paper-and-pencil tasks. The four US protocol students were from the same school where the large-group data had been collected.

I selected these protocol students based on their teachers' recommendation. Each of them returned the parental consent and assent form to complete the think aloud and interview. Neither Korean nor US protocol students' reading ability was available. Table 2 represents specific demographic information, including gender, for the Korean and the US participants as provided by each student and their teacher. In this and the following chapters, I refer to each protocol student by a pseudonym that indicates their country and the type of text they read in this study (See Table 3).

Table 2

Demographic Information for the Korean and the US Participants

Gender	Korean	US	Total
Large Group Participants			
Male	36	32	68
Female	27	25	52
Total	63	57	120
Protocol Students			
Male	4	2	6
Female	0	2	2
Total	4	4	8

All US (American) students have US names that begin with an A, the same middle initial that designates the country of origin for the text (K or U), and the same last initial that designates the topic (E or C). Likewise, all Korean students have Korean names that begin with a K, the same middle initial and last initial that designate the type of text they read.

Table 3

The Eight Protocol Students' Pseudonyms

Country	Passage Read	Pseudonym
US (America)	US Economics/choices Passage (UE)	Abigail U.E.
	US Civics/community involvement Passage (UC)	Ann U.C.
	Korean Economics/choices Passage (KE)	Adam K.E.
	Korean Civics/community involvement Passage (KC)	Andy K.C.
Korea	US Economics/choices Passage (UE)	Kuni U.E.
	US Civics/community involvement Passage (UC)	Kangmin U.C.
	Korean Economics/choices Passage (KE)	Kijung K.E.
	Korean Civics/community involvement Passage (KC)	Kyun K.C.

Materials

Two passages about Economics/choices and Civics/community involvement were selected from each country's textbooks, and each passage was long enough for one lesson.

Thus, in total four passages were included in this study, two Korean passages (one Economics/choices and one Civics/community involvement) and two US passages (one Economics/choices and one Civics/community involvement). In the following section, I present how and why I selected these passages and how I translated them. I describe how I analyzed each text and compared them and the results in the next chapter (Chapter 4).

Text Selection

I set criteria for comparable passages from the two countries' textbook series: age and grade level, a similar main concept about the same topic, a good example of relatively comprehensible passages from each series, the same instructional unit (i.e. a lesson), and a similar level of readability. But as explained in the previous section about participants, Korea and the US differed in curriculum and grade-age correspondence. Considering such difference, I chose to focus on the same age rather than grade level. However, because it was hard to find passages that were similar in terms of both topic and age group, I chose passages of similar topics and readability, though their target age groups were different.

The following is the procedure for selecting comparable passages. First, I compared the Korean and the US series at the whole series level to find comparable topics for the study. According to the comparison, some books were excluded. First, books focusing on national history or geography were considered inappropriate for this study, because these topics required substantial content background knowledge to understand (e.g., Korean and US books for grade 5 and the US book for grade 4). With textbook passages about these topics, it was highly likely that cultural content schemata might override the effect of cultural formal schemata and the effects of other variables.

Second, the US book for grade 6 was also inappropriate because it dealt with topics about world geography and culture that none of the Korean books covered. Finally, the US books for grade 1 and 2 were excluded because there were no counterparts in the Korean series. The Korean social studies series had books from grade 3 to 6. As a result, the only remaining books that contained various disciplines of social studies were a US book for grade 3 (age 8) and Korean books for grades 3 (age 9) and 4 (age 10) (See Appendix B for the bibliography).

Second, I chose the topics of Economics/choices and Civics/community involvement among various topics of the different disciplines that the 3rd-grade US book and the 3rd- and 4th-grade Korean books contain. As mentioned above, disciplines like history and geography were excluded, because the preliminary search showed that passages about history or geography tended to focus on content that was too specific to each country. On the other hand, disciplines like economics and civics were likely to have content that was not too specific. Among various topics in economics and civics, passages about economic institutions or government branches were not selected for reasons similar to excluding history or geography. Finally, passages about Economics/choices and Civics/community involvement were selected for this study, because they were not too specific and had both culture-dependent and culture-independent contents.

Third, in order to select relatively comprehensible passages, I chose the same type of text with the same intended purpose: explanation. Rowan (1988, 1990) contended that well-written explanation would promote a deep understanding of a subject matter to a lay reader by rendering unfamiliar concepts familiar. Young readers might have some

awareness of a social studies topic but not necessarily have expert-like understanding. In that sense, explanatory text on a social studies topic could be considered relatively well-written, comprehensible text.

Finally, Table 4 shows the specific readability levels for each of the texts based on a Flesch-Kincaid Grade Level analysis. As shown in the table, while the ages intended for the texts in the two countries differed, the actual readability scores of these texts were quite similar. Only the US Economics/choices text had a readability level below 5th grade, 10 year olds in the US. On the other hand, the US Civics/community involvement text had the highest readability level of almost sixth grade (11-year-olds), even if it was written for younger children (8-year-olds) than the Korean Civics/community involvement text (9-year-olds).

Table 4

Comparison of Selected Passages in Target Age, Target Grade, and Readability

Topic	Korean			US		
	Target age	Target grade	Readability: grade	Target age	Target grade	Readability: grade
Economics/choices	10	4	5.1	8	3	4.6
Civics/community involvement	9	3	5.5	8	3	5.8

Translation

As a native speaker of the Korean language who had been attending an American graduate school for several years, I translated the Korean passages into English and the US passages into Korean, assuming that cross-linguistic written communication is possible. According to Bakhtin (1986), any utterances could be translated into any other languages with the important caveat that direct translation does not guarantee the retaining of meaning.

Keeping in mind that the subtlety of meaning could be lost in translation due to the linguistic and cultural differences, I chose several principles to guide the preliminary translation. First, I retained the verbatim translation if it made sense, including some technical vocabulary. However, whenever the verbatim translation was awkward and might cause unnecessary confusion to young readers who would read the translated versions, I found alternative wording that would better convey the intended meaning and edited accordingly. However, even in this case, I maintained the logic of the thinking in the original version as much as possible. Retaining the logic was important, considering that the text analysis, especially at a section level, would deal with relationships between clauses in a sentence, sentences in a paragraph, and among paragraphs. It was also important to choose appropriate words among available synonyms. Considering that this study focuses on the instructional materials for children written by experts who are adults, it was important that the translated versions keep the similar level of register used in the original version and appropriate vocabulary.

Finally, it was important that the translated versions accurately represent the ideas in the original passages, while not sounding awkward to native speakers of each language.

To address this issue, I asked one native speaker of Korean to read the Korean versions of the US passages and one native speaker of English to read the English versions of the Korean passages. Both of them are well-educated and fluent readers in their native languages. Anything that they found awkward was changed accordingly through discussion between the native speaker and me. The same principles for translation applied to creating Korean and English versions of each measure.

Measures

A set of measures was used to test children's comprehension of each passage, problem solving, knowledge, and interest. In addition, think-aloud protocols and semi-structured interviews were administered to protocol students. Each packet contained this set of measures for each passage (See Appendix F). In the following sections, I provide the details of each measure.

For All the Participants

Knowledge/Interest Questionnaire (KIQ). The *KIQ* was a combined questionnaire to examine readers' knowledge and interest before and after reading each test passage. Both knowledge and interest measures had two sub categories. Knowledge measures consisted of a perceived knowledge measure to examine readers' perception of their own knowledge and a demonstrated knowledge measure to examine readers' actual knowledge about a given topic. Both types of knowledge were measured before and after reading. Interest measures also consisted of the two types of measures. Individual interest was measured before and after reading, while situational interest was measured only after reading. Table 5 shows the list of questions included in the *KIQ* for the Civics/community involvement passages. The questions in the *KIQ* for the

Economics/choices passages were the same except for questions that indicated a specific topic. The italicized words in the table were only included in post reading *KIQs*.

Table 5

The Questions and Measures in the KIQs for the Civics/community involvement Passages

Question	Scale	Measure
1. Do you like reading about social studies topics?	a. a lot b. some c. a little d. not at all	Individual interest
2. Do you think that the topic, “people working together to make our community a better place to live in” is interesting?	a. a lot b. some c. a little d. not at all	Individual interest
3. Do you want to know more about people working together to make our community a better place to live in?	a. a lot b. some c. a little d. not at all	Individual interest
<i>4. Do you think this text (“Clean Streets, Good Neighbors”) is interesting?</i>	a. a lot b. some c. a little d. not at all	Situational interest

Table 5 (continued)

Question	Scale	Measure
5. How much do you think you know <i>now</i> about people working together to make our community a better place to live in?	a. a lot b. some c. a little d. nothing	Perceived knowledge
6. How many ideas do you think you could write <i>now</i> about people working together to make our community a better place to live in?	a. more than 4 b. 3-4 c. 1-2 d. 0	Perceived knowledge
7. How long a report do you think you could write <i>now</i> on people working together to make our community a better place to live in?	a. a few paragraphs b. a paragraph c. a sentence d. nothing	Perceived knowledge
8. Please write as much as you can <i>now</i> about people working together to make our community a better place to live in, <i>especially any new ideas about it.</i>		Demonstrated knowledge

As shown in Table 5, each *KIQ* included one open-ended short answer question (Question 8) and seven Likert-scaled questions with four scales (Questions 1 to 7) (Fowler, Jr., 1995). The first three questions (Questions 1 to 3) measured readers'

individual interest in social studies topics in general and a given topic in particular (e.g., Ainley, Hillman, & Hidi, 2002). Question 4 measured readers' situational interest created by reading a given text (e.g., Ainley, Hillman, & Hidi, 2002; Alexander, Jetton, & Kulikowich, 1995). Thus, this question was included only in the post reading *KIQs*.

The next three questions (Questions 5 to 7) measured readers' perceived knowledge about a given topic (Richgels, McGee, Lomax, & Sheard, 1987), while an open-ended short answer question (Question 8) measured their demonstrated knowledge about the topic (Langer, 1984; Ozuru, Dempsey, & McNamara, 2009). This open-ended question stimulated children's free association by presenting the key words of the topic that children were going to read about (pre-reading test) and had read about (post-reading test): "making choices" and "working together for a better community." According to Langer (1984), open-ended free association types of question are reliable measures of topic-specific background knowledge. Langer argued that because of the reliability of this type of question and its ease of administration as a topic-specific background knowledge measure, open-ended questions as used in this study are a useful research tool to control and examine the effect of background knowledge on text comprehension and learning. After reading, the same questions were asked in general with the slightly changed wording and the addition of a question for situational interest, as shown in the italicized parts in Table 5.

Previous research (e.g., Freebody & Anderson, 1983; Langer, 1984) showed that background knowledge about the topic of a text affects reading performance. If readers have appropriate background knowledge and can use it appropriately, they perform better. Also, a reader's individual interest affects comprehension of a text on a specific topic

(e.g., Hidi, 2001), and certain text characteristics can evoke situational interest that may help a reader understand what they read (e.g., Wade, Buxton, & Kelly, 1999). Chambliss and Calfee (1998) based on these studies contended that how text is designed to connect to readers' background knowledge and interest affects the comprehensibility of expository text and learning from text. Thus, I had a purpose for using this combined questionnaire of knowledge and interest before and after reading.

In sum, by using this *Knowledge/Interest Questionnaire*, I examined any changes in readers' perceived knowledge about a given topic and individual interest in the social studies subject and topics before and after reading a given passage. I also measured readers' situational interest after reading. Perceived knowledge, individual interest, and situational interest were measured by 4-point Likert-scale questions. Finally, I measured readers' demonstrated background knowledge about a given topic before reading and demonstrated acquired knowledge after reading by asking an open-ended question. The pre-reading demonstrated knowledge outcomes as coded from the open-ended question were used as a covariate for all the statistical analyses.

Comprehension and transfer measures. There were three types of comprehension measures and one transfer measure that students completed after reading each passage. The three types of comprehension measures included short-answer questions about main ideas, a question about the conceptual understanding of vocabulary words, and free drawing. The transfer measure was a problem-solving question. Table 6 shows the examples of those questions used in the Korean Civics/community involvement packet (See Appendix F for questions for the other passages).

Table 6

Comprehension and Transfer Measures (The Korean Civics/community involvement Text)

Questions	Measures
1. Why did the adults in the “Green Group” start their project and what steps did they take?	Comprehension (Main idea)
2. Please, tell some examples of what we can do to make our town a better place to live.	Comprehension (Main idea)
3. Please make a sentence, using the word, “volunteer”.	Comprehension (Vocabulary)
4. Recently a huge storm swept Juni’s town. Some families lost their houses, pets, and belongings and suffered from lack of food, clothing, and shelter. Juni wants to do something for them. If you were Juni, what would you do and why?	Transfer (Problem solving)
Some of your friends have not read this passage.	Comprehension
If you could draw what you have learned from it, your friends would also learn from your drawing. But you cannot draw everything. So, please draw what you think is most important for your friends to know.	(Free drawing)

After reading each test passage, participants answered two short-answer questions about main ideas first. Short-answer questions seemed to be more child-friendly than written recall or summarizing and provide richer data than multi-choice questions in demonstrating their understanding. The third question was to check whether students understood the concept of the key vocabulary words. This question was important, considering that the Korean and the US passages differed in the degree of explicit presentation of vocabulary.

In addition, participants were asked to show their understanding of the main ideas through free drawing. This type of measure seemed to be more developmentally appropriate to young children or children who might feel comfortable with expressing their thoughts visually rather than linguistically (e.g., Guthrie, Van Meter, Hancock, McCann, Anderson, & Alao, 1998).

This combination of linguistic and visual comprehension measures also matched differences in how the Korean and the US passages were designed. Both the Korean passages and the US passages included text and various types of visual aids including pictures, photos, tables, graphs, and so on. However, the text-picture relations of the passages from the two countries' series were very different. By having students represent their understanding through the two media, I expected to gain insight on how different text-picture relations affected students' comprehension of the text. Using different test media would also help the triangulation of data to make a reasonable conclusion on the research questions.

A problem-solving question was intended to examine whether the comprehension had transferred to a similar but different context. Students were asked to solve a problem

based on what they had read. By completing this task, they showed whether they could apply and transfer what they comprehended to a similar but new context.

For the Protocol Students

Protocol students were asked to respond to the *KIQ* and comprehension and transfer measures just as the large group of students did. Additionally, two types of data were collected only for the protocol students: think-aloud protocols while reading the test passage and semi-structured interviews after responding to all the measures (See Appendix G and H). Although data from the *KIQ* and comprehension measures could show whether culture, text origin, text topic, or readers' country affected children's comprehension and learning from textbook passages, the large group data could not provide clear answers about how, what, and why. Think-aloud protocols and interviews would provide an in-depth view of the relations among text design, reader characteristics, and culture, supporting and extending the large group paper-and-pencil data.

Think alouds and semi-structured interview. Think-aloud is a useful technique to provide insight about what happens inside students' minds while reading, and there is evidence that young children can think aloud. For example, both the third-graders in the study by Schellings, Aarnoutse, and Leeuwe (2006) and the fifth-graders in VanSledright's (2002) study successfully used think-aloud to show what they were thinking while reading. However, think-aloud is not easy to do even as an adult, requiring some modeling and practice to be used successfully. On the other hand, semi-structured interviews may not require any modeling or practice. However, because of the retrospective nature of structured interviews, students may not exactly remember what

they thought while reading and responding to questions, limiting the validity of their answers.

Considering the advantages and limitations of the two types of measures, combining the two promised to provide better insight into students' thought process, while reading culturally familiar and unfamiliar passages as well as responding to various measures. These two together provided detailed information on different aspects: what strategies students used while reading each passage, what text characteristics they attended to, how they used and felt about certain characteristics, and what specific features of text and pictures helped them to comprehend and answer questions.

Procedures

The study was conducted in two ways: the large group of students and the protocol students. First, I show how different test passages and measures were bound together in packets. Then I present the specific procedures for the two groups.

Packets

For this study, I prepared eight packets based on the four passages selected from the two countries' textbooks and related measures. Each packet contained the pretest *KIQ*, a test passage, two main idea questions, a conceptual understanding question, a problem-solving question, free drawing item, and the posttest *KIQ* in this order. Packet 1 contained a US Economics/choices passage, while Packet 2 contained a Korean Economics/choices passage. Packet 3 contained a US Civics/community involvement passage, while Packet 4 contained a Korean Civics/community involvement passage. Each packet had English and Korean versions. Thus, there were eight packets in total, four in English and four in Korean (See Appendix F for English versions).

For the Large Group of Participants

In Korea, two 4th-grade classes participated in the test. They read either a culturally familiar or unfamiliar textbook passage about one social studies topic and completed various measures in their classroom. I administered the test to one class first and after a 10 minute break, I visited the next classroom to administer the same test to the second class. While I was in each classroom, the teacher stayed somewhere else. I met with the students in their classroom to introduce myself and inform them that they were going to read one passage and answer some questions about the passage. I had prepared a stack of packets with the four packets for each class ordered randomly. After I distributed the packets, one to each student, I played the recorded introductory directions through their classroom computer system.

The recorded directions informed students of what their packet contained and what they were supposed to do with the packet in general (See Appendix F for the exact wording for the recorded directions). After the introductory directions were over, the students started working on the first section of their packet, a pretest *Knowledge/Interest Questionnaire (KIQ)*, following the written directions. When they were finished, they turned it over and moved on to the next section. Although the introductory directions informed students that they should not look back once they had finished a section, I emphasized it again before they started and watched them carefully throughout the whole session to make sure that no one looked back to an already completed section that they turned over on the desk. This procedure was repeated throughout the five sections of the packet. I privately answered the questions of any student who raised his or her hand and

collected the completed packets from the students' desks as they finished. The whole procedure took approximately 40 minutes.

In the US, the overall procedure was the same as in the Korean classrooms. However, as requested by the teachers, I met the students from the three different classes all together in their school cafeteria and instead of playing the recorded introductory directions, one of the 5th-grade teachers read the directions to the students. The three teachers stayed in the cafeteria together while their students participated in the study. The four protocol students and other students who did not want to take the test sat around a table away from the participating students, working on their schoolwork under the direction of their teachers. As the students finished the five sections of the packet, each teacher collected the completed packets and gave me only the packets of the students who returned the signed forms. Just as in the Korean classrooms, the whole procedure took approximately 40 minutes.

For the Protocol Students

For each of the protocol students in both countries, I had accommodated to their schedule and the places they preferred to meet with me. In each country, I met these protocol students about one or two weeks after the large-group test had ended. In Korea, I met two students back to back one day and the other two students the next day. I met the first student in one of the quiet classrooms where his mother worked, and after that, I visited the second student at his home. Next day, I met the other two students at one of the student's homes after school. On the other hand, I met the four US protocol students back to back in a day at their school. I met each student in a quiet classroom at their school with five- to thirty-minute intervals in between as scheduled by their teachers.

In a one-on-one setting, each protocol student read a passage from one of the four packets and completed all the measures in that packet just as the large group of participants had. In addition, they thought aloud while reading and answered the semi-structured interview questions after completing all the measures. First, I began with a casual conversation to help the student feel comfortable. Then, I gave one of the four packets to the student. I read the introductory directions that informed the protocol student of what he or she was supposed to do with the packet in general. The directions were almost the same as the directions for the large group of students. However, I modified them slightly to inform the protocol students that although they could complete each section silently at their own pace following each written direction, they had to think aloud while reading the passage aloud in the second section. Accordingly, each packet for the protocol students was slightly modified with written directions and prompt points for the think-aloud. The whole procedure for each protocol student took approximately 60 to 70 minutes, depending on whether I asked more follow-up probes or questions.

Think aloud. After the introductory directions ended, each protocol student followed the written directions and filled out the pretest *Knowledge/Interest Questionnaire (KIQ)*. When she or he had completed it, I explained how to think aloud, and gave the student specific instructions about think-aloud protocols (e.g., Moore & Scevak, 1997), reading the written directions on the packet (See Appendix F). I had inserted a red star at each prompt point in each passage. When protocol students saw the red star, they should stop reading and talk about what they thought at that moment (e.g., Afflerbach, 1990; Moore & Scevak, 1997; Wade et al., 1990). However, I emphasized that they could tell anything that came to their mind at any point regardless of the prompt

points. Following Schellings, Aarnoutse, and Leeuwe (2006), I asked them to read aloud while completing the think-aloud. The read-aloud would help me to see where the student was in the text and whether they might have some kind of difficulties such as word identification. After giving this instruction, I modeled think-aloud with a short passage, and then the student practiced think-aloud with another short passage (See Appendix G for the English version of passages for modeling and practice). Other short passages were prepared in case the student needed further guided or independent practice.

When I judged that the student was ready, I gave the student a test passage. After reminding the student of the directions for the think-aloud and reading aloud the written directions, I had the protocol student think aloud to show what strategies he or she used and what he or she thought about the different textual features. There was no time limit for this session. Each student's think-aloud was audio-taped with consent and assent from parents and students.

After completing the think-aloud, the student turned over the section on the desk and moved on to the next section, completed it, and turned it over as the large group of students had. I answered questions if any. This procedure was repeated to the last section of the packet, the posttest *KIQ*.

Semi-structured interview. Finally, after a student finished all the measures in the packet, I asked the student several open-ended questions about familiarity, interestingness, and comprehensibility of the text as well as questions about why and how he or she answered the various measures (See Appendix H for the examples of interview questions). In doing so, I shared with the protocol student all the parts of the packet that the student had completed, so that he or she could refer to it as he or she answered

interview questions. I asked some follow-up probes and questions to clarify or solicit an elaborated response. Each interview was audio-taped with consent and assent from parents and students.

Scoring and Analysis

This study contained both quantitative and qualitative components. As described early in this chapter, I conducted a research study with a 2 (Text topic) x 2 (Text origin) x 2 (Readers' country) x 2 (Time) design. With this design, I asked each participant to complete perceived and demonstrated knowledge and individual interest measures before and after reading and main ideas, conceptual understanding of the key vocabulary, free drawing, problem-solving, and situational interest measures after reading. The additional eight protocol students also provided think-aloud protocols as they read and interviews after completing all the measures.

First, through the quantitative analyses, I explored the effects of topic, text origin, and readers' country on each measure and interactions among the three. Especially, I expected that certain interactions such as between text origin and readers' country could illuminate the effect of culture on the comprehension of expository text. I also examined the change in perceived knowledge and individual interest before and after reading a passage.

For all analyses, I used as a covariate pretest demonstrated knowledge as a measure of background knowledge. Unlike the original plan, reading ability was not used as a covariate, because the information on the US students' reading ability was not available. For the measures of perceived knowledge and individual interest, I conducted 2 x 2 x 2 x 2 mixed ANCOVA with Text topic, Text origin, and Readers' country as

between-subjects variables and Time (pretest and posttest) as a within-subject variable. For the other dependent variables that were measured only after reading, I conducted 2 x 2 between-subjects ANCOVA with the same three factors as between-subjects variables. Because the pretest demonstrated knowledge outcomes as coded from an open-ended question were used as a covariate, only the posttest demonstrated knowledge outcomes were analyzed, using between-subjects ANCOVA instead of a mixed ANCOVA.

Second, by analyzing the data from the protocol students qualitatively, I expected to understand better what patterns characterized the effect of text origin, text topic, and reader's country on children's strategy use, comprehension, and learning from the text. I also expected to see how such patterns corroborated the text analysis and the quantitative outcomes. In the following subsections, I first briefly describe how I developed scoring rubrics. Second, I describe how I scored and analyzed the large group data quantitatively, followed by the description how I reached inter rater agreement. Third, I describe how I scored and analyzed the protocol data qualitatively.

Developing Scoring Rubrics

I developed four sets of rubrics for the measures about US Economics/choices (UE) text, Korean Economics/choices (KE) text, US Civics/community involvement (UC) text, and Korean Civics/community involvement (KC) text. Each set consisted of six rubrics for the demonstrated knowledge measure (*KIQ* Question 7 or 8), the comprehension measures (main idea question 1, main idea question 2, conceptual understanding of the vocabulary, and free drawing), and the transfer measure (problem-

solving). These rubrics were adapted from Chambliss, Torney-Purta, and Richardson's (2008) rubric.

First, I carefully developed each rubric on the basis of the two countries' curriculum materials and the texts themselves to identify the expert understandings. I revised them several times through discussion with the inter rater. In revising the rubrics, I intended to make each rubric specific so that inferencing would not cause low agreement between the two raters. I also insured that any variance not come from different scoring decisions, but from differences in how students comprehended and learned from the four versions. Therefore, in order to minimize variance across the four texts from different scoring decisions, I intended that the decisions I made about scoring the two Economics/choices texts were the same decisions that I made about scoring Civics/community involvement texts; that the decisions that I made for scoring the US texts were the same decisions that I made for scoring the Korean texts.

I also addressed the possibility that a certain rubric or question could appear to favor one country's text more than the other country's text. For example, the conceptual understanding question might appear to favor the Korean texts, because the conceptual understanding questions for the US texts were about formal vocabulary like "opportunity cost" and "common good", while the questions for the Korean texts were about less formal vocabulary like "wise choice" and "volunteer." Although the vocabulary in the Korean texts appeared easier, it was not necessarily so. Because the conceptual understanding question focused on the concept, not on the vocabulary or grammatical accuracy, wise choice and volunteer were not necessarily so easy that children could not

come to a fuller understanding. Table 7 shows the rubric for scoring the main idea question 1 for the US Economics/choices text (See Appendix K for the other rubrics.)

Table 7

Rubric for scoring the main idea question #1 for US Economics/choices Text: Why do people have to make choices about the things they want most?

Level of Understanding	Definition	Example	Score
Expert-like deep conceptual understanding	The answer shows the conceptual understanding that because of limited resources and income and unlimited wants, people cannot have everything they want. They must choose some things and give up others. Why we should make choices should be clearly explained through the answer.	No example found	4

Table 7 (continued)

Level of Understanding	Definition	Example	Score
Combination of expert-like and naïve understanding	The answer shows some understanding that because of limited resources and income and unlimited wants, people cannot have everything they want. They must choose some things and give up others. In other words, the answer shows either unlimited wants or limited resources but does not explain the relation between the two clearly.	If they get their second most favorite they may change their mind to their favorite thing but it would be too late. Also maybe it is limited or it's on sale or something like that.	3
Naïve understanding based on everyday thinking	The answer simply shows other reasons why people should make choices but does not show any understanding of the relation between limited resources and income and unlimited wants.	To make sure they have enough money in the future.	2

Table 7 (continued)

Level of understanding	Definition	Example	Score
Naïve understanding based on everyday thinking	<p>Or the answer simply says that we can't get everything we want without why, or that it's because there is many things we want.</p> <p>Or the answer simply shows examples of making choices in life, defines what is making choices, and / or how people can make a wise choice without mentioning why we should do that.</p> <p>Or the answer simply says that we should make choices about the things we want most without explaining why and / or that we should make choices about the things we want most because we don't have enough money.</p>	<p>If it's best for them that they really need it or if it's something that you don't really need, but the important thing is will it make you happy?</p> <p>Because If they buy too much, they waste money.</p> <p>Because there are more than one that they want.</p>	2

Table 7 (continued)

Level of understanding	Definition	Example	Score
Grossly inaccurate or incomplete answer	The answer simply repeats the fact that we should make choices about the things we want most without explaining why. Or the answer is inaccurate, incomplete, incomprehensible or unrelated to the question.	Because they want something. Because they like it.	1
“I don’t know” or no answer		Three students did not answer.	0

Comprehension and Transfer Measures

I scored each student’s responses to the three types of comprehension measures including main ideas, conceptual understanding of the vocabulary, and free drawing, and one transfer measure (the problem-solving measure) separately based on each rubric. With the separate sets of scores, I conducted a 2 x 2 x 2 between-subjects analysis of covariance separately for each of the three comprehension measures in order to determine to what extent topic of text, text origin, and readers’ country affected children’s comprehension independently of the influence of their background knowledge, measured by the main idea questions, the conceptual understanding question, and free drawing. I

also conducted the same three-way ANCOVA for the problem-solving measure to explore whether comprehension had transferred to a similar but different context and to what extent each of the three factors affected such transfer. The covariate was background knowledge as coded from the open-ended pretest demonstrated knowledge question in the *KIQ*. I present the detailed scoring scheme below (Also see Table 8).

Table 8

Comprehension and Transfer Measures Scoring Scheme

Questions	Type of answer	Score	Total score range
Main Ideas	“I don’t know” or no answer	0	0-4
Questions	Grossly inaccurate or incomplete answer	1	(8 divided by 2)
(#1 & 2)	Naïve understanding based on everyday thinking	2	
	Combination of expert-like and naïve understanding	3	
	Expert-like deep conceptual understanding	4	
Conceptual	“I don’t know” or no answer	0	0 - 3
Understanding	Grossly inaccurate or incomprehensible	1	
Question	Inaccurate but developing conceptual	2	
(#3)	understanding of the vocabulary		
	Conceptual understanding of the vocabulary	3	

Table 8 (continued)

Questions	Type of Answer	Score	Total Score Range
Free drawing	“I don’t know” or no drawing	0	0 - 4
	Grossly inaccurate or incomplete visual representation	1	
	Naïve understanding based on everyday thinking	2	
	Combination of expert-like and naïve understanding	3	
	Expert-like deep conceptual understanding	4	
Problem-solving Question (#4)	“I don’t know” or no answer	0	0 - 4
	Grossly inaccurate or incomplete answer	1	
	Naïve understanding based on everyday thinking	2	
	Combination of expert-like and naïve understanding	3	
	Expert-like deep conceptual understanding	4	

Main ideas and conceptual understanding of vocabulary. For the main idea questions (Questions 1 and 2), a score from zero to four was assigned according to the scoring rubric adapted from Chambliss, Torney-Purta, and Richardson (2008). Then, the sum of the two scores was divided by two (Wigfield, Guthrie, & McGough, 1996). As a result, the total score range was zero to four, as shown in Table 8. For the conceptual understanding question, a score from zero to three was assigned, as shown in Table 8.

Free drawing. According to the similar scoring rubric used in short-answer comprehension questions, a score from zero to four was assigned, depending on the extent to which the drawing represented the main ideas of the passage.

Problem-solving measure. The fourth question in each packet was a problem-solving question to measure the transfer of comprehension. It was scored similarly to the comprehension measures. Thus, a score from zero to four was assigned to each answer to the problem-solving question, based on its scoring rubric.

Knowledge/Interest Questionnaire (KIQ)

The *KIQ* had two subcategories of interest and two subcategories of knowledge: individual interest in social studies topics and situational interest in a given text, and perceived and demonstrated knowledge of a topic. Each question in this questionnaire contained four scales of response, except the last question (See Table 5). I first scored each category of the *KIQ* according to the scoring scheme presented below and then analyzed the categories separately, using either between-subjects or a mixed ANCOVA with pretest demonstrated knowledge as a covariate. The following presents a detailed description of the scoring for each subcategory of the *KIQ* data.

Interest. Among the four interest questions, the first three were about individual interest (pre- and post-test), while the fourth question was to examine situational interest (post-test only). The two types of interest questions were analyzed separately. Since all of the individual interest questions had four scales from one to four, the scores of the three questions were added up and the sum was divided by three (the number of questions) (Wigfield, Guthrie, & McGough, 1996). Similarly, the situational interest question was scored from one to four. The resulting individual interest scores were analyzed, using a mixed ANCOVA on SPSS, while the situational interest scores were analyzed, using a between-subjects ANCOVA.

Knowledge. Both pretest and posttest *KIQ* included three perceived knowledge questions. Questions 4 to 6 in the pretest *KIQ* examined perceived background knowledge, while Questions 5 to 7 in the posttest *KIQ* examined the perceived acquired knowledge. Scoring for each of these three questions ranged from one point (“no knowledge”) to four (“a great deal of knowledge”) (Langer, 1984; Richgels, McGee, Lomax, & Sheard, 1987). Then, the scores for the three questions were added up, and the sum was divided by three (Wigfield, Guthrie, & McGough, 1996).

Scores for the demonstrated knowledge questions (Question 7 in the pretest *KIQ* and Question 8 in the posttest *KIQ*) were based on a scoring rubric adapted from Chambliss, Torney-Purta, and Richardson (2008) similar to the comprehension and transfer measures. Accordingly, scores ranged from zero to four for both questions. The resulting demonstrated background knowledge scores were used as a covariate, while the demonstrated acquired knowledge scores were analyzed, using a between-subjects ANCOVA on SPSS.

Inter rater Agreement

To determine the inter rater agreement for the large-group data, an estimate of scoring reliability, I worked together with an expert rater who was a doctoral student in reading with Korean as his first language and could rate both the English and the Korean answers. We had a conference call once or twice a week for about two months. Each session took about two hours. We carefully took several steps for reaching agreement. I present the details of the steps we took and the results below.

First, as I described above, I developed four sets of rubrics for the four texts, and each set consisted of six rubrics for the six measures. Before sharing these rubrics with the other rater, I presented my research briefly to him, and had him become very familiar with the texts on which these rubrics were based and the curriculum materials I had used to identify the expert understandings. I talked through my rationale for the different levels of the rubrics. According to his feedback, I revised the rubrics.

After completing this step, we practiced together on a small subset of student answers from across the four texts and two languages. We worked a few of them together until we felt comfortable that we would score the student answers identically. We talked through any disagreements and revised the rubrics accordingly. Then, we scored a small subset individually and compared them. We talked through disagreements and adjusted the rubrics accordingly. We continued with this step until we felt that we could reach high agreement.

After completing preparation steps, I chose a random sample from across all of the data that represented 20% of the entire sample. I made sure not to include any of the student answers that we used for practicing. We independently scored the same set of 24 random samples across the four texts and two languages. That is, each of us scored 12

Korean data and 12 English data. The 12 Korean data included 3 UE packets, 3 KE packets, 3 UC packets, and 3 KC packets. The 12 English data had the same makeup. I decided to compute percent agreement by counting agreements as shown in Table 9.

Table 9

Inter rater Agreement Percentages for All Measures across the Four Texts and Two Languages

Texts	Economics/choices (UE & KE)					
Measures	<i>KIQ 7 and 8</i>	MainQ1	MainQ2	Concept.	Problem-sol.	Drawing
Inter rater	91%	91%	100%	100%	100%	75%

Agreement

Texts	Civics/community involvement (UC & KC)					
Measures	<i>KIQ 7 and 8</i>	MainQ1	MainQ2	Concept.	Problem-sol.	Drawing
Inter rater	91%	75%	91%	100%	100%	100%

Agreement

Overall, we reached 94% agreement. The discrepancies were evident in the free drawing measure for the Economics/choices texts and Main idea question 1 for the Civics/community involvement texts. The expert rater and I thoroughly discussed these discrepancies and reached an agreement through consensus. The overall inter rater

agreement for the Economics/choices measures was 94%. However, most disagreements were found in the drawing measure, causing 75% inter rater agreement on drawings. The other disagreements were found in the demonstrated knowledge question (*KIQ* Q7 and Q8) and main idea question 1. Each had 91% agreement. The rest of the questions (main idea Q2, conceptual understanding, problem-solving) did not have any disagreement.

What caused the relatively lower agreement on the free drawing measure than on the other measures? First, it might result from the nature of drawing itself as an assessment tool. Unlike the verbal answers, visual answers could cause differences in interpretation of details although we mostly agreed on the general meanings of each drawing. Second, it might result from the small sample size for establishing agreement, which we suspect underestimated the agreement to some degree. We rated 12 drawings and three of them were in disagreement. If we had had 10 agreed drawings, it would have been 83%, and if there was only one disagreed item, it would have been 91%. Third, it might result from the part of the rubric that allowed some flexibility for the raters. The rubric for drawing said that the level depended upon whether the drawing showed the full thought process of making choices and decision making with captions. The full thought process consisted of three parts: 1) the situation that requires a choice, 2) how to make a choice by considering some criteria of a choice, 3) the result of the choice. So, if the drawing had all the three parts clearly, it was level 4, if 2 parts, level 3, if only one part, level 2. However, we allowed some flexibility in applying this rubric by saying that depending on how much drawing and / or caption was elaborated, we could move it one level up or down. For example, although a drawing had all the three parts, if it was less elaborated and less clear, it was level 3, instead of level 4.

For the questions about the Civics/community involvement texts, we reached 94% agreement overall, which was the same as for the Economics/choices texts. But this time we had the most disagreements on main idea question 1 rather than drawings. Three out of the five disagreements came from main idea question 1 (75%) and one disagreement from the demonstrated knowledge question (91%) and the other disagreement from main idea question 2 (91%). One of the three disagreements on main idea question 1 was a mistake by one of the raters. The other two disagreements came from the different level of acceptability for the partially inaccurate detail in a student's answer.

For example, main idea question 1 asked why the students in Arizona started their project and what steps they took. The rubric says that the score differs depending on how much an answer shows why and how they practiced it clearly. The answers from the two students were similar in the level of understanding why the students in Arizona started their project. Both answers showed naïve understanding that they started their project to build 10 houses in 10 years. Both answers also had partially inaccurate detail in explaining the steps. For example, the US civics/community involvement text says that carpenters showed older students how to cut wood, and painters taught younger students to paint walls. But one of the students wrote, "Carpenters taught the older students how to cut wood and the older students taught the younger students how to paint." The other student wrote, "They learned how to paint for the little kids and for the older kids, they did drilling." I thought that both answers contained partially inaccurate information on who taught what. But I thought that it was partially inaccurate, not grossly inaccurate. Thus, I scored it as a naïve level of understanding. On the other hand, the other rater scored it as a grossly inaccurate or incomplete answer.

But we reached an agreement through discussion about these disagreements. We agreed to accept a minor mistake in explaining the tangential steps the students in Arizona took as long as the answer includes one or two of the three major steps as stated in the rubric. What is more important is whether the answer shows that the Arizona students started the project for a better community as they worked together, involving other community members in their project. As a result, of the two disagreed answers, we assigned a score of 2 to the answer that included one of the three major steps, raising money for supplies and materials, although it had a minor mistake in explaining a tangential step. On the other hand, we assigned a score of 1 to the other answer that did not include any major steps but had a minor mistake in explaining a tangential step. Finally, with the 94% inter rater agreement, I completed the rest of the scoring, using the final versions of the rubrics that the other rater and I used.

Think Aloud and Interview

In this section, I describe how I qualitatively analyzed the think aloud and the interview data in order to answer my research questions. First, I transcribed all the audio-taped data verbatim for the individual coding. I transcribed the tapes of both the Korean and the US protocol students. In order to analyze the transcribed protocols, I developed the list of categories and sub-categories separately for think aloud and interview data. I describe how I coded the think aloud and interview data respectively in the following subsections. Second, with the coded transcript, I prepared the case study of each student by reading his or her think aloud and interview data that were coded carefully and repeatedly. In writing up each of the eight cases with thick description, I organized each of the eight cases in the underlying matrix structure based on the shared categories so that

I could compare and contrast the students' responses in each category to identify the patterns across the eight cases. Finally, once I had prepared all the eight cases, I searched for patterns across the eight cases by carefully reading over the cases by the rows of the matrix, comparing and contrasting each response for the same category in order to answer the research questions.

Think aloud. First, I coded each think aloud protocol by the type of reading strategy the student used at each prompt of think aloud. I went through each student's think-aloud protocol and coded each unit of the think-aloud with the appropriate category of reading strategy. For the categories of reading strategies, I used a taxonomy adapted from Pritchard (1990). Table 10 shows the taxonomy of reading strategies.

Pritchard identified four general categories of reading strategies that the students employed in reading a culturally familiar or unfamiliar text (See Appendix L for an example for each of the strategies that children used for the protocols.) This taxonomy was a starting point and guideline for determining what strategies readers used. However, the analysis and description of each student's think-aloud protocols were not limited to this taxonomy. In addition to this general coding scheme for reading strategy use, I also analyzed the think aloud protocols by using the same codes that were used for the interviews such as partial understanding, passive attitude, low interest, and so on.

In coding the data, the unit was a phrase, a sentence, or sentences. Some units of data were assigned multiple codes (Bogdan & Biklen, 2006). For reading strategy use, I constructed a table by counting the frequency of each type of strategy that each protocol student had used. Based on this table, I constructed another table that showed the percentages for strategies for global understanding and for local understanding (See

Table 31 in Chapter 5). With these tables, I searched for patterns that could help answer the research question about reading strategy use. The codes other than the reading strategy codes were used in triangulation of the coded interview data.

Table 10

Taxonomy of Reading Strategies

Category	Subcategory
A. Strategies for Sentence-level (Local) understanding, focusing on details	1. Coping with ambiguity
	a. Stating failure to understand a portion of the text
	b. Skipping or murmuring unknown words
	c. Formulating a question
	d. Suspending judgment
	2. Establishing intrasentential ties
	a. Gathering information
	b. Rereading
	c. Paraphrasing
	d. Using context clues to interpret a word or phrase
B. Strategies for Global understanding, focusing on main ideas	1. Establishing intersentential ties
	a. Reading ahead
	b. Relating the stimulus sentence(s) to a previous portion of the text or the packet

Table 10 (continued)

Category	Subcategory
B. Strategies for	1. Establishing intersentential ties
Global understanding, focusing on main ideas	<ul style="list-style-type: none"> c. Making an inference or a prediction based on information presented in the text d. Confirming/disconfirming an inference or a prediction e. Summarizing
	2. Using background knowledge
	<ul style="list-style-type: none"> a. Using background knowledge of the text structure b. Referring to the previous passage or what they have read before c. Visualizing d. Relating the stimulus sentence(s) to personal experience e. Putting the stimulus sentence(s) in one's own situation or saying personal opinions on the stimulus sentence(s) f. Speculating beyond the information presented in the text

Semi-structured interview. Similarly to the think-aloud protocols, I explored the interview data qualitatively to find patterns of students' answers that would illuminate the relations among text, reader, and culture (Bogdan & Biklen, 2006). This qualitative analysis allowed me to triangulate the interview data with the analysis of the think-aloud protocols to portray each student as a reader in general and the effects of various features of text on their comprehension, learning, strategy use, and interest.

I coded each student's responses to the interview questions by categories such as reading strategy, unfamiliarity, interest, knowledge, pictures, and text structure that could commonly apply to the eight cases. In addition, carefully reading over the data, I realized that some students' responses showed certain unique patterns that the other students' responses did not have but could illustrate interesting aspects of text origin, topic, or readers. In that case, I added another category in coding these responses to address unique patterns, like vocabulary and passive attitude.

Conclusion

Chapter 3 described the research methodology used in this study. First, I selected two Korean and two US social studies textbook passages that were comparable in several criteria. I translated, analyzed, and compared them from a cross-cultural perspective. I describe the text analysis and comparison in detail in chapter 4. The overall research design was a mixed design with background knowledge as a covariate. For the quantitative analysis, I had 63 Korean and 57 US ten-year-old students complete the measures of main ideas, conceptual understanding, free drawing, problem-solving, and situational interest after reading and demonstrated and perceived knowledge and individual interest measures before and after reading one of the four passages in their

own language. For the qualitative analysis, I had four Korean and four US protocol students think aloud as they read and answer interview questions after reading and completing all the measures. Chapter 4 presents the results of the text analysis.

CHAPTER FOUR

Text Analysis and Comparison

Despite the shared concern about the quality of textbooks and the influence of textbooks on what and how students learn (Chambliss & Calfee, 1998; Yi, 2000), there has been very little cross-country research that has analyzed and compared the content and form of textbooks from different countries. More than two decades ago, Chambliss and Calfee (1989) conducted a cross-country study of fourth grade science textbooks from Japan, Singapore, and the United States. Their study revealed striking differences in the structure and content of these expository texts, suggesting how these differences could affect the comprehensibility of each of the textbooks.

However, Chambliss and Calfee's comparison did not focus on the influence of culture on the content, rhetorical structures, and text-picture relations of textbooks, partly because they analyzed science textbooks rather than social studies textbooks. Although Korean researchers also compared textbooks from different countries including Korea and the US, they paid little attention to the comprehensibility of textbooks and the effect of culture on the selection and organization of content (e.g., Kim, Quak, Park, & Kim, 2005). Therefore, an analysis and comparison from a cross-cultural perspective of textbooks from different countries would add to and expand this very limited research base.

As the first step for this study, I analyzed and compared the four passages from the Korean and US social studies textbooks that participants from both countries in this study would read. Such text analysis and comparison would help provide a deeper view of the influence of culture and text design on children's comprehension and learning from

expository text by informing the empirical data from the Korean and US participants. In addition, it would add to and expand the very limited research base. In this chapter, I first present Chambliss and Calfee's analytical approach that guided the text analysis for this study. Then, I present the four steps of text analysis and comparison, followed by the results.

Chambliss and Calfee Analytical Approach

The Chambliss and Calfee (1998) analytical approach guided the analysis and comparison of each passage from the Korean and US social studies textbooks. Other types of text analysis tend to convert relatively short passages to logically related propositions (e.g., Meyer, Brandt & Bluth, 1980). Alternatively, Chambliss and Calfee's (1998) approach focuses on the elements of text as they are, including the sentences, paragraphs, larger sections of text, illustrations, and diagrams, converting them to graphic representations according to a small set of rhetorical patterns suggested by college composition books (Calfee & Chambliss, 1987). This approach has been successfully used in analyzing US textbooks and in cross-cultural textbook analyses (e.g., Chambliss & Calfee, 1989; Huh & Chambliss, 2009). Following Chambliss and Calfee's analytical approach in general, I added a cross-cultural perspective and considered text-picture relations as another feature for text analysis.

In the following subsections, I first present Chambliss and Calfee's general approach to analyze the comprehensibility of an expository text, which guided the analysis of the overall comprehensibility of each text used in this study. Then, I present Chambliss and Calfee's specific approach to analyzing an explanatory text structure,

which particularly guided the analysis of the structural coherence of the four explanations used in this study.

Comprehensibility of an Expository Text

Chambliss and Calfee (1998) proposed three general features that could make an expository text more or less comprehensible: structural coherence; familiarity; and interest-enhancing features. According to Chambliss and Calfee, structural coherence comes from the overall rhetorical patterns that hold together the elements like words, sentences, and paragraphs, depending on an author's purpose: to inform, argue, or explain. Structural coherence also comes from functional devices such as introductions, transitions, conclusions, and headings that signal text structure to readers. Familiarity depends on how familiar vocabulary or the text topic is to readers.

Finally, Chambliss and Calfee proposed interest-enhancing textual features such as vivid expressions, attractive illustrations and novelty. Particularly, they emphasized that such interest-enhancing features should be "integral to the concepts" in order to facilitate comprehension rather than function merely as decorations (Chambliss & Calfee, 1998, p. 27). They also argued that interestingness of a text also depends on whether interest-enhancing features or content are relatable to readers. Based on these three general features, they contended that text is considered comprehensible and well-designed when the elements like words, sentences, and paragraphs present familiar and interesting content that readers can easily relate to and when such elements are coherently and logically linked together by rhetorical patterns and functional devices.

Explanatory Text Structure

According to the Chambliss and Calfee approach (Chambliss & Calfee, 1998), the first step for text analysis at any level is to identify the author's purpose. As shown in the taxonomy of rhetorical patterns that I used for the text analysis, the rhetorical patterns of expository text depend on whether the author's purpose is to inform, to argue, or to explain (See Appendix A for Chambliss and Calfee's taxonomy of the rhetorical patterns used in expository text).

For this study, I selected passages that were written to explain concepts about two topics (economics/choices and civics/community involvement). Thus, the author's purpose for each of the four passages is to explain. In other words, all of the four texts are from the same genre, explanatory text. Chambliss and Calfee (1998), building on work by Rowan (1988, 1990) presented three structural features of an explanatory text; gap filling between a young reader's novice understanding of difficult concepts and an expert-like understanding, a series of subexplanations, and logical order. Well-designed explanations fill gaps between the understanding of novice readers and that of experts by connecting to readers and logically ordering subexplanations of examples, definitions, facts, analogies, and expert models (Chambliss & Calfee, 1998; Rowan, 1988, 1990).

Throughout an explanation, the expert author gives novice readers steps that progress logically through to help them reach the expert-like understanding beyond their naïve everyday understanding of a phenomenon. Each of these small steps is called a subexplanation. Subexplanations can be several sentences, a paragraph, or a diagram. The explanatory features of each subexplanation may vary, including analogies, definitions,

examples, or expert models. Also each subexplanation has its own rhetorical pattern, linking elements within it.

The next step is to identify how the parts (or elements) of the text are logically linked to determine the organizational pattern (See Chambliss & Calfee, 1998 for detail). In this text analysis, I scrutinized words, clauses, sentences, and paragraphs in terms of the logical linkages among them. In addition, I also included pictures as elements, because pictures seemed to play a role equal in importance to the role of words in some textbook passages.

The Four Steps of the Text Analysis

I followed the same four-step analysis for each of the four passages: preparation of a graphic representation of the text, analysis of the text's comprehensibility, analysis of text-picture relations, and comparison of Korean and US passages. In this section, I describe what I did at each step of the analysis.

Graphic Representation

Based on the above defining features of explanation, I first identified subexplanations and their explanatory features. Next I scrutinized the linkages among various elements within each subexplanation such as words, clauses, sentences, and pictures. Then I graphically depicted the organizational pattern of each subexplanation. In particular, I focused on how subexplanations were logically linked to each other, filling gaps and contributing to readers' understanding of the main concept (See Appendix C for guidelines for analysis and graphic representation of text structure). Figures 3 to 6 show the graphic representation of text structure of each passage with explanatory features but without actual text and pictures to provide an overview of the rhetorical patterns and

logical progression of subexplanations (See Appendix E for the complete versions of graphic representations with text and pictures).

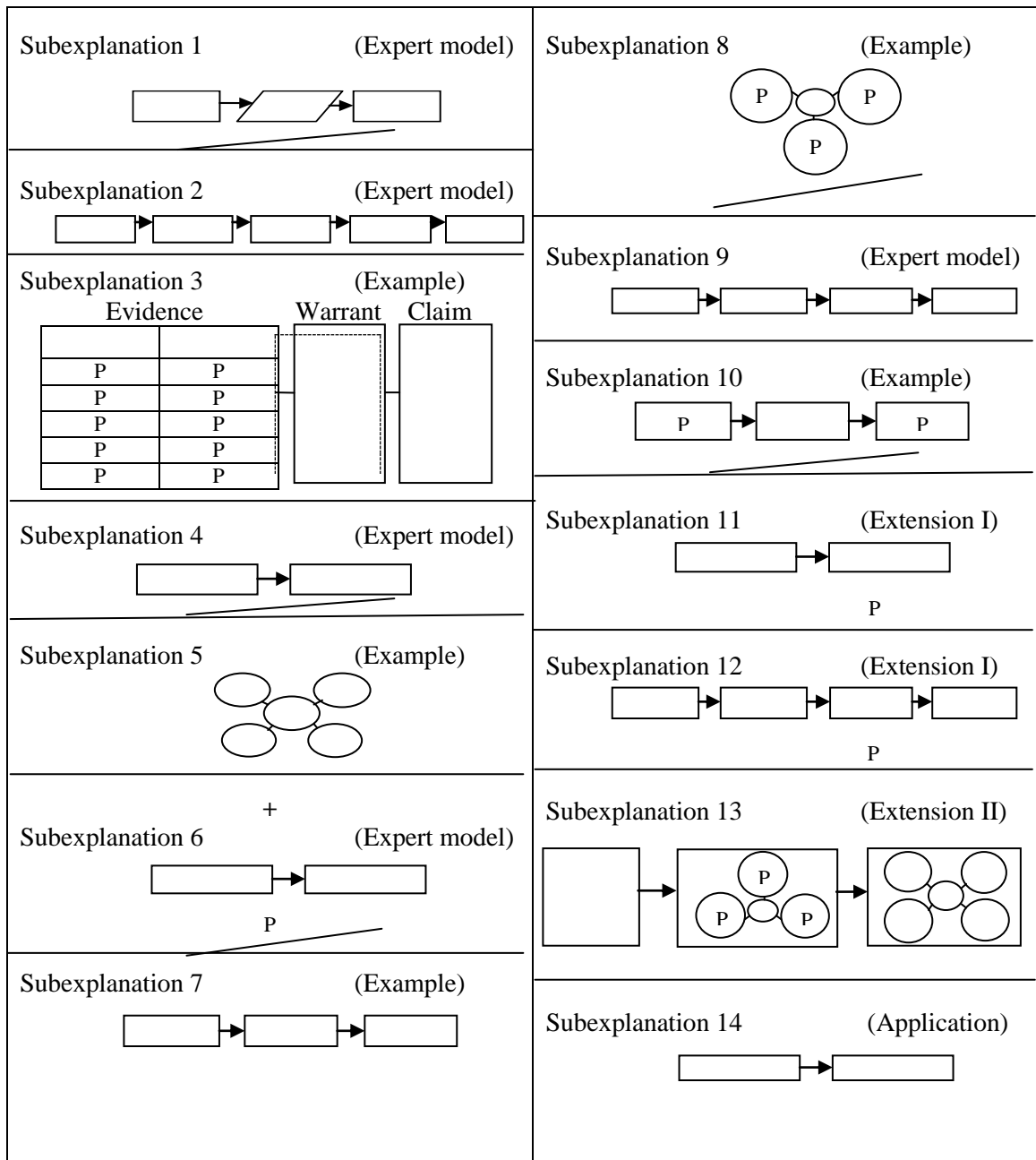


Figure 3. The graphic representation of the text structure of the Korean Economics/choices passage.

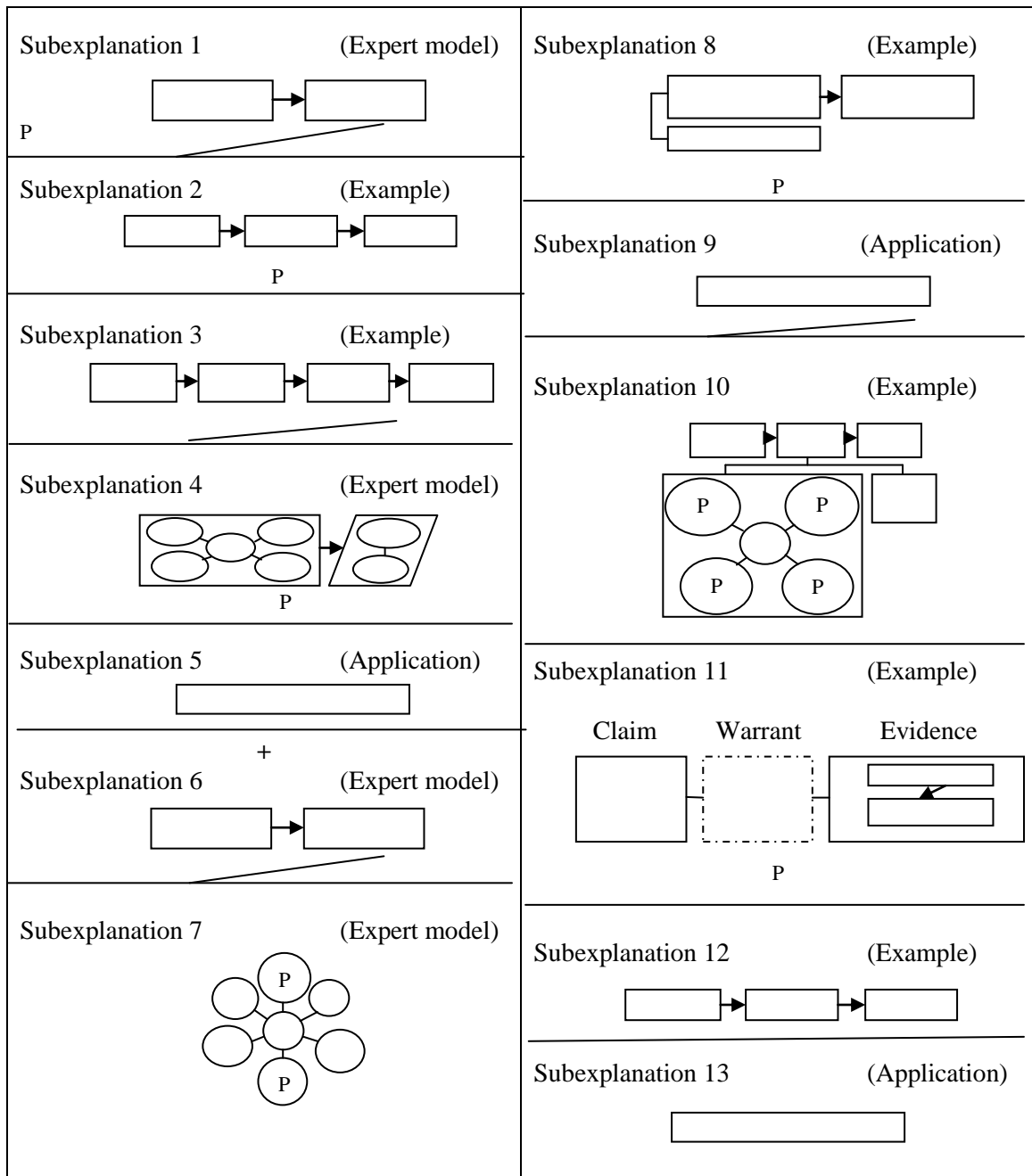


Figure 4. The graphic representation of the text structure of the Korean Civics/community involvement passage

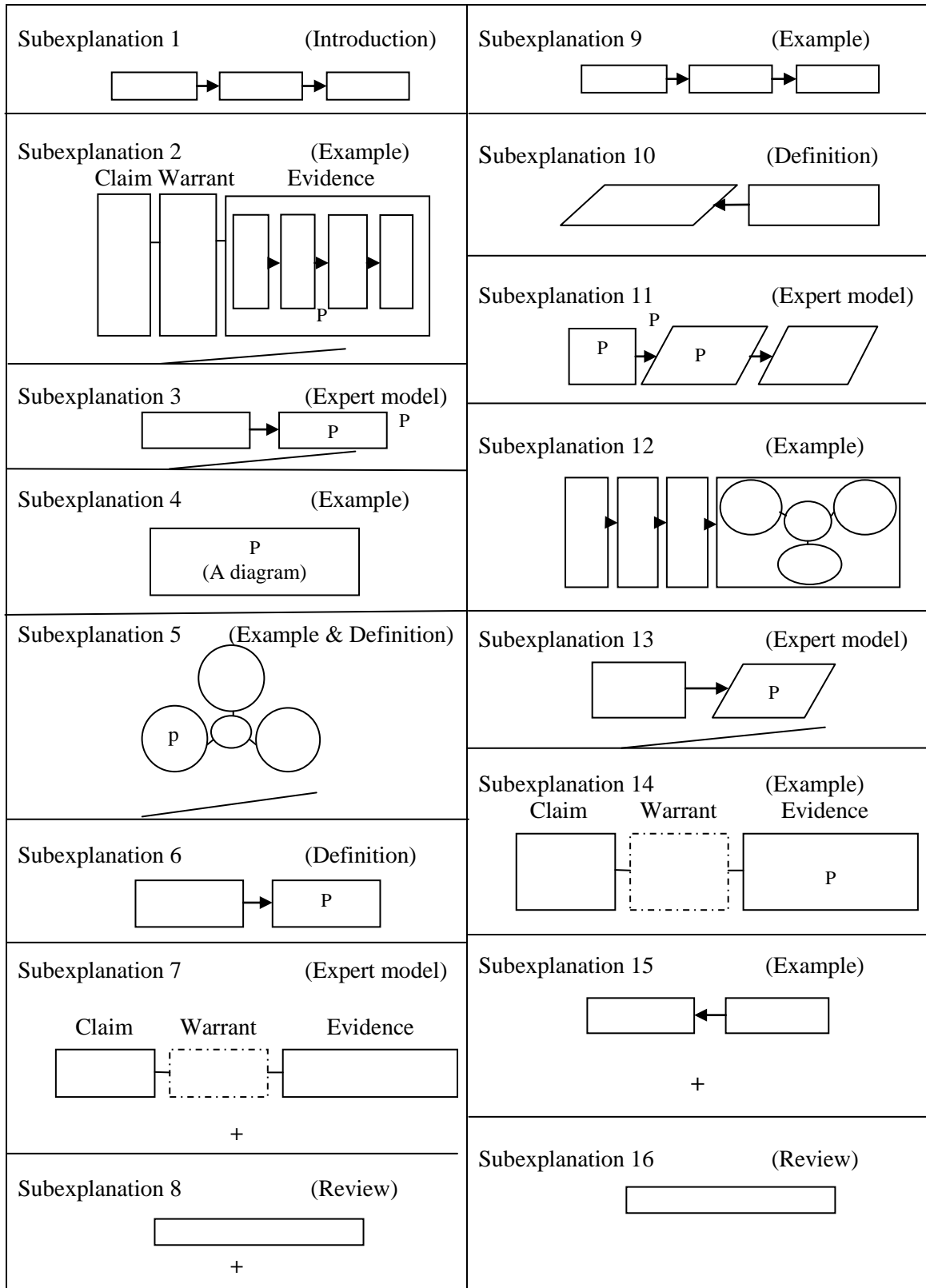


Figure 5. The graphic representation of the text structure of US Economics/choices passage.

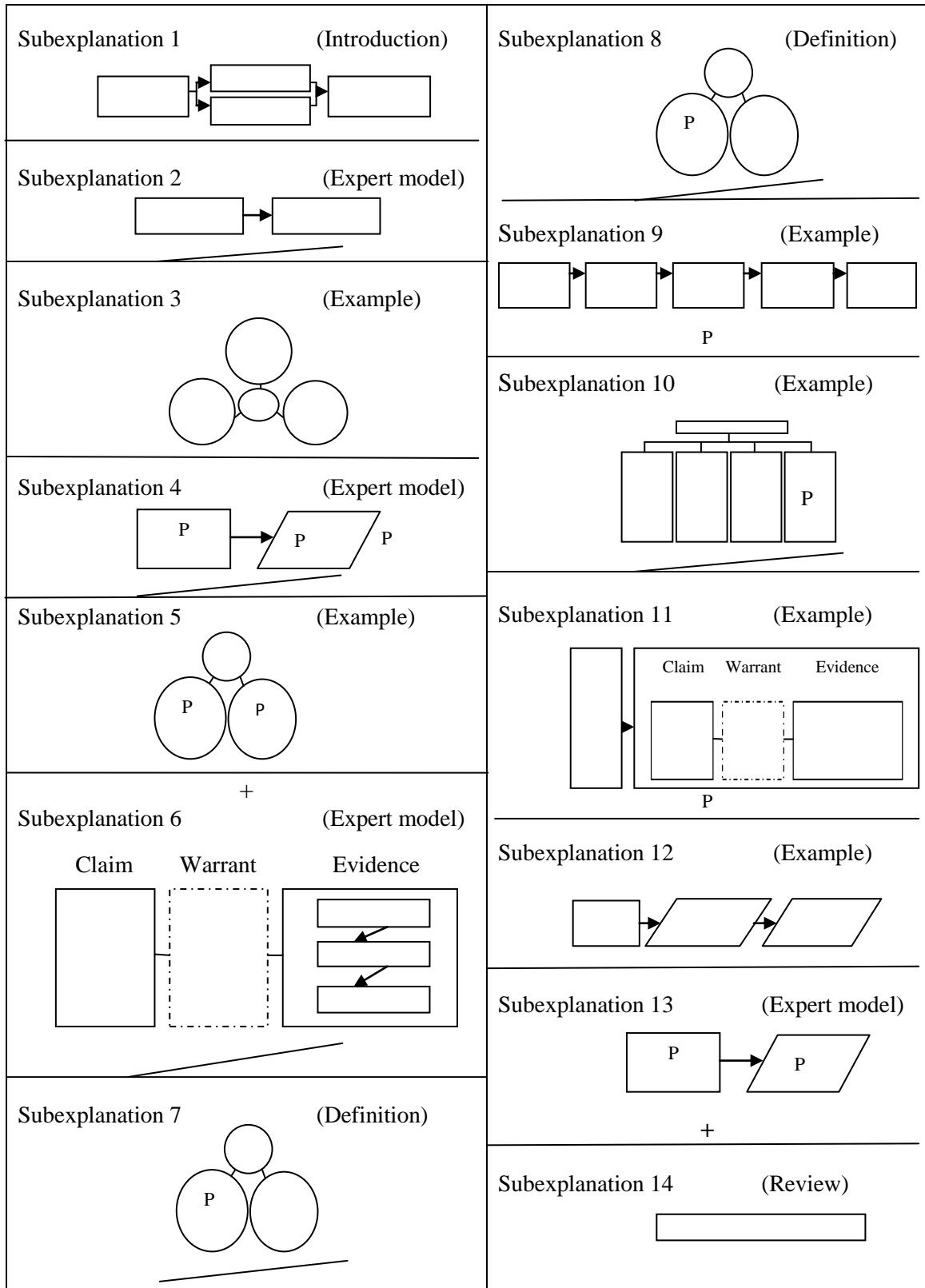


Figure 6. The graphic representation of the text structure of the US Civics/community involvement passage.

In each graphic representation, some special notations were used. First, I inserted a plus sign whenever there was any logical gap between subexplanations, and the letter, P for a picture. Any subexplanation with a single box indicates a review question or activity for application. A diagonal line between subexplanations indicates that transitional sentences are explicitly given. In constructing the graphic representations, I relied solely on the text and pictures as they are and made sure that I did not fill in any logical gaps, keeping in mind that adult readers are likely to fill in the gaps unconsciously in reading (Dreher & Singer, 1989).

Comprehensibility

In order to evaluate the comprehensibility of the written explanation in each passage, I analyzed the graphic for evidence of the three features of comprehensibility. First, I examined structural coherence in terms of logical progression among subexplanations around big ideas and logical gaps that might hinder comprehension. Considering that all of these passages were explanatory texts, I also examined how familiarity and interest-enhancing features contributed to gap filling. In other words, I examined how explanations were written in a way to connect to readers' prior knowledge and interest, rendering the unfamiliar content more familiar and interesting. I also examined whether readers could easily relate themselves to interest-enhancing features in each text.

Text-Picture Relations

For this analysis, I categorized each picture in each passage based on the classification system for text-picture relations in textbooks. As Table 1 in Chapter 2 as well as Appendix D-2 show, this classification system includes four structural relations of

text and pictures: 1) Hierarchical structure; 2) Equivalent structure; 3) Symbiotic structure; and 4) Autonomous Structure. Hierarchical structure indicates that the text is primary and a picture is supplementary in presenting information. It includes four subcategories: decorative, representational, organizational, and interpretational. Both equivalent structure and symbiotic structure show that a picture is as important as the text in presenting information. Autonomous structure indicates that both text and pictures are independent sources of meaning and are capable of being considered in isolation such as an external reference in a side bar. Tables 11 and 12 show the text-picture relations of each country's passages.

Table 11

The Text-Picture Relations in the US Passages

Page	Picture	Category
<u>US Economics/choices passage</u>		
5	The diagram with vocabulary and reading skills	Organizational (Hierarchical)
5	Blue underlining and starred flag of main idea	
5	The picture labeled "Marisa thinks about her choices"	Organizational (Hierarchical) Representational(Hierarchical)
6	The diagram about opportunity cost	
6	Yellow highlighting on the two key words	Organizational Hierarchical)
7	Blue underlining and starred flag of main idea	Organizational (Hierarchical) Organizational (Hierarchical)

Table 11 (continued)

Page	Picture	Category
<u>US Economics/choices passage</u>		
7	The picture labeled “Scarcity”	Representational(Hierarchical)
8	The picture labeled “Marisa decides to buy a tan jacket that fits.	Representational(Hierarchical)
<u>US Civics/community involvement passage</u>		
5	The diagram with vocabulary and reading skills	Organizational (Hierarchical)
5	Blue underlining and starred flag of main idea	Organizational (Hierarchical)
5	The picture labeled “Community Helper”	Representational(Hierarchical)
6	The picture labeled “The Common Good”	Symbiotic
6	Yellow highlighting on the two key words	Organizational (Hierarchical)
7	The picture labeled “Paradise Valley, Arizona”	Representational(Hierarchical)
7&8	The picture of paint cans	Decorative (Hierarchical)
8	The picture labeled “Young volunteers paint”	Representational(Hierarchical)
8	Blue underlining and starred flag of main idea	Organizational (Hierarchical)

Table 12

The Text-Picture Relations in the Korean Passages

Page	Picture	Category
<u>Korean Economics/choices passage</u>		
5	A set of pictures titled “What we want to have”	Symbiotic
6	The whole picture including the five speech balloons	Symbiotic
7	The table titled “Why can’t our classmates get what they want?”	Symbiotic
7	The picture of a boy who is showing his wallet and thinking of things he wants	Equivalent
8	The whole picture including three speech balloons	Symbiotic
9	The picture of a boy with the speech balloon	Representational
9	The table of criteria for making a decision and things to buy	(Hierarchical) Organizational (Hierarchical)
9	The picture of a boy sitting at a desk with a speech balloon	Representational (Hierarchical)
10	The picture of a woman with a speech balloon	Equivalent
10	The picture of a car, a bus, and a train	Decorative (Hierarchical)
10	The table of transportation types and criteria	Organizational (Hierarchical)
11	The whole picture of a boy holding a soccer ball with a speech balloon	Symbiotic

Table 12 (continued)

Page	Picture	Category
<u>Korean Civics/community involvement passage</u>		
5	The picture of a town	Decorative (Hierarchical)
6	Diagram titled “The Results of the Town Meeting”	Symbiotic
6	The picture of a town at the bottom of the page	Decorative (Hierarchical)
7	Diagram titled “Things to do for clean streets” including pictures of a man sweeping the street and a woman and a man who are removing ads from the wall	Symbiotic
8	The whole-page picture	Representational(Hierarchical)
9	A set of pictures titled “Things we can do at school”	Symbiotic
10	All the pictures of a family and students recycling together	Representational(Hierarchical)

Comparison

Based on the analysis of each text, I compared the Korean and US text that dealt with the same topic. In doing so, I expected to see how the two countries’ texts were different in text design and what such differences suggested about differences in cultural

schemata. First, I examined how the two countries' texts were similar and different in terms of logical progression of subexplanations and gap filling by connecting to reader's background knowledge and interest, and how such differences, if any, might make the text more or less comprehensible. Second, I also compared how the two countries' texts differed in text-picture relations. Finally, I examined any other differences that the graphic representation could not capture and that might result from cultural differences. In the next section, I present the results of this analysis and comparison.

The Results of the Text Analysis and Comparison

In general, the Korean and the US passages shared similarities in both structure and content, because they were written for the same purpose: to explain similar concepts in economics/choices and civics/community involvement by filling gaps between novice readers and experts. However, despite the research design calling for texts selected intentionally to be similar in text type, main ideas, readability, comprehensibility, and passage length, the two countries' texts differed in comprehensibility, text-picture relations, writing style, and content and cultural values. In reporting the results of the text analysis and comparison, I focus on the differences rather than the similarities between the two countries' textbook passages.

Comprehensibility

All of the four texts were relatively well-written in terms of comprehensibility. However, the Korean texts seemed more comprehensible than the US texts. First, in terms of logical progression, passages from both countries were relatively logically ordered, and their overall text structure seemed similar. However, as shown in the graphic representation of each passage's text structure (See Figures 3 to 6), the Korean and the

US passages were different in the features used as subexplanations. Although the explanatory features in the Korean passages were as diverse as those in the US passages, the subexplanations in the Korean passages tended to follow a consistent organizational pattern in general (i.e. sequential), whereas those in the US passages were more varied. Furthermore, subexplanations in the Korean passages seemed to be slightly more logically ordered than those in the US passages.

Chambliss and Calfee (1998) hypothesized that text would be more comprehensible when content is presented in a more consistent rhetorical pattern rather than a mishmash of rhetorical patterns from argument to informational, from description to sequence. In addition, Chambliss and Calfee also proposed that this consistent organization needs to follow the expert model for better comprehensibility. The main ideas of the economics/choices passages were the causal relations between scarce resources and the need for making choices, and the implications for how one should make a choice (the procedure for making a choice). The expert-model of these main concepts was sequential in nature. Likewise, the main ideas of the civics/community involvement passages also dealt with some causal relations to answer why we need to participate in our community or become a good citizen as well as other sequential patterns that show how people can practice good citizenship. There were also more logical gaps in the US texts than the Korean texts as I depicted them as a plus sign in each graphic representation.

Second, both countries' passages showed multiple subexplanations. But the characteristics of the subexplanations for each country differed. In both countries' texts, main ideas were repeatedly presented through different explanatory features. Both of

them built upon what students might know and moved to what experts would know, filling gaps between them systematically. However, the examples in the Korean passages seemed to be more familiar and realistic to young children than those in the US passages. In the civics/community involvement texts, the US text presented an example of children's building a home as a way to practice good citizenship, while the Korean text presented an example of children recycling trash. In the economics/choices texts, the US text presented an example of a child's making a choice to buy a jacket without any help from an adult, while the example in the Korean text showed how an adult might influence a child's choice-making. In addition, although both the Korean and the US civics/community involvement texts focused on one major example, the two countries' economics/choices texts differed in the number of examples used. The Korean economics/choices text presented three examples of making a choice, while the US economics/choices text focused on one example. Finally, although both countries used familiar vocabulary and common children's names in general, the US texts included more technical terms like "common good" or "opportunity cost", while the Korean texts did not include such formal vocabulary.

The Korean and the US passages had different interest-enhancing features as well. The Korean passages had cartoon-like pictures, speech balloons, real-life photos, and various kinds of charts. On the other hand, the US passages had real-life photos and structural signals intended to help a child understand the text such as highlighting, underlining, or a colored side bar with key vocabulary in bold face. Although both countries' texts had various interest-enhancing features, some of these features in the US texts were likely to be distracting or fail to draw readers' attention. The key vocabulary

and information about reading skill were boxed off and presented in the side of the text. Such features may not attract readers' attention or may distract them from focusing on main ideas.

Although all of the four texts were relatively well-written, the Korean texts would be more comprehensible than the US texts, based on Chambliss and Calfee's general features of comprehensibility: coherent text structure, familiarity, and interest. In the Korean texts, subexplanations were more coherently ordered with fewer logical gaps. The Korean texts, particularly the Korean economics/choices text, presented more familiar and realistic examples and interest-enhancing features that were not distracting. Therefore, one could conclude, based on the US research, that the Korean texts would be more comprehensible than the US texts. However, regardless of these differences in design, children might comprehend and learn from their own country's text better, if cultural schemata are indeed reflected in text design.

Text-Picture Relations

The two countries' passages differed in text-picture relations as well (See Tables 11 and 12). The striking difference was that most of the pictures in the US passages except one presented information supplementary to the text (a hierarchical text-picture relation), while more than half of the pictures in Korean passages had symbiotic or equivalent relations to the text. It suggests that pictures in the Korean passages were as important as the text in providing information. In addition, although both the Korean and the US passages showed similar hierarchical text-picture relations, interestingly, the US passages included more organizational pictures than the Korean passages. Presenting a

graphic organizer for reading skills, highlighting the key vocabulary words, and underlining the main ideas belong to this category of pictures.

In conclusion, for the Korean texts, understanding the pictures would be as important as understanding the text in order to comprehend the main ideas, while for the US texts, understanding pictures may not be as important as understanding the text. However, regardless of these differences in design, children may comprehend and learn from their own country's text better, if cultural schemata are indeed reflected in text design.

Writing Style

The Korean passages and the US passages differed in the degree of explicit presentation of the main ideas and where the main ideas appeared. The US passages signaled main ideas more explicitly than the Korean passages. First, the title of each passage was more explicit in the US passages ("Making Choices" and "Citizens Make a Difference") than in the Korean passages ("We have many things we want to have but" and "Clean Streets, Good Neighbors"). The US passages also provided explicit structural signals that would draw readers' attention to the main ideas by underlining them with the starred flag of "main idea". Moreover, the main ideas were explicitly presented and expressed verbally in the definitions and highlighting of key vocabulary words and other sentences. The US passages required little inference from readers.

On the other hand, the Korean passages presented main ideas in an implicit way, mostly through embedded questions, focusing on why or how. The introduction of each Korean passage contained an explicit presentation of the topic and there is an explicit statement of main ideas in the middle of the Korean economics/choices text. However,

implicitness pervaded throughout most of the passage, leaving room for inferences by readers. Activities or embedded questions implicitly presented main ideas and encouraged readers to think about the main ideas. For one thing, the embedded questions in the Korean texts focused on why or how that helped readers to understand the main ideas, as shown in “Let’s find out why we cannot get everything we want.” On the other hand, the review questions in the US texts tended to focus on what, asking details or a summary of content. For example, one of the review questions in the US economics/choices text was “What choices did Marisa make?” It asks “what” rather than “why or how Marisa made her choice.” The charts in the Korean texts also presented main ideas implicitly and encouraged readers to think about the main ideas. For example, on page 7 of the Korean economics/choices passage, the chart listed why Hyunsoo’s classmates cannot get what they want. The last row of this chart was empty with a question mark, promoting readers to fill it with their idea.

In addition, unlike the US passages, the Korean passages did not provide any definitions of words. It might be because the Korean passages mostly rely on vocabulary that children might use daily, while the US passages included more technical terms like “opportunity cost” and “common good” that children would not understand without definitions and examples. But the lack of explicit definitions might also show the implicit writing style of the Korean texts. It is possible that the presence of formal vocabulary and its definitions also reflects cultural differences in the intellectual traditions and attitudes in the parent academic disciplines as Clyne (1987) suggested. Similarly, the difference in the explicitness between the two countries’ texts was also reflected in the fact that the US civics/community involvement passage used the specific name of a community (e.g.,

Paradise Valley, Arizona), while the Korean civics/community involvement passage used the general name of a community (e.g., our town).

Finally, the Korean and the US passages were also different in the location of the main ideas. Although the introduction of each Korean passage contained an explicit presentation of the topic, mostly paragraph main ideas in the Korean passages appeared in the end with tables, figures, or final statements, after some examples were introduced first. On the other hand, paragraph main ideas in the US passages appeared in the beginning with headings, subheadings, or topic sentences, followed by supporting details.

The fact that the different writing styles were apparent in the two countries' texts supports what some scholars proposed about the difference between the Korean and the English writing styles (e.g., Hinds, 1987, 1990; Kaplan, 1966). These differences indicate that different cultural schemata, particularly different formal schemata (Carrell, 1987; Swales, 1990) are reflected in the design of the two countries' textbook passages. Indeed, these differences may also reflect cultural differences in the formal schemata used by the academic disciplines of economics and civics in the two countries themselves to develop and communicate ideas (Clyne, 1987).

Content and Cultural Values

I examined the content of the two countries' textbook passages in several aspects: depth and breadth of content in relation to the main ideas; specific examples employed; and underlying cultural values. First of all, the results showed that the two countries' textbook passages shared content that was not too specific to a particular culture and therefore could be considered culture-independent. I had been able to find textbook passages from the two countries with main ideas that were very similar. For example,

both Korean and the US Economics/choices texts contained the main concept that it is necessary and important to make a wise choice by considering various things, because of the relations between unlimited wants and limited resources or income.

However, the two countries' texts differed in how to present this concept as shown in the above section about writing styles, as well as in the examples used and where the focus is, which I considered culture-specific content or underlying cultural values. This was the case with the two countries' Civics/community involvement texts as well. First, the four texts differed in the number and the type of examples that each text used to explain the main ideas. The US economics/choices passage focused on one major example and showed different aspects of the same example to explain the main concept, while the Korean economics/choices passage dealt with several examples. The Korean economics/choices passage showed Hyunsoo's choices in three contexts: what to buy, what transportation to take, and what to do on a Saturday afternoon. On the other hand, the US economics/choices passage focused only on Marisa's making an economic choice until she decides to buy a tan Jacket. The US economics/choices passage was more limited to making economic choices, while the Korean passage extended from economic choices to other daily choices. Consequently, the criteria for making a wise choice differed as well. The US passage focused on price and scarcity of resources, while the Korean passage included other criteria such as necessity, usefulness, interest, and durability as well as price.

On the other hand, the two countries' civics/community involvement texts were similar in terms of the number of the examples but differed in the type of examples. Both countries' civics/community involvement texts focused on one major example to explain

the main ideas. The Korean civics/community involvement passage focused only on the one example of keeping streets clean to make a community better. The US civics/community involvement passage also focused on one major example of building a new home for the homeless to make a community better, although it briefly enumerated various ways to practice good citizenship.

However, despite the similar main ideas, the two civics/community involvement passages were different in the specific examples of what young children could do for the community. Although both passages contained the major project that children planned and practiced for a better community, they differed in scale. The Korean civics/community involvement passage focused on small things that young children could do every day in school and in their community such as cleaning the school or recycling trash, while the example of Arizona students who helped build a new home seemed like a large-scale project for young children.

The difference in underlying cultural values may partly explain why different examples were used in the two countries' passages. Overall, the Korean passages seemed to emphasize relationships among people more than the US passages did. This difference supports the notion that people in a collectivist culture like the Korean culture tend to define the self as interdependent with other people and their groups, while people in an individualist culture like the US culture tend to define the self as independent (Triandis, 2001; Triandis & Suh, 2002; Triandis, Bontempo, Villareal, Asai, & Lucca, 1988). The influence of adults existed in both the Korean economics/choices and civics/community involvement passages, while both of the US passages did not show much influence of adults on young children's decision making or practicing good citizenship. The Korean

economics/choices passage seemed to suggest that individuals make choices in relation to other people such as parents and friends. For example, it said that Hyunsoo's classmates cannot buy what they want, not only because they do not have enough money but also because their parents do not buy what they want for them, thinking that it may be dangerous or disturb their studying. On the other hand, the US passage focused only on one individual, "Marisa" who makes a choice, considering price, availability of goods for her size and her taste, without mentioning her family or parents at all.

The civics/community involvement passages also showed the same difference. The Korean civics/community involvement passage first showed what adults did and how they did it for a better community in detail, and then introduced what and how young children could do for their community, following the adults' model. However, in the US civics/community involvement passage, children were the ones who built a home and adults gave help only when needed. This difference might come from cultural differences: the importance of independence in the US culture and of interdependence in the Korean culture (Triandis, 2001).

Another example in the civics/community involvement passages also seemed to show different cultural values that might come from individualist and collectivist culture. Another difference between an individualist culture and a collectivist culture is whether personal goals or group goals are emphasized (Triandis, 2001). Overall, the Korean civics/community involvement text emphasized the community rather than an individual and how to make a community better by, for example, cleaning the streets and recycling trash. On the other hand, the US civics/community involvement passage focused on an individual as shown in the examples like speaking up when something is unfair, or

choosing either to obey or change laws in order to make them better, which are not included in the Korean passage. Encouraging young students to speak up or take social actions seems to reflect different cultural values in the US culture from the values in Korean culture.

These various differences between the Korean and US passages are not independent of each other. Rather, they are overlapped. For example, layers of gap filling are combinations of structural features, content familiarity, interestingness, and text-picture relations. Interestingness is also affected by structure, content, familiarity, and text-picture relations. Because different bodies of research have made different claims on the same issues, it is not possible to say which features hinder or facilitate comprehension and learning at this point, until the data is collected and analyzed. For example, Garner, Gillingham, and White (1989) contended that young readers might not easily understand main ideas when presented in an implicit or minimally explicit way. However, the contrastive rhetoric studies showed that readers will understand text well, even if main ideas are presented less explicitly, as long as it is a more culturally familiar style to them. For another example, in the study by Brookshire, Scharff, and Moses (2002), young readers (first and third graders) preferred realistic photo-like pictures to cartoon-like pictures, which was different from the adult researchers' expectation.

Inter rater Agreement

To establish inter rater agreement, an estimate of the validity and reliability of the analysis, I developed a rubric for comprehensibility, a classification system for text-picture relations, and categories for a cross-cultural comparison (See Appendix D). Two experts who are familiar with Chambliss and Calfee's analytical approach each analyzed

two of the four passages. One expert analyzed the Korean and US economics/choices passages, while the other expert analyzed the Korean and US civics/community involvement passages. First, they reviewed the graphic representation of each passage's structure that I completed and gave me feedback. Then each of them evaluated the comprehensibility of each passage based on the provided rubric and compared the two passages (US passage and Korean passage), using the provided categories for cross-cultural comparison. They also categorized each picture according to the classification system for text-picture relations in textbooks (See Appendix D). The two experts' analyses were compared with mine.

In terms of comprehensibility, our analyses were very similar in general. Our analyses of cultural differences were also similar in general. First of all, for writing styles, we agreed that the main ideas were more explicitly presented throughout the US texts than the Korean texts. We also agreed that there were differences in the two countries' economics/choices texts that might come from differences between an individualist culture and a collectivist culture. We agreed that the Korean economics/choices text focused on "We", while the US economics/choices text focused on "I". The boy in the Korean economics/choices text considered his parents' permission in deciding what to buy, while the girl in the US economics/choices text considered only her own personal interest and budget.

We also agreed in general that the two countries' civics/community involvement text showed comparable differences that reflect differences between an individualist culture and a collectivist culture. But we chose different examples to support these differences. I suggested that although both countries' civics texts appeared to show adult

influence, unlike the Korean civics text, children themselves were foregrounded in the US civics texts, while adults seemed to stay behind to give help only when children asked for it. On the other hand, the other rater suggested that the specific ways that children practiced good citizenship revealed the difference between individualist and collectivist cultures. She contended that the Korean civics/community involvement text emphasized the community as shown in examples like cleaning the streets and recycling, while the US civics/community involvement text emphasized the individual as shown in examples like speaking up when something is unfair. However, through discussion, we agreed that both examples might come from differences between the two types of culture, so that it would be appropriate to include both examples in this chapter to show different cultural values reflected in the two countries' Civics/community involvement texts.

Finally, we had a few disagreements about text-picture relations, mostly about the pictures in the US economics/choices text. For example, we disagreed on the blue underlining of the main ideas and yellow highlighting on the key vocabulary words. Although both raters thought that these pictures showed hierarchical text-picture relations, we disagreed on whether it is organizational or representational under the hierarchical category. One rater focused on the fact that underlining and highlighting were structural signals and categorized them as organizational, while the other rater focused on the words and sentences that were underlined or highlighted and therefore, categorized them as representational. These disagreements and any other disagreements were settled through discussion.

Conclusion

Chapter 4 presented the results of the text analysis and comparison of the four textbook passages used in this study. Based on Chambliss and Calfee's analytical approach, I analyzed the comprehensibility of each text in terms of the logical order of an explanatory text structure, familiarity, and interest-enhancing values. Additionally, I analyzed the text-picture relations and cultural differences of each text. Although there were shared textual features and similar content, I was able to identify design differences between the Korean and the US texts. One could conclude, based on the US research, that the Korean texts would be more comprehensible than the US texts. However, there were apparent cultural differences in the design of the two countries' textbook passages in terms of writing styles and cultural values. It suggests that regardless of the differences in text design, it is very possible that children would comprehend and learn more from a passage from their own country than one from the other country. Chapter 5 presents the results of the quantitative and qualitative analyses.

CHAPTER FIVE

Results: Part I. Quantitative Analyses

This study explored the influence of different text designs and different cultural schemata on children's comprehension and learning from social studies textbook passages. For this exploration, I conducted a research study with a 2 (Text topic) x 2 (Text origin) x 2 (Readers' country) x 2 (Time) design. With this design, I asked each participant to complete eight measures: main ideas, conceptual understanding of the key vocabulary, free drawing, problem-solving, and situation interest after reading; and perceived and demonstrated knowledge and individual interest before and after reading. The additional eight protocol students also provided think-aloud protocols as they read and answered interview questions after completing all the measures.

Therefore, this study contained both quantitative and qualitative components. I report the results of the quantitative and qualitative analyses in this chapter. In the first part of this chapter, I report the results of quantitative analyses of the large-group paper-and-pencil test. In the second part of this chapter, I report the results of qualitative analyses of the protocol students' think-aloud protocols and interviews.

Overview of Quantitative Analyses

Research Questions

Through this study, I expected to better understand how culture-dependent and culture-independent text features as well as reader characteristics could influence children's comprehension and learning. Especially, by exploring the large group paper-and-pencil data quantitatively, I expected to answer the overarching research question: To what extent do different text topic, text origin, and reader characteristics (country of

origin and background knowledge) affect young readers' comprehension, knowledge, and interest independently of each other and in interaction with each other? The following are the specific questions that I expected to answer through quantitative analyses.

1. Text topic: economics/choices or civics/community involvement
 - a. To what extent do texts on two different topics differentially affect young readers' comprehension, knowledge, and interest regardless of text origin and readers' country?
2. Text origin: Korea or US
 - a. To what extent do textbook passages from Korea and the US differentially affect young readers' comprehension, knowledge, and interest regardless of topic and readers' country?
3. Reader characteristics: readers' country (Korea or US) and background knowledge
 - a. To what extent do young readers from Korea and the US comprehend and learn from their reading differentially and have differential interest regardless of text topic or text origin?
 - b. How does young readers' background knowledge affect their comprehension, knowledge, and interest?
4. Interaction: differential effects of text topic, text origin, and readers' country.
 - a. To what extent do the text topic and the text origin interact?

For example, does the Korean text on economics/choices affect young readers' comprehension and learning differently than the US text on economics/choices regardless of the readers' country?

- b. To what extent do the text topic and the young readers' country interact?

For example, do the Korean readers comprehend economics/choices text better than civics/community involvement text, while the US readers comprehend civics/community involvement text better than economics/choices text regardless of the text origin?

- c. To what extent do the text origin and the young readers' country interact? For

example, does the Korean text facilitate the comprehension of Korean children more than the US text, and vice versa regardless of topic?

- d. To what extent do the topic, the text origin, and the young readers' country interact?

For example, does the Korean text facilitate the comprehension of Korean children for the economics/choices text but not for the civics/community involvement text, while the reverse is the case for US children?

Statistical Analyses Used and Assumptions

In order to answer the above research questions, I explored the effects of topic, text origin, and readers' country on each measure and interactions among the three. I also examined the change in perceived knowledge and individual interest before and after reading a passage. Depending on the type of measure, I conducted 2 x 2 x 2 between-subjects ANCOVA with the above three factors as between-subjects variables (See Table 13) or 2 x 2 x 2 x 2 mixed ANCOVA with the same three between-subjects variables and time (pretest and posttest) as a within-subject variable (See Table 14).

For the covariate, I used pretest demonstrated knowledge as a measure of background knowledge. This measure was an open-ended question with scores from zero

to four as noted in the rubric described in chapter 3. A score of zero represented “I don’t know or no answer,” one represented “grossly inaccurate or incomplete answer,” two represented “naïve understanding based on everyday thinking,” three represented “combination of expert-like and naïve understanding,” and four represented “expert-like deep conceptual understanding.”

Table 13

Between-subjects Factors and Covariate for Main Idea, Conceptual Understanding, Free Drawing, Problem Solving, Demonstrated Knowledge, and Situational Interest Measures

Factors		Levels
Between-subjects	Text topic	Economics/choices
		Civics/community involvement
	Text origin	Korea
		US
Readers’ country	Korea	
	US	
Covariate		Zero: I don’t know or no answer
	Background	One: Grossly inaccurate or incomplete answer
	Knowledge	Two: Naïve understanding based on everyday thinking
		Three: Combination of expert-like and naïve understanding
	Four: Expert-like deep conceptual understanding	

Table 14

Within and Between Subjects Factors and Covariate for Perceived Knowledge and Individual Interest Measures

Factors		Levels
Between-subjects	Text topic	Economics/choices Civics/community involvement
	Text origin	Korea US
	Readers' country	Korea US
Within-subjects	Time	Pre-reading assessment Post-reading assessment
Covariate	Background	Zero: I don't know or no answer
	Knowledge	One: Grossly inaccurate or incomplete answer
		Two: Naïve understanding based on everyday thinking
		Three: Combination of expert-like and naïve understanding
	Four: Expert-like deep conceptual understanding	

For each analysis, I conducted preliminary checks for the assumptions of each statistical test and set the alpha level at .05 and level of significance at less than .05. When Levene's test for homogeneity of variance was not met, I set a more stringent significance level (i.e., .01) for evaluating the ANCOVA outcomes (Pallant, 2007). The cell sizes were similar but not equal. However, the unequal size was not an issue, because SPSS could deal with it using the Type III sum of squares method (Lomax, 2001). Across all analyses, sphericity assumption was not an issue because Mauchly's Test of Sphericity showed that this assumption was either met, or all the models, including the corrected model (e.g., the Geisser-Greenhouse or the Huynh-Feldt) showed the same F values (Huck, 2008; Pallant, 2007). Because I was using ANCOVA, I additionally checked for the assumptions of linearity and regression of slopes and they were all met. Reporting each effect size, I used partial eta squared as criteria (.01 = small, .06 = medium, .14 = large effect) (Huck, 2008).

This chapter consists of three sections to report the results of analyses of three different categories of measures (comprehension, knowledge, and interest). Within each section, I report the ANCOVA outcomes with adjusted means after background knowledge was controlled for. In doing so, for each measure, I also report raw means and standard deviations before background knowledge was controlled for as references.

Comprehension of Social Studies Text and Transfer

I conducted a 2 x 2 x 2 between-subjects analysis of covariance for each of the three comprehension measures in order to determine to what extent topic of text, text origin, and readers' country affected children's comprehension independently of the influence of their background knowledge, measured by the main idea questions, the

conceptual understanding question, and free drawing. I also conducted the same three-way ANCOVA for the problem-solving measure to explore whether the comprehension had transferred to a similar but different context and to what extent each of the three factors affected such transfer.

Analysis of Main Idea Questions

For this analysis, I assigned a score to each of the two main idea questions, ranging from zero to four as noted in the rubric described in Chapter 3. A score of zero represented “I don’t know or no answer,” one represented “grossly inaccurate or incomplete answer,” two represented “naïve understanding based on everyday thinking,” three represented “combination of expert-like and naïve understanding,” and four represented “expert-like deep conceptual understanding.” After scoring each main idea question, I calculated the average score of the two main idea questions. With this averaged main idea score as a dependent variable, I conducted a 2 (text topic: economics/choices or civics/community involvement) x 2 (text origin: Korea or US) x 2 (readers’ country: Korea or US) between-subjects ANCOVA. Table 15 reports raw means and standard deviations, and Table 16 shows the ANCOVA result for this measure.

According to the ANCOVA outcomes, the covariate (demonstrated background knowledge) was significant with a medium to large effect size ($F(1, 111) = 11.64, p = .00, \eta_p^2 = .09$). The ANCOVA results showed a main effect for text origin ($F(1, 111) = 4.18, p < .05, \eta_p^2 = .04$). Children who read the Korean text (adjusted $M = 2.14, SD = 0.08$) outperformed children who read the US text (adjusted $M = 1.92, SD = 0.08$).

Table 15

Raw Means and Standard Deviations on Main Idea Measure (N = 120)

		<u>Text Origin (TO)</u>		
		Korean Text	US Text	Total
Topic (T)	Economics/choices	2.13 (0.63)	1.74 (0.70)	1.94 (0.69)
	Civics/community involvement	2.10 (0.56)	2.14 (0.65)	2.12 (0.60)
Readers'	US	2.12 (0.42)	2.19 (0.62)	2.16 (0.53)
Country (RC)	Korea	2.11 (0.71)	1.73 (0.71)	1.92 (0.73)
T x RC	Economics/choices x US	2.04 (0.46)	2.07 (0.63)	2.04 (0.54)
	Economics/choices x Korea	2.22 (0.75)	1.47 (0.67)	1.85 (0.80)
	Civics/community involvement x US	2.21 (0.38)	2.33 (0.59)	2.28 (0.49)
	Civics/community involvement x Korea	2.00 (0.68)	1.97 (0.67)	1.98 (0.66)
	Total	2.12 (0.59)	1.95 (0.70)	2.03 (0.65)

Note. Numbers in parentheses are standard deviations.

Table 16

ANCOVA Table for Main Idea Measure

Source	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>	η_p^2	Observed Power
<u>Covariate</u>						
Background	1	4.09	11.64	.001**	.09	.92
Knowledge						
<u>Between subjects</u>						
Topic (T)	1	0.00	0.00	.96	.00	.05
Readers' Country (RC)	1	0.33	0.94	.33	.01	.16
Text Origin (TO)	1	1.47	4.18	.04*	.04	.53
T x RC	1	0.57	1.62	.20	.01	.24
T x TO	1	1.51	4.31	.04*	.04	.54
RC x TO	1	1.38	3.93	.05	.03	.50
T x RC x TO	1	0.36	1.03	.31	.01	.17
Error	111	0.35				

Note. Observed power is computed by SPSS based on observed values and calculated at alpha = .05.

* $p < .05$, ** $p < .01$.

The interaction between text origin and topic also was statistically significant ($F(1,111) = 4.31, p < .05, \eta_p^2 = .04$). Children who read the Korean economics/choices text (adjusted $M = 2.25, SD = 0.12$) comprehended main ideas better than those who read the US economics/choices text (adjusted $M = 1.80, SD = 0.11$). On the other hand, children who read the civics/community involvement text performed almost the same with both countries' text (US adjusted $M = 2.04, SD = 0.11$; Korean adjusted $M = 2.03, SD = 0.11$). However, there was no significant interaction between text origin and readers' country.

Analysis of Conceptual Understanding Question

Scores of the conceptual understanding of the key vocabulary ranged from zero to three as noted in the rubric described in chapter 3. A score of zero represented "I don't know or no answer," one represented "inaccurate," two represented "inaccurate but developing some understanding," and three represented "accurate conceptual understanding." With this score as a dependent variable, I conducted a 2 x 2 x 2 between-subjects ANCOVA with background knowledge as the covariate. Table 17 reports raw means and standard deviations, and Table 18 shows the ANCOVA result for this measure.

As shown in Table 18, the ANCOVA showed statistically significant effects for background knowledge ($F(1, 111) = 6.32, p < .05, \eta_p^2 = .05$) and text origin ($F(1, 111) = 26.02, p < .01, \eta_p^2 = .19$). Children who read the Korean text (adjusted $M = 2.07, SD = 0.10$) showed higher conceptual understanding in the vocabulary measure than children who read the US text (adjusted $M = 1.31, SD = 0.10$). The effect size for text origin was large ($\eta_p^2 = .19$). The effect size for background knowledge was small and the adjusted means were almost the same as the raw means. However, there was no significant interaction between text origin and readers' country.

Table 17

Raw Means and Standard Deviations on Conceptual Understanding Measure (N = 120)

		<u>Text Origin (TO)</u>			
		Korean Text	US Text	Total	
Topic (T)	Economics/choices	1.80 (0.85)	1.21 (0.86)	1.51 (0.90)	
	Civics/community involvement	2.27 (0.78)	1.48 (0.77)	1.87 (0.87)	
Readers' Country (RC)	US	2.14 (0.59)	1.31 (0.76)	1.72 (0.80)	
	Korea	1.94 (1.01)	1.39 (0.88)	1.67 (0.98)	
T x RC	Economics/choices x US	1.86 (0.53)	1.00 (0.78)	1.43 (0.79)	
	Economics/choices x Korea	1.75 (1.06)	1.40 (0.91)	1.58 (0.99)	
	Civics/community involvement x US	2.43 (0.51)	1.60 (0.63)	2.00 (0.71)	
	Civics/community involvement x Korea	2.13 (0.96)	1.38 (0.88)	1.75 (0.98)	
	Total		2.03 (0.84)	1.35 (0.82)	1.69 (0.90)

Note. Numbers in parentheses are standard deviations.

Table 18

ANCOVA Table for Conceptual Understanding Measure

Source	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>	η_p^2	Observed Power
<u>Covariate</u>						
Background	1	4.03	6.32	.01*	.05	.70
Knowledge						
<u>Between subjects</u>						
Topic (T)	1	0.93	1.47	.23	.01	.22
Readers' Country (RC)	1	0.13	0.20	.65	.00	.07
Text Origin (TO)	1	16.60	26.03	.001**	.19	1.00
T x RC	1	2.51	3.94	.05	.03	.50
T x TO	1	0.18	0.28	.60	.00	.08
RC x TO	1	0.74	1.15	.28	.01	.19
T x RC x TO	1	0.64	1.00	.32	.01	.17
Error	111	0.64				

Note. Observed power is computed by SPSS based on observed values and calculated at alpha = .05.

* $p < .05$, ** $p < .01$.

Analysis of Free Drawing

For this analysis, I assigned each participant's drawing a score ranging from zero to four as noted in the rubric described in Chapter 3. A score of zero represented "no drawing," one represented "grossly inaccurate or incomplete answer," two represented "naïve understanding based on everyday thinking," three represented "combination of expert-like and naïve understanding," and four represented "expert-like deep conceptual understanding." With these scores as a dependent variable, I conducted a 2 x 2 x 2 between-subjects ANCOVA. Table 19 reports raw means and standard deviations and Table 20 shows the ANCOVA result for this measure.

The preliminary checks for ANCOVA showed that all assumptions except homogeneity of variance assumption were met. Levene's Test showed that homogeneity of variance assumption was violated. To compensate for this violation, I set the alpha level at .01, instead of .05. As shown in the ANCOVA table, the covariate was not significant ($F(1, 111) = 2.87, p > .05, \eta_p^2 = .02$). There were no significant main and interaction effects in the free drawing measure at the alpha level at .01.

Analysis of Problem-solving Question

In the same way, I assigned each participant's answer to the problem-solving question a score ranging from zero to four as noted in the rubric described in Chapter 3. A score of zero represented "I don't know or no answer," one represented "grossly inaccurate or incomplete answer," two represented "naïve understanding based on everyday thinking," three represented "combination of expert-like and naïve understanding," and four represented "expert-like deep conceptual understanding."

Table 19

Raw Means and Standard Deviations on Free Drawing Measure (N = 120)

		<u>Text Origin (TO)</u>			
		Korean Text	US Text	Total	
Topic (T)	Economics/choices	1.80 (1.16)	1.90 (0.86)	1.85 (1.01)	
	Civics/community involvement	2.13 (0.68)	1.94 (0.73)	2.03 (0.71)	
Readers' Country (RC)	US	1.93 (1.05)	2.14 (0.69)	2.04 (0.89)	
	Korea	2.00 (0.88)	1.71 (0.82)	1.86 (0.86)	
T x RC	Economics/choices x US	1.43 (1.16)	2.21 (.70)	1.82 (1.02)	
	Economics/choices x Korea	2.13 (1.09)	1.60 (0.91)	1.87 (1.02)	
	Civics/community involvement x US	2.43 (0.65)	2.07 (0.70)	2.24 (0.69)	
	Civics/community involvement x Korea	1.88 (0.62)	1.81 (0.75)	1.84 (0.68)	
	Total		1.97 (0.96)	1.92 (0.79)	1.94 (0.87)

Note. Numbers in parentheses are standard deviations.

Table 20

ANCOVA Table for Free Drawing Measure

Source	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>	η_p^2	Observed Power
<u>Covariate</u>						
Background	1	2.01	2.87	.09	.02	.39
Knowledge						
<u>Between subjects</u>						
Topic (T)	1	0.13	0.19	.66	.00	.07
Readers' Country (RC)	1	0.22	0.31	.58	.00	.09
Text Origin (TO)	1	0.19	0.28	.60	.00	.08
T x RC	1	2.34	3.34	.07	.03	.44
T x TO	1	0.77	1.10	.30	.01	.18
RC x TO	1	1.80	2.57	.11	.02	.36
T x RC x TO	1	4.14	5.92	.02	.05	.67
Error	111	0.70				

Note. Observed power is computed by SPSS based on observed values and calculated at alpha = .01.

Table 21

Raw Means and Standard Deviations on Problem-solving Measure (N = 120)

		<u>Text Origin (TO)</u>		
		Korean Text	US Text	Total
Topic (T)	Economics/choices	1.77 (0.73)	1.72 (0.75)	1.75 (0.73)
	Civics/community involvement	2.03 (0.67)	2.06 (0.73)	2.05 (0.69)
Readers' Country (RC)	US	2.04 (0.58)	2.00 (0.80)	2.02 (0.69)
	Korea	1.78 (0.79)	1.81 (0.70)	1.79 (0.74)
T x RC	Economics/choices x US	1.86 (0.53)	1.86 (0.77)	1.86 (0.65)
	Economics/choices x Korea	1.69 (0.87)	1.60 (0.74)	1.65 (0.80)
	Civics/community involvement x US	2.21 (0.58)	2.13 (0.83)	2.17 (0.71)
	Civics/community involvement x Korea	1.87 (0.72)	2.00 (0.63)	1.94 (0.67)
	Total	1.90 (0.71)	1.90 (0.75)	1.90 (0.73)

Note. Numbers in parentheses are standard deviations.

Table 22

ANCOVA Table for Problem-solving Measure

Source	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>	η_p^2	Observed Power
<u>Covariate</u>						
Background	1	1.05	2.03	.16	.02	.29
Knowledge						
<u>Between subjects</u>						
Topic (T)	1	1.08	2.09	.15	.02	.30
Readers' Country (RC)	1	0.67	1.31	.25	.01	.20
Text Origin (TO)	1	0.05	0.09	.76	.00	.06
T x RC	1	0.10	0.19	.66	.00	.07
T x TO	1	0.05	0.09	.76	.00	.06
RC x TO	1	0.04	0.07	.79	.00	.06
T x RC x TO	1	0.08	0.16	.69	.00	.07
Error	111	0.52				

Note. Observed power is computed by SPSS based on observed values and calculated at alpha = .05.

With these scores as a dependent variable, I conducted a 2 x 2 x 2 between-subjects ANCOVA. Table 21 reports raw means and standard deviations, and Table 22 shows the ANCOVA result for this measure. The ANCOVA on problem-solving measure did not show any main and interaction effects, including no significant interaction between text origin and readers' country.

Knowledge of Social Studies Topics

Both perceived knowledge and demonstrated knowledge were measured before and after reading a passage. For the perceived knowledge measure, I conducted a mixed ANCOVA with three between-subjects variables (topic, readers' country, and text origin) and one within-subject variable (time) (See Table 14), to analyze the change in perceived knowledge over time as well as the effect of the three factors on this measure. However, for the demonstrated knowledge measure, I conducted a between-subjects ANCOVA with the posttest demonstrated knowledge as the dependent variable, and the pretest demonstrated knowledge (background knowledge) as the covariate (See Table 13).

Perceived Knowledge

For this analysis, I assigned a score to each of the three perceived knowledge questions. The score ranges from zero to four. A score of zero was assigned when the participant did not answer. A score of one represented "no knowledge", two represented "a little," three represented "some," and four represented "a lot of knowledge." Then I averaged the scores of the three questions. With these averaged perceived knowledge scores as a dependent variable, I conducted 2 x 2 x 2 x 2 mixed ANCOVA with background knowledge as the covariate. ANCOVA showed the covariate to be statistically significant ($F(1, 111) = 12.69, p < .01, \eta_p^2 = .10$) with a medium to large

effect size. There were neither statistically significant within-subjects effects nor between-subjects effects (See Tables 23 and 24). There was no significant interaction between text origin and readers' country as well.

Table 23

Means and Standard Deviations on Perceived Knowledge Measure (N = 120)

		<u>Time</u>		
		Before	After	Total
		Reading	Reading	
Topic (T)	Economics/choices	2.81 (0.56)	2.81 (0.73)	2.81 (0.65)
	Civics/community involvement	2.92 (0.61)	2.98 (0.70)	2.95 (0.66)
Readers' Country (RC)	US	2.77 (0.62)	2.92 (0.75)	2.85 (0.69)
	Korea	2.95 (0.55)	2.87 (0.69)	2.84 (0.69)
Text Origin (TO)	US	2.87 (0.56)	2.89 (0.73)	2.88 (0.65)
	Korea	2.85 (0.62)	2.90 (0.71)	2.88 (0.66)
T x RC	Economics/choices	2.82 (0.60)	2.83 (0.87)	2.83 (0.74)
	x US R ^a			
	Economics/choices x Korea R	2.79 (0.53)	2.79 (0.59)	2.79 (0.56)

Note. Numbers in parentheses are standard deviations.

R^a = Readers, T^b = Text

Table 23 (continued)

		<u>Time</u>		
		Before	After	Total
		Reading	Reading	
T x RC	Civics/community involvement x US R	2.72 (0.65)	2.01 (0.62)	2.87 (0.63)
	Civics/community involvement x Korea R	3.09 (0.53)	2.95 (0.77)	3.02 (0.65)
T x TO	Economics/choices x US T ^b	2.78 (0.46)	2.71 (0.55)	2.74 (0.50)
	Economics/choices x Korea T	2.83 (0.66)	2.91 (0.87)	2.87 (0.76)
	Civics/community involvement x US T	2.96 (0.64)	3.06 (0.84)	3.01 (0.74)
	Civics/community involvement x Korea T	2.88 (0.59)	2.89 (0.52)	2.88 (0.55)
RC x TO	US R x US T	2.82 (0.52)	3.03 (0.56)	2.92 (0.54)
	US R x Korea T	2.73 (0.72)	2.81 (0.90)	2.77 (0.81)
	Korea R x US T	2.92 (0.60)	2.76 (0.85)	2.84 (0.72)
	Korea R x Korea T	2.97 (0.50)	2.98 (0.48)	2.97 (0.49)

Note. Numbers in parentheses are standard deviations.

R^a = Readers, T^b = Text

Table 23 (continued)

		<u>Time</u>		
		Before	After	Total
		Reading	Reading	
T x RC x TO	Economics/choices x US R x US T	2.93 (0.42)	2.95 (0.45)	2.94 (0.43)
	Economics/choices x US R x Korea T	2.71 (0.75)	2.71 (1.15)	2.71 (0.95)
	Civics/community involvement x US R x US T	2.71 (0.60)	3.11 (0.65)	2.91 (0.63)
	Civics/community involvement x US R x Korea T	2.74 (0.72)	2.90 (0.59)	2.82 (0.65)
	Civics/community involvement x Korea R x US T	3.19 (0.61)	3.02 (1.00)	3.10 (0.80)
	Civics/community involvement x Korea R x Korea T	3.00 (0.44)	2.87 (0.50)	2.94 (0.45)
Total		2.86 (0.59)	2.90 (0.72)	2.88 (0.65)

Note. Numbers in parentheses are standard deviations.

R^a = Readers, T^b = Text

Table 24

ANCOVA Table for Perceived Knowledge Measure

Source	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>	η_p^2	Observed Power
<u>Covariate</u>						
Background knowledge	1	6.83	12.69	.001**	.10	.94
<u>Between subjects</u>						
Topic (T)	1	0.05	0.09	.76	.00	.06
Readers' Country (RC)	1	1.66	3.08	.08	.03	.41
Text Origin (TO)	1	0.11	0.21	.65	.00	.07
T x RC	1	0.01	0.01	.91	.00	.05
T x TO	1	1.05	1.94	.17	.02	.28
RC x TO	1	1.15	2.13	.15	.02	.30
T x RC x TO	1	1.33	2.48	.12	.02	.34
Error	111	0.54				

Note. Observed power is computed by SPSS based on observed values and calculated at alpha = .05.

** $p < .01$.

Table 24 (continued)

Source	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>	η_p^2	Observed Power
Within subjects						
Time	1	0.47	1.95	.16	.02	.28
Time * DBKnow	1	0.67	2.75	.10	.02	.38
Time * T	1	0.02	0.08	.78	.00	.06
Time * RC	1	0.29	1.21	.27	.01	.19
Time * TO	1	0.04	0.18	.67	.00	.07
Time * T * RC	1	0.95	3.90	.05	.03	.50
Time * T * TO	1	0.24	0.97	.33	.01	.16
Time * RC * TO	1	0.31	1.27	.26	.01	.20
Time * T * RC * TO	1	0.00	0.01	.94	.00	.05
Error (Time)	111	0.24				

Note. Observed power is computed by SPSS based on observed values and calculated at alpha = .05.

Demonstrated Knowledge

Demonstrated knowledge was also scored from zero to four as noted in the rubric described in chapter 3. A score of zero represented “I don’t know or no answer,” one represented “grossly inaccurate or incomplete answer,” two represented “naïve

understanding based on everyday thinking,” three represented “combination of expert-like and naïve understanding,” and four represented “expert-like deep conceptual understanding.” With the after reading scores as a dependent variable, I conducted a 2 x 2 x 2 between subjects ANCOVA. Table 25 reports raw means and standard deviations, and Table 26 shows the ANCOVA result for this measure.

An ANCOVA assessed the effects of text’s topic, reader’s country, and text origin on readers’ demonstrated knowledge after reading. As for the other between-subjects tests, background knowledge was the covariate. Because Levene’s Test for homogeneity of variance was not met, I set the alpha level at .01 instead of .05. The covariate was significant with a large effect size ($F(1, 111) = 90.78, p < .01, \eta_p^2 = .45$). Otherwise none of main effects and interactions reached statistical significance, including no significant interaction between text origin and readers’ country.

Table 25

Raw Means and Standard Deviations on Demonstrated Knowledge Measure (N = 120)

		<u>Text Origin (TO)</u>		
		Korean Text	US Text	Total
Topic (T)	Economics/choices	1.63 (0.89)	1.90 (0.86)	1.76 (0.88)
	Civics/community involvement	2.20 (0.76)	2.06 (1.00)	2.13 (0.88)

Note. Numbers in parentheses are standard deviations.

Table 25 (continued)

		<u>Text Origin (TO)</u>		
		Korean Text	US Text	Total
Readers' Country	US	2.14 ((0.89)	2.31 (0.81)	2.23 (0.85)
(RC)	Korea	1.72 (0.81)	1.68 (0.94)	1.70 (0.87)
T x RC	Economics/choices	2.00 (0.96)	2.21 (0.89)	2.11 (0.92)
	x US			
	Economics/choices	1.31 (0.70)	1.60 (0.74)	1.45 (0.72)
	x Korea			
	Civics/community	2.29 (0.82)	2.40 (0.74)	2.34 (0.77)
	involvement x US			
	Civics/community	2.13 (0.72)	1.75 (1.12)	1.94 (0.95)
	involvement x			
	Korea			
Total		1.92 (0.87)	1.98 (0.93)	1.95 (0.90)

Note. Numbers in parentheses are standard deviations.

Table 26

ANCOVA Table for Demonstrated Knowledge Measure

Source	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>	η_p^2	Observed Power
<u>Covariate</u>						
Background knowledge	1	36.26	90.78	.001**	.45	1.00
<u>Between subjects</u>						
Topic (T)	1	0.86	2.16	.14	.02	.31
Readers' Country (RC)	1	0.53	1.34	.25	.01	.21
Text Origin (TO)	1	0.38	0.94	.33	.01	.16
T x RC	1	0.70	1.76	.19	.02	.26
T x TO	1	0.63	1.58	.21	.01	.24
RC x TO	1	0.16	0.39	.53	.00	.09
T x RC x TO	1	1.99	4.99	.03	.04	.60
Error	111	0.40				

Note. Observed power is computed by SPSS based on observed values and calculated at alpha = .01.

** $p < .01$.

Interest in Social Studies Subject and Text

As was the case with the perceived knowledge measure, I conducted a mixed ANCOVA to assess the impact of the topic, text origin, and readers' country on participants' scores on individual interest across two time periods (before reading, and after reading). On the other hand, I used between-subjects ANCOVA to explore the effect of the three factors on scores of situational interest, since participants completed this measure only after reading. As for all the other analyses, background knowledge was the covariate.

Individual Interest

For this analysis, I assigned a score to each of the three individual interest questions. The score ranges from zero to four. A score of zero was assigned when the participant did not answer. A score of one represented "no interest", two represented "a little," three represented "some," and four represented "a lot of interest." Then I averaged the scores of the three questions. Table 27 reports means and standard deviations, and Table 28 shows the ANCOVA result for this measure.

Levene's Test showed that homogeneity of variance assumption was met for the pretest individual interest, while violated for the posttest individual interest. Except this, all other assumptions were met. Since homogeneity of variance was partially met, I report the significant results for both using alpha level .05. The covariate was significant ($F(1, 111) = 4.96, p < .05, \eta_p^2 = .04$) with a small to medium effect size (See Table 28).

Table 27

Means and Standard Deviations on Individual Interest Measure (N = 120)

		<u>Time</u>		Total
		Before	After	
		Reading	Reading	
Topic (T)	Economics/choices	2.81 (0.59)	2.87 (0.82)	2.84 (0.71)
	Civics/community involvement	3.00 (0.53)	3.17 (0.72)	3.09 (0.63)
Readers' Country (RC)	US	2.72 (0.57)	2.99 (0.77)	2.85 (0.67)
	Korea	3.08 (0.52)	3.05 (0.80)	3.07 (0.66)
Text Origin (TO)	US	2.84 (0.49)	2.98 (0.80)	2.91 (0.64)
	Korea	2.98 (0.64)	3.07 (0.77)	3.02 (0.70)
T x RC	Economics/choices x US R ^a	2.58 (0.67)	2.77 (0.93)	2.68 (0.80)
	Economics/choices x Korea R	3.02 (0.43)	2.96 (0.72)	2.99 (0.57)
	Civics/community involvement x US R	2.85 (0.42)	3.19 (0.52)	3.02 (0.47)
	Civics/community involvement x US R	3.14 (0.59)	3.14 (0.87)	3.14 (0.73)
	Civics/community involvement x Korea R			

Note. Numbers in parentheses are standard deviations.

R^a = Readers, T^b = Text

Table 27 (continued)

		<u>Time</u>		
		Before	After	Total
		Reading	Reading	
T x TO	Economics/choices	2.83 (0.45)	2.79 (0.69)	2.81 (0.57)
	x US T ^b			
	Economics/choices	2.80 (0.71)	2.94 (0.94)	2.87 (0.82)
	x Korea T			
	Civics/community	2.85 (0.53)	3.15 (0.87)	3.00 (0.7)
	involvement x US T			
	Civics/community	3.33 (0.50)	3.19 (0.54)	3.26 (0.52)
	involvement x Korea T			
RC x TO	US R x US T	2.73 (0.45)	3.09 (0.58)	2.91 (0.52)
	US R x Korea T	2.70 (0.68)	2.88 (0.93)	2.79 (0.80)
	Korea R x US T	2.93 (0.51)	2.87 (0.96)	2.90 (0.73)
	Korea R x Korea T	3.23 (0.49)	3.23 (0.56)	3.23 (0.53)
T x RC x TO	Economics/choices x	2.74 (0.51)	2.95 (0.60)	2.84 (0.55)
	US R x US T			
	Economics/choices x	2.43 (0.79)	2.59 (1.17)	2.51 (0.98)
	US R x Korea T			

Note. Numbers in parentheses are standard deviations.

R^a = Readers, T^b = Text

Table 27 (continued)

		<u>Time</u>		
		Before	After	Total
		Reading	Reading	
T x RC x TO	Economics/choices x Korea R x US T	2.91 (0.39)	2.64 (0.75)	2.78 (0.57)
	Economics/choices x Korea R x Korea T	3.12 (0.45)	3.25 (0.56)	3.19 (0.51)
	Civics/community involvement x US R x US T	2.73 (0.40)	3.22 (0.56)	2.98 (0.48)
	Civics/community involvement x US R x Korea T	2.98 (0.42)	3.17 (0.50)	3.07 (0.46)
	Civics/community involvement x Korea R x US T	2.95 (0.62)	3.08 (1.10)	3.02 (0.86)
	Civics/community involvement x Korea R x Korea T	3.33 (0.52)	3.21 (0.58)	3.27 (0.55)
Total		2.91 (0.57)	3.02 (0.78)	2.97 (0.68)

Note. Numbers in parentheses are standard deviations.

R^a = Readers, T^b = Text

Table 28

ANCOVA Table for Individual Interest Measure

Source	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>	η_p^2	Observed Power
<u>Covariate</u>						
Background knowledge	1	3.05	4.96	.03*	.04	.60
<u>Between subjects</u>						
Topic (T)	1	0.97	1.58	.21	.01	.24
Readers' Country (RC)	1	4.53	7.37	.01*	.06	.77
Text Origin (TO)	1	1.15	1.88	.17	.02	.27
T x RC	1	1.25	2.03	.16	.02	.29
T x TO	1	0.20	0.32	.57	.00	.09
RC x TO	1	2.85	4.63	.03*	.04	.57
T x RC x TO	1	0.88	1.44	.23	.01	.22
Error	111	0.61				

Note. Observed power is computed by SPSS based on observed values and calculated at alpha = .05.

* $p < .05$, ** $p < .01$.

Table 28 (continued)

Source	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>	η_p^2	Observed Power
Within subjects						
Time	1	0.05	0.21	.65	.00	.07
Time * DBKnow	1	0.27	1.20	.27	.01	.19
Time * T	1	0.02	0.09	.76	.00	.06
Time * RC	1	0.85	3.73	.06	.03	.48
Time * TO	1	0.01	0.06	.81	.00	.06
Time * T * RC	1	0.08	0.33	.56	.00	.09
Time * T * TO	1	0.78	3.42	.07	.03	.45
Time * RC * TO	1	0.21	0.91	.34	.01	.16
Time * T * RC * TO	1	0.10	0.45	.51	.00	.10
Error (Time)	111	0.23				

Note. Observed power is computed by SPSS based on observed values and calculated at alpha = .05.

* $p < .05$, ** $p < .01$.

The main effect of readers' country ($F(1, 111) = 7.37, p < .05, \eta_p^2 = .06$) and interaction between readers' country and text origin ($F(1, 111) = 4.63, p < .05, \eta_p^2 = .04$) were both statistically significant. Time, however, had no main effect and did not interact with any of the main effects. Reading these texts did not change children's individual interest. The Korean children had higher individual interest in the social studies subject and topics than the US children. The Korean children started out with higher individual interest even before they had read, and they maintained it over time. However, since there was no time effect, the interaction between readers' country and text origin does not seem to have important meaning, except that just by chance, children who read the text from their own country had higher individual interest scores both before and after reading than children who read the text from the other country.

Situational Interest

For this analysis, I assigned a score to the situational interest question. The score ranges from zero to four. A score of zero was assigned when the participant did not answer. A score of one represented "no interest", two represented "a little," three represented "some," and four represented "a lot of interest."

With these situational interest scores as a dependent variable, I conducted 2 x 2 x 2 between-subjects ANCOVA. Table 29 reports raw means and standard deviations, and Table 30 shows the ANCOVA result for this measure. As shown in the ANCOVA table, with the alpha level set at .05, the covariate was not significant. The main effect of topic reached statistical significance with a small to medium effect size ($F(1, 111) = 4.51, p < .05, \eta_p^2 = .04$). The adjusted means indicated that children who read the civics/community involvement text (adjusted $M = 3.29, SD = 0.13$) had higher situational

interest than children who read the economics/choices text (adjusted $M = 2.88$, $SD = 0.13$). There were no other significant main and interaction effects, including no significant interaction between text origin and readers' country.

Table 29

Raw Means and Standard Deviations on Situation Interest Measure (N = 120)

		<u>Text Origin (TO)</u>		
		Korean Text	US Text	Total
Topic (T)	Economics/choices	3.13 (1.01)	2.59 (1.15)	2.86 (1.11)
	Civics/community involvement	3.37 (0.67)	3.29 (0.86)	3.33 (0.77)
Readers' Country (RC)	US	3.07 (0.98)	3.03 (0.98)	3.05 (0.97)
	Korea	3.41 (0.71)	2.87 (1.15)	3.14 (0.98)
T x RC	Economics/choices x US	2.86 (1.17)	2.71 (1.14)	2.79 (1.13)
	Economics/choices x Korea	3.37 (0.81)	2.47 (1.19)	2.94 (1.09)
	Civics/community involvement x US	3.29 (0.73)	3.33 (0.72)	3.31 (0.71)
	Civics/community involvement x Korea	3.44 (0.63)	3.25 (1.00)	3.34 (0.83)
Total		3.25 (0.86)	2.95 (1.06)	3.10 (0.97)

Note. Numbers in parentheses are standard deviations.

Table 30

ANCOVA Table for Situational Interest Measure

Source	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>	η_p^2	Observed Power
<u>Covariate</u>						
Background knowledge	1	0.50	0.56	.45	.00	.12
<u>Between subjects</u>						
Topic	1	4.01	4.51	.04*	.04	.56
Readers' Country (RC)	1	0.45	0.51	.48	.00	.11
Text origin (TO)	1	2.95	3.32	.07	.03	.44
T x RC	1	0.20	0.22	.64	.00	.07
T x TO	1	1.62	1.82	.18	.02	.27
RC x TO	1	1.81	2.04	.16	.02	.29
T x RC x TO	1	0.32	0.47	.50	.00	.10
Error	111	0.89				

Note. Observed power is computed by SPSS based on observed values and calculated at alpha = .05.

* $p < .05$, ** $p < .01$.

Summary

Through these analyses, I was able to answer my research question: to what extent do different text topic, text origin, and reader characteristics (country of origin and background knowledge) affect young readers' comprehension, knowledge, and interest independently of each other and in interaction with each other? First, as for the two different text topics, I was able to confirm that text topic mattered at least in situational interest measure, regardless of readers' country or text origin. Children showed higher situational interest after reading civics/community involvement than economics/choices passages. They were more interested in the civics/community involvement text than the economics/choices text regardless of the text's country of origin.

Second, text origin had a great impact on both main ideas and conceptual understanding measures. Both Korean and US children showed higher understanding of main ideas from Korean than US passages. Also, children across the two countries showed higher conceptual understanding of the key vocabulary after reading a Korean than a US passage. In particular, text origin had a large effect on the conceptual understanding measure. Its effect size was the largest among all of the other significant effects in this study. Although background knowledge significantly affected the measure of conceptual understanding overall, the effect of text origin on this measure was substantial even after pulling out the influence of background knowledge.

Third, as for reader characteristics, I was able to answer that readers' country mattered in at least individual interest. Overall, Korean children showed higher individual interest than US children. On the other hand, background knowledge seemed to have a powerful impact across the measures of comprehension, knowledge, and interest. In the

measures of main ideas, conceptual understanding, perceived knowledge, demonstrated acquired knowledge, and individual interest, the covariate was statistically significant.

In terms of interactions among text topic, text origin, and readers' characteristics, there were significant two-way interactions in two of the measures. One was the significant interaction between text origin and topic in the main ideas measure. The Korean economics/choices text seemed to be most effective in prompting children to comprehend main ideas, while the US economics/choices text was least effective. As for the civics/community involvement text, the Korean text was almost as effective as the US text. In addition, the interaction between text origin and readers' country in the individual interest measure reached statistical significance. But considering that there was no time effect, this interaction suggests that although just by chance, children who read the text from their own country seemed to have higher individual interest scores than children who read the text from the other country. Text did not change children's individual interest.

Results: Part II. Qualitative Analyses

In this section, I report the results of analyzing think-aloud and interview data from the eight protocol students. As I described in Chapter 3, I analyzed these data mostly qualitatively, except that I counted the frequency of each category of reading strategy to get the percentages of strategies for global and local understanding (See Table 31). I coded think-aloud data mainly with the categories of reading strategy and other categories like misconception, passive attitude, and so on. I also coded interview data with categories like reading strategy, unfamiliarity, interest, knowledge, pictures, text

structure, and so on. I explored both coded think-aloud and interview data qualitatively to find the patterns that would illuminate the relation among text, reader, and culture.

In reporting these results, I refer to each protocol student by a pseudonym that indicates their country and the type of text they read in this study (See Table 3 in Chapter 3). As described in Chapter 3, all US (American) students have US names that begin with an A, the same middle initial that designates the country of origin for the text (K or U), and the same last initial that designates the topic (E or C). Likewise, all Korean students have Korean names that begin with a K, the same middle initial and last initial that designates the type of text they read.

The patterns found in the think aloud and interview data corroborate the quantitative outcomes presented above and extend them by suggesting what causes such differences in children's comprehension and learning from the text. As the large group of students showed, text origin mattered when the protocol students tried to comprehend the main ideas from the economics/choices texts, but not from the civics/community involvement texts.

The students who read the Korean economics/choices text used different strategies as they read from the students who read the US text. As shown in Table 31, the think aloud and interview data suggest that children who read the Korean economics/choices text were more likely to demonstrate global processing, while children who read the US economics/choices text were more likely to demonstrate local processing. Thus this section focuses on what the students who read the Korean and the US economics/choices text did rather than the civics/community involvement text.

Table 31

The Percentages of Strategies for Local and Global Understanding Used by Each Protocol Student

Passage	Readers' Country	<u>Strategies Used (%)</u>	
		Strategies for local understanding (A)	Strategies for global understanding (B)
US Economics/choices	Korean Student	44	56
Passage	US Student	12	88
Korean Economics/choices	Korean Student	7	93
Passage	US Student	5	95
US Civics/community involvement	Korean Student	4	96
Passage	US Student	50	50
Korean Civics/community involvement	Korean Student	76	24
Passage	US Student	12	88

This section consists of four subsections. In the first subsection, I describe in detail the global processing that the Korean and the US students who read the Korean economics/choices text commonly demonstrated as they read. In the second subsection, I describe the local processing that the Korean student who read the US economics/choices text demonstrated as he read. In the third subsection, I describe what the US student who

read the US economics/choices text did as she read, unlike the other student who read the same US text. In each of the three subsections, I also present how each of these students comprehended the text and what I learned from their interview in relation to their think aloud data. In the last subsection, I briefly explain why there was no pattern identified for the civics/community involvement texts, while interaction between text origin and topic was found for economics/choices texts. Finally, I conclude Part II of this chapter with a brief summary. In each subsection, bullets indicate what protocol students thought aloud as they read a text. In quoting these think aloud protocols, I used ellipses to indicate that a protocol student was pausing, murmuring, or did not complete a sentence.

Global Processing

Kijung K.E. and Adam K.E. who read the Korean economics/choices text commonly relied on global processing, focusing on main ideas. The commonality between Kijung K.E. and Adam K.E. suggested that regardless of readers' country of origin, children who read the Korean economics/choices text were likely to demonstrate global processing which would help them to comprehend main ideas.

Kijung K.E. In the beginning of the text, Kijung K.E. revealed a naïve understanding of the main ideas as he read the title “We have many things we want to have but,” the first bulleted sentence, and the side box that says “When you want to have many things but can’t, you need to make a wise choice. Let’s find ways to make a wise choice,”

- “It seems to say that we are greedy”
- “If children buy too many things, they waste money.”

- “The way to make a wise choice is to buy things with the allowances that you saved.”

Reading the paragraphs with pictures throughout two pages about what Hyunsoo’s classmates wanted, Kijung K.E. expressed his opinion about each item and compared why he would want it and why Hyunsoo’s classmates wanted it.

- “On the Internet, I can collect data and play fun games. Clothes... clothes... I like them because they are pretty. Then if you wear them, other children will come around you. You’ll be popular. And with inline skates, you can do exercise. With shoes, you can show off to your friends. With a bicycle... You can move fast and go to Hakwon (a private institute for tutoring) fast.... My ideas for choosing a bicycle, inline skates, and shoes seem different from what they say here.”

Kijung K.E. gradually understood the main ideas, as he read the third page that focused on why we cannot get everything we want. At first, he still revealed the naïve understanding. When he read “We cannot get everything we want. Why is that so?” Kijung responded,

- “Because my mom doesn’t buy everything I want. She keeps saying ‘just buy one thing,’ but I keep saying ‘I want to buy’.... She thinks it’s a waste of money, because if sometimes I buy too many things, they become out of fashion, and then I do not play with them anymore.”

Next, after reading the chart that listed why our classmates cannot get what they want, he added his own to the three presented reasons. But he still retained naïve understanding.

- “Like I said before, because after you buy too many things, you may not use them because they become out of fashion.”

Following the chart on the third page, the main ideas were explicitly presented. The text says “Everyone has many things they want. But resources or income that is necessary to satisfy those desires are always scarce.” Apparently this statement helped him to understand the main ideas. Connecting to his personal experience, Kijung responded,

- “Hm... yes, it’s like what I just said. Sometimes I can’t buy what I want because my mom won’t buy it. It’s like my mom maybe won’t buy it because of our family income. Hm...also what I want is not always there. I mean... the other day I went to a store to buy a baseball glove, but they didn’t sell the one I had in mind.”

The rest of the Korean economics/choices text focused on how to make a wise choice. Although he understood why people cannot get everything they want, he still had the naïve understanding of what we should do in that case. After reading “Let’s think about what we should do when we cannot buy everything we want,” Kijung responded,

- “Hm... it’s like... I think I can do errands for my parents and do good things and can buy things with the allowance that I earn.”

He focused on how to save money for things he wanted rather than on how to make a wise choice among things he wanted.

However, he gradually understood how to make a wise choice as he read the three examples of making a choice throughout the next four pages, putting himself in each situation.

- “If I were Hyunsoo, hm... I would buy a soccer ball. Because you play soccer outside, it would be good exercise for health... and you can also play soccer with friends.”
- “I like the train the most, because its fare is almost the same as the bus, and it is safe and can move fastest. Hm... I change my mind.... I think a car is better. Hm... the train is the fastest, but after you get off, you should take a taxi. So in a car you can go straight... and you can stop by a gas station, too.”
- “I would go somewhere. A vacation.... Or a movie.... I would get my friends together to watch a movie or play baseball.” After reading Hyunsoo’s choices for his Saturday afternoon, Kijung said, “If I were him, I would go to watch a movie at the Children’s Center with Youngmi. Because movies are not what you can watch every day, and soccer, you can play it every day, and you can play a CD-ROM game every day too.”

Kijung K.E.’s answers to the comprehension question and demonstrated acquired knowledge showed that he did not retain the naïve understanding of why and how we should make a wise choice any more after reading.

- “Why do people have to make a choice among the things they want most? Because buying many things costs a lot and parents may not want to buy many things for you. Or what you want is not always there and after buying many things, some things can be thrown away if they are out of fashion. So, you should think about what you want most, what you really need, and so on.”

- “I cannot get everything I want. From now on, instead of buying anything, I would make a wise choice after thinking about whether I really need it, or what’s good about it. Among many things, I would buy baseball stuff, because I like baseball, and it’s good for exercise. Second, I would have books, because I would be smarter and wise.”

Kijung K.E. started with a naïve understanding on why and how we should make a wise choice. But he gradually understood why and how as he read the text.

Adam K.E. As he read the title and the first bulleted sentence, Adam K.E. used his background knowledge of text structure.

- “Hmm... that really didn’t give much about maybe what the setting or what the main idea of this is. It should give a little more detail.”
- “That kind of gives away the main idea.”

Adam seemed to expect to see a title and a topic sentence that indicate the main ideas or present the setting of the entire text at the very beginning of the text.

Next when he read the side box that introduced the topic and the main idea, he referred it back to the questions in the *KIQ* without saying anything about the topic or the main idea. He said,

- “I think it’s like showing us what I did choose on the other... hmm... in the section where we had when I was circling those answers for making choices.”

After that, with every example of Hyungsoo and his classmates, Adam K.E. made inferences or predictions or expressed his opinions, as if he were in that situation. I have

presented what he said condensed altogether. The ellipses indicate that he was reading the text.

- “Hyun...Soo.... [continues reading] Sounds like they are being kind of greedy or something ‘cause they don’t get what they wanted, and they are just really anxious to get it. They don’t probably care about anything else but that. [continues reading] Hm... most of them are probably what I would get because one... clothes or something you should always wear because you ... sneakers and soccer shoes... mostly not the soccer shoes, but I’ll have the sneakers. I have to walk. Hmm... the rest... I don’t know. Maybe I would pick the inline skates. But then I have to make up my mind. If I would choose one, it would probably be, or two, maybe probably be clothes and sneakers.”

The third page mostly focused on the main ideas, “Why we cannot get everything we want.” At first, he showed naïve understanding of the main ideas. After reading “We cannot get everything we want. Why is that so?” Adam said,

- “Well, maybe because your family might be poor, and it’s maybe not the best time to get toys. My mom, she works in this school, and she had this little project or something going on. Toys for Tots. You can bring in toys, put them in a box, and they ship to kids who don’t have toys.”

Then, reading the chart that listed why our classmates can’t get what they want, Adam expressed his opinions about the three reasons presented in the text and added his own at the end. But he still showed naïve understanding.

- “I kind of agree with one and maybe two, I mean three. Because one, not all families are rich people. Three because some of this stuff my mom buys. Yes I like it, but then it’s just like it doesn’t give me enough time for studying because I’d be more interested in this. (Then he added his own reason to the chart.) Hmm... Maybe like some kids have their mothers or fathers pass away. They probably don’t have enough money.”

Next on that page, the main ideas were explicitly presented. After reading “Everyone has many things they want. But resources or income that is necessary to satisfy those desires are always scarce,” Adam K.E. started to show better understanding.

- “For this sentence, I would say, yes everyone has many things they want but not always can you get the stuff that you want because your family could be either poor or just the family income is not enough or one of these (pointing at the previous chart).”

However, he did not mention limited resources in any way. Instead he focused on limited income.

Lastly, looking at a picture with a boy holding a wallet, Adam made an inference,

- “Hmm... that picture below... yeah, he’s greedy ‘cause he has his wallet in his hand, and he’s trying to say I wanna get all this stuff, which, yes I would, but then I would wanna save money maybe for something bigger instead of just wasting it all on something else.”

Again, Adam focused on the unlimited wants and limited income.

The rest of the Korean economics/choices text presented three examples of making a wise choice throughout four pages. Just like Kijung K.E., Adam K.E. started to

understand why we cannot get everything we want. But he still had a naïve understanding of what we should do in that case. After reading “Let’s think about what we should do when we cannot buy everything we want,” Adam responded,

- “I wouldn’t pout or get angry or anything ‘cause that kind of sets off your mother’s mood, and you probably get in a lot of trouble.”

But he started to understand that he should make a wise choice in that case and how to make a wise choice. He put himself in each situation as if he had been this Korean boy and the choices had been his own.

- “If I were him, I probably would get the soccer ball. Either that or the robot kit, because assembling is my favorite part and maybe he might like that too. Or soccer, like he said, he wanted the soccer ball. And it would help.... It would both... it would give him fun and help if he would ever try to do that sport.”

The single quotation marks below indicate where he is reading directly from the text.

- “Wow, he must be busy. He wants to do all those things. He’d have to pick probably one or maybe he could just gather them together and do all one thing. ‘1. What is the first thing I promised to do?’ He promised first to play his CD-ROM. ‘2. Which one is the most beneficial to me?’ Hm... beneficial? What’s that mean? Helpful? Hm... I’d probably say if you are going on to the computer and maybe doing some research, I would go for that, but then he’s just going to play games. Helpful? Maybe Jinwoo. Maybe he needs some practice and soccer would probably be helpful for

him. ‘3. Which one is most interesting?’ To him, it sounded more like the CD-ROM. ‘4. Which one is most economical?’ I’d say that, what is it, the movie or something.”

- “If I were Hyunsoo, I’d gather my friends and maybe think over or maybe vote to figure out which one we wanna do.”

His answer to the main idea question and the demonstrated acquired knowledge question showed that he comprehended why people cannot get everything we want and how we should make a wise choice.

- “Their families might be poor and could only buy one thing for the person. Their family income might not be enough for everything they want. So they might have to give up some things. To make a wise choice, think about which one of these things are useful and fun to you.”
- “You may want to buy a lot of toys. But you can’t get everything, because your family income may not be enough. You have to make a choice. Think which would be interesting to you the most. Making a bad choice could lead you to trouble. Making good choices can help you by avoiding trouble. Even if you don’t get everything you want, remember there is always next time to get it.”

Like Kijung K.E., Adam K.E. also started with a naïve understanding on why and how we should make a wise choice. But he gradually understood why and how as he read the text. However, unlike Kijung, Adam still did not see the influence of the scarcity of resources on making a choice.

Local Processing

Unlike the students who read the Korean economics/choices text, Kuni U.E. who read the US economics/choices text demonstrated local processing almost as much as global processing, which might have caused his misconceptions of the key vocabulary and prevented him from comprehending main ideas

Kuni U.E. First, as he read the title “Making choices” and the side box that introduced the key vocabulary and reading skill, Kuni U.E. was confused.

- “Hm... I don’t know this well. All of a sudden, making choices shows up. I cannot come up with anything.... It reminds me of making choices in social studies... hm... it’s so hard to think about it.”
- “Competition and scarcity and opportunity cost, what is opportunity co...? (murmuring)”

For the rest of the first page, Kuni demonstrated global processing. As he read “Build on What You Know” and about Marisa’s choice between a CD and a jacket, he responded,

- “As for me.... I would save more to have something that doesn’t go out of fashion quickly.”
- “Hm... here I think Marisa got stuck. There are two things she wants to buy. One thing she can buy later, and the other she can buy right away. And, what’s more... both are what she likes... If I were her, I would buy clothes later. Because the music group’s CD may become out of fashion later, but you can wear a shirt even after it becomes out of fashion.

Somehow, she will wear it... so... if I were her, I would wait to buy a shirt by saving more...”

But as he read the second page, Kuni U.E. struggled a lot with the definition and example of opportunity cost both in text and a diagram, heavily relying on local processing. First, he had difficulty understanding the diagram that graphically showed the concept of opportunity cost. The diagram with the title of “Opportunity Cost” had pictures of a music CD and a maroon jacket that Marisa wanted. The first row of the diagram consisted of the word “If” followed by the picture of a music CD and the word “Then” on the arrow followed by the picture of a maroon jacket with an “X” mark on it. The second row of the diagram had the same format, except that the places of the two pictures were switched. The picture of a jacket came first, followed by the picture of a music CD with an “X” mark on it. After reading this diagram, he formulated questions and stated his failure to understand it.

- “The pictures look the same... but something changes, the places change.... Hm... I don’t know what opportunity cost is.... Because cost means money, does it mean that it costs a lot?.... Oh... I think although she wants to buy both, she can’t.... If she buys this one, then she can’t buy that one because she runs short of money.... I think that’s the way it is.... I don’t really know what it exactly means.”

After reading the caption of the diagram that says “What will happen if Marisa buys the CD?” he responded,

- “Opportunity cost, as I said earlier, you set one goal but if you have two goals and because it’s difficult to choose one of them.... That’s why.... I really don’t know what it is exactly.”

After reading the next paragraph that presented the definition of “opportunity cost” in relation to Marisa’s choice, Kuni U.E. started to reveal some misconception. The paragraph says, “By choosing the jacket, she gave up the CD. The CD was the opportunity cost of the jacket. Opportunity cost is the thing that people must give up in order to do what they most want. Marisa’s first choice was the jacket. The CD was her second choice.” After reading this paragraph, Kuni U.E. responded,

- “Hm... so looking here, I think it means that because in fact she wanted the jacket first, she had to give up the CD.”

His response made me suspect that he might have mistakenly understood opportunity cost to be choosing the first thing that he had in mind and giving up the second thing that he had in mind.

Kuni U.E. also was not able to answer confidently the review question, “What is the opportunity cost of the jacket Marisa wants?” He responded,

- “Hm... opportunity cost... I don’t know this. I mean, I know the words ‘opportunity cost’ but because it says the opportunity cost of the jacket Marisa wants, it means she has to give up one thing. Is this something that she did in the store?... Store.... Hm... I need more time....”

On the third page where the definition of scarcity was presented in relation to Marisa’s choice, Kuni also revealed his misconception of “scarcity.” After reading the subtitle “Scarcity Limits Choice” and the definition “A scarcity is a lack of goods or

services. Scarcity takes place when people who make goods or provide services cannot provide enough for everyone who wants them,” he responded,

- “Scarcity.... So... if something lacks, people always like people who look perfect. So... this means also that she is not going to choose what she wanted.”
- “So here if there is no scarcity, then everyone will feel happy, and sellers are happy too because many people will buy. I think that’s what it is....”
- “Hm... I think scarcity really makes it hard for people to choose. Because in this store however cheap an item may be, if it is not good or lacks something, it will not look cool, so....”

Such responses made me suspect that he thought that scarcity means a defect in an item or a lack of certain features that are necessary for the perfection of that item.

Lastly as he read about Marisa’s final decision on the last page, Kuni U.E. revealed his persistent misconception of “scarcity” and showed that he had difficulty in recalling the vocabulary “opportunity cost” correctly.

- “Hm... she finally made a decision, a tough decision. She might have thought of what fit her first although she wanted something else.... Hm... I think Marisa had already studied about something like social thing (by social thing, he really means ‘opportunity cost.’ Note the description below)... what could happen in the store... what she should choose, or whether the items in that store lack some features something like that. But if I were her, I would buy what I want. I think I feel much happier if I can

buy it early although it's a little big and keep wearing it rather than saving money to buy it later. ”

Kuni U.E. seemed to make a mistake in recalling the vocabulary “opportunity cost”, substituting “social thing” for “opportunity cost.” Later, I was again able to confirm his failure to recall the exact vocabulary. As he answered one of the interview questions, he substituted “social cost” for “opportunity cost” at one point and I had to correct it.

His answer to the comprehension question also revealed the same misconceptions. He answered,

- “‘People have to make a choice about the things they want most’ because people achieve the goal they set no matter how much it lacks something. For example, a child might want to buy a comic book. But then a more interesting comic book has come out. Then he will buy the interesting comic book. But because if he doesn’t have enough money, he cannot buy it, he will buy a comic book that he is able to buy.’”

This answer showed that he did not get the main ideas accurately and still had the misconceptions of “scarcity” and “opportunity cost” in the situation of an everyday economic choice.

To confirm my suspicion of his misconceptions, I asked him to explain what opportunity cost and scarcity mean during the interview. He explained,

- “Opportunity cost means... so, it means... buying what you wanted most. So it means you have to give up the goal that you set to buy later.”

- “Scarcity means a lack of something. Let’s say there is an item, for example, a pencil. Among the two pencils, the one with eraser at the end may be better. Because the other pencil does not have an eraser, you know there is scarcity.”

Kuni U.E.’s drawing (See Figure 7) and his explanation of his own drawing revealed his misconceptions of both “opportunity cost” and “scarcity” together. Kuni explained his drawing,

- “If you look here, the boy named Kildong Hong set two goals (a game and a baseball glove) to buy what he wanted. What he wanted first was a game. So he thought about opportunity cost and decided to buy the game. Then he went to a game store and found out that they did not give a battery, although the game stores usually did. So, there is scarcity (a lack of something). So he thought that it might be better to buy a baseball glove instead because of the scarcity. But he thought about opportunity cost again and bought the first thing he wanted to buy.”

His drawing and explanation are a good summary of his misconceptions of the two key vocabulary words (See Figure 7 for Kuni U.E.’s drawing). Ironically, his voice and attitude showed that he was very confident in his conceptual understanding. But his drawing together with his other responses during and after reading confirmed again that he had misconceptions of the key vocabulary and did not understand the main ideas well. Kuni U.E. got stuck in the misconception that “opportunity cost” is giving up what he has in mind later in order to buy what he has in mind first, and “scarcity” is a lack of some

features that make an item imperfect or defective, without getting the overarching main ideas.

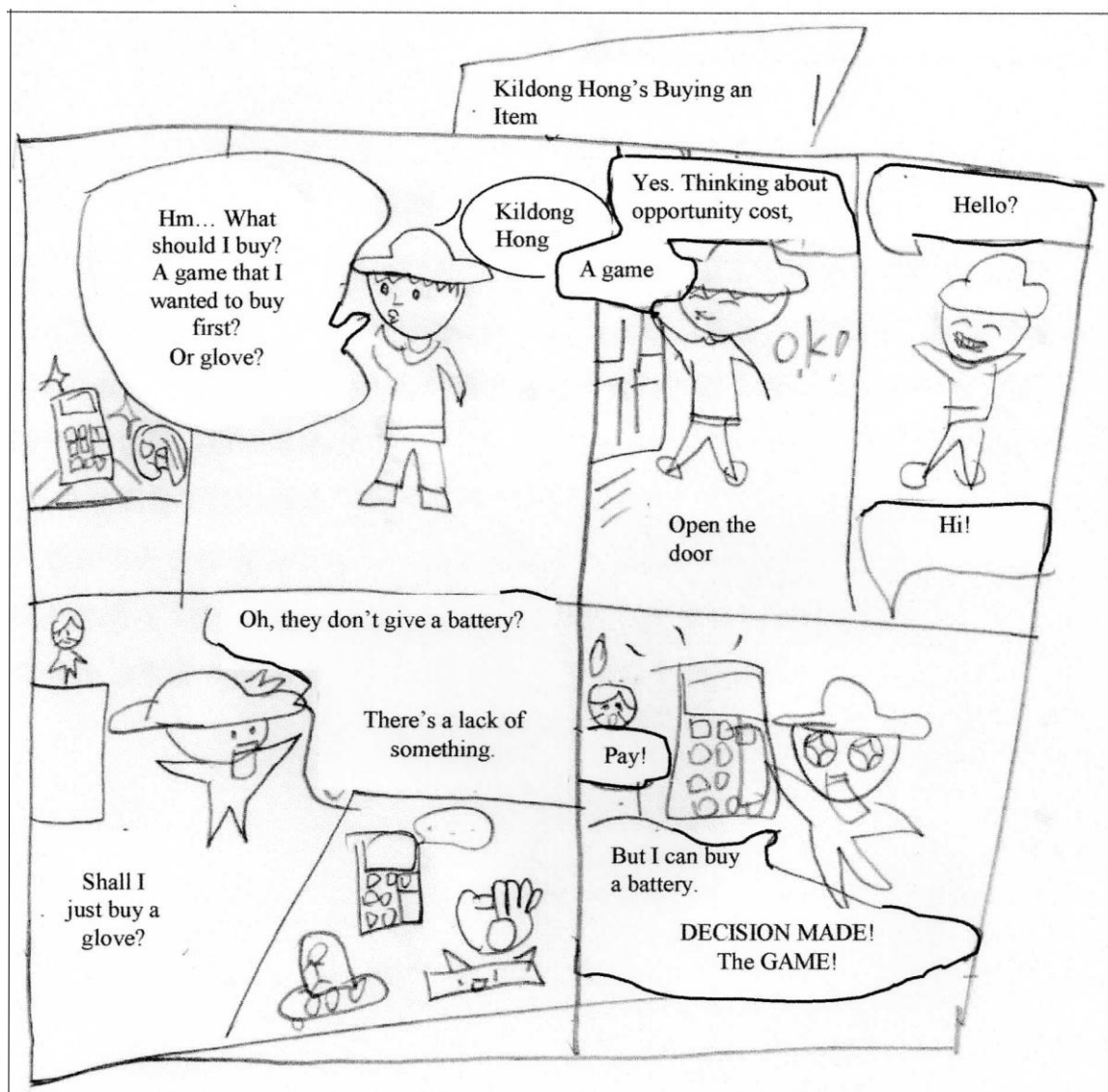


Figure 7. Kuni U.E.'s Drawing

Note. Captions were translated from Korean to English.

Reader Characteristics and Strategy Use

The above three cases of Kijung K.E., Adam K.E., and Kuni U.E. suggested that children were more likely to demonstrate global processing as they read the Korean economics/choices text, while they were more likely to demonstrate local processing as

they read the US economics/choices text. However, Abigail U.E. did not match this pattern because of her own characteristics as a reader.

Abigail U.E.'s reading ability and background knowledge. Abigail was a strong reader and had considerable background knowledge. As described in Chapter 3, the US teachers did not provide any information about the participating students' reading ability. But one of the teachers who coordinated the schedule for the protocol students hinted that Abigail was a strong reader. I was also able to see that Abigail was a fluent reader as I watched her think aloud with text, although she did not seem to be excited or interested throughout the whole session.

Abigail U.E. also had considerable background knowledge about the topic, "making choices" and the concept of "scarcity" even before reading the text. For the demonstrated background knowledge question, she wrote,

- "Making choices is important in almost everything. It can change your life in good or bad ways. Examples are making choices in political subjects, and making choices for simple things like what dinner to have at home or what to buy or what to wear. When you make choices, you have to think of many things like what's good about it or what's bad about it."

During the interview, I asked her to tell what she had known before reading. She responded,

- "I think I learned about scarcity before but haven't used the word scarcity to describe with... I learned it at home, listening to my dad talking to my brothers."

She also explained during the interview that she used her background knowledge of scarcity to understand the text better. She said,

- “When I heard that scarcity limits the choice, I thought to myself, because I know ‘scarce,’ scarcity has to do with something that meant there wasn’t much. If scarcity means there wasn’t much, then, I guess that means there wasn’t much of something.”

Because of such background knowledge and her reading ability, Abigail U.E. relied more on global processing than local processing and comprehended the text well.

Abigail U.E.’s global processing. Although she read the US economics/choices text, Abigail relied on global processing more than local processing unlike Kuni U.E. At first, she used her background knowledge that was not closely related to the topic of this text.

- “When I think of making choices, I think about it as political.”
- “Today in social studies, we were reading about economy and it sounds like the definitions are different from what they’re trying to say in the passage ‘cause what we were talking about was how countries would trade and use money.”

The term “economic choice” might have reminded her of international trading.

As she read the rest of the first page about Marisa’s choices between a CD and a jacket, Abigail related the paragraph to her personal experience and expressed her personal opinions.

- “The passage sounds sort of like one of the things my sister does every time we go shopping. She has my aunt go to try to buy her something else

and ends up getting something she didn't really want." She also said, "Hmm.. Personally I would buy the jacket 'cause I don't really listen or I don't have a radio to listen on."

On the second page where she read about opportunity cost, at first, she did not struggle much but did not show her understanding of the concept of opportunity cost, either. After reading the caption of the diagram that says "What will happen if Marisa buys the CD? she responded,

- "If Marisa buys the CD, she can probably also buy something else because of the two dollars she has left."

Her response was not necessarily related to the concept of opportunity cost. But as she read the first paragraph of this page that presented the definition and example of opportunity cost in relation to Marisa's choice, she started to show some conceptual understanding.

- "I think when they said opportunity cost, she could have been buying the CD and not buying the jacket."
- "When they said the CD was her second choice, I think they're meaning if she doesn't... If she turns down the jacket all of a sudden and ends up buying the CD, she would be giving up her jacket."

She started to understand that this vocabulary had to do with a situation of economic choice where we have to give up one in order to get or do the other.

The next paragraph on the second page was about competition between sellers. As she read this paragraph, she made a prediction and connected to her personal experience. She said,

- “When I hear that (The sub heading, ‘Competition Between Sellers’), I think there’s gonna be a competition that can possibly happen at school or when they say they mean the CD and jacket are sort of like competition to her.”
- “That’s where my aunt goes to Aeropostale and American Eagle because I know that they both are very competitive to each other. From my experience, Aeropostale is cheaper than American Eagle.”

But similarly to Kuni U.E., Abigail U.E. did not answer the review question about opportunity cost. She responded,

- “The opportunity cost of the jacket would probably... I forgot about the opportunity cost.”

However, unlike Kuni U.E., she seemed to understand the concept of “scarcity” to some extent as she read.

- “Reading that title (Scarcity Limits Choice), I think it’s going to say what scarcity means, which is one of my questions back on one of the passages.”
- “It did say what scarcity means. And it makes me think of the word scarce, which means lack or little.”

As she read the rest of the third page, she predicted what decisions Marisa might make.

- “I think that because the maroon jacket doesn’t fit, she probably won’t buy the tan because she was hoping for the maroon jacket, probably just see... waiting until next week or going to the store with higher prices.”

On the last page, Abigail expressed her opinion about Marisa's final decision and concluded that we can always give up one.

- "I personally wouldn't have picked the tan jacket. I probably would have gone to the store with higher prices because I've been in a choice like that before."
- "I think that many people can really do like Marisa did in this passage because like I said earlier we can always give up one."

She concluded her think aloud with a summary of Marisa's choices as an answer to the review question. She summarized,

- "She decided not to buy her CD, and she decided not to go to the stores with higher prices and decided to buy the tan jacket that fit and not the maroon one that did not."

Her responses during the interview also showed that Abigail U.E. understood the concepts of "scarcity" and "opportunity cost" in the situation of economic choices. She defined each of them.

- "Scarcity is when there's not enough of an item for everyone to have."
- "Opportunity cost is when you have to give up one thing to get another."

Such responses suggested that she understood the concept of scarcity but had only partial understanding of opportunity cost. Her response did not clearly show that "opportunity cost" is what's given up when a choice is made. But at least she understood that this vocabulary had to do with a situation of economic choice where we have to give up one in order to get or do the other.

However, although Abigail U.E. had at least partial understanding of the concept of opportunity cost, she made a mistake in recalling this exact label for this concept, during the interview, just like Kuni U.E. She said that she liked “learning the new words like scarcity and opportunity choice” and talked about what she learned about these words. In doing so, she kept saying “opportunity choice” instead of “opportunity cost” and did not realize her mistake until I corrected it.

Her answers to the main idea question and the demonstrated acquired knowledge question showed the different levels of understanding. Her answer to the main idea question focused on how we can make a wise choice by considering various things but did not show how she understood why we should make a choice or why we cannot get everything we want.

- “Because in real life situations like the one in the passage, people have to think of many things like quality of things, if they need it or not, and how much benefit will they get out of the choices they make.”

But her answer to the demonstrated acquired knowledge question showed that she had understood why we should make a choice or why we cannot get everything we want.

- “Making choices is an everyday thing that many people face. Buyers have to make choices between many things. Most of the time they have to give up something sometimes because of scarcity or cost. That is called opportunity cost. When making choices, they have to think of many things like quality of things and cost.”

Although Abigail U.E. also struggled with the concept of “opportunity cost,” she did not rely heavily on local processing and reveal any misconceptions. In the end, she

understood the concept of “scarcity” and “opportunity cost” to some extent and comprehended the main ideas well.

Civics/community involvement Texts

Analogous to results from the quantitative data, which showed no significant results for the two countries’ civics/community involvement texts, the think aloud and interview data from the protocol students who read the civics/community involvement texts showed no patterns of differences. These outcomes could result both from differences between the economics/choices and civics/community involvement texts and the influence of individual differences among the protocol students who read the civics/community involvement texts.

Difference in text design. First of all, the civics/community involvement texts are different from the economics/choices texts in two ways. The topic of the civics/community involvement texts was not as academic as the topic of the economics/choices texts. The concepts of opportunity cost or scarcity of resources seemed more challenging to young readers than the concepts of common good or volunteerism, as the interview with the protocol students suggested. Second, unlike the economics/choices texts, the two countries’ civics/community involvement texts were not very different.

In the case of the economics/choices texts, the Korean text made unfamiliar concepts familiar and helped readers to comprehend the main ideas better by presenting more than one example of making a wise choice, while the US text presented only one example that was not very realistic. However, in the case of the civics/community

involvement texts, both countries' texts focused on one example of practicing good citizenship, and it worked well for readers.

Influence of individual differences. Compared to the protocol students who read the economics/choices texts, the individual differences among the protocol students who read the civics/community involvement texts greatly influenced their comprehension and think aloud activity. The two students who read the US civics/community involvement text showed different patterns of strategy use partly because of their individual differences.

Kangmin U.C., who had considerable background knowledge about the topic, relied highly on global processing. He comprehended the main ideas well.

- “Among 30 students in my class, four of us have cleaned the large playground behind our school buildings for a semester. At first, it took more than 2 hours. But now that we work together with more classmates, we can finish it early and work better. If we, ten of us, work together, just as people win at the Olympic Games, we can do volunteer work better and finish it early.”
- “I’d like to do work (building a house for the homeless) like this. When they raised money to help poor neighbors, I donated as much as I could. I am very glad to think that my money together with other people’s donation can be spent on providing or pumping water for people in Africa.”

On the other hand, Ann U.C. who read the same text as Kangmin U.C. relied more on local processing. Although I had no information about Ann’s reading ability, I

suspected that she might not be a good reader as I watched her read aloud and think aloud with the civics/community involvement text.

- “Citizens help in the world, people....”
- “Makes me think of people doing the right things, not being harsh to the world.”
- “Makes me think of people helping other people and being nice to our community and doing the right thing.”
- “Makes me think of... people saying... listen to the law and that all....”
(She’s murmuring, not completing the sentence)
- “Working as a group. That’s what I think of.”

The students who read the Korean civics/community involvement text showed different patterns of strategy use as well. Kyun K.C. was very shy and not very active throughout the whole session of the think aloud and interview. He relied heavily on local processing as he read the Korean civics/community involvement text.

- “What’s ‘*hwabo*’? I should read more.”
- “How can I make clean streets? Shall I also ask adults?”
- “What is ‘town meeting’? I should read more.”
- “What problems does our town have? Shall I read more?”
- “What is ‘Green Group’? Did they gather together for cleaning?”

On the other hand, Andy K.C. who had considerable background knowledge and showed high interest in the text relied mostly on global processing.

- “It makes me think that he’s like being a detective. I think that’s really nice...like how they are asking adults to ... how they did that. And I think that they’re gonna try to do the same thing to make the dirty streets clean.”
- “Hmm... I think that’s nice that they could clean up the town even though other people did it, not them.”
- “Hm... I think that’s nice that they’re like having everyone help. The government or somebody probably hires those people who drive big cleaning machines to clean the roads.”
- “That picture looks really nice. And that people help to make that street looks nice. And then that’s people working on, putting, like carrying flowers and putting in the streets. And that picture looks like people cleaning up trash. And that’s a nice mural that people are walking by and looking at. That looks like a Green Group who are helping to stop the dirty streets.”
- “Hm... I think that’s really important for people to know about that they can help the community be nice.”

Summary

Text origin and topic mattered in protocol students’ strategy use and comprehension of main ideas. Text origin had an effect for the economics/choices texts, but not for the civics/community involvement texts. The protocol students who read the Korean economics/choices text relied mostly on global processing and comprehended the main ideas well, while the protocol student who read the US economics/choices text relied on local processing as much as global processing, ending up with misconceptions.

However, Abigail U.E. who also read the US economics/choices text relied on global processing and comprehended the main ideas well, probably because of her reading ability and high background knowledge. As with Abigail U.E., for the civics/community involvement texts, individual differences like background knowledge had a greater influence on readers' strategy use and comprehension, regardless of readers' country and text origin.

Conclusion

The two sources of data supported one another. The think aloud and interview data from the protocol students not only corroborated the quantitative outcome of the large group data but also extended it by suggesting what might cause the different level of comprehension between readers who read the Korean economics/choices text and readers who read the US economics/choices text and why the same pattern was not found for the civics/community involvement texts.

Results suggest that text design is crucial in comprehending the text particularly when the text deals with relatively challenging and formal topics like economics/choices. Participants tended to rely more on global processing and therefore comprehended well when they read the Korean economics/choices text that has no formal vocabulary but many examples and encourages children to relate to their personal experience. On the other hand, participants tended to rely more on local processing and have difficulty in comprehending the text when they read the US economics/choices text that has formal vocabulary words with only one example.

Results also suggest, however, that readers' individual differences like prior knowledge play a significant role in their comprehension, regardless of text origin, topic,

and readers' country. Participants who had more background knowledge performed better for most of the measures regardless of their country, text origin, and topic. But prior knowledge helped readers to comprehend the text even more when the text was challenging and less comprehensible, as shown in the case of Abigail U.E.

CHAPTER SIX

Discussion

Each discourse community tends to develop and use unique genres for communication, and novice members learn such genre skills through repeated tasks using exemplars of genres from expert members of their community (Swales, 1990). Textbook passages could play a role as an exemplar of genres with the appropriate tasks and text for novice members.

Textbooks should be designed well in order to provide exemplars of genres and fulfill the communicative goal of explaining difficult concepts to novice readers. Text design plays a significant role in young readers' comprehension and learning from text (Beck, McKeown, Sinatra, & Loxterman, 1991; Chambliss & Calfee, 1998). US research suggests that familiarity, interest-value, and structural coherence enhance comprehension (Chambliss & Calfee, 1998).

Some researchers also suggest that culture plays a significant role in text comprehension (Carrell, 1987) at least for adult readers, although there has been a long-time debate over whether expository writing is culture-dependent or based on universal thought patterns (e.g., Cahill, 2003; Kaplan, 1966; Mohan & Lo, 1985). However, little is known about how culture affects text design and children's comprehension and learning from expository text.

Accordingly, I conducted this research study to explore the relations among culture, text design, and young readers' comprehension and learning from textbook passages. By conducting a cross-country study on elementary social studies textbooks and the text comprehension of children from two countries, I intended to investigate how

different cultural communities have developed educational genres with unique content and form for their novice members, and how the culturally familiar or unfamiliar materials affect students' comprehension and learning. By analyzing comparable passages from Korean and the US textbooks and having Korean and US children read a passage from their own country or a translation of a passage from the other country, I examined whether there are culture-independent or culture-dependent features of text and reader characteristics and, if so, how these features and reader characteristics affect young readers' comprehension and learning.

For that purpose, I conducted this research study in three steps. As presented in Chapter 3, the following research questions guided three types of analyses. I do not present the subsidiary questions for the quantitative analyses here in this section (For the subsidiary questions, please see Chapter 3 or Chapter 5).

1. Text analysis (Chapter 4: Text Analysis)
 - a. How do the passages from the US and the Korean textbooks differ in text design?
 - b. What do the differences in text design suggest about differences in cultural schemata?
2. Quantitative analyses (Chapter 5: Part I. Results of Quantitative Analyses)
 - Overarching question: To what extent do different text topic, text origin, and reader characteristics (country of origin and background knowledge) affect young readers' comprehension, knowledge, and interest independently of each other and in interaction with each other?
 - Subsidiary questions: See Chapter 3 or Chapter 5.

3. Qualitative analyses (Chapter 5: Part II. Results of Qualitative Analyses)
 - a. What patterns characterize young readers' strategy use and various aspects of text design and reader characteristics?
 - b. How do those patterns differ by text topic, text origin, and readers' country independently of each other and in interaction with each other?

First, to answer the questions about text design in relation to cultural differences, I selected four comparable passages from Korean and US social studies textbooks. I analyzed and compared two Korean and two US social studies textbook passages about two different topics (economics/choices and civics/community involvement), based on the Chambliss and Calfee (1998) analytical approach. In Chapter 4, I presented the results of the text analysis and comparison of the two countries' textbook passages.

Second, to answer to what extent different text topics, text origins, and reader characteristics as main effects and interactions affect young readers' comprehension, knowledge, and interest, I had children from Korea and the US read a passage on economics/choices or civics/community involvement from their own country or a translation of a passage from the other country. Sixty three Korean and 57 US 10-year-olds read in their own language one of eight passages, which differed in topic and country of origin counterbalanced to insure that all passages were read by an equal number of students. These students completed knowledge and interest measures before and after reading, and main idea, conceptual understanding, and problem-solving measures after reading. The data from this large group of students were quantitatively analyzed using both mixed and between-subjects ANCOVAs with demonstrated background knowledge as a covariate. In Part I of Chapter 5, I presented the results of these quantitative analyses.

Third, to find the patterns of young readers' strategy use and various aspects of text design and reader characteristics that might differ by text topic, text origin, and readers' country, I had four US and four Korean protocol students participate in a think-aloud activity while reading and a semi-structured interview after completing all the measures. I transcribed the audio-taped think alouds and interview of each protocol student and analyzed these data qualitatively. I expected the outcomes from these data to help to clarify the findings from the quantitative analyses of the large group data and to give an in-depth view of the relations among culture, text, and reader. By looking carefully at what the eight students did and thought as they read and after they read, I was able to understand better the outcomes from the large group as presented in Part I of Chapter 5. In addition, the outcomes from the protocol students also helped to highlight how the differences in text design as shown in the text analysis and comparison might affect young readers' strategy use, comprehension, and learning from text. In Part II of Chapter 5, I presented the results of the qualitative analyses of the data from the protocol students.

In this chapter, I discuss my major findings from both the quantitative analyses of the large group paper-and-pencil data and qualitative analyses of the protocol students' think-aloud and interview data. I reveal how these findings contribute to understanding the relations among culture, text design, and young readers' comprehension and learning. I conclude the chapter by examining the strengths and limitations of my study and by discussing the directions for future research and the implications for educators followed by a conclusion.

Major Findings

Through the three types of analyses, I was able to answer the overarching research question that guided this study: Are there culture-independent or culture-dependent features of text and reader characteristics and, if so, how do these features and reader characteristics affect young readers' comprehension and learning? The findings from the text analysis, large-group data, and protocol data supported one another, converging to answer the overall research question. In this section, I briefly present the major findings from the text analysis and the quantitative and qualitative analyses in terms of the presence of cultural schemata, the influence of text design, and differences in reader characteristics.

First, the text analysis showed that different cultural schemata were reflected in the design of textbook passages from the two countries such as different styles of writing (implicit vs. explicit) and different cultural values as shown in the degree of adults' influence on children's making a choice and practicing good citizenship. However, the quantitative and qualitative outcomes showed that cultural familiarity did not affect children's comprehension and learning.

Second, the quantitative outcomes showed that regardless of cultural familiarity, children's comprehension was affected by text origin and topic. Regardless of their country of origin, children comprehended the main ideas from the Korean economics/choices text better than from the US economics/choices text, and also understood the concept of vocabulary from the Korean texts better than from the US texts. Differences in the designs of the texts from the two countries as shown in the text analysis and the qualitative outcomes also supported these results. First, the text analysis

showed that the Korean texts, particularly the Korean economics/choices text, appeared to be more comprehensible than the US texts. The Korean texts had more familiar vocabulary and examples that help children connect to their personal experiences. The interest-enhancing features in the Korean texts such as pictures and charts not only may intrigue children's interest but also play a significant role in comprehension, while pictures in the US texts may not be as important as the text, and some of the interest-enhancing features in the US text may not attract children's attention. Also, the structure of the Korean economics/choices text was more coherent with more layers of gap-filling (three examples) than that of the US economics/choices text with one example.

The qualitative outcomes also supported the findings from both the text analysis and the quantitative data. Regardless of their country of origin, the two protocol students who read the Korean economics/choices text relied heavily on global processing as they read and comprehended the main ideas well. On the other hand, the student who read the US economics/choices text relied on local processing as much as global processing. He did not comprehend the main ideas well and ended up with misconceptions of the key vocabulary.

Finally, children's background knowledge had a powerful impact across the measures of comprehension, knowledge, and interest. The quantitative outcomes showed that for the main ideas, conceptual understanding, perceived knowledge, demonstrated acquired knowledge, and individual interest measures, the covariate was statistically significant. Protocol students' data also supported the finding about the influence of background knowledge on comprehension. Of the two protocol students who read the US economics/choices text, the student who had considerable background knowledge relied

on global processing and comprehended the main ideas well, while the other student did not.

Culture and Written Communication

Humans are social and cultural beings (e.g., Bakhtin, 1986; Connor, 1996; Matsumoto, 2001; Swales, 1990; Vygotsky, 1978). Each discourse community tends to develop and use unique genres for communication (Swales, 1990), and people from different cultures tend to have different background knowledge (Bartlett, 1932). Swales (1990) proposed that by belonging to the same cultural or discourse community, people tend to share the conventional expectations of communication to some extent, which is crucial for the communicative effectiveness within the community. If this is the case, children as cultural apprentices in a certain community (Rogoff, 1990) could be expected to learn from a culturally based textbook genre whose content and form they are familiar with and that they can use to facilitate their comprehension and learning.

Cultural psychologists have also contended that people's thought patterns are not the same everywhere; that there are differences in thought patterns across cultures (Matsumoto, 2001; Nisbett, 2003). Researchers from a contrastive rhetoric have also suggested that such different thought patterns lead to different conventional expectations of written communication, and readers are likely to comprehend the text better if the same content and formal schemata are reflected in a text (Carrell, 1984, 1987; Connor, 1996; Hinds, 1990; Kaplan, 1966). If this is the case, the effectiveness of written communication between a reader and a writer depends on how much they share norms and conventions of written communication, in other words, how much a reader feels culturally familiar with text.

From this perspective, I hypothesized that as long as both countries' textbooks are relatively well written, children would perform better with their own country's textbook passages than the other country's textbook passages. The participants in this study might very well differ in their content and formal schemata, so that they could comprehend and learn better from their own country's text because the reasoning built into a text could be expected to match the student's reasoning better than the reasoning built into a text from a different culture (Carrell, 1987; Swales, 1990). However, the results of this study showed that although different cultural schemata were reflected in the content and the form of textbook passages, culture did not make a difference in children's comprehension and learning from text.

As I expected, through text analysis, I was able to confirm that culture influenced text design. Different cultural schemata were reflected in the content and the form of textbook passages. First, western researchers (e.g., Eggington, 1987; Hinds, 1987, 1990; Kaplan, 1966) have argued that Korean writing style can be characterized as an indirect or circular approach to a theme that delays the introduction of the topic and uses an inductive or quasi-inductive approach in which the reader is responsible for figuring out the theme, while English writing style is direct, linear, deductive, and writer-responsible. I was able to identify such differences in the Korean and the US textbook passages, except that Korean texts did introduce the topic in the beginning of the text instead of delaying it. As I described in the section of major findings, paragraph main ideas in the US texts are explicitly presented and introduced earlier than later, while paragraph main ideas in the Korean texts are implicitly presented and appear later in paragraphs. Titles of textbook passages show such differences. For example, the title of the US

economics/choices text, “Making Choices,” clearly introduces the topic, while the title of the Korean economics/choices text, “We have many things we want to have but ...” leaves some gap that readers should fill in. These differences suggested the presence and the influence of the different formal schemata on the design of textbook passages from different countries (Carrell, 1987; Swales, 1990).

Second, scholars have suggested that eastern cultures like the Korean culture feature collectivism and foster interdependence, while western cultures like the American culture are individualistic and value independence (Triandis, 2001; Triandis & Suh, 2002; Triandis, Bontempo, Villareal, Asai, & Lucca, 1988). Such different cultural values were reflected in the content of the two countries’ textbook passages, suggesting the presence of culture-specific content schemata (Carrell, 1987; Swales, 1990). The examples in the Korean texts showed more influence of adults on children’s decision making and emphasized the relationship between adults who are experts or cultural agents and children who are novices or cultural apprentices (Rogoff, 1990). The examples in the US texts, especially in the US economics/choices text, did not show much influence of adults on children’s decision making.

These differences in content and form of the two countries’ textbook passages suggest the possibility that disciplines like economics and civics themselves could be based on different intellectual traditions and foundations across cultures. Clyne (1987) found structural differences in the same disciplines across cultures in the study on German and English scholars’ writing in sociology and linguistics. Clyne interpreted that such differences result from different intellectual traditions and attitudes toward learning and content, including reader-writer responsibility. Although Clyne focused only on

formal schemata, it may be the case that scholars from different cultures but in the same academic disciplines make different decisions on not only what content they would emphasize but also how they would present content for young novice readers to understand the key concepts of their discipline. Nevertheless, it is clear that overall, cultural differences as shown in Figure 1 in Chapter 1, influenced the design of the two countries' textbook passages.

However, the quantitative outcomes showed that culture did not have a statistically significant effect on children's comprehension and learning. Analyzing the large group data quantitatively, I assumed that an interaction between text origin and readers' country would mean that cultural familiarity has either a negative or positive effect on children's comprehension and learning. This interaction was not found, a result that was not consistent with the previous research findings that readers understand culturally familiar text better than culturally unfamiliar text both in terms of content and structure (e.g., Carrell, 1984, 1987; Pritchard, 1990; Steffensen, Joag-Dev, & Anderson, 1979). The children in this study did not comprehend the culturally familiar text better than the culturally unfamiliar text.

Similarly, the patterns in the protocol students' data also did not reveal any strong influence of culture on children's comprehension and learning from text. Both the Korean and the US protocol students who read the Korean economics/choices text comprehended the main ideas better than the Korean student who read the US economics/choices text. Kuni U.E., the Korean student who read the US economics/choices text, demonstrated local processing as much as global processing and revealed the misconceptions of "opportunity cost" and "scarcity" as he read and even after he read. Likewise, Abigail

U.E., who also read the US economics/choices text, struggled with the concept of “opportunity cost” as she read, and had only partial conceptual understanding of “opportunity cost” after she read.

On the other hand, Kijung K.E. and Adam K.E. who read the Korean economics/choices text commonly demonstrated global processing. Adam K.E., the US student who read the Korean economics/choices text seemed to be puzzled by cultural unfamiliarity at the beginning of the text, seeming to be confused when the topic was not explicitly presented as he read the first part of the Korean economics/choices text. He pointed out that the Korean text lacked details and did not introduce the topic and the settings in the very beginning, just as Hinds (1990) contended. According to Hinds (1990), in reader-responsible language like Korean, writers tend to leave some information unsaid or presented implicitly, and readers are responsible for filling in any information gap and drawing their own conclusions. But he was able to process it very competently once he got used to the differences. Indeed, I was able to see him enjoy the differences.

Such patterns of reading strategy use are not consistent with what Pritchard (1990) found in the study about American and Palauan 11th graders reading culturally familiar and unfamiliar letters about a funeral. Pritchard found that readers used different processing strategies for culturally familiar and unfamiliar text. Readers tended to make connections among different portions of the text and use their background knowledge as they read the culturally familiar text, while they tended to use more sentence-level strategies and fail to make connections as they read the culturally unfamiliar text, a pattern that was not found in the think aloud data in this study. The differences between

Adam K.E. and Kuni U.E. and the similarity between Adam K.E. and Kijung K.E. suggest that cultural familiarity or cultural unfamiliarity did not have much effect on children's reading strategy use and comprehension.

The lack of an effect of culture is different from what I conceptualized about culture based on the previous research findings about the influence of culture on written communication. As shown in the text analysis, there may be underlying cultural differences in the design of each country's textbook passages, and some students may be aware of the cultural unfamiliarity of a text. However, such cultural differences are not as influential as the shared characteristics of well-designed text itself.

This insignificant or minimal effect of culture can be interpreted in two ways in comparison with the previous research on culturally familiar and unfamiliar text. This present study differed in the participants and the texts from the previous research. The earlier studies mostly focused on adult readers' recall or comprehension of text that was highly likely to require high culture-specific content knowledge. For example, Steffensen, Joag-Dev, and Anderson (1979) asked Indian and American college students to read letters about an Indian wedding and an American wedding. On the other hand, in this study, children read textbook passages about similar main ideas in the same discipline that were less likely to require high content knowledge.

Considering such differences, first, the insignificant or minimal effect of culture in this study might come from the nature of the participants. As is the case with the developmental nature of children's text structure awareness (e.g., Chambliss & Murphy, 2002; Englert & Hiebert, 1984; Hare, Rabinowitz, & Schieble, 1989) and other literacy or cognitive skills (e.g., Connor, 1996; Rogoff, 1990), children's content and formal

schemata may not be completely developed yet and therefore could be more flexible than adults in the previous empirical research (e.g., Carrell, 1984, 1987; Eggington, 1987; Hinds, 1990; Pritchard, 1990; Steffensen, Joag-Dev, & Anderson, 1979), so that they were not affected significantly by the differences in underlying cultural values and in rhetorical patterns as much as adult readers might have been. We are not born with written communication skills but acquire them through schooling (Connor, 1996). As researchers (e.g., Rogoff, 1990; Vygotsky, 1978) have proposed, children are in their early stage of cultural apprenticeship. They are still in the process of learning the effective cognitive and communicative functions and social meanings of symbols that members of their culture share.

With this possible developmental nature of children's schemata and literacy, one may also ask how much children's experiences are different across cultures in this era of globalization. Today we live in a world where people across countries and cultures are connected to and interdependent of one another more than ever (Nisbett, 2003). It is likely that Korean children and US children may share similar everyday experiences as children.

On the other hand, the insignificant or minimal effect of culture in this study might also come partly from the nature of the textbook passages used. The four textbook passages were selected because they had many things in common: topic, discipline, main ideas, and genre, and therefore were less likely to advantage children from one country over children from the other country. With other passages that included more culture-specific content as shown in the example of "an Indian wedding vs. an American

wedding” (Steffensen, Joag-Dev, & Anderson, 1979), there would have been a statistically significant effect of culture.

In conclusion, for young readers, the universal thought processes that bind us as human beings and their shared experiences as a child seemed to play a bigger role in written communication than cultural schemata. The results of this study show that although there are both culture-dependent and culture-independent text characteristics, culture-dependent features were not as influential on children’s comprehension and learning as culture-independent features of text design that make text more or less comprehensible to readers. In the following section, I discuss what culture-independent features of text design make text more or less comprehensible to young readers.

Text Design and Children’s Comprehension and Learning from Text

The results of this study showed that culture-independent features of text design were more influential on children’s comprehension than the cultural familiarity of a text. Previous US research showed that text design plays a crucial role in children’s comprehension of expository text (e.g., Beck, McKeown, Sinatra, & Loxterman, 1991; Chambliss & Calfee, 1998; Hare, Rabinowitz, & Schieble, 1989). This study corroborates US research and shows that the importance of text design and characteristics of well-designed text can commonly apply to text design not only within the US but also across cultures and countries. In the following subsections, I discuss specifically what text characteristics make text more comprehensible to young readers based on the results of this study. First, I discuss what made the difference in comprehension between children who read the Korean texts and who read the US texts. Second, I discuss why children’s comprehension of main ideas and processing strategies were different for the

economics/choices texts from the two countries, but not for the civics/community involvement texts.

Comprehensibility: Korean Texts vs. US Texts

Eggington (1987) and Hinds (1990) suggested that the text written by Korean authors might look incomprehensible to those who had different cultural backgrounds like English-speaking readers, because the rhetorical patterns of the Korean text did not match their cultural thought patterns. However, the results of this study suggest that this notion is not always true. On the contrary, the Korean texts in this study did not seem incomprehensible to the US children. Rather, the Korean texts seemed more comprehensible to children from both countries.

Both Korean and US children in this study performed better with Korean texts on the measure of conceptual understanding than US texts. Also, regardless of readers' country, children comprehended the main ideas better from the Korean economics/choices text than the US economics/choices text. Such results match the results of the text analysis. The analysis suggested that the Korean passages are more comprehensible than the US passages because of a more coherent structure, more familiarity, and higher levels of interest value, although I intentionally selected relatively comprehensible text from the Korean and the US textbooks that share topics and overall structure. In the following subsections, I first discuss the similarity between the Korean and the US texts. Then, I discuss how differences between the two countries' texts such as explicitness, formal vocabulary, coherence, familiarity, and interest all together made these texts more or less comprehensible.

Explanatory texts. On purpose, I selected relatively well-written texts that were written for the same purpose of explaining difficult concepts to children. Accordingly, the text analysis showed that both the Korean and the US passages were relatively coherent and comprehensible overall, despite some differences in comprehensibility, cultural values, and text-picture relations.

The protocol students also thought that both the Korean and the US texts were easy to read, partly because all the texts were explanatory text, which some of the students called “story.” For example, Kuni U.E. said, “Yes (this passage was easy to understand.), because the text showed an example. It kept telling Marisa’s story. The story was easy to understand. Our country’s (Korea) textbooks are sort of this way too.” The logical order of sub explanations that include examples with a story structure might look like a coherent story to young readers. Kuni’s comment supports my rationale that the explanatory texts that I chose for this study were relatively comprehensible for children.

However, unlike the Korean children, the US children did not seem familiar with explanatory text or “story.” Abigail U.E. said, “Most of the time it (her school social studies textbook) doesn’t tell stories like this. It most of the times says on history. And if it does tell stories, I think it is normally the reading class.” The responses of the US protocol students are consistent with what Chambliss and Calfee (1998) found. They found that explanatory texts are more common in science textbooks than in the textbooks of other subject areas like social studies. Likewise, Rowan’s research on explanatory text focused on scientific texts (Rowan, 1990; Rowan, Gale, Whaley, & Tovar, 2005). However, as Rowan (1988, 1990) contended, one of the most common and important

communicative aims is explaining difficult concepts to lay people. This is the case especially in the context of school. If so, this study shows that explanatory text in social studies textbooks would help children comprehend and learn from what they read in social studies.

But this study also shows that although explanatory text can work well for social studies text, not all explanatory texts help children to comprehend and learn difficult concepts from text. One important feature of a good explanatory text is whether the explanation focuses on why or how questions by “demonstrating key claims rather than merely asserting them” (Rowan, 1990, p.332). For example, the Korean texts tended to raise why or how questions to set children up in advance to look for the answers as they read. On the other hand, the US texts did not have such kinds of why or how questions. The US texts presented two review questions that focused on *what*, leading readers to review or summarize *what* rather than *why*. Such difference in the two countries’ explanatory texts might affect the performance of both the large group of students and the protocol students. What other differences in the design of the Korean and the US explanatory texts lead to such difference in children’s performance?

Importance of explicitness. The US texts appeared far more explicit than the Korean texts in presenting main ideas or important concepts. As shown in the text analysis, the Korean texts present main ideas in a less explicit way than the US text. The US texts include text features such as titles, headings, topic sentences, underlining, highlighting, and explicit structural signals which Rowan (1988) identified as text features that could highlight organizational patterns for lay readers. The US texts also include explicit definitions of the key vocabulary. On the other hand, the Korean texts do

not have such explicit structural signals. This difference may result from the difference between a high-context culture and a low-context culture (Hall, 1976) or between reader-responsible language and writer-responsible language (Hinds, 1990).

However, as Beck, McKeown, Sinatra and Loxterman (1991) contended, making all concepts explicit might not necessarily contribute to more comprehensible text all the time. Some of the explicit structural signals like reading skills or vocabulary were boxed off and placed as a side bar. These features were separated from the entire text rather than coherently integrated with the other parts of the text. The protocol students who read the US texts often skipped these side boxes and were not aware that they also had to read them until I called their attention back to them. In addition, in Kuni U.E.'s text processing, I was not able to see that he paid more attention to such explicit signals as underlining, title, headings, highlighting, and the mark of main idea as he read the US economics/choices text. It may be possible that he paid attention to those signals but did not reveal it in his think aloud. In either case, his misconceptions and the quantitative results suggest that these explicit signals did not help children's comprehension of main ideas as much as intended. If the protocol students who were prompted to pay attention and respond to these side boxes often reacted like that, it might be highly likely that the large group of participants skipped them or paid little attention as well.

Researchers have argued that explicitness of presentation of main ideas is important, especially for young readers or lay people to understand main ideas or difficult concepts (Garner, Gillingham, & White, 1989; Hare, Rabinowitz, & Schieble, 1989; Rowan, 1988). Rowan (1988) emphasized the importance of explicit structural signals in an explanatory text in order for lay readers to understand difficult concepts. Garner,

Gillingham, and White (1989) also contended that young readers might not easily understand main ideas when presented in an implicit or minimally explicit way. Hare, Rabinowitz, and Schieble (1989) provided empirical evidence that explicit presentation of main ideas actually helped young children identify main ideas better.

Consistently with what these researchers contended, I was also able to confirm the importance of explicit presentation of main ideas by looking at the text processing of the two protocol students who read the Korean economics/choices text. Both Adam K.E. and Kijung K.E. did not show comprehension of main ideas higher than the level of novice everyday understanding until they read the explicit statement of the main ideas in the Korean economics/choices text. However, although the protocol students who read the US texts agreed that explicit signals like underlining and highlighting helped them to comprehend the text, the results showed that such explicitness in the US texts did not help them as much as they thought it did. It indicates that explicit presentation of main ideas alone does not guarantee children's comprehension and learning from text, although it is important, particularly for young readers. The explicit textual features would help as long as they are coherently integrated with the other textual features around the main ideas.

Formal vocabulary. Another difference between the Korean and the US texts is whether an understanding of expert-like formal vocabulary accompanied by a definition is necessary to understand the main ideas or not. The Korean passages do not include such formal vocabulary. Instead, they mostly rely on everyday vocabulary or vocabulary that can be understood in context and does not require specific definition. On the other hand, the US passages present two key vocabulary words. One of these two words is

expert-like vocabulary such as “opportunity cost” and “common good”, while the other words like “competition” and “volunteer” may be rather categorized as everyday vocabulary or vocabulary that can be understood in context.

As both quantitative and qualitative outcomes showed, the emphasis on key formal vocabulary did not seem to be as effective as intended. The effect of text origin in the measure of conceptual understanding of vocabulary was significant both for the economics/choices and the civics/community involvement texts. The qualitative outcomes supported the effect of text origin regardless of topic or readers’ country. All the students who read the US texts struggled with the formal vocabulary like opportunity cost or common good. These students revealed misconceptions or only partial understanding of the concepts of the vocabulary both during and after reading. What caused such difficulty and ineffectiveness of explaining the concepts of these vocabulary words?

First, children may be conceptually overloaded with formal vocabulary and explicit structural signals that are intended to help them comprehend it. Kuni U.E.’s case illustrates this possibility. Kuni’s think aloud and interview showed how much the vocabulary like scarcity and opportunity cost drew his attention and how hard he tried to figure out their meaning. However, despite such attention and effort, he did not seem to understand why we cannot get everything we want because there is scarcity of resources or income, while we have unlimited wants. Instead, as described above, during and even after reading, he revealed misconceptions of these words and did not comprehend the main ideas well.

It may be simply developmentally inappropriate to introduce such formal vocabulary for young readers. Kuni U.E.'s impression on the US economics/choices text shows this possible reason why including such formal vocabulary with explicit definition did not work well. Kuni said, "In America they learn opportunity cost as early as third grade, while when we were in third grade, we learned about everyday things like leisure, things people do in their leisure time, and types of groups that work to improve the community. I think they learn things like opportunity cost or scarcity really early.... I think it's ok to learn them slowly because as you see in the story about a hare and a tortoise, they say that it's important to go steady and farther, although it may be slow."

Kuni U.E.'s response suggests that the US social studies curriculum introduced difficult vocabulary and concepts like opportunity cost and scarcity too early. Both US economics/choices and civics/community involvement texts used in this study are originally written for third graders who are eight years old. However, the participants in this study who are two years older than the target age group did not easily recall counterintuitive vocabulary like opportunity cost and ended up with misconceptions or only partial understanding of such concepts. Even readers like Abigail U.E. who seemed to be a strong reader with considerable background knowledge had difficulty figuring out the concept of opportunity cost as she read, recalled it poorly after reading, and comprehended the concept partially.

However, the failure or partial success of the US texts in explaining the concepts of the formal vocabulary can result from text design rather than developmental or curriculum issues, particularly considering that some students like Abigail U.E. and the protocol students who read the US civics/community involvement text were able to

understand the concepts of the formal vocabulary words at least partially. If a text includes more examples that children can connect to their prior knowledge and experiences in explaining such formal vocabulary and main ideas, children may understand the concepts even at a young age.

In contrast, the US economics/choices text focuses on only one example in explaining the concept of “opportunity cost” and how to make a wise choice. This one example resulted in Kuni U.E.’s misconception. The US economics/choices text showed that Marisa had been saving to buy a maroon jacket. Then, by the time she saved 12 dollars, she also came to want a music CD. Finally, she decided to buy a jacket and give up a CD. So, the text says, “Marisa’s first choice was the jacket. The CD was her second choice.” In the end Marisa decided to buy the first thing that she had in mind (the jacket) by chance. But the text suggests that Marisa’s choice could go the other direction. If she chose the CD that she had in mind later instead of the jacket she had first in mind, her first choice could be the CD and her second choice could be the jacket, regardless of what she had first in mind. But Kuni did not see that. Kuni U.E. got stuck in the misconception that “opportunity cost” is giving up what he has in mind later in order to buy what he has in mind first. To Kuni, the second thing that he has in mind is always the opportunity cost of the first thing that he has in mind. If there had been more than one example, Kuni U.E. might not have had such a misconception.

In short, if text is designed well so that it encourages children to connect to their experiences and scaffolds them from novice understanding toward expert-like understanding of complex concepts, young children may understand them better, although the formal vocabulary is counterintuitive, complex, or developmentally

inappropriate. If the US economics/choices text had had more examples of opportunity cost and how to make a wise choice which children can often encounter in their everyday lives, children like Kuni U.E. might not have had any misconception and comprehended the main ideas better. Likewise, children like Abigail U.E. might have had deeper conceptual understanding of the vocabulary and comprehended the main ideas better.

Familiarity, interest, and coherence. Why did children comprehend main ideas of the Korean economics/choices text better than the US economics/choices text, although the US economics/choices text had explicit structural signals that highlighted the main ideas and important concepts, unlike the Korean economics/choices text? Why did children show better conceptual understanding of vocabulary in the Korean texts than in the US texts, regardless of text origin and readers' country? Overall coherence of a text with familiar examples and relevant interest-enhancing values can help answer such questions.

First of all, in order to help young readers comprehend the text, it is important that the text is designed to connect to children's background knowledge and make the unfamiliar more familiar (Beck, McKeown, Sinatra and Loxterman, 1991; Chambliss & Calfee, 1998; Rowan, 1988, 1990). The results of this study showed that the number of examples that are realistic and familiar to children can make a big difference in comprehension of main ideas and conceptual understanding of vocabulary. In the subsection about formal vocabulary, I have already suggested that children need more than one familiar example in order to comprehend difficult concepts, especially when the text involves formal and challenging vocabulary. Apparently, one example did not work well for the US economics/choices text, particularly when the example was less realistic.

It is also important how familiar the given examples are. The familiarity of examples does not mean cultural familiarity here. Rather, it depends on how children, regardless of their cultural background, can easily make connections between such examples and their personal experiences or prior knowledge because they might share some experiences as a child.

In that sense, the Korean economics/choices text worked better than the US economics/choices text. Whenever they read about the Korean boy, Hyungsoo and his classmates' problems and choices, both Kijung K.E. and Adam K.E. actively interacted with text and pictures in the Korean economics/choices passage as if they had been the boy, expressing their opinions, saying what they would do if they were him, and filling in the table for making a choice among things they want to buy or different types of transportation to take to go to the grandma's or what to do Saturday afternoon. They also tried to connect to their personal experiences as well. Such active engagement suggests that children felt familiar with the situations in the Korean economics/choices text and the way they were presented. But if the text had focused only on one example just like the US economics/choices text, it might not have been guaranteed that the children who read the Korean economics/choices text would have comprehended the main ideas better than the children who read the US economics/choices text. Indeed, the think aloud protocols of Kijung K.E. and Adam K.E. did show that both of them had a novice understanding of the main ideas for a while and gradually had better understanding as they read more examples together with explicit main idea statements.

On the other hand, the US economics/choices text focused only on one example. As discussed in the subsection of formal vocabulary, one example was not sufficient for

young readers to understand not only the difficult concepts of formal vocabulary but also the main ideas of the US economics/choices text. Moreover, this one example was less likely to encourage young readers to connect to their experience and background knowledge. The protocol students who read the US economics/choices text, especially Kuni U.E., did not seem to be immersed in the situation where the US girl, Marisa, had to decide what to buy as much as Adam K.E. and Kijung K.E. did with HyunSoo's choices in the Korean economics/choices text. Such differences in their responses seemed to show that the design of the US economics/choices text did not make the link between the example of Marisa and what young readers knew and experienced.

Moreover, Marisa's situation looks "unnatural." It may be because the US children are being raised in a culture that is more individualistic and independent (Triandis, 2001). Or it may be because Marisa's situation is contrived for the purpose of explaining the concepts of "opportunity cost," "scarcity," and "competition between sellers" all together within one short text focusing on one example. Or it may be because of the complex nature of the US textbook publishing, adopting, and selecting system. According to Chambliss and Calfee (1998), textbook publishing in the US is a gigantic business that involves various groups like publishers, policy-makers, administrators, and teachers, and publishers are often forced to compromise on sensitive issues to satisfy diverse groups and public. However, admitting such cultural differences and the complex nature of US textbook publishing, it is still doubtful that a 10-year-old child in the US would shop on his or her own for a jacket without an adult and whether young children both in the US and Korea can connect to such a situation.

Texts from the two countries may also differ in interest value. Researchers have warned that not all interest-enhancing features contribute to readers' comprehension and learning (Chambliss & Calfee, 1998; Garner, Gillingham, & White, 1989; Harp & Mayer, 1997; Lehman, Schraw, McCrudden, & Hartley, 2007; Shirey & Reynolds, 1988; Wade & Adams, 1990). Adding highly interesting but unimportant or irrelevant information to a text would disrupt the overall coherence of a text and interfere with understanding and remembering the important information of the text. The interest-enhancing features in the US text may be "seductive details" that are interesting but not relevant to the topic so that readers can be distracted from the main ideas (Chambliss & Calfee, 1998; Garner, Gillingham, and White, 1989), while the interest-enhancing features in the Korean text may be relevant to the main ideas of the text. The interest-enhancing features in the Korean economics/choices text were not only interesting but also helped the comprehension of the main ideas, while the interest-evoking features in the US economics/choices text may well have captured children's attention but did not enhance their comprehension.

The think aloud protocols and interview suggest that the interest-enhancing features like pictures and charts in the Korean economics/choices text not only captured the two students' attention but also prompted them to understand the main ideas better. Both Kijung K.E. and Adam K.E. actively interpreted the pictures and charts, filling in any information gap in charts. What they did with these pictures and charts was necessary to comprehend the text, considering that the Korean texts tend to convey important information through pictures and charts as much as through text.

On the other hand, the US economics/choices text had more variety of interest-enhancing features, including some of explicit structural signals and pictures, than the Korean economics/choices text. But these various features were more like seductive details. As Lehman, Schraw, McCrudden, and Hartly (2007) explained, seductive details might have a debilitating effect on comprehension and learning by distracting readers from important ideas, disrupting the overall coherence of text, and facilitating inappropriate schema construction.

Such a negative effect was found in Kuni U.E.'s case. First, emphasizing the vocabulary like "opportunity cost" by the vocabulary presented in a side bar or highlighting captured Kuni U.E.'s attention, but did not help him to get the concepts accurately. He did not see what the concepts of opportunity cost meant in relation to the main ideas of the text. In addition, some pictures in the US economics/choices text also were interesting but did not help him to comprehend the economic concepts and main ideas partly because some were just decorative or repeated the same information as the text and partly because some might be unclear. Kuni U.E. struggled a lot with the diagram that depicted an example of opportunity cost and was not able to answer the review question that was related to that diagram. The features that were built into this text in order to explain the concept of opportunity cost distracted Kuni's attention away from the main ideas and disrupted the overall coherence.

Abigail U.E. did not show the difficulty with that picture as much as Kuni U.E. did, but she was not able to answer the same review question. It suggests that interest-enhancing features like pictures or highlighting and definitions of the key vocabulary in

the US economics/choices text are not coherently interwoven with other text features in the way to increase the comprehensibility of the text.

Differences in coherence between the US and the Korean economics/choices texts best explains differences in the quantitative and qualitative outcomes. Adam K.E. was puzzled with the lack of details or cultural unfamiliarity of text structure in the beginning of the Korean economics/choices text. But he was able to process the text without much difficulty and comprehended the main ideas well in the end. He revealed interest and excitement as he read as well. What made it possible for him to overcome such cultural unfamiliarity of the text and engage in the Korean economics/choices text? It is because of the coherent structure. Adam said, “There was nothing really confusing, because all [pictures, captions, tables, text, and so on] stay on the topic or what it was about.” The Korean text adhered to the purpose of an explanatory text, filling gaps between the understanding of novice readers and that of experts by logically ordering subexplanations and connecting to readers (Chambliss & Calfee, 1998; Rowan, 1988, 1990). To fulfill the purpose, it made the unfamiliar familiar by interweaving more than one familiar example and interest-enhancing feature coherently around the topic and the main ideas.

On the other hand, the US economics/choices text was not effective in making the unfamiliar familiar by focusing only on one example that appeared unnatural and by failing to coherently knit all the text features including explicit structural signals and other interest-enhancing features together around the main ideas. It did not provide examples that are clear, familiar, and sufficient. Too many structural signals, seductive interest-enhancing features, and too much information interrupted the overall coherence of the text, overloading children conceptually and distracting them from the main ideas.

These differences in coherence apparently affected the overall comprehensibility of the Korean and the US economics/choices texts, as shown both in the text analysis and in children's responses to the texts.

The comprehensibility differences between the Korean economics/choices text and the US economics/choices text contrast strikingly to the readability differences between them. As shown in Chapter 3, the readability formula predicted that the US Economics/choices text (4.6) would be easier to comprehend than the Korean Economics/choices text (5.1). Indeed, the US Economics/choices text had the lowest readability of the four texts and should have been the easiest to comprehend. Such different predictions between the readability formula based on Flesch-Kincaid grade level and comprehensibility based on Chambliss and Calfee's analytical approach support what Loxterman, Beck, and McKeown (1994) contended. In their study, the students who read the revised text that increased textual coherence performed better than those who read the original text. Loxterman, Beck, and McKeown (1990) concluded that though the revised text was longer and predicted to be more difficult in terms of traditional readability, it turned out to be more comprehensible, because the revision was based on how people process information. They argued that text coherence is a more productive and adequate criterion for text design than readability formulas.

A readability formula cannot measure everything that contributes to the comprehensibility of a text. It cannot measure prior knowledge, interest level, difficulty of concepts, or coherence of text. It tends to simplify how readable or comprehensible a text may be, simply by, for example, counting the number of syllables, words, and sentences and obtaining the average, based on word and sentence length (e.g., Flesch-

Kincaid Grade Level). Such simplification cannot capture whether apparently short sentences or words are actually conceptually loaded and text is less coherent without providing enough scaffoldings for lay readers. This quick and simple formula can be problematic, especially when the text is written to explain difficult concepts to lay readers, as shown in the US Economics/choices text.

In conclusion, explicitness, familiarity, and interest-enhancing features are important as the previous research showed. But these textual features work as long as they are coherently structured together around the main ideas without seductive details or unrealistic examples. The Korean economics/choices text included more familiar vocabulary and examples that children could easily empathize with and connect to their own experiences than the US economics/choices text. Also, the interest-enhancing features in the Korean economics/choices text were not only interesting but also relevant to the main ideas, while some of the interest-enhancing features in the US economics/choices text worked as decorations or seductive details that interfered with the coherence of the text and comprehension rather than helped it. Most of all, coherent structure tied all together textual features like familiar examples that are ample in quantity and interest-enhancing features that are not seductive but relevant to the main ideas.

Challenging Topic and Active Engagement: Economics/choices Texts vs.

Civics/community involvement Texts

If text design really matters as shown above, why did it influence the economics/choices texts only? Both the large group data and the protocol data showed that text design is more important when children read the economics/choices texts than

the civics/community involvement texts. There was a significant interaction between text origin and topic in the quantitative outcomes. Unlike the economics/choices texts, the quantitative outcomes on the measure of the comprehension of main ideas were almost identical for the Korean and the US civics/community involvement texts. Corroborating such results, the protocol students who read the economics/choices texts showed different patterns of reading strategy use depending on the text origin, while there was no pattern that suggested the effect of text origin on the reading strategy use of children who read the two countries' civics/community involvement texts. How can this interaction be explained?

First, as the text analysis showed, each country's civics/community involvement and economics/choices texts are similar in general text design. The US civics/community involvement text has formal vocabulary, explicit structural signals, and other seductive details like the US economics/choices text. The Korean civics/community involvement text is similar to the Korean economics/choices text in text design, except that it uses only one example. But the text analysis also showed that the two countries' civics/community involvement texts did not differ in familiarity or the number of examples, while the two economics/choices texts differed.

Other than the similarity or difference in text design, this interaction could have resulted from the difference between the topics themselves or the difference in the way these topics were presented. The significant effect of text topic on children's situational interest showed that children were more interested in the civics/community involvement texts than the economics/choices texts. On the other hand, the think aloud and interview

data also suggested that the way the text writer conceived of the economics/choices topic and presented it were more challenging to children.

Considering the differences in the interest-value and difficulty of the civics/community involvement and the economics/choices topics, the interaction between text topic and text origin suggests that text design is more important when a topic is likely to be more challenging and less interesting to readers. It suggests that unlike the economics/choices texts, any differences in comprehensibility did not make a big difference in comprehension of the two countries' civics/community involvement texts, because the civics/community involvement topic was not considered or presented as academically as the economics/choices topic and children were more interested in it. This interaction also shows, however, that with the right kind of text design, particularly if it fosters engagement, students can perform well even on challenging and less interesting topics. (Loxterman, Beck, & McKeown, 1994; McNamara, 1996). Loxterman and colleagues (1994) suggested that textual coherence in combination with active engagement could enhance readers' comprehension and learning from a text. McNamara (1996) also argued that active processing is advantageous especially for the situational understanding rather than text-based superficial understanding when readers process less coherent text on difficult concepts.

The design of the Korean economics/choices text facilitates children's active engagement more than any other text in this study. The results of the think aloud protocols showed that Adam K.E. and Kijung K.E. who read the Korean economics/choices text actively engaged in the situations presented in this text. They actively expressed their opinions and connected to their experiences or prior knowledge,

as they read each of the familiar examples. They answered the embedded questions, made inferences about the pictures and implicit information, and filled in the charts. In doing so, they acted as if they were in that situation of making a choice. They were easily able to identify themselves with the boy in the text. By going through such engaging processes, these two protocol students were able to gradually understand the difficult concepts in this economics/choices text. Indeed, as Rowan, Gale, Whaley, and Tovar (2005) argued for well-designed explanatory writing, these children might have felt as if they had solved challenging but intriguing puzzles along with the author.

The implicit style of the Korean economics/choices text leaves more room for readers to fill in through active engagement. The title of the Korean economics/choices text is incomplete. The embedded questions are often followed by an example rather than an explicit answer. The tables are left with empty cells and a questions mark. However, such implicitness or the lack of details that Adam K.E. noted did not interfere with children's comprehension. Rather, it prompted readers to process the text more actively (McNamara, 1996). As discussed above, the Korean explanatory texts focused on *why* rather than *what* (Rowan, 1990). However, if such implicit features were included in the text incidentally rather than on purpose, they would interfere with comprehension and not foster active engagement. Rather, because they were prepared thoughtfully and presented in a systematic and coherent manner with other features, the Korean economics/choices text was able to fulfill the purpose of the explanatory text that helps readers who initially have little knowledge acquire full understanding of unfamiliar subject matter (Rowan, Gale, Whaley, & Tovar, 2005).

On the other hand, although the US economics/choices text dealt with similar main ideas, its design did not foster children's engagement. Kuni U.E. did not engage himself in the situation of making a choice. He did not seem to identify himself with the girl in the text. He was busy in figuring out the concepts of opportunity cost and scarcity and following what Marisa did, rather than thinking about why in advance, actively expressing his opinions, or connecting to his experiences or prior knowledge. The overuse of explicit structural signals did not facilitate children's engagement and might even have diminished it.

In conclusion, the civics/community involvement topic itself seems less challenging than the economics/choices topic, so that the difference in the design of the two countries' civics/community involvement texts did not make a big difference as it did with the economics/choices texts. When a text deals with a less challenging topic, reader characteristics are likely to have a more significant effect than text characteristics for comprehending and learning from text. On the other hand, when the text deals with a challenging topic, it is crucial that the text be meticulously designed so that it can foster readers' active engagement and comprehension.

Reader Characteristics

Comprehension and learning from text are not only affected by text characteristics but also by reader characteristics (Beck, McKeown, Sinatra, & Loxterman, 1991). Researchers have shown that text characteristics have differential effects for readers with different characteristics as a reader such as reading ability and background knowledge (Birkmire, 1985; Levie & Lentz, 1982; Levin & Mayer, 1993; Mayer, 1997; McGee, 1982; McKeown, Beck, Sinatra, & Loxterman, 1992; McNamara, 1996; Molinari &

Tapiero, 2007; McNamara, Kintsch, Songer, & Kintsch, 1996; O'Reilly & McNamara, 2007; Taylor, 1980; Voss & Silfies, 1996). The results of this study also showed that comprehension and learning from text depend on the effective interplay between text characteristics and reader characteristics.

Among different reader characteristics, I focused only on the influence of background knowledge that I measured by pre-reading demonstrated background knowledge and used as a covariate for the quantitative analyses. Previous research has also showed the effect of reading ability on readers' comprehension and learning from text and in interaction with text characteristics like text cohesion (e.g., O'Reilly & McNamara, 2007; Ozuru, Dempsey, & McNamara, 2007; Voss & Silfies, 1996). I do not discuss the effect of reading ability in this dissertation. Since I did not measure the participants' reading ability or collect such information, it is outside of the scope of this study.

Background Knowledge

As shown in chapter 2, there is a strong research base that supports the effect of background knowledge on comprehension and learning from text (e.g., Freebody & Anderson, 1983; Langer, 1984; Torney-Purta, 1991). McKeown, Beck, Sinatra, and Loxterman (1992) contended that both background knowledge and text coherence should be considered together in improving textbooks, since the results of their empirical study revealed that both variables would make contributions to comprehension but neither could completely make up for the lack in the other.

Consistent with the previous research base, both quantitative and qualitative outcomes of this study indicated that readers' background knowledge played a significant

role in children's comprehension from text. First of all, the quantitative outcomes showed that the covariate, pre-reading demonstrated background knowledge, was statistically significant for five measures: main ideas, conceptual understanding, demonstrated acquired knowledge, perceived knowledge, and individual interest. It suggests that for these measures, high background knowledge had a positive effect on children's performance, regardless of text origin, text topic, and reader's country. Because background knowledge was a covariate, however, it is not possible to evaluate any interactions between it and text origin, text topic, or reader's country. In addition, the covariate was not statistically significant for situational interest, free drawing, or problem solving.

First, for the measure of main ideas, high-background knowledge children comprehended main ideas better than low-background knowledge children, regardless of which country's text they read, what topic they read about, or what country they come from. This outcome corroborates previous research that yielded the overall facilitative effect of background knowledge on comprehension (e.g., Freebody & Anderson, 1983; Johnston, 1984; Langer, 1984; Pearson, Hansen, & Gordon, 1979). Similarly, for the measure of conceptual understanding, high-background knowledge children showed higher levels of conceptual understanding than low-background knowledge children. However, the effect size for background knowledge was small while the effect size for text origin was large. Indeed, the effect size for text origin for this measure was the largest among all the significant effects in this study. It suggests that although background knowledge affected children's conceptual understanding of vocabulary, text origin had a larger contribution to conceptual understanding. It comes as no surprise,

considering that the conceptual understanding question was about specific vocabulary words, rather than the overall main ideas or the general topic knowledge. Children's performance in this measure seems to have been affected by what text they read more than what they knew generally about the topic before reading.

Third, for the measure of demonstrated acquired knowledge, the effect of background knowledge was statistically significant. Only the covariate, background knowledge, was statistically significant for this measure, and its effect size was large. Regardless of text origin, topic, and readers' country, the children who knew more about the topic before reading were able to demonstrate more knowledge after reading, because of their pre-existing knowledge rather than because of the particular passage that they read. However, using pre-reading demonstrated knowledge outcomes as a covariate made it impossible to evaluate the knowledge gain before and after reading.

Fourth, background knowledge also had a significant effect on the measure of perceived knowledge as expected. However, there were no between-subjects or within-subjects effects (time) on this measure. This result indicates that children who knew more about the topic before reading also had better self-perception of their background knowledge and such perceived knowledge did not change significantly after reading.

Fifth, for the measure of individual interest, background knowledge was also statistically significant with a small to medium effect. Other than the significant effect of background knowledge, there was also the significant effect of readers' country. The Korean children had higher individual interest than the US children. However, there was no time effect.

Individual interest is personal preference that develops slowly over time and is stable and long lasting (Hidi, 2001; Krapp, 1999, 2000; Schiefele, 1998; Wade, Buxton, & Kelly, 1999). Considering this nature of individual interest, it is not surprising that reading a passage did not change readers' individual interest, and text topic or text origin did not affect it. On the other hand, background knowledge and readers' country had a significant effect on individual interest. Indeed, readers' pre-existing knowledge and personal experiences that have been accumulated over time may contribute to their individual interest over time as well. Thus, it is not surprising that the children who had higher background knowledge had higher individual interest. In addition, different educational experiences that the two countries' children had may account for the difference in their individual interest as well.

In short, the quantitative outcomes showed that children's performance on the measures of main ideas and conceptual understanding resulted partially from their pre-existing knowledge and partially from reading a certain text that differed by text origin or topic. On the other hand, children's demonstrated and perceived knowledge and individual interest were affected by their background knowledge regardless of the particular text that they read.

Finally, the qualitative outcomes also corroborate the powerful effect of background knowledge on children's comprehension of main ideas and conceptual understanding of vocabulary. As shown in Abigail U.E.'s case, the US economics/choices text dealt with a challenging topic and did not help readers to engage in reading and connect to their own experiences and background knowledge. However, Abigail U.E. who had considerable background knowledge was able to connect to her

personal experiences and use her background knowledge. As a result, she was able to comprehend the main ideas and conceptually understand the vocabulary to some extent. On the other hand, Kuni U.E.'s low background knowledge did not help him resolve the difficulties he encountered in the passage and overcome misconceptions. Kangmin U.C. who knew a lot about the topic before reading also did not have any difficulty as he read the US civics/community involvement text. He actively engaged in reading and showed interest and excitement as he read. He heavily relied on global processing, connecting to his background knowledge and experiences. As a result, after reading, he showed good comprehension of main ideas, although he had only partial conceptual understanding of "common good."

Such results from qualitative data suggest that readers with appropriate background knowledge can actively engage in the reading process, filling in gaps in text-based information and helping them avoid developing any misconceptions (Ozuru, Dempsey, & McNamara, 2007). On the other hand, if readers do not have high background knowledge, they cannot easily fill in such gaps on their own. They need more scaffolding from a well-designed text. But when their low background knowledge is combined with logical gaps or lack of gap fillings in text design, they are likely to have misconceptions, instead (McKeown, Beck, Sinatra, & Loxterman, 1992; McNamara, Kintsch, Songer, & Kintsch, 1996; O'Reilly & McNamara, 2007; Ozuru, Dempsey, McNamara, 2007; Voss & Silfies, 1996).

In conclusion, background knowledge is so powerful that it is inappropriate to discuss the effect of text design alone without considering the effect of background knowledge. This study showed that background knowledge had a significant contribution

to the performance in the measures of comprehension, knowledge, and interest, independently of the other factors. However, this study also showed that text design could make a difference in the comprehension of main ideas and conceptual understanding of vocabulary, even when the effect of background knowledge was considered. Such powerful influence of background knowledge together with the importance of text design suggests that it is important to design a text that builds upon readers' background knowledge (Beck, McKeown, Sinatra, & Loxterman, 1991; Chambliss & Calfee, 1998). It suggests that the explanatory text genre that builds upon novice readers' everyday background and scaffolds them toward expert-like understanding can be a powerful tool for children's comprehension and learning, if it is effectively designed (Chambliss & Calfee, 1998; Rowan, 1988, 1990).

Revisiting the Conceptual Framework

The original conceptual framework posited that cultural schemata would affect both text design and a reader who is a member of a cultural community. Thus, I conceptualized that because of the effect of different cultural schemata, if both countries' textbook passages were relatively well-written, children would comprehend their own countries' textbook passages better than the other countries' textbook passages. However, this conceptual framework only partially matched the results of this study.

Instead, Figure 8 shows a modified conceptual framework that fits the results of this present study better. As shown in Figure 8, textbook passages are likely to be designed based on both cultural schemata that are shared by the members of a particular cultural community and writer schemata that textbook writers may share across cultures. These cultural schemata and writer schemata are represented in a textbook passage,

resulting in both culture-dependent and culture-independent content, structure, interest, familiarity, and text-picture relations in the design of a textbook passage.

On the other hand, in reading a textbook passage, children are likely to be influenced by reader schemata that young readers share across cultures rather than specific cultural schemata by being a member of a particular cultural community. Children are likely to have such shared reader schemata to some extent because they are experiencing the same process of acquiring literacy skills and communicative competence through schooling and because they are children who live in the same era. However, although reader schemata are based on common thought processes and experiences as a human being and child, there are individual differences in children's reader schemata regardless of their cultural membership, resulting in different mental representations of a text, based on different levels of background knowledge, reading ability, and interest.

The results of this study showed that although there were both culture-dependent and culture-independent characteristics in the design of textbook passages, children's comprehension was influenced by the shared characteristics of a well-designed text rather than the culture-dependent characteristics like different cultural writing styles or underlying cultural values. Also, children's comprehension was influenced by their individual background knowledge, reading ability, and interest, indicating the effect of individual reader's schemata. Therefore, children's comprehension of a textbook passage and learning depends on the effective interplay between the characteristics of a well-designed text that are shared across cultures and reader schemata that an individual reader brings to a text, rather than specific cultural schemata.

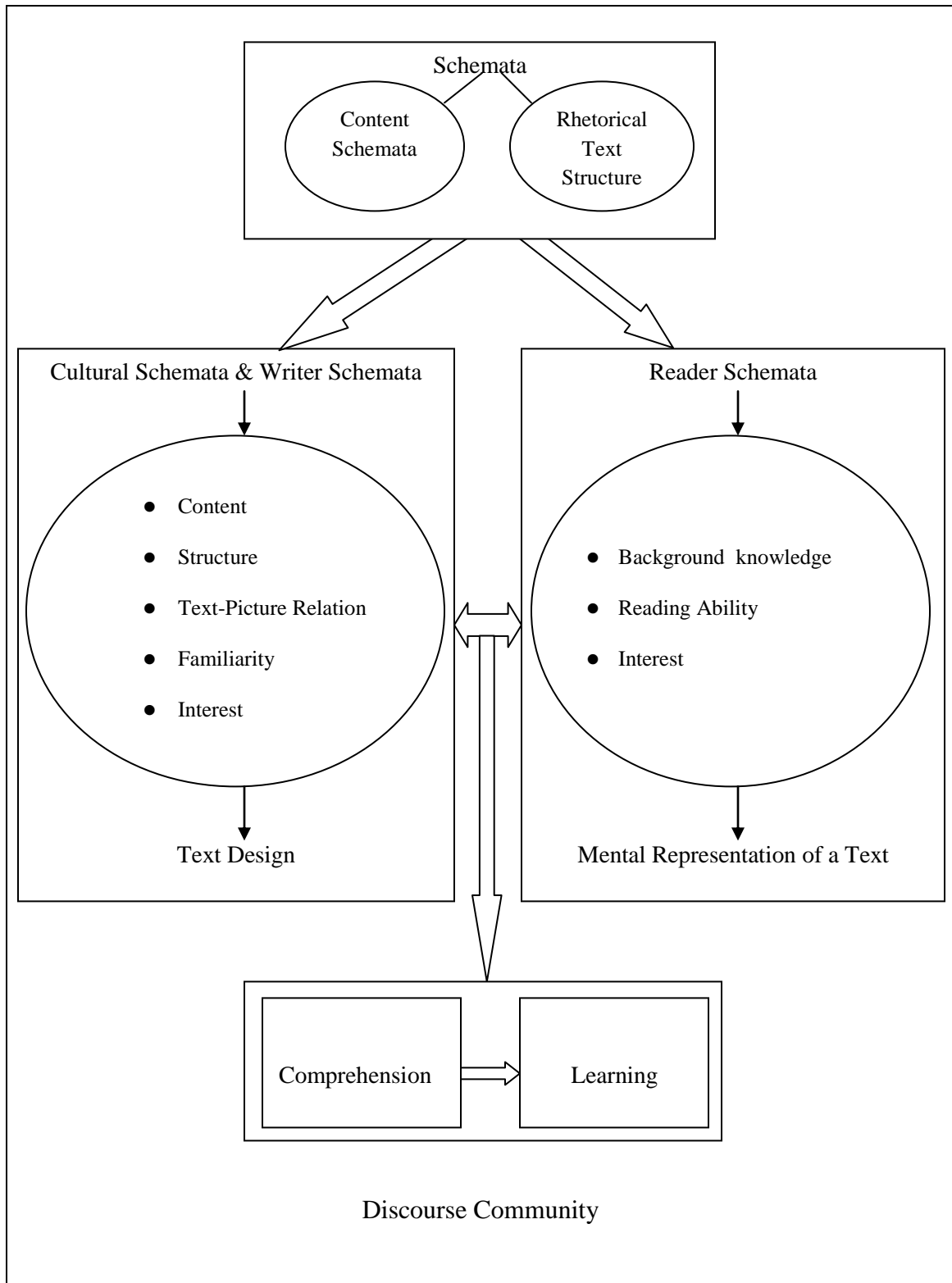


Figure 8. A model for children's comprehension and learning from a textbook passage

Summary

The text analysis and comparison indicated that different cultural schemata were reflected in the content and the form of each country's textbook passages. Such cultural differences in design might have come from different cultural values, writing styles, or possible cultural differences in the intellectual traditions or attitudes of a particular academic discipline.

However, unlike the original conceptual framework (See figure 2 in Chapter 1.), both quantitative and qualitative analyses suggested that culture did not make differences in children's comprehension and learning from text. There were no significant interactions between text origin and readers' country. Underlying cultural differences in the text design were not as influential as the shared characteristics of a well-designed text itself. Underlying cultural values and writing styles did not affect young readers who might share common experiences as a child across cultures and whose cultural schemata are not completely developed in their early stage of cultural apprenticeship. What seemed to have a larger contribution to their comprehension were shared thought processes common to human beings and common experiences as children.

In terms of text design, the Korean and the US texts differed in explicitness, formal vocabulary, familiarity, interest-enhancing features, and coherence, which resulted in the different performance of children who read the two countries' texts. The results suggest that well-designed text should contain explicit structural signals, more familiar vocabulary and examples that are ample and realistic, and interest-enhancing features that are not seductive but relevant to the main ideas of a text. When all of these textual features are coherently interwoven around the main ideas, the text can contribute to

readers' comprehension and learning from text significantly. In addition, the interaction between text topic and text origin suggests that text design is more important when the topic is challenging and less interesting. When a text is designed in the way that fosters readers' active engagement and provides appropriate scaffolding for comprehension, children can perform well even on such challenging and less interesting topics.

Comprehension and learning from text are not only affected by text characteristics but also by reader characteristics (Beck, McKeown, Sinatra, & Loxterman, 1991). Particularly, when a text deals with less challenging topics like the civics/community involvement topic in this study, reader characteristics are likely to make a more significant contribution to comprehension than text characteristics. Among various reader characteristics, the results of this study showed that background knowledge had a large contribution to the measures of main ideas, conceptual understanding, individual interest, perceived knowledge and demonstrated acquired knowledge, suggesting that it is critical to design a text that builds upon and facilitates readers' background knowledge.

Implications

This study has implications both for researchers and for educators. First, the research design of this study has implications for research. Little research has provided an in-depth analysis and comparison of the textbook passages that were actually used in two countries as well as empirical data from children who come from different countries. By conducting the cross-country study involving not only analysis and comparison of two countries' textbook passages but also children from the two countries, this study contributes to the extension of the US-focused research toward the other side of the world and provides a stepping stone for the necessity and benefit of cooperation across the

international research community. Moreover, this study provided empirical evidence for the relations among culture, text design, and comprehension by comparing the comprehension of children from the two countries who read either their own country's or the other country's textbook passage. Second, this study had both quantitative and qualitative components. This mixed research method helped to identify not only differences between the two countries' textbook passages and in children's comprehension by text topic, text origin, and reader's country, but also where such differences might originate and how they might affect a reader's comprehension and learning from text.

This study also has implications for educators. The results of this study indicated that there are some shared text and reader characteristics that positively affect young readers' comprehension and learning from social studies textbooks. It suggests that we can learn from each other about how text should be designed in order to promote children's comprehension and learning from textbooks. Textbook authors and publishers in each country can learn from both the Korean textbook design and the US textbook design to improve the quality of instructional materials for children in their country. However, as Chambliss and Calfee (1998) suggested, it is not easy to make such changes happen in the design of textbooks, because textbook publishing is such a gigantic business in the US that needs to reflect the opinions from voices of various sides.

If textbook publishers could improve the quality of textbooks, it would be ideal. However, if it is too slow and complex to happen, this study implies what teachers can do instead. Teachers are in an important position to facilitate the appropriate interplay between text and young readers. The results of this study have implications for both

Korean and US educators by increasing their sensitivity to the strength and weakness of their school textbooks and probable difficulties that their students may face as they read the textbooks. It can help teachers answer how they can design their instruction to compensate for the weaknesses and make the most of the strengths of their textbooks and what role they can play when children interact with text.

The selected passages for this study were relatively well designed. Nevertheless, this study showed that all of the four passages still could be improved. In other words, it suggests that most of the textbook passages used in both countries' classrooms are far from perfect instructional or educational materials, so that teachers' roles remain crucial. This study points the way for how teachers can address the strengths and the weaknesses of their textbooks and promote children's comprehension and learning from text.

First, the results of this study suggest that young readers can benefit from explicit statements or explicit structural signals if these two text features are coherently presented with other parts of a text. This study also suggests that not all students can pay attention to or make use of such explicit signals. Accordingly, teachers should help children to pay attention to explicit statements or signals in relation to the main ideas or provide explicit explanation if the text lacks it. At the same time, they also should help children to be aware of logical gaps, if any, and to help them fill in such gaps. Previous research has shown that many students, especially those who do not have high reading skills, cannot fill in the gaps in a text on their own (e.g., McNamara et al. 1996). Students who need the most help from textbooks are likely to have the least, if textbooks are less coherently designed. This is where teachers' help may be the most crucial.

Second, this study indicates that when a text facilitates a reader's active engagement, readers can comprehend the text better, supporting previous research findings (e.g. Loxterman, Beck, & McKeown, 1999). But if the text does not promote active engagement, then teachers need to engage the students themselves, for example by asking appropriate *why* or *how* questions as shown in the Korean Economics/choices text rather than *what* questions in the US Economics/choices text. Teachers also may provide graphic organizers that children can fill in based on what they read and what they think. The think aloud activity itself may facilitate such active engagement as the protocol students in this study and participants in Loxterman, Beck, and McKeown's study (1999) did.

Third, this study suggests that background knowledge has a powerful impact on readers' comprehension. Teachers need to make sure that their instructional materials build upon children's background knowledge and provide enough examples that are familiar and realistic to children. Otherwise, teachers should activate or provide appropriate background knowledge for children by adding appropriate examples that are familiar and realistic.

However, the results of this study suggested that children often have a naïve understanding or even misconception about important ideas in social studies just as in science (Torney-Purta, 1991). Thus, before facilitating students' background knowledge, teachers need to identify and address possible misconceptions and naïve understanding or mismatch between a student's background knowledge and the student's probable background knowledge assumed by a text writer. Think aloud protocols can be a way to identify any misconceptions or mismatches. Then, a teacher can help prevent students

from activating inappropriate background knowledge and developing or having misconceptions persistently, for example, by explaining such concepts step by step with more examples. Such help from a teacher is crucial, especially when children are likely to have a naïve understanding or hold misconceptions about the difficult topics and conceptually overloaded formal vocabulary such as in the US Economics/choices text.

Limitations

The results from this study clearly informed the research questions. However, as with any research, the positive outcomes and implications discussed above inherently presented limitations as well.

External Validity

There are two threats to the external validity of this study. One comes from the setting and the makeup of the participants. First, the makeup of the students in the participating US school does not represent that of urban US elementary schools, which typically are more diverse linguistically and ethnically. Likewise, the make-up of the Korean participants in a school located in a big city may not represent that of the Korean elementary schools in a small town or in a rural area. Because the schools and students are not representative of all schools and students in either country, careful consideration is necessary in generalizing the results of this study to all US or Korean ten-year-olds.

The other threat to external validity results from the control over the text passages used in this study. First, the US text passages were from one of the US social studies textbook series. Some US textbooks may be similar to the chosen textbooks in one way or another, while other US textbooks may be quite different. It is inappropriate to say that the chosen textbook passages are representative of all the US social studies textbook

passages. Indeed, explanation is quite rare in US social studies textbooks (Chambliss & Calfee, 1998). In addition, I selected one civics topic (community involvement) and one economics topic (making choices) among various topics in each discipline. These two topics were less likely to require high cultural content knowledge, which would advantage readers from one country over readers from the other country. Selecting such topics helped me to examine the effect of both cultural content and formal schemata on comprehension and learning. However, these topics are not representative of all civics and economics topics. It is possible that with another topic there would have been a statistically significant effect of culture on comprehension and learning.

Finally, I selected relatively well-written textbook passages from both countries' textbooks. Thus, it is inappropriate to say that these textbook passages are representative of all the other textbooks. However, the results showed that despite the relatively well-written nature of these four passages, they need to be improved. Thus, the outcomes are at least suggestive of features of text design that positively affect readers' comprehension and learning regardless of what textbook series and what country they were from.

Internal Validity and Reliability

The threats to internal validity of this study result from selection of participants and the reliability of instrumentation. This study was conducted in naturally occurring classroom settings in each country limited by site accessibility, far from laboratory "true experiments." To rule out extraneous variables that might threaten internal validity, I used random assignment of participants and counter-balanced design. Nevertheless, it is possible that there are still threats to internal validity leading to three limitations.

First, previous research has shown that textual characteristics have differential effects on comprehension and learning of readers who vary in reading ability (e.g., O'Reilly, & McNamara, 2007; Ozuru, Dempsey, & McNamara, 2009; Voss, & Silfies, 1996). However, I was not able to collect information on the participants' reading ability or school level educational achievement because school administrators denied my access to such data, so that these differences were not considered in analyzing the data and reporting the results. I tried to deal with this issue by random assignment and counter-balanced design.

Second, before conducting this study, I expected that the Korean students might have read at least one of the chosen Korean passages, because there was only one social studies textbook series for elementary students in Korea. However, I was able to confirm that there was no unfairness to the US children in terms of background knowledge. The pre-reading demonstrated knowledge measure showed that the US children had higher background knowledge, although the difference between the Korean and the US children's background knowledge was not statistically significant. Even if the students from one country had statistically higher background knowledge than the students from the other country, I tried to eliminate the potential threat to internal validity due to the difference in background knowledge by controlling for background knowledge in analyzing the data and carefully interpreting the results in relation to background knowledge.

Third, in this study, gender was not examined as one of the reader characteristics that could influence children's comprehension. Previous research has shown that girls consistently outperformed in reading comprehension tests not only in the US (NAEP,

2009) as well as across countries (Ming Chui & McBride-Chang, 2006; Mullis, Martin, Kennedy, & Foy, 2007; Mullis, Martin, Gonzales, & Kennedy, 2003; Torney-Purta & Amadeo, 2004), although the reason for gender differences is not clear, causing various possible explanations and suggestions (Logan & Johnston, 2010). For this study, including gender as another factor in this research design would have required a larger sample size in order not to lose statistical power (Cohen, 1988; Huck, 2008). Because of the site access issue, I was not able to have a larger sample size or have an equal number of boys and girls participate in this study. Instead, with the given sample size, I tried to prevent the loss of the statistical power by not including gender in the statistical analysis.

Finally, another possible threat to internal validity comes from the reliability of measures. First of all, the overall scores in each measure were not that high. Mostly they ranged from 1 to 2 in the scale from zero to four. It may suggest that one-time reading does not have a dramatic impact on children's comprehension, knowledge, and interest. In addition, there were no meaningful patterns in the measures of free drawing and problem-solving. As is the case with the scores issue, these non-significant results may suggest that one-time reading does not have a great effect on children's comprehension and transfer. But it may also suggest that the measures, especially the free drawing and problem-solving measures, might not be sensitive and reliable measures.

Directions for Future Research

This study suggests many possible directions for future research. However, I propose a number of broad proposals for future research in five directions. First, I make suggestions relating to the measures used. Then, I make suggestions for research that would aid in better understanding the influence of culture in text design and

comprehension of a text, suggestions for research that would aid in better understanding text characteristics, and suggestions for research that would aid in better understanding reader characteristics. Finally, I make a few suggestions for research on teachers who use these textbook passages and instruction.

First, to compensate for the above limitations, different ways of measuring could be explored to be more sensitive to comprehension of main ideas, conceptual understanding, and transfer. The different measurements could include a short-answer question, multi-choice questions, and written summarization, and so on. In addition, some of the wordings or prompts that I used to ask children questions could be changed, considering that reliability may be improved by clarity of expression. With different types of measures, the same cross-country study or a study on students from one of the countries could be replicated in the future.

Second, I suggest three directions for future research that would help clarify better the effect of cultural schemata on comprehension and learning from text. This study suggested that cultural schemata were reflected in text design, but did not have a significant effect on readers' comprehension. Thus, first of all, more comprehensive text analysis and comparison could be conducted in order to examine whether the findings of cultural differences in text design in this study are limited to these social studies textbook passages used or common among other textbook passages. In addition, the study could be replicated with more culturally-influenced textbook materials just as the other researchers did for their cross-cultural research (e.g. Freebody & Anderson, 1983; Pritchard, 1990; Steffensen, Joag-Dev, & Anderson, 1979). One example can be texts about holidays that have similar concepts but differ in the traditional ways of celebrating them. For example,

both Korea and the US have a similar holiday for which families gather together to celebrate the harvest in fall. But they may differ in origin, tradition, and history.

Finally, the protocol students in this study suggested that the Korean and the US children might have had a different level of awareness of text structure. Most of the US protocol students used their background knowledge of text structure at least once as they read, while none of the Korean protocol students did. To examine whether such difference was only incidental or true to other Korean and US children as well, qualitative research with more protocol students could be conducted, focusing on their awareness of text structure, how they use such awareness, and how it may affect their comprehension. Such research may be a replication of previous research with addition of a cross-cultural perspective (Chambliss & Murphy, 2002; Englert & Hiebert, 1984; Hare, Rabinowitz, & Schieble, 1989; McGee, 1982; Taylor, 1980; Taylor & Samuels, 1983).

Third, there are three directions for future research that would help clarify better the effect of text design on comprehension and learning from text. This study focused on social studies textbook passages. However, previous research had shown that different textual characteristics could make a bigger difference in readers' comprehension, when the texts contain more complex and counter-intuitive concepts (Rowan, 1988, 1990). Accordingly, this study could be replicated with textbook passages from different disciplines like science that are likely to contain more complex and counter-intuitive concepts. In addition, since this study showed that there are shared textual characteristics that promote comprehension and learning, a study could be conducted by revising textbook passages based on the results of this study and comparing readers' comprehension and learning from the revised text and original text, just as Beck,

McKeown, Sinatra, and Loxterman (1991) did. Finally, in order to examine whether reading well-designed textbook passages also affects the quality of their writing, a study could be conducted by asking high school or college students to write a summary or an essay after reading textbook passages that differ in text design.

Fourth, there are two directions for future research that would clarify better the effect of reader characteristics on comprehending textbook passages that differ in text design. This study focused on ten-year-olds, and their reading ability was not controlled for. Thus, first of all, this study could be replicated with participants from a different age group like high school students or college students. Such replication could provide insight into whether the text design that positively affected ten-year-old children in this study also has a similar effect on adolescents or adults. In addition, further quantitative and/or qualitative research with students of different reading ability and background knowledge could also help our understanding of how reading ability and background knowledge together or independently may have a differential effect on readers' comprehension from text passages that differ in explicitness, coherence, familiarity, and interest level.

Finally, this study dealt with the features of instructional materials that affect comprehension and learning in classrooms. Whether textbooks are written well or poorly may matter to the extent to which teachers use them for instruction and how they use them. Accordingly, a cross-country teacher survey could be conducted to clarify better whether the two countries' teachers have different or similar perceptions and use of social studies textbooks. Furthermore, qualitative research based on observation and interviews with teachers could provide insight into how textbooks are used during the instructional

time. Finally, instructional intervention research could be conducted by designing instruction that can compensate for the weakness of a textbook passage and make the most of its strengths. For example, a teacher may activate and provide students' background knowledge and facilitate their active engagement by providing questions focusing on why and how and making use of graphic organizers that students should fill in. The instructional model that Chambliss and Calfee (1998) proposed could be implemented as well. Chambliss and Calfee proposed a framework for effective student-centered instruction called "CORE," which *Connects* to student knowledge, *Organizes* new content for students, promotes students to *Reflect* and to *Extend* what they have learned to new contexts.

Conclusion

The first step in helping elementary students comprehend and learn from their content area textbooks is to understand how text is designed and how it may affect children's comprehension and learning. This study investigated the influence of culture, text design, and reader characteristics on comprehension and learning from a social studies textbook passage. The results of this study failed to support the hypothesis that readers might comprehend and learn better from a culturally familiar text than a culturally unfamiliar text, because text in one cultural community might be written based on the cultural schemata that readers in the same cultural community might share. Although text analysis showed that different cultural schemata were reflected in the design of textbook passages from different countries, such cultural schemata in text design did not affect children's comprehension significantly.

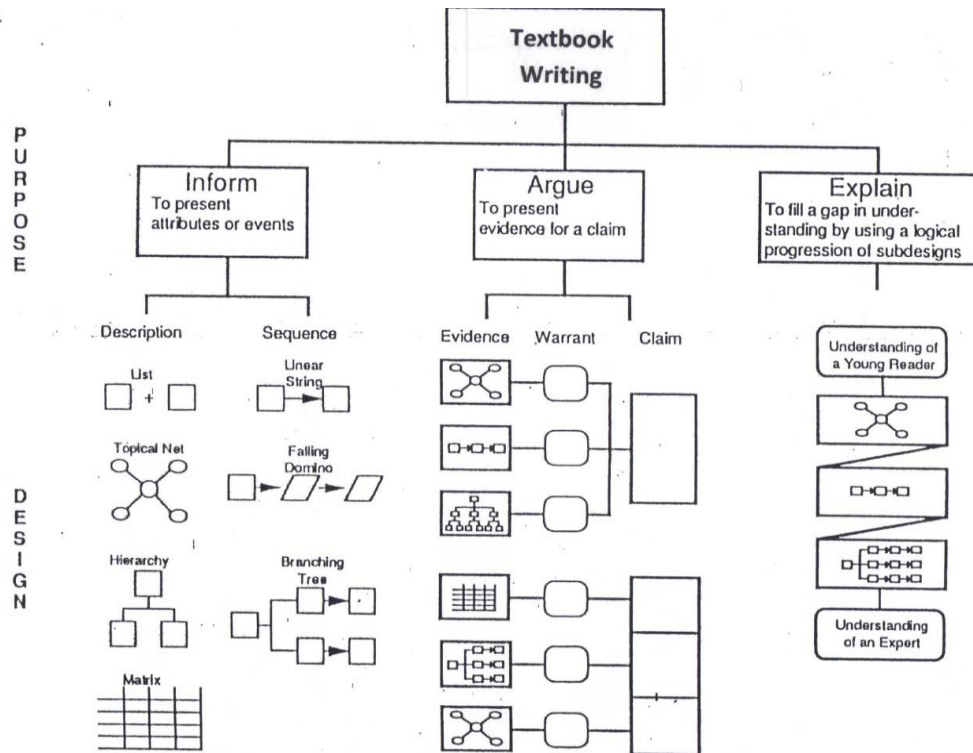
Rather, this study showed that there were text characteristics that significantly affected children's comprehension, regardless of cultural familiarity. Such text characteristics include a number of familiar and realistic examples, interest-enhancing but not seductive features, explicit statements or signals that are coherently structured with other features, and features that facilitate active engagement such as questions on why and how. What is particularly important is that all of these textual features should be coherently structured around main ideas. Independently of text characteristics, background knowledge was also crucial for children's comprehension. It indicates that comprehension and learning from text depend on the effective interplay between well-designed text and a reader who brings a certain level of background knowledge to text.

In conclusion, the focus of this study is not on whether one country's textbooks are designed better than the other country's textbooks or children from one country perform better than children from the other country. Rather, it is important to focus on the shared characteristics of a well-designed text that help children's comprehension and learning, regardless of their cultural membership or schemata. This study made it clear that in order to facilitate comprehension and learning, text should be carefully designed so that it builds upon and facilitates appropriate background knowledge, and includes other shared characteristics of a well-designed text: ample familiar and realistic examples, interest-enhancing but not seductive features, explicit statements or signals, features that facilitate active engagement such as why and how questions, and structural coherence among various textual features around main ideas.

APPENDIX A

Model Used for Graphic Representation of Text structure

The design of rhetorical patterns used in expository writing. (Chambliss & Calfee, 1998, p. 32) (Reprinted with permission)



APPENDIX B

The Bibliography of the Textbooks Used

Houghton Mifflin. (2005). *Houghton Mifflin Social Studies / Communities / Student Edition*. Boston, MA: Houghton Mifflin Company.

Korean Ministry of Education. (2005). *Social Studies 3-2 / Student Edition*. Seoul: Daehan Textbook Company.

Korean Ministry of Education. (2005). *Social Studies 4-2 / Student Edition*. Seoul: Daehan Textbook Company.

All the textbook passages were reprinted with permission.

APPENDIX C

Guidelines for Analysis and Graphic Representation of Text Structure (Explanation)

1. Everything in the textbook passages can be part of the analysis. This includes text and pictures (diagram, table, chart, graph, photo, any kind of illustration).
 - a. If a picture plays a substantial role in conveying message alone or together with text, it should be depicted as one subexplanation on its own or part of a subexplanation with text.
 - b. If a picture serves only as background or a partial replicate of the information included in text, it can be inserted only as such in the graphic representation in relation to the text.
2. Questions for review or activity in the passage should be considered in text analysis and graphic representation.
3. The main title of each passage is not a subexplanation on its own.
4. The headings or subheadings are not subexplanations on their own. But they can be included as part of explanatory features of subexplanations.
5. As for explanatory features, what kind of subexplanation it is should be described. For example, if a certain subexplanation shows how expert may conceptualize main ideas, the explanatory feature for this subexplanation is expert model. If it shows an example of the expert model that students are familiar with, the explanatory feature is example.
6. If a sentence or sentences show transition from one subexplanation to another, contributing to logical progression, it is more appropriate to depict them as a connector rather than a single subexplanation on their own. Such connector will be depicted graphically on a diagonal line between the two subexplanations.
7. If there is a substantial logical gap between one subexplanation and another, PLUS sign is used between the two subexplanations to note that gap.

APPENDIX D

Guidelines for Inter rater Agreement on Text Analysis

These guidelines are for the three-step analyses of the two passages (one Korean and one US) about the same topic in the same discipline (Civics/community involvement or Economics/choices).

The three steps of text analyses are as follows.

1. Comprehensibility evaluation, using the rubric provided
2. Analysis of text-picture relations, using the given tables
3. Comparison of the two passages from a cross-cultural perspective, considering categories suggested.

For the analyses, please read the passages in the booklets provided. The booklet also includes measures in addition to passages. But what you need for the text analyses is only the passages.

For the Korean passage, read through pages from 5 to 10 and for the US passage, read pages from 5 to 8.

Please complete each level of analysis, according to the direction

Please continue until you see “The End”.

If you have any questions, please feel free to contact me by hhuh@umd.edu or call me by 609-356-2522.

I greatly appreciate your time and help!!

APPENDIX D-1

Comprehensibility Rubric

Direction: Please evaluate the overall comprehensibility of each passage, using the evaluation rubric below.

1. You can assign in-between points, 2 and 4 for each category.
2. Everything in the textbook passages can be part of the analysis. This includes text and pictures (diagram, table, chart, graph, photo, any kind of illustration).
3. Questions for review or activity in the passage should be considered in text analysis.
4. The order of presentation matters in logical progression of ideas. So, if a page consists of a labeled picture, text, and a review question in order, you should analyze this page in this order to see whether this order contributes to the logical progression of ideas and overall coherence and whether there is any logical gap among them.
5. For each of the three categories above, please refer to Chambliss and Calfee's approach if you need.

Author's purpose: To explain	1	3	5
Text Structure (Coherence: Logical progression)	Too many logical gaps may hinder overall coherence and logical progression in explaining main concepts.	There are some logical gaps, but they do not hinder overall coherence and logical progression in explaining main concepts.	Logical progression, coherence, few or no logical gap between subexplanations
Familiarity (Gap-filling)	There are few or no efforts for gap filling between naïve understanding and expert-like understanding. There are few or no attempts to connect to children's prior experiences and knowledge.	There are some efforts for gap filling between naïve understanding and expert-like understanding. There are some attempts to connect to children's prior experiences and knowledge. But not all of them are effective in rendering unfamiliar content familiar.	Efforts for gap filling between naïve understanding and expert-like understanding are pervasive. Appropriate attempts are made to connect to children's prior experiences and knowledge, rendering unfamiliar content familiar.
Interest	There are few or no child-friendly and interest-enhancing features.	There are some child-friendly and interest-enhancing features.	There are many child-friendly and interest-enhancing features.
Overall comprehensibility	Total: ___/15		

APPENDIX D-2

Analysis of Text-Picture Relations

- Direction: 1. Please categorize each picture, using the classification systems of text-picture relations (See Table 1).
2. Please type in what category each picture belongs to in the empty cell in Table 2 or Table 3, depending on whether you analyze Civics/community involvement passages or Economics/choices passages. For example, if a category is decorative, please type in “Decorative (Hierarchical)” under the column of category. If it is symbiotic, type in “Symbiotic”.

Table 1. Classification System for Text-Picture Relations in Textbooks

Classification		Description
Hierarchical		Text is primary and picture is supplementary in presenting information. Text can stand alone.
	Decorative	Picture is not related to content, or if it is, the relation is not meaningful. It is inserted for the purpose of superficial decoration only. So, there is no beneficial effect on learning from text
	Representational	Picture is a partial or complete replication of text content
	Organizational	Picture is used as a structural framework for text content to enhance coherence (e.g., graphic organizer for overview or summary of the content)
	Interpretational	Clarifiers of abstract or difficult text content
	Transformational	Mnemonic tool (e.g., a picture of a big bell may help readers to remember the name of a town, “Bellevue”, although Belle means “beautiful”, not “ringing bell”)
Equivalent		Text and picture share equal status in the representation of information. Both sources of information can stand independently and are able to convey relevant coherent information.
Symbiotic		Meaning can only be constructed through a consideration of the information in both text and pictures. Neither the text nor the pictures can stand alone as a single source of information.
Autonomous		Both the text and the pictures are independent sources of meaning and are capable of being considered in isolation. They do not provide the same information and are not necessarily coherent with each other. The relationship can be of contrast, ironic contradiction, external reference, and intertextuality.

Definition of text and picture

Text: For this study, text refers only to written text

Picture: Picture refers to various types of visual representation, including photograph, drawing, painting, and diagrams. Various typographic features like highlighting and underlining are also considered pictures in this study.

Table 2. The Text-Picture Relations in the Korean and US Civics/community involvement passages

Korean Civics/community involvement Passage			US Civics/community involvement Passage		
Page	Picture	Category	Page	Picture	Category
5	The picture of a town		5	The diagram with vocabulary and reading skills	
6	Diagram titled "The Results of the Town Meeting"		5	Blue underlining and starred flag of main idea	
6	The picture of a town at the bottom of the page		5	The picture labeled "Community Helper"	
7	Diagram titled "Things to do for clean streets" including pictures of a man sweeping the street and a woman and a man who are removing ads from the wall		6	The picture labeled "The Common Good"	
8	The whole-page picture		6	Yellow highlighting on the two key words	
9	A set of pictures titled "Things we can do at school"		7	The picture labeled "Paradise Valley, Arizona"	
10	All the pictures of a family and students recycling together		7&8	The picture of paint cans	
			8	The picture labeled "Young volunteers paint"	
			8	Blue underlining and starred flag of main idea	

Table 3. The Text-Picture Relations in the Korean and US Economics/choices passages

Korean Economics/choices Passage			US Economics/choices Passage		
Page	Picture	Category	Page	Picture	Category
5	A set of picture titled "What we want to have"		5	The diagram with vocabulary and reading skills	
6	The whole picture including the five speech balloons		5	Blue underlining and starred flag of main idea	
7	The table titled "Why can't our classmates get what they want?"		5	The picture labeled "Marisa thinks about her choices"	
7	The picture of a boy who is showing his wallet and thinking of things he wants		6	The diagram about opportunity cost	
8	The whole picture including the three speech balloons		6	Yellow highlighting on the two key words	
9	The picture of a boy with the speech balloon		7	Blue underlining and starred flag of main idea	
9	The table of criteria for making a decision and things to buy		7	The picture labeled "Scarcity"	
9	The picture of a boy sitting at a desk with a speech balloon		8	The picture labeled "Marisa decides to buy a tan jacket that fits."	
10	The picture of a woman with a speech balloon				
10	The picture of a car, a bus, and a train				
10	The table of transportation types and criteria				
11	The whole picture of a boy holding a soccer ball with a speech balloon				

APPENDIX D-3

Cross-cultural ComparisonDirection:

- Please compare the two countries' passages according to the following categories and provide a short answer for each subcategory.
- When thinking of each category for comparison, you may refer back to the comprehensibility rubric and your analysis of the text-picture relations for consistency.
- Please feel free to brainstorm and present any differences you identified that do not fit into these categories.
- Please note that these categories are not independent of each other. Rather, they are overlapped with each other. For example, gap-filling can be a combination of structural features, content, and text-picture relations. That is why the category of gap-filling is presented last.

1. Structure

- a. Explicit or implicit approach to topic
 - i. Definition of explicit approach to topic: Main ideas are fully revealed or expressed verbally without requiring much inference
 - ii. Definition of implicit approach to topic: Main ideas are not fully revealed or expressed verbally but expressed indirectly in the context or examples, leaving room for inferencing.
- b. Logical progression (coherence):
 - i. How do various rhetorical patterns used in subexplanations contribute to the logical progression of main ideas?
 - ii. Are there many logical gaps between subexplanations or elements?
- c. Other cultural difference in structure

2. Content

- a. Difference in breadth or depth of content in relation to main ideas

- i. Is this passage trying to provide many pieces of information or focusing on big ideas?
 - b. Difference in underlying cultural values or attitudes
 - c. Difference in specific examples or context used
 - d. Other cultural difference in content
3. Text-picture relations:
 - a. How do text-picture relations differ in the two countries textbook passages in general?
 - b. What are the most common text-picture relations in each country's textbook passages (e.g., Symbiotic vs. Hierarchical)?
 - c. Other interesting differences in text-picture relations
4. Gap filling between naïve understanding and expert-like understanding of the main concept:
 - a. Are there attempts to connect to children's experiences, knowledge and interest, making the new content more familiar and interesting to children?
(Content)
 - b. Are there any differences in specific ways that the two countries passages connect to children?
 - c. Are main ideas explained repeatedly but not in a boring manner?
(Structure)
 - d. Other cross-cultural differences in terms of gap-filling
5. Other cultural differences identified, if any

The End

Thank you so much!!

APPENDIX E

The Results of Text Analysis (Graphic Representations)

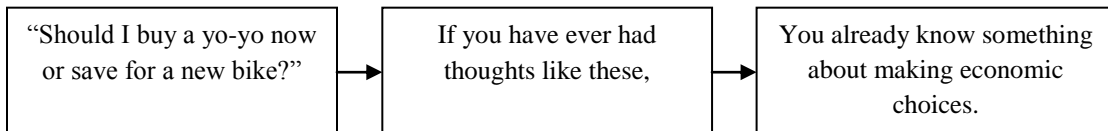
APPENDIX E-1

The Graphic Representation of US Economics/choices Passage

US Economics/choices – Grade 3 (8-year-olds)**Title**

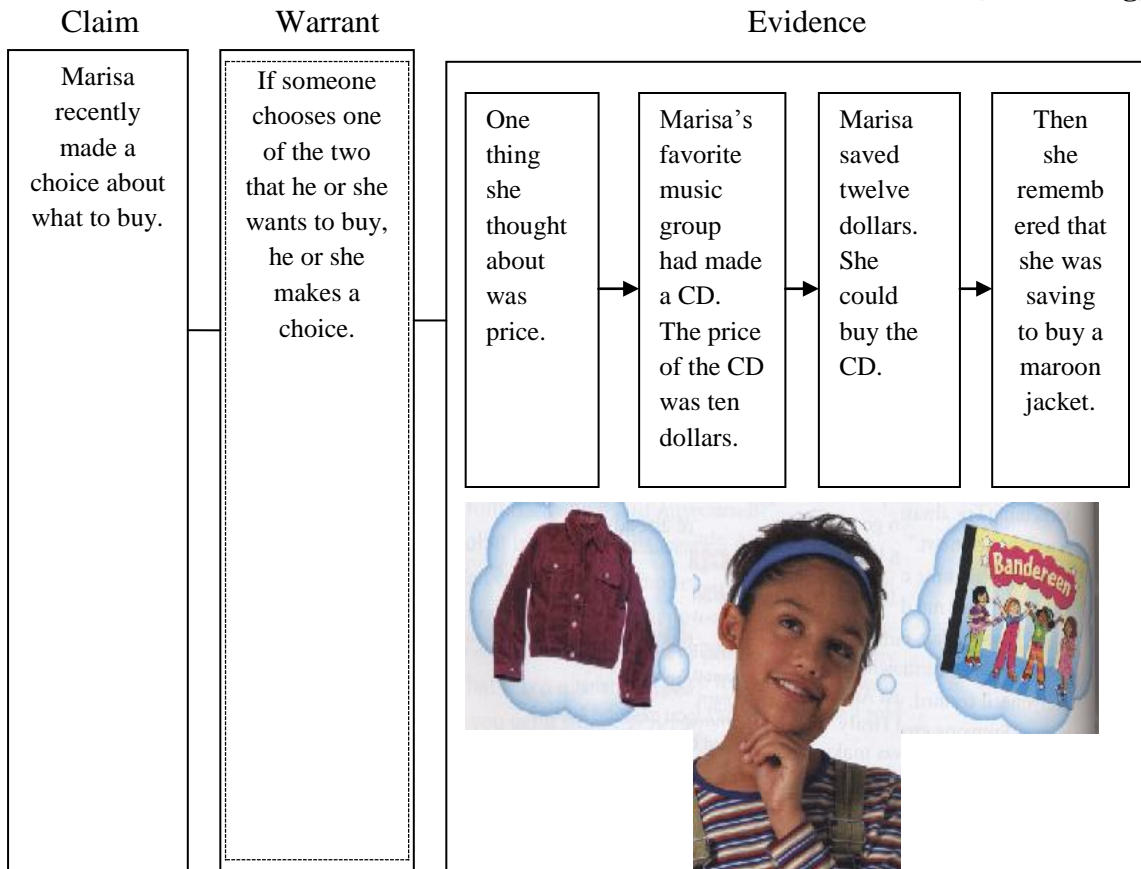
Making Choices

VOCABULARY	
opportunity cost	
competition	
scarcity	
READING SKILL	
1	
2	
3	
4	

Sub-explanation 1**Introduction: Building on what you know**

Sub-explanation 2

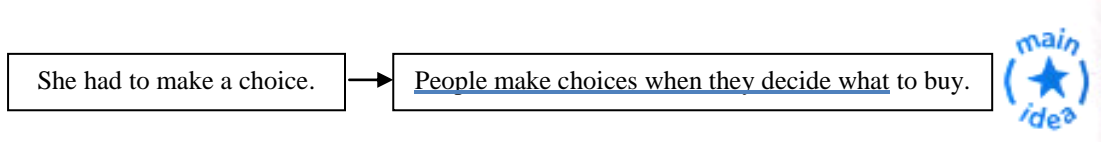
**Example: Marisa Makes a Choice
(1st Heading)**



Marisa thinks about her choices.

Sub-explanation 3

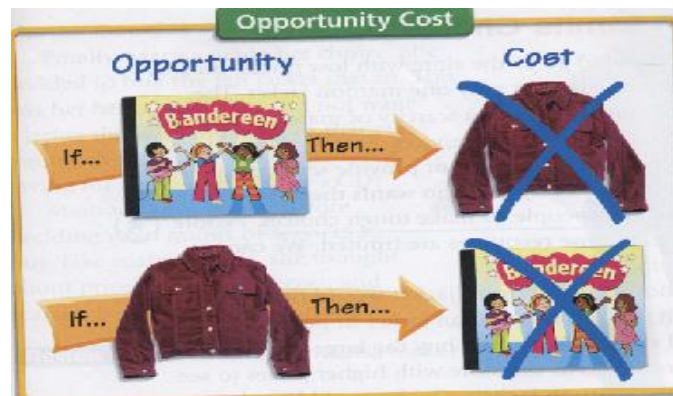
Expert Model: Main idea



What will happen if Marisa buys the CD?

Sub-explanation 4

Example: Opportunity Cost (Diagram)

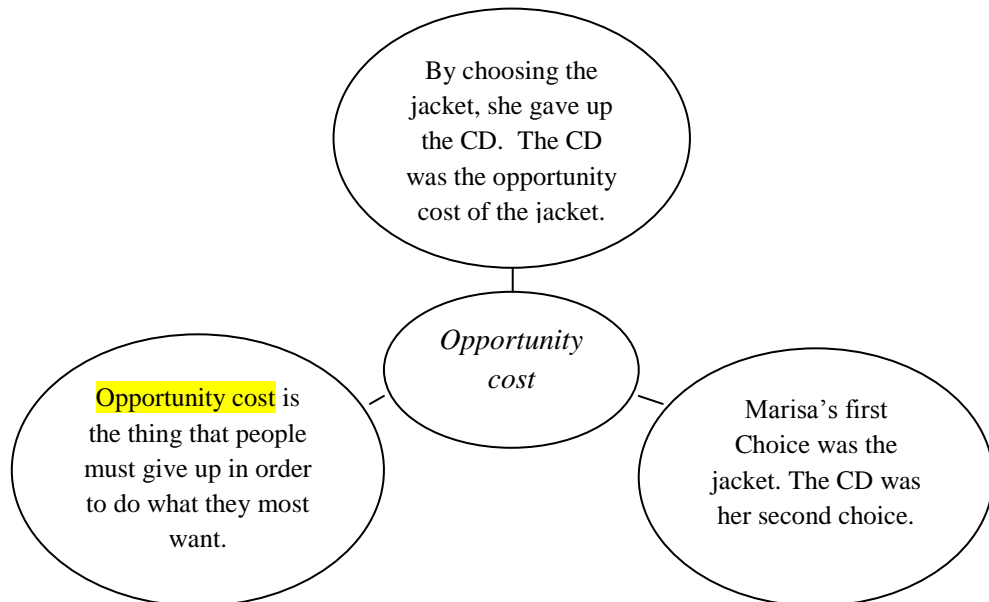


After thinking about it, Marisa chose to keep saving for the maroon jacket.

Sub-explanation 5

Example & Definition: Opportunity Cost

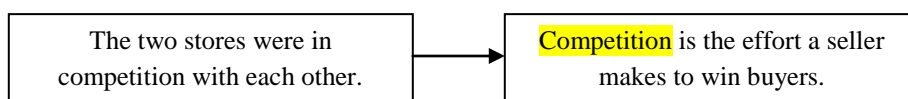
(Subheading)



When Marisa had enough money, she found two stores that sold maroon jackets.

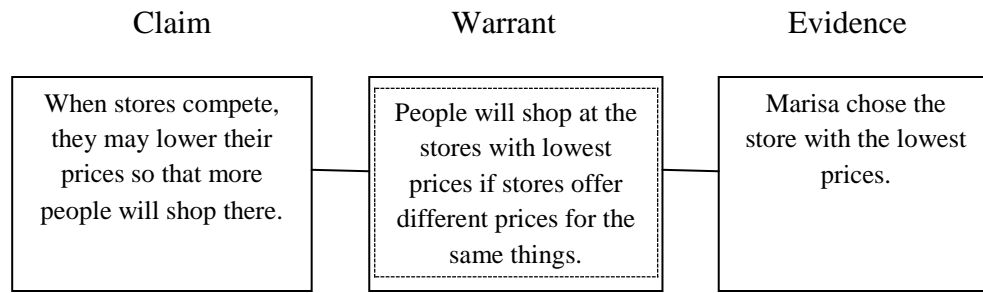
Sub-explanation 6

Definition: Competition Between Sellers (Subheading)



Sub-explanation 7

Expert Model: Competition Between Sellers



+

Sub-explanation 8

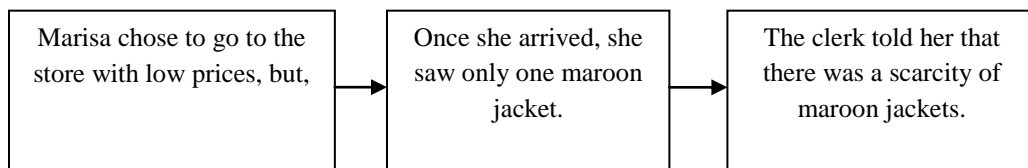
Review

What is the opportunity cost of the jacket Marisa wants?

+

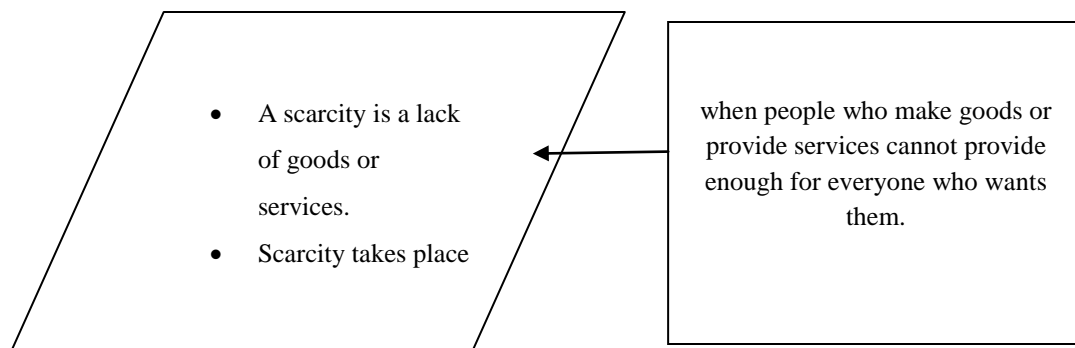
Sub-explanation 9

Example: Scarcity Limits Choice (2nd Heading)



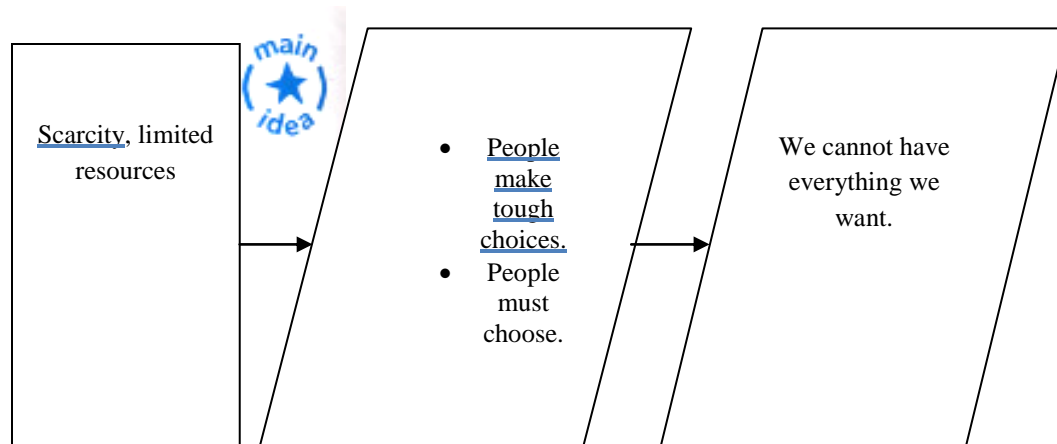
Sub-explanation 10

Definition: Scarcity



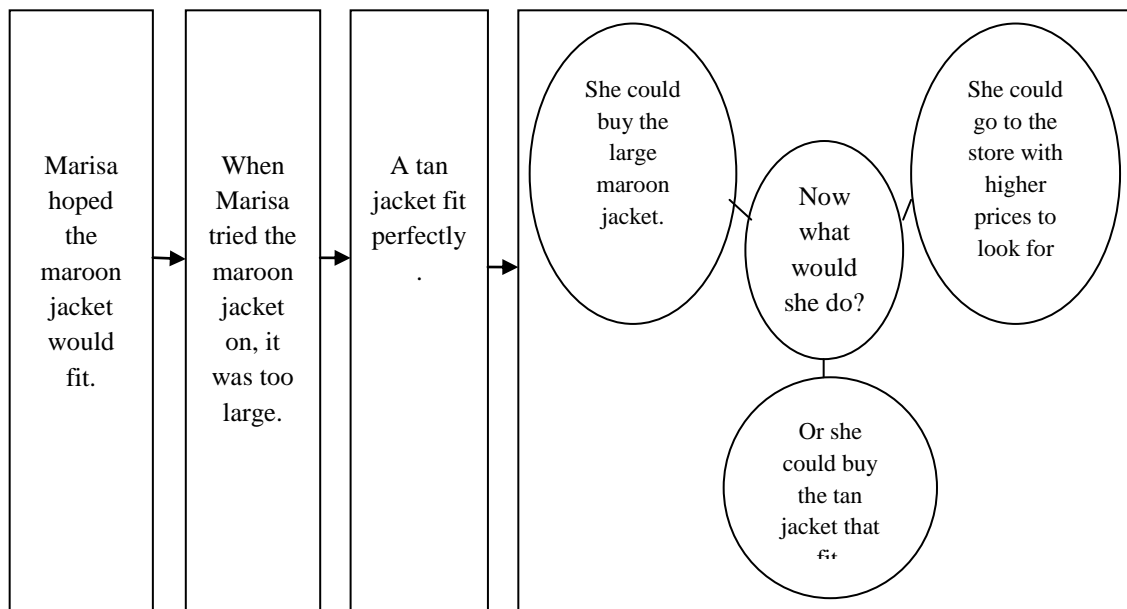
Sub-explanation 11

Expert Model: Main idea



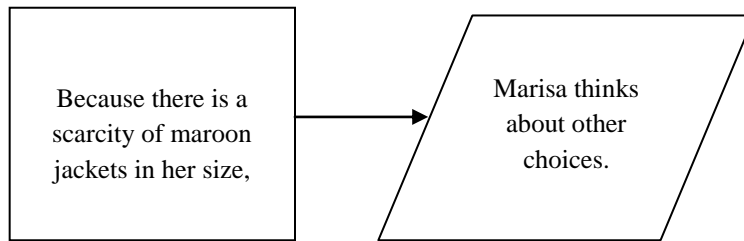
Sub-explanation 12

Example: Scarcity limits choice



Sub-explanation 13

Expert Model: Scarcity

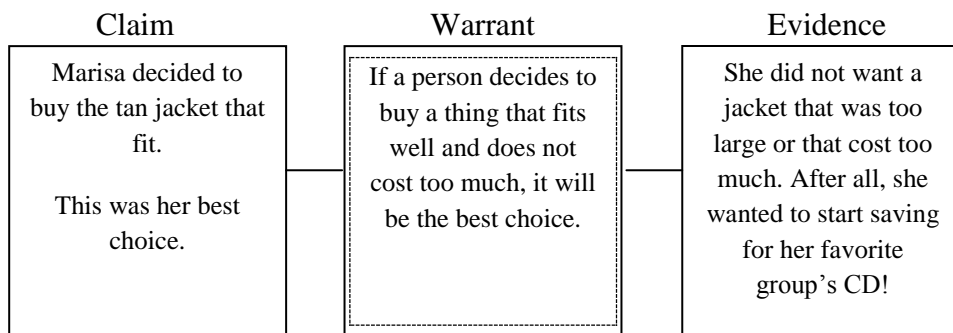


Finally, Marisa made her choice.

Sub-explanation 14

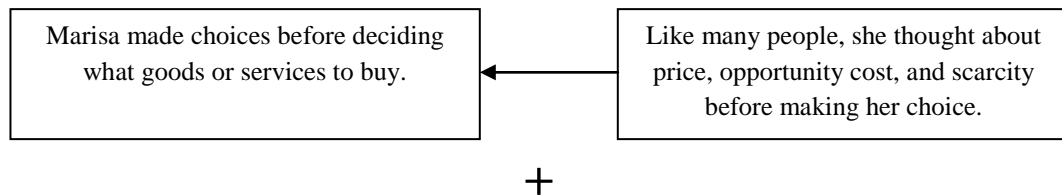
Example: Marisa Decides

(Subheading)



Sub-explanation 15

Expert Model: Making choices



Sub-explanation 16

Review

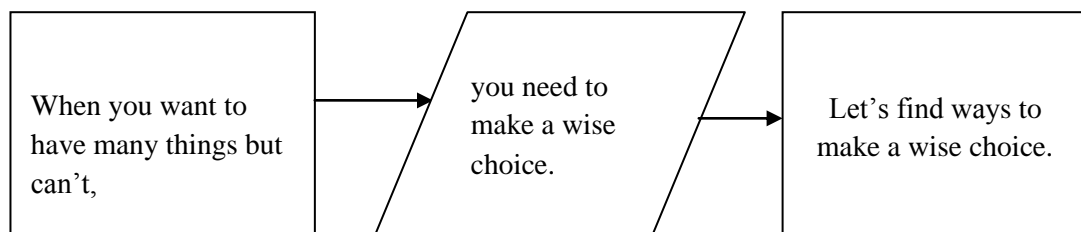
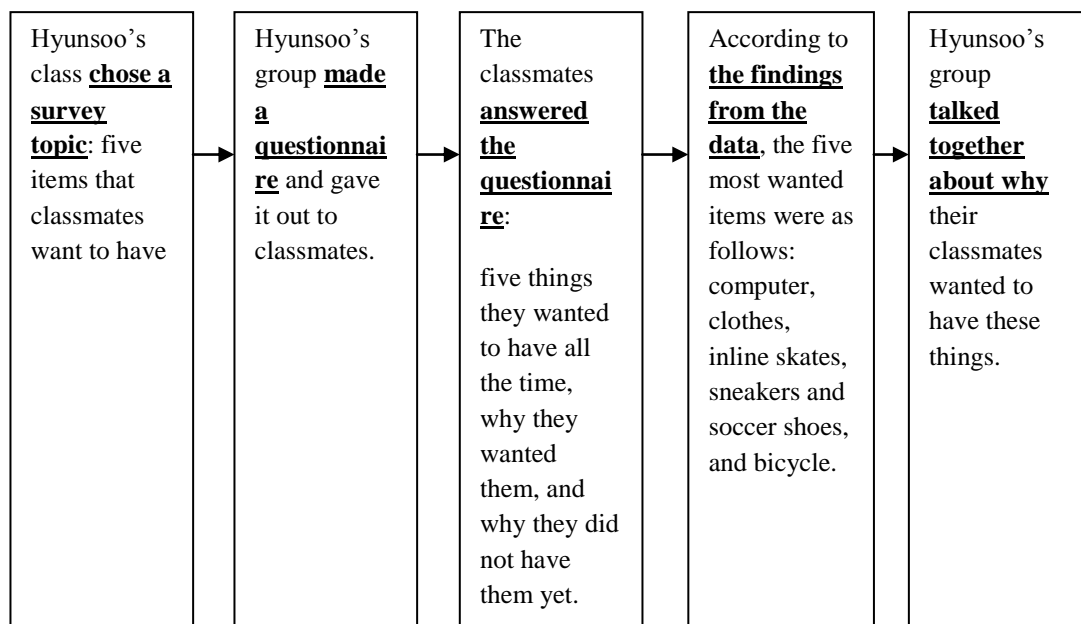
What choices did Marisa make?

APPENDIX E-2

The Graphic Representation of Korean Economics/choices Passage

Korean Economics/choices - Grade 4 (10-year-olds)**Title**

We have many things we want to have but.....

Sub-explanation 1**Expert model: Introduction****Sub-explanation 2****Expert Model: how to survey and use the data**











Sub-explanation 3

**Example: Many things we want to buy and why
(Text & labeled Picture)**

Evidence

Warrant

Claim

What we want to have	Why we want it
<p>Computer</p> 	<p>Through the Internet I can search data and play games.</p> 
<p>Clothes</p> 	<p>I'd like to wear prettier and more convenient clothes for playing.</p> 
<p>Inline skates</p> 	<p>Skating is fun and can be a good exercise.</p> 
<p>Sneakers & soccer shoes</p> 	<p>I'd like to wear comfortable shoes for playing.</p> 
<p>Bicycle</p> 	<p>Bicycle riding is good for health and convenient for doing errands.</p> 

If each member of a group wants a different thing for a different reason, what they want and why varies.

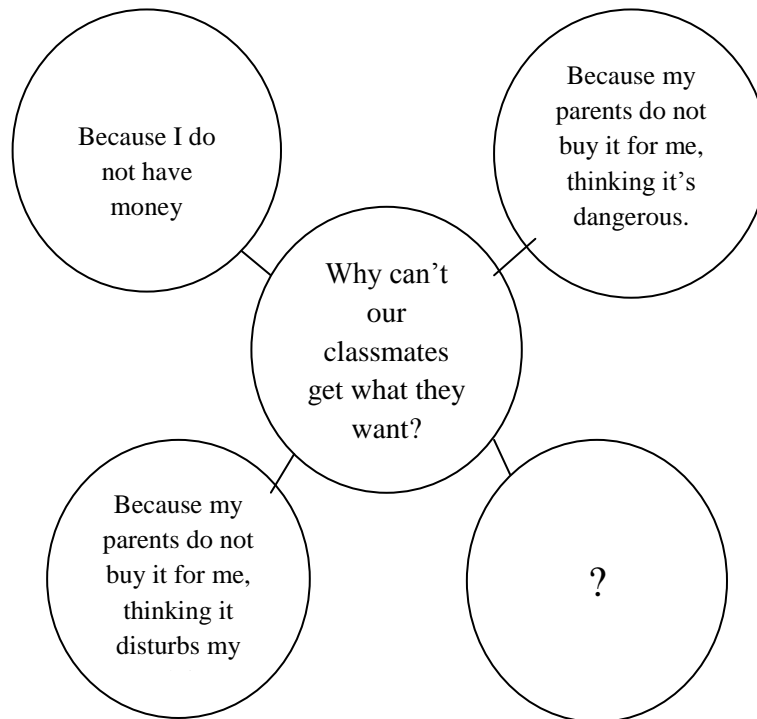
What Hyunsoo's classmates wanted to have and why varied.

Sub-explanation 4**Expert Model: We can't get everything we want**

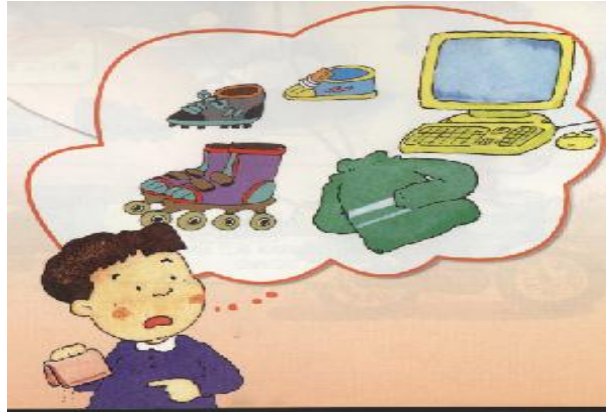
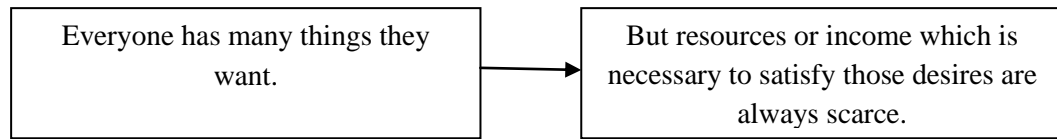
There are countless things that we need in our everyday lives.

But like Hyunsoo's classmates, we cannot get everything we want.

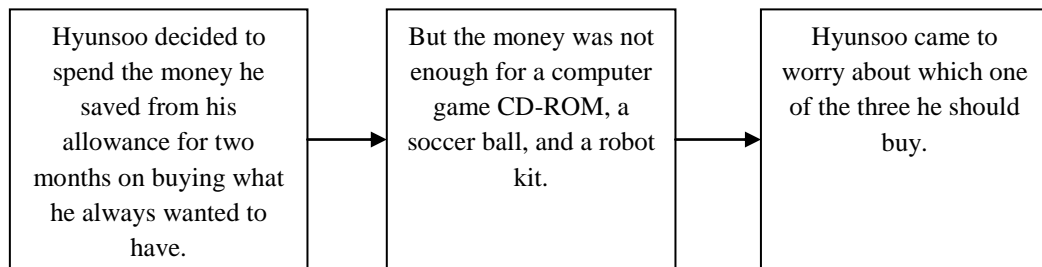
Why is that so?

Sub-explanation 5**Example: Table**

+

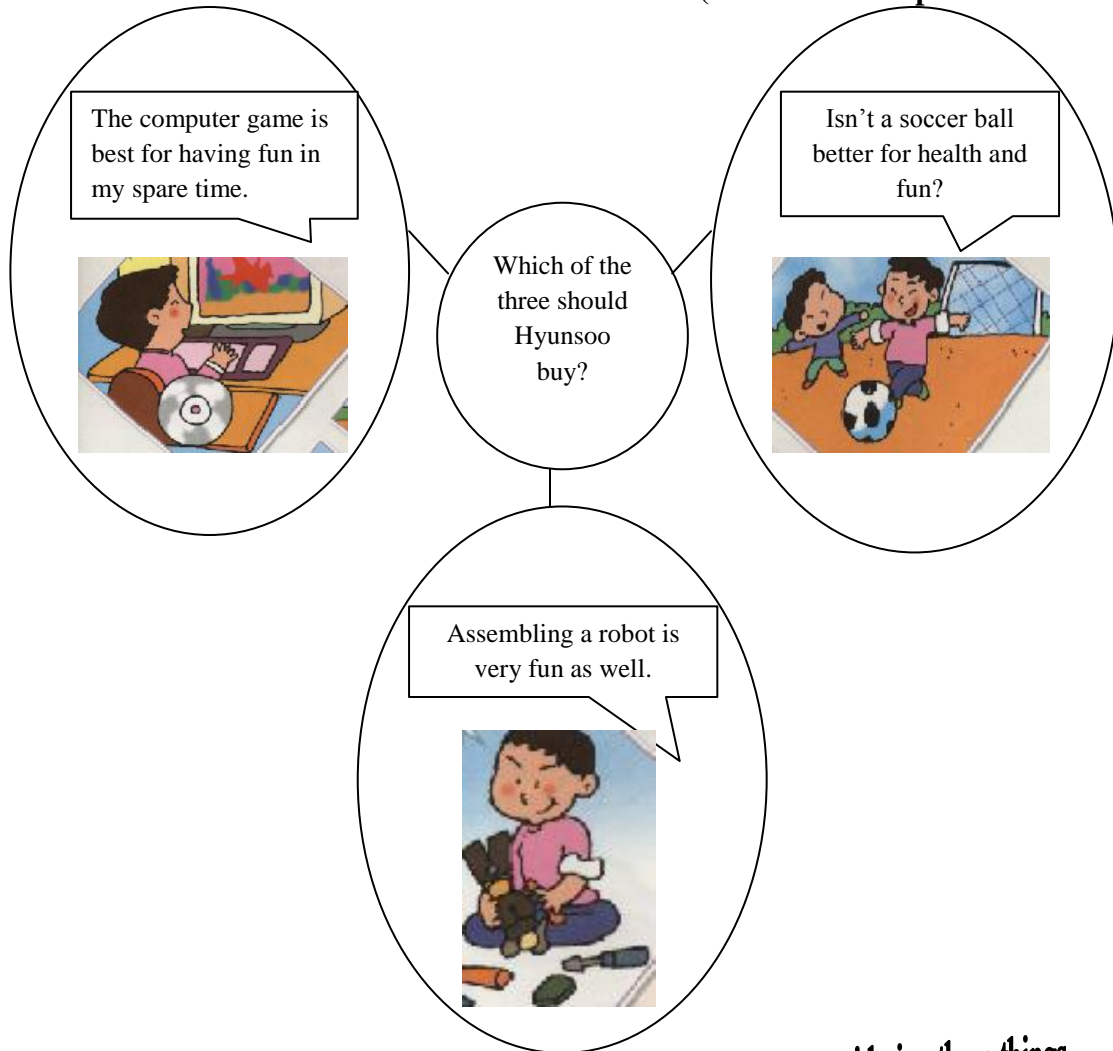
Sub-explanation 6**Expert Model: Scarcity & choices**

Let's think about what we should do when we cannot buy everything we want.

Sub-explanation 7**Example: Hyunsoo's choice**

Sub-explanation 8

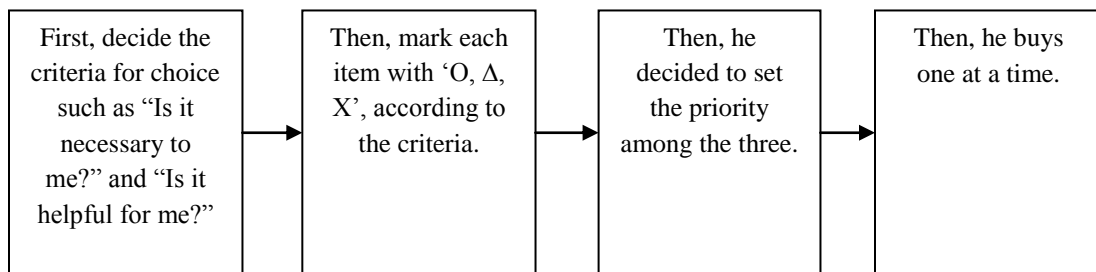
**Example: Hyunsoo's choice
(Pictures with Speech Balloons)**



When buying things, Hyunsoo decided to choose what to buy after considering these things.

Sub-explanation 9


Expert Model: How to make a choice




Sub-explanation 10

**Example: How to make a choice
(Chart & Pictures with Speech Balloons)**

I'm going to choose what can give me both fun and help first.



Item	Computer game CD-ROM	Soccer ball	Robot kit
Criteria			
Can I buy it with the money I have?			
Is it necessary for me?			
Does it give me both fun and help?			
Is it durable?			
How do I set the priority of the purchase?			

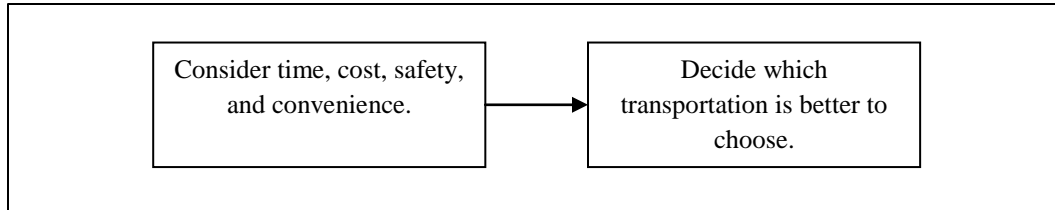


Since I cannot buy all at once, which one should I buy first?

Let's find some examples where we have to make a good choice in everyday lives and discuss how to do that.

Sub-explanation 11

**Extension I: Making choices in everyday lives
(Picture with speech balloon)**

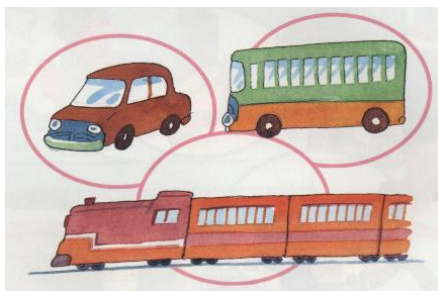
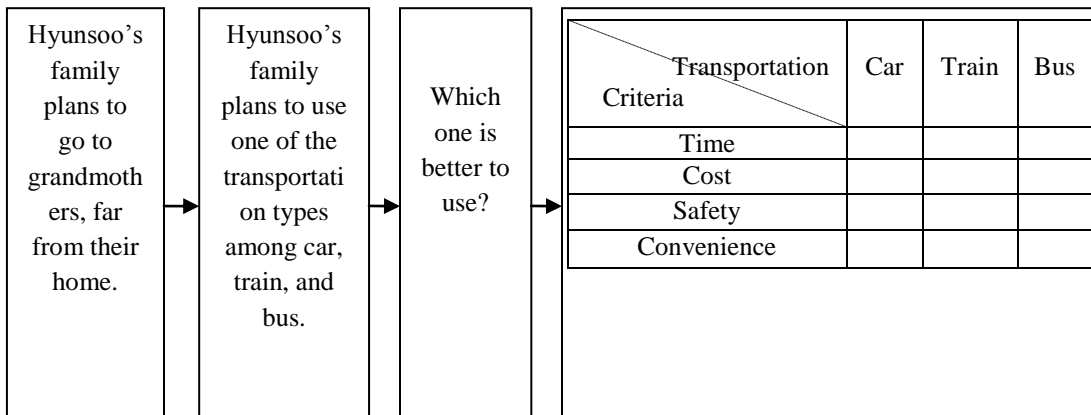


Sub-explanation 12

Extension I: Making choices in everyday lives

(Text, Pictures, & Table)

What transportation to choose



Sub-explanation 13

Extension II: Making choices in everyday lives
(Text, Pictures, & List)

What to do Saturday afternoon

Hyunsoo is thinking of what to do this Saturday afternoon.

Hyunsoo wanted to play computer games with the new CD-ROM he bought.



What to do Saturday afternoon

Youngmi called, suggesting going to the Children's Center to watch a movie.



Jinwoo suggested playing soccer.



What is the first thing I promised to do?

Which one is most beneficial to me?

Criteria

Which one is most interesting?

Which one is most economical?

Sub-explanation 14**Application: Activity**

If I were Hyunsoo,

what would I do? Please tell why you think so?

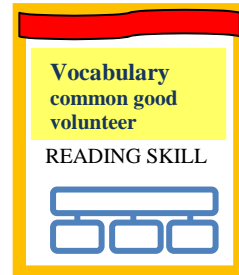
APPENDIX E-3

The Graphic Representation of US Civics/community involvement Passage

US Civics/community involvement – Grade 3 (8-years-old)

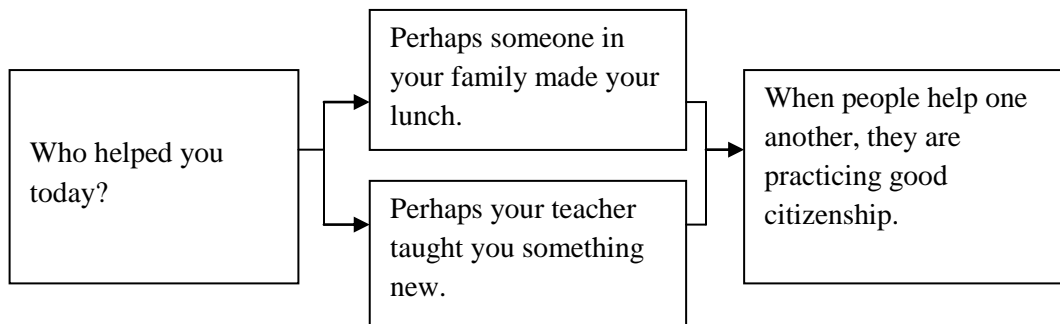
Title

Citizens Make a Difference



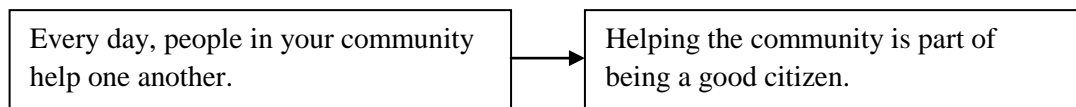
Sub-explanation 1

Introduction: Building on what you know



Sub-explanation 2

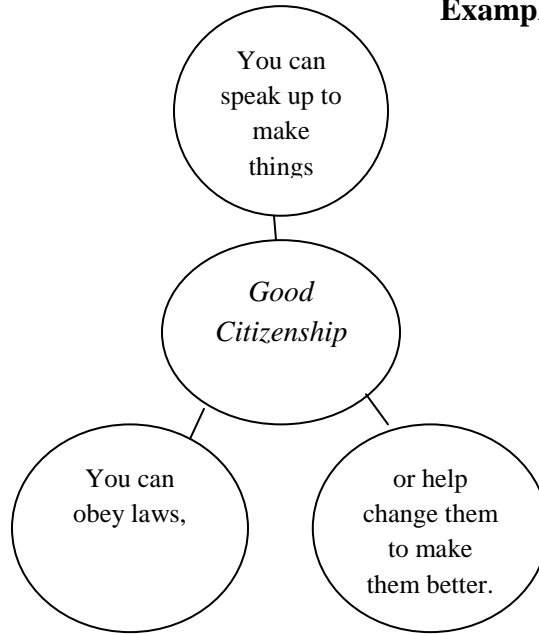
Expert Model: Citizens Can Help (1st Heading)



You can practice good citizenship, too.

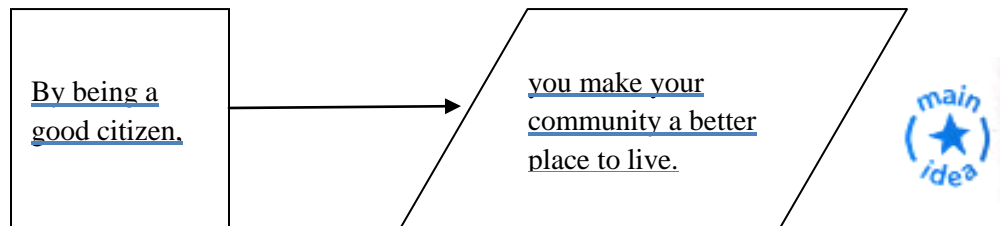
Sub-explanation 3

Example: Good citizenship



Sub-explanation 4

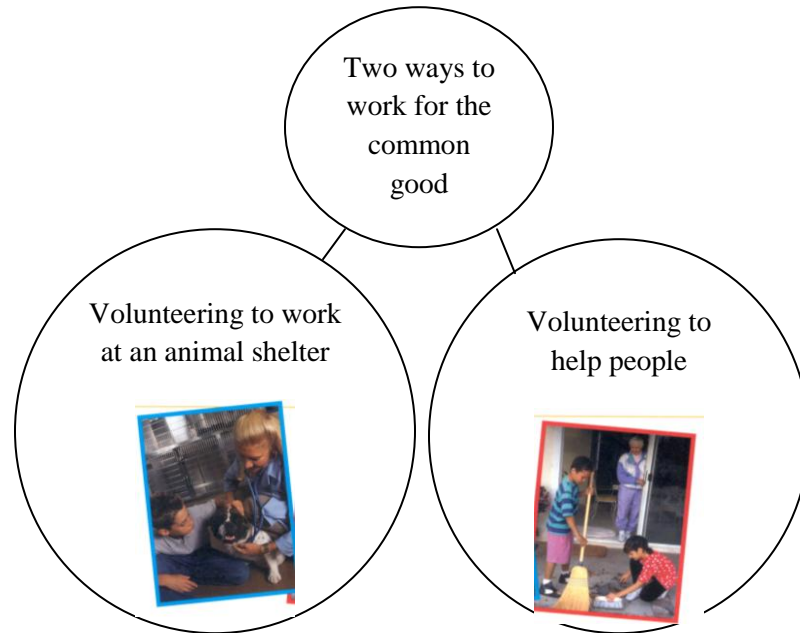
Expert Model: Main idea



Community Helper: This crossing guard helps to keep people safe.

Sub-explanation 5

**Example of working for the common good
(Picture with caption)**

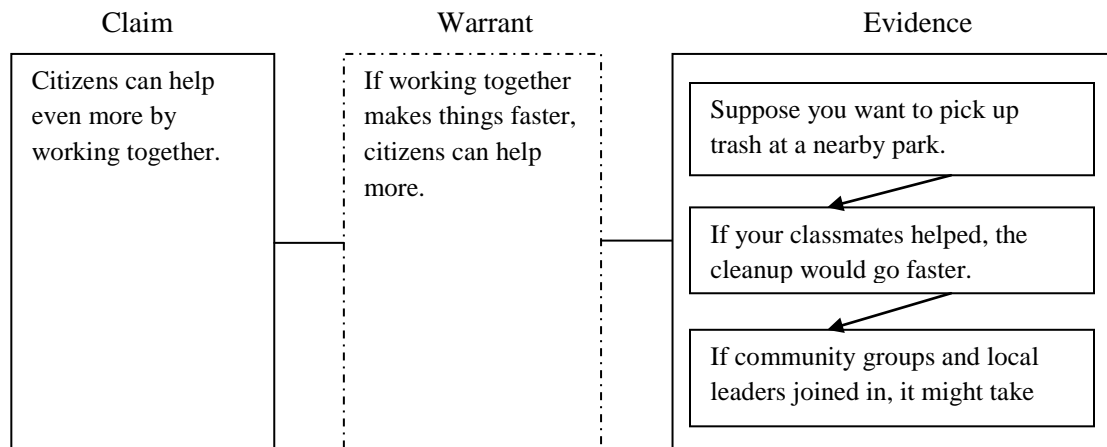


+

Sub-explanation 6

Expert Model: Working Together

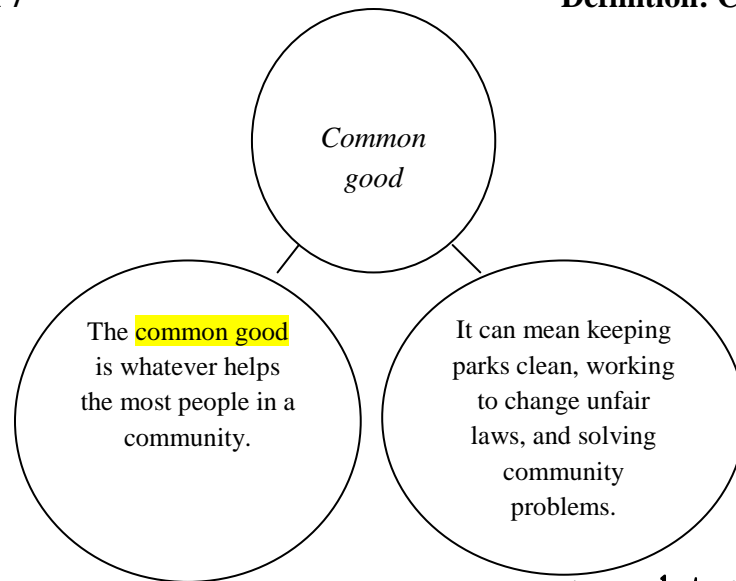
(Subheading)



When people work together to benefit their community, they work for the common good

Sub-explanation 7

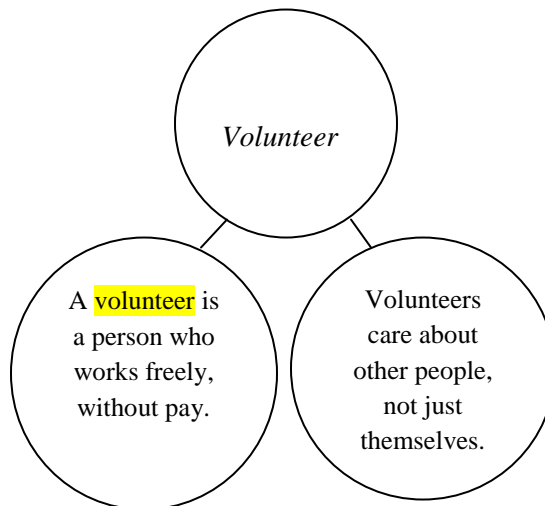
Definition: Common good



Some people take part in their school or community by working as volunteers.

Sub-explanation 8

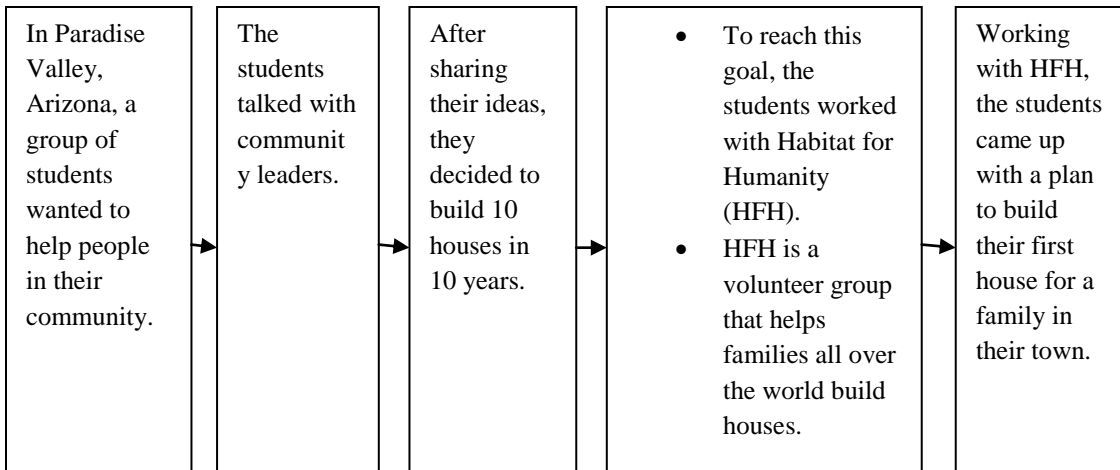
Definition: Volunteer



In what ways can students practice good citizenship?

Sub-explanation 9

Example: Students Help Others (2nd Heading)



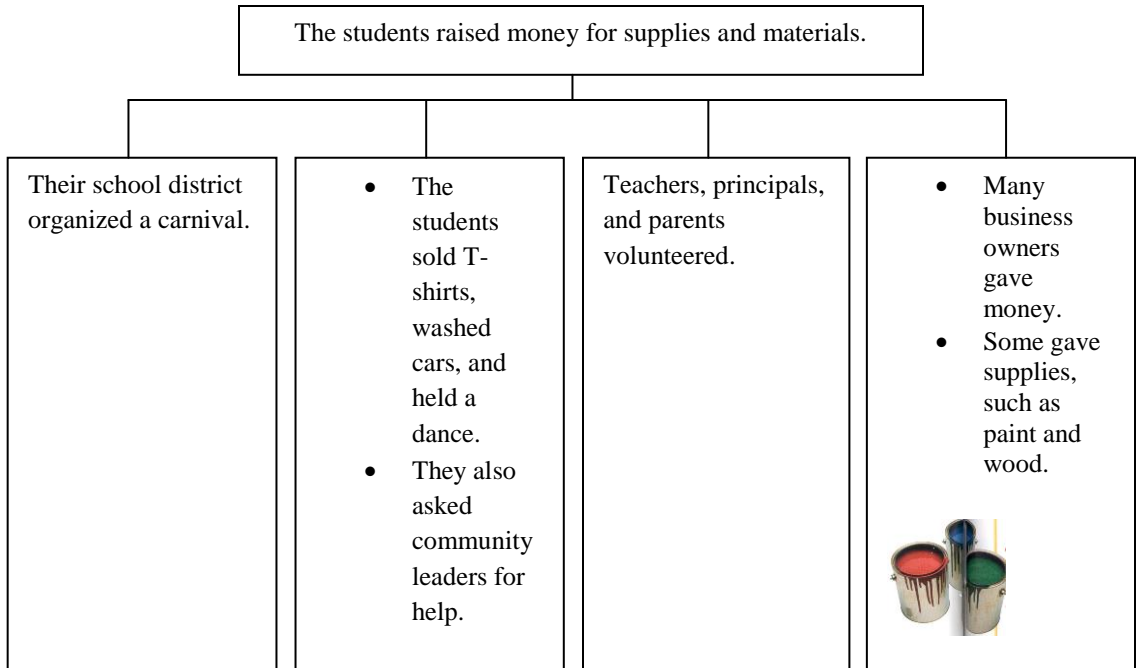
Paradise Valley, Arizona These Arizona students helped build a new house in their town.



Raising Money (Subheading)

Sub-explanation 10

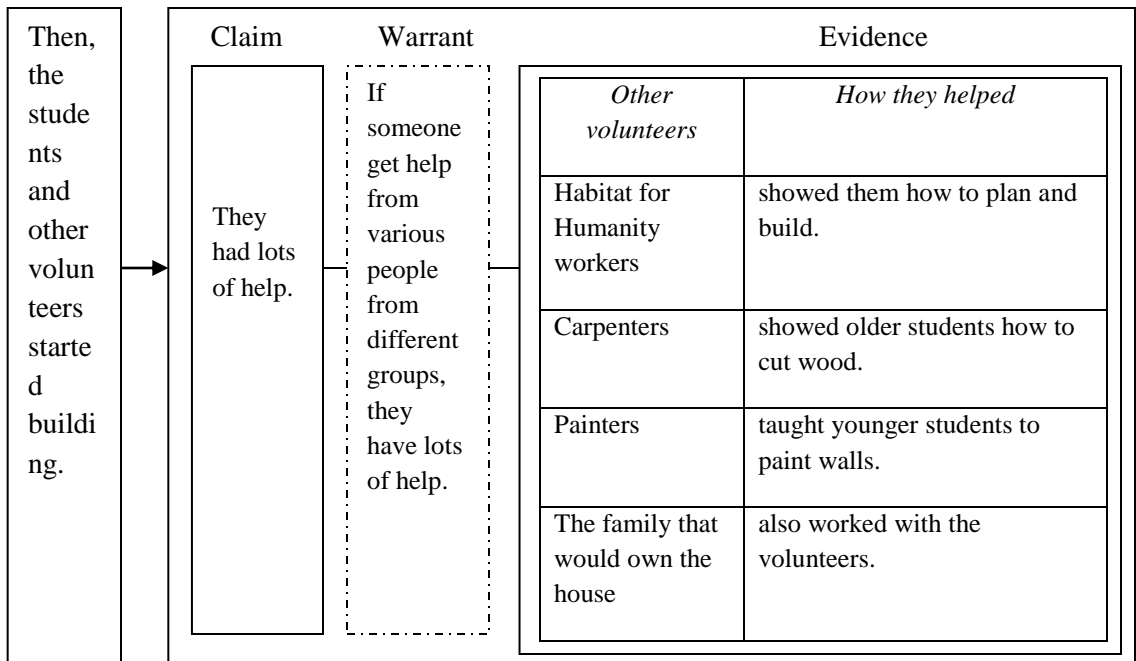
Example: Arizona Students' Project

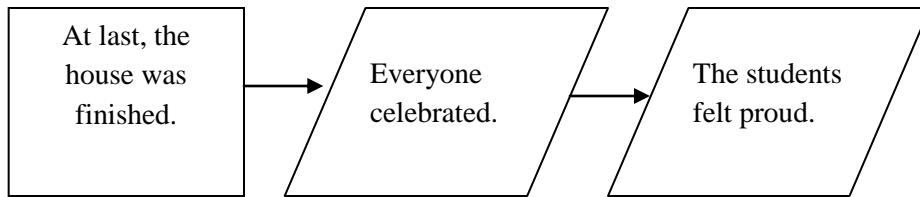
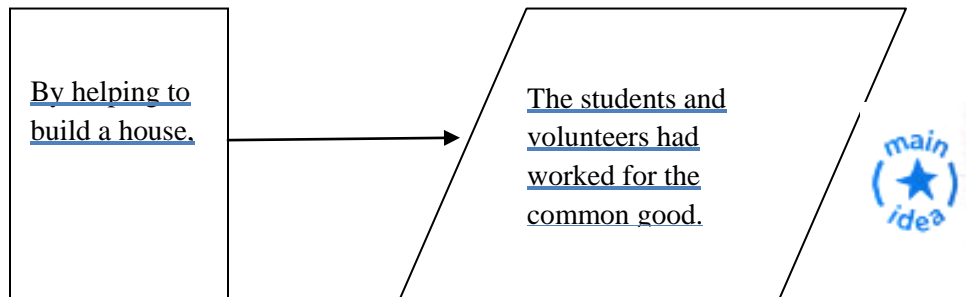


Building a New Home (Subheading)

Sub-explanation 11

Example: Arizona Students' Project



Sub-explanation 12**Example: Arizona Students' Project****Sub-explanation 13****Expert Model: Main Idea**

+

Sub-explanation 14**Review**

What steps did students take before starting to build the house?

APPENDIX E-4

The Graphic Representation of Korean Civics/community involvement Passage

Korean Civics/community involvement – Grade 3 (9-years-old)

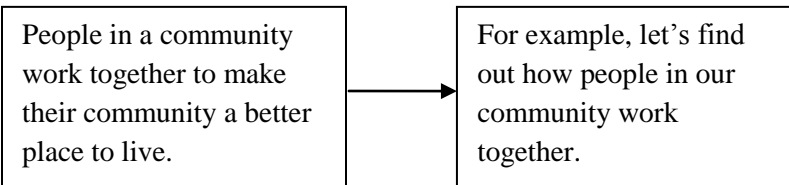


Title

Clean Streets, Good Neighbors

Sub-explanation 1

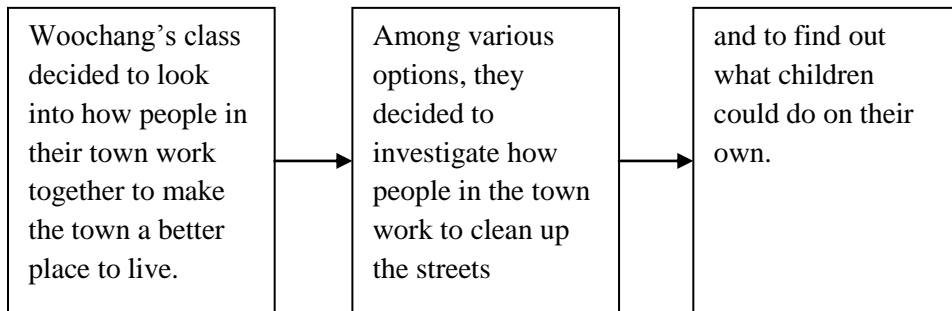
Expert model: Introduction



Let's find out how people in our community work together to make clean streets and get along with neighbors.

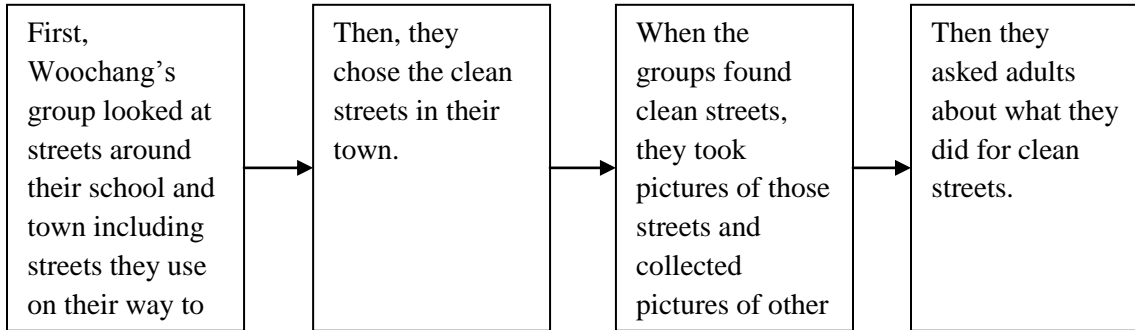
Sub-explanation 2

Example: Woochang's class project I: Planning



Sub-explanation 3

Example: Woochang's class project I: Implementation

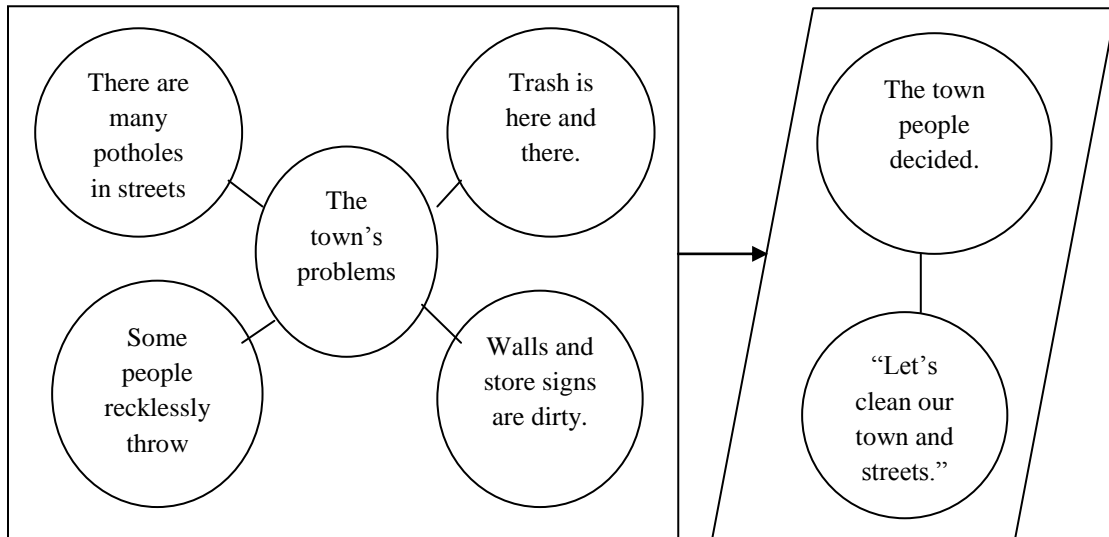


The adults said that they had noticed dirty streets. So, they held a town meeting.

Sub-explanation 4

Expert model: Working together for a better community I (Chart)

The results of the town meeting



Sub-explanation 5

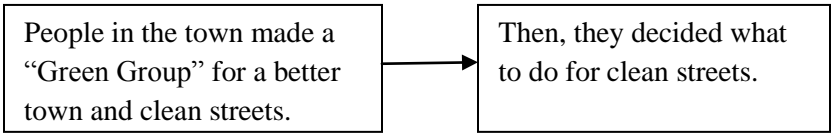
Application: Activity

Think what problems our town's streets have.

+

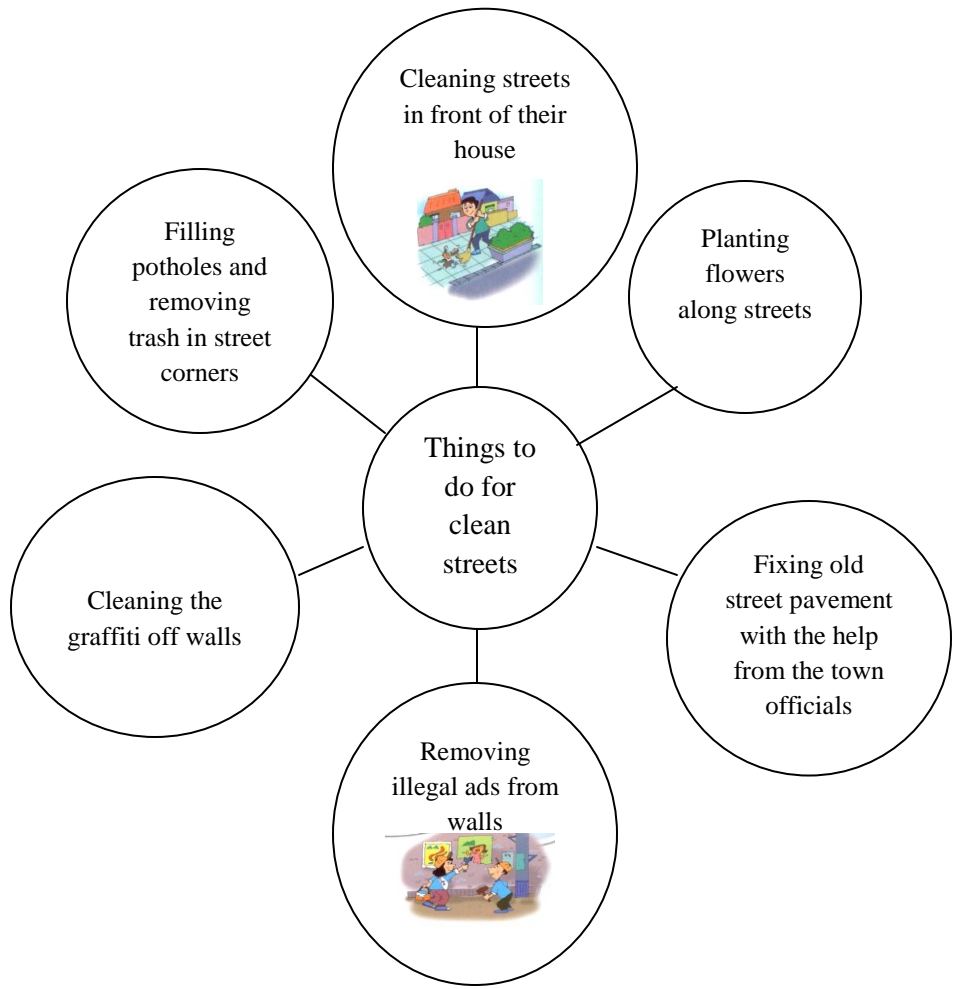
Sub-explanation 6

Expert model: Working together for a better community II



Sub-explanation 7

Expert model: Working together for a better community III (Chart & Picture)



Sub-explanation 8

Expert model: Working together for a better community IV (Text & Pictures)

During a town meeting, the adults in the Green Group passed along the things-to-do list for clean streets to other people in the town.

The town officials also helped them a lot.

Then, they participated in a volunteer work every day.

The image is a composite. The top part shows a street scene with a mural of a person and a group of people participating in a street cleanup. The bottom part is a cartoon illustration of a meeting where a woman is pointing to a list on a screen while others look on.

Sub-explanation 9

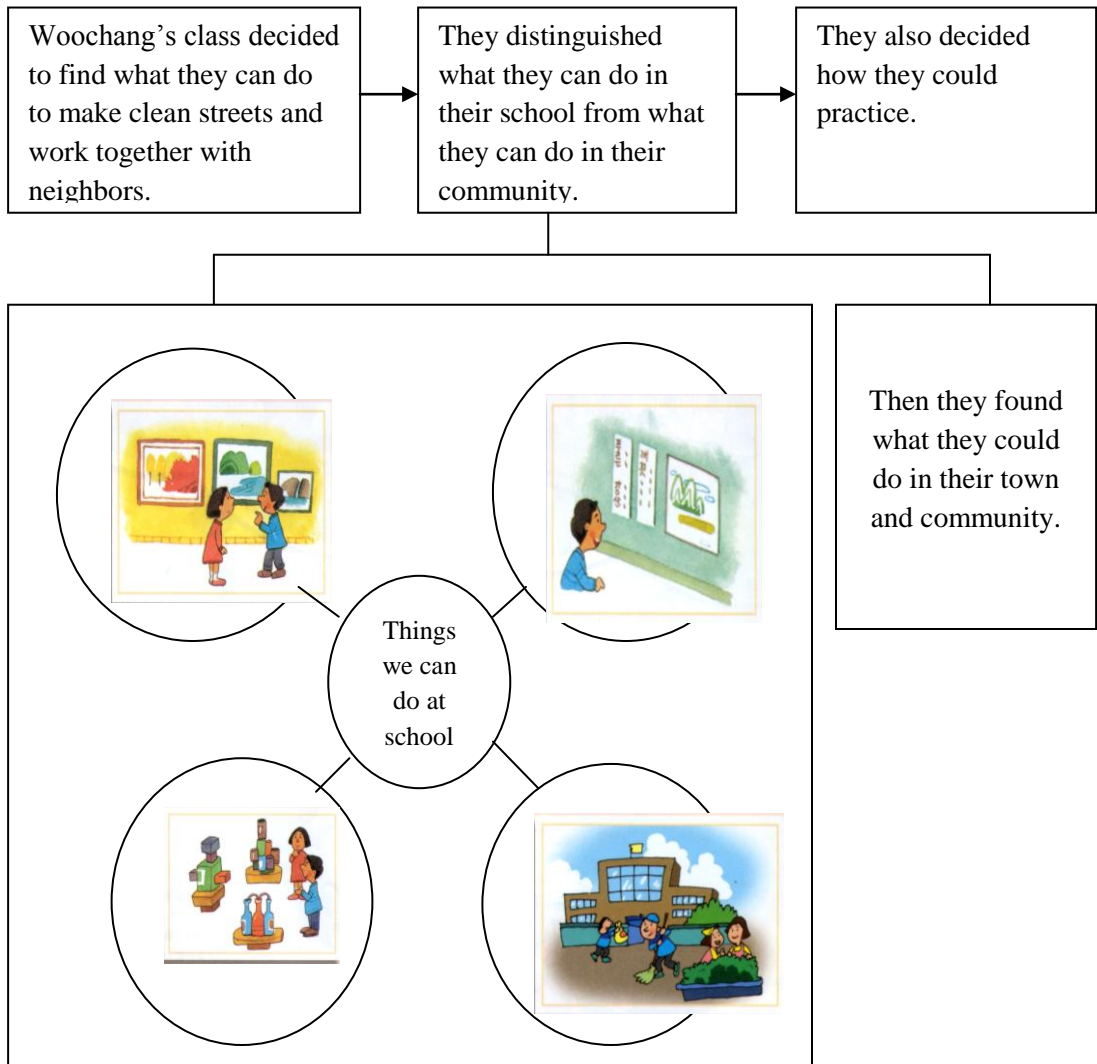
Application: Activity

Think about what people in our town do for clean streets.

Let's find out what we can do to make clean streets and work together with our neighbors, and let's practice.

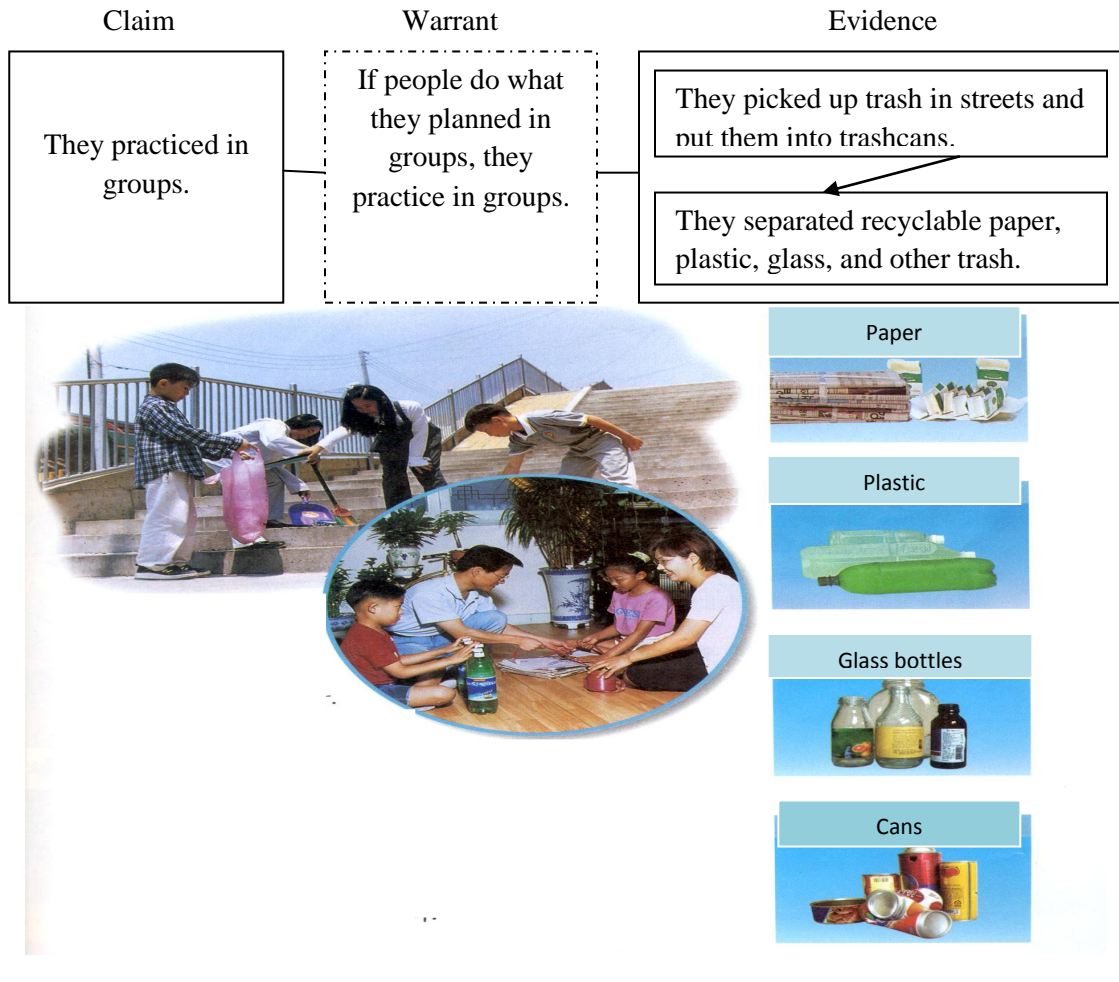
Sub-explanation 10

**Example: Woochang's class project II:
Planning (Text & Pictures)**



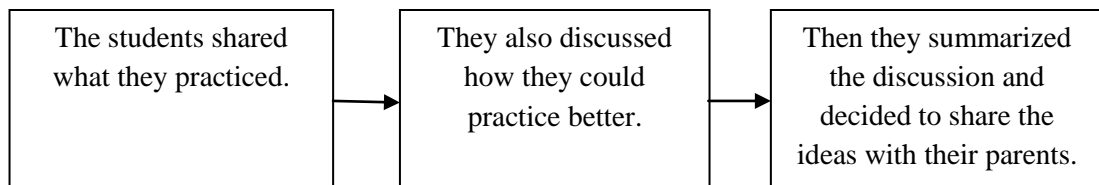
Sub-explanation 11

**Example: Woochang's class project II:
Implementation (Text & Labeled photos)**



Sub-explanation 12

**Example: Woochang's class project II:
Sharing**



Sub-explanation 13

Application: Activity

Let's talk about why we need to actively participate in our community.

APPENDIX F

Packets with Test Passages, Measures, and Directions (English Versions)

APPENDIX F-1

Packet 1 (US Economics/choices Passage)

Directions:

Please do not turn over this page until Ms. Huh says, “You can start now.” Ms. Huh has given you a packet with five sections. The packet has questions for you to answer, a passage for you to read, and then more questions to show her what you have learned. Please do not look ahead in the packet.

You will be finishing each section before you go on to the next section and you won't be able to look back once you have finished a section. Each section will begin with a line for your name. Please don't forget to put your name on each section. Then you will see directions for how to complete the section.

You should complete each section silently at your own pace. You will have 40 minutes to complete everything. When you think you are finished with a section, please turn it over on your desk and then move onto the next section. Ms. Huh will then pick up the sections that you have turned over.

When you see the words, “Thank you so much!” you will know that it is the end of the packet. You can ask questions at any time. If you have any questions, please raise your hand.

Name: _____ .

Directions: I am interested in who you are, what you know, and what you think.

Please read each question and answer. There are no right or wrong answers.

When you are finished, please turn it over on your desk and move onto the next section.

☺ **Please write down the following information.**

1. Gender (Boy or Girl):
2. Date of birth (Month/day/year):
3. Teacher's name:

☺ **Please circle one of the four choices for each question (Questions from 1 to 6).**

1. Do you like reading about social studies?
 - a. a lot
 - b. some
 - c. a little
 - d. not at all

2. Do you think that reading about **making choices** would be interesting?
 - a. a lot
 - b. some
 - c. a little
 - d. not at all

3. Do you want to know more about **making choices**?
 - a. a lot
 - b. some
 - c. a little
 - d. not at all

4. How much do you think you know about **making choices**?
- a. a lot
 - b. some
 - c. a little
 - d. not at all
5. How many ideas do you think you could write about **making choices**?
- a. more than 4
 - b. 3-4
 - c. 1-2
 - d. 0
6. How long a report do you think you could write on **making choices**?
- a. a few paragraphs
 - b. a paragraph
 - c. a sentence
 - d. nothing

Name: _____ .

For the Large-group Participants

- Please read carefully everything from pages 5 to 8.
- After finishing reading them, you will be asked to answer some questions about what you have read.
- But do not look ahead at the questions before or during reading.
- When you are finished reading, please turn it over on your desk and then move onto the next section to answer questions.

For the protocol students

- Please read aloud everything from pages 5 to 8.
- Whenever you see a red star, you should stop reading and tell what you were thinking as you read.
- You can tell anything that comes to your mind at any time, even when you do not see any red star.
- After you have finished reading aloud these pages, you will be asked to answer some questions about what you have read.
- Do not look ahead at the questions before or during reading.
When you are finished reading aloud, please turn the section over on your desk and then move onto the next section to answer questions.

Note. In a student version, one of the two directions appeared.

VOCABULARY

opportunity cost
competition
scarcity

READING SKILL

Sequence List the order of steps Marisa follows to make decisions.

1	
2	
3	
4	



Marisa thinks about her choices.

Making Choices

Build on What You Know “Should I buy a yo-yo now or save for a new bike?” If you have ever had thoughts like these, you already know something about making economic choices.

Marisa Makes a Choice

Meet Marisa. She recently made a choice about what to buy. One thing she thought about was price.

Marisa’s favorite music group had made CD. The price of the CD was ten dollars. Marisa saved twelve dollars. She could buy the CD.

Then she remembered that she was saving to buy a jacket. She had to make a choice. People make choices when they decide what to buy.



**Skill**

Reading Diagrams What will happen if Marisa buys the CD?

Opportunity Cost

After thinking about it, Marisa chose to keep saving for the maroon jacket. By choosing the jacket, she gave up the CD. The CD was the opportunity cost of the jacket. Opportunity cost is the thing that people must give up in order to do what they most want. Marisa's first choice was the jacket. The CD was her second choice.

Competition Between Sellers

When Marisa had enough money, she found two stores that sold maroon jackets. The two stores were in competition with each other. Competition is the effort a seller makes to win buyers. When stores compete, they may lower their prices so that more people will shop there. Marisa chose the store with the lowest prices.

Review

What is the opportunity cost of the jacket Marisa wants?

Scarcity Limits Choice

Marisa chose to go to the store with low prices, but, once she arrived, she saw only one maroon jacket. The clerk told her that there was a scarcity of maroon jackets. A scarcity is a lack of goods or services. Scarcity takes place when people who make goods or provide services cannot provide enough for everyone who wants them.

Scarcity causes people to make tough choices.



People must choose because resources are limited. We cannot have everything we want.

Marisa hoped the maroon jacket would fit. When she tried it on, it was too large. A tan jacket fit perfectly. Now what would she do? She could buy the large maroon jacket. She could go to the store with higher prices to see whether it had maroon jackets. Or she could buy the tan jacket that fit.

Scarcity Because there is a scarcity of maroon jackets in her size, Marisa thinks about other choices.



Marisa Decides

Finally, Marisa made her choice. She decided to buy the tan jacket that fit. This was her best choice. She did not want a jacket that was too large or that cost too much. After all, she wanted to start saving for her favorite group's CD!

Marisa made choices before deciding what goods or services to buy. Like many people, she thought about price, opportunity cost, and scarcity before making her choice.

Review

What choices did Marisa make?



Marisa decides to buy a tan jacket that fits.

Name: _____.

- ☺ Please think about what you have just read, and answer these questions as much as you can. You cannot go back to read the passage again.

When you are finished, please turn it over on your desk and move onto the next section.

1. Why do people have to make choices about the things they want most?
2. Why does competition between stores benefit buyers?
3. Please make a sentence, using the words, “opportunity cost”.
4. John wants to buy a music CD and a new bike. He has 20 dollars that he saved. If you were John, how would you decide what to buy?

Name: _____.

😊 **Free drawing** 😊

Some of your friends have not read this passage. If you could draw what you have learned from it, your friends would also learn from your drawing.

But you cannot draw everything. So, please draw what you think is most important for your friends to know.

***Note: You cannot go back to previous pages.**

If you need extra paper, please raise your hand to ask Ms. Huh.

When you use extra paper, do not forget to write your name on it.

When you are finished drawing, please turn it over on your desk and move onto the next section.

Name: _____.

- Please answer these same questions now that you have read about making choices (Questions from 1 to 8).

1. Do you like reading about social studies?

- a. a lot
- b. some
- c. a little
- d. not at all

2. Do you think that reading about **making choices** is interesting?

- a. a lot
- b. some
- c. a little
- d. not at all

3. Do you want to know more about **making choices**?

- a. a lot
- b. some
- c. a little
- d. not at all

4. Do you think this text (“**Making choices**”) is interesting?
- a. a lot
 - b. some
 - c. a little
 - d. not at all
5. How much do you think you know now about **making choices**?
- a. a lot
 - b. some
 - c. a little
 - d. not at all
6. How many ideas do you think you can write about **making choices**?
- a. more than 4
 - b. 3-4
 - c. 1-2
 - d. 0
7. How long a report do you think you could write now on **making choices**?
- a. a few paragraphs
 - b. a paragraph
 - c. a sentence
 - d. nothing

APPENDIX F-2

Packet 2 (Korean Economics/choices Passage)

Directions:

Please do not turn over this page until Ms. Huh says, “You can start now.” Ms. Huh has given you a packet with five sections. The packet has questions for you to answer, a passage for you to read, and then more questions to show her what you have learned. Please do not look ahead in the packet.

You will be finishing each section before you go on to the next section and you won't be able to look back once you have finished a section. Each section will begin with a line for your name. Please don't forget to put your name on each section. Then you will see directions for how to complete the section.

You should complete each section silently at your own pace. You will have 40 minutes to complete everything. When you think you are finished with a section, please turn it over on your desk and then move onto the next section. Ms. Huh will then pick up the sections that you have turned over.

When you see the words, “Thank you so much!” you will know that it is the end of the packet. You can ask questions at any time. If you have any questions, please raise your hand.

Name: _____ .

Directions: I am interested in who you are, what you know, and what you think.

Please read each question and answer. There are no right or wrong answers.

When you are finished, please turn it over on your desk and move onto the next section.

☉ Please write down the following information.

1. Gender (Boy or Girl):
2. Date of birth (Month/day/year):
3. Teacher's name:

☉ Please circle one of the four choices for each question (Questions from 1 to 6).

1. Do you like reading about social studies?
 - a. a lot
 - b. some
 - c. a little
 - d. not at all

2. Do you think that reading about **making choices** would be interesting?
 - a. a lot
 - b. some
 - c. a little
 - d. not at all

3. Do you want to know more about **making choices**?
 - a. a lot
 - b. some
 - c. a little
 - d. not at all

4. How much do you think you know about **making choices**?
- a. a lot
 - b. some
 - c. a little
 - d. not at all
5. How many ideas do you think you could write about making choices?
- a. more than 4
 - b. 3-4
 - c. 1-2
 - d. 0
6. How long a report do you think you could write on making choices?
- a. a few paragraphs
 - b. a paragraph
 - c. a sentence
 - d. nothing

Name: _____ .

For the Large-group Participants

- **Please read carefully everything from pages 5 to 11.**
- **After finishing reading them, you will be asked to answer some questions about what you have read.**
- **But do not look ahead at the questions before or during reading.**
- **When you are finished reading, please turn it over on your desk and then move onto the next section to answer questions.**

For the protocol students

- **Please read aloud everything from pages 5 to 11.**
 - **Whenever you see a red star, you should stop reading and tell what you were thinking as you read.**
 - **You can tell anything that comes to your mind at any time, even when you do not see any red star.**
 - **After you have finished reading aloud these pages, you will be asked to answer some questions about what you have read.**
 - **Do not look ahead at the questions before or during reading.**
- When you are finished reading aloud, please turn the section over on your desk and then move onto the next section to answer questions.**

Note. In a student version, one of the two directions appeared.

We have many things we want to have but

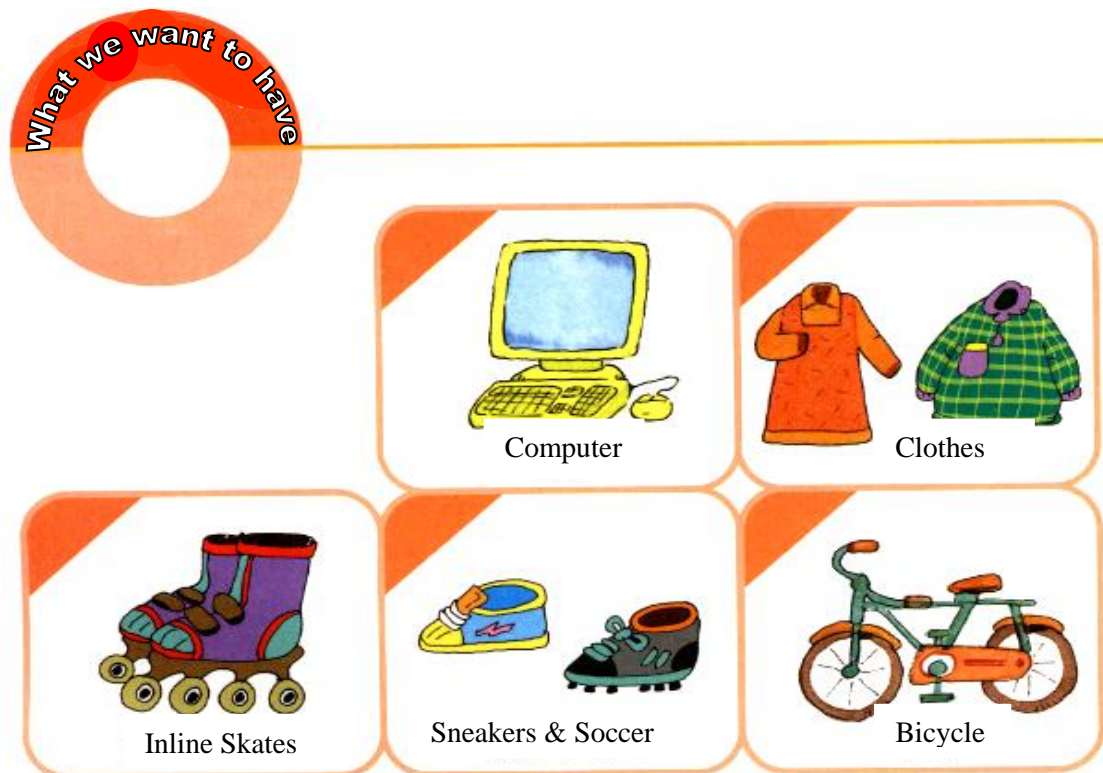
■ When you want to have many things but can't, you need to make a wise choice. Let's find ways to make a wise choice.

● Let's find out why we cannot get everything we want.

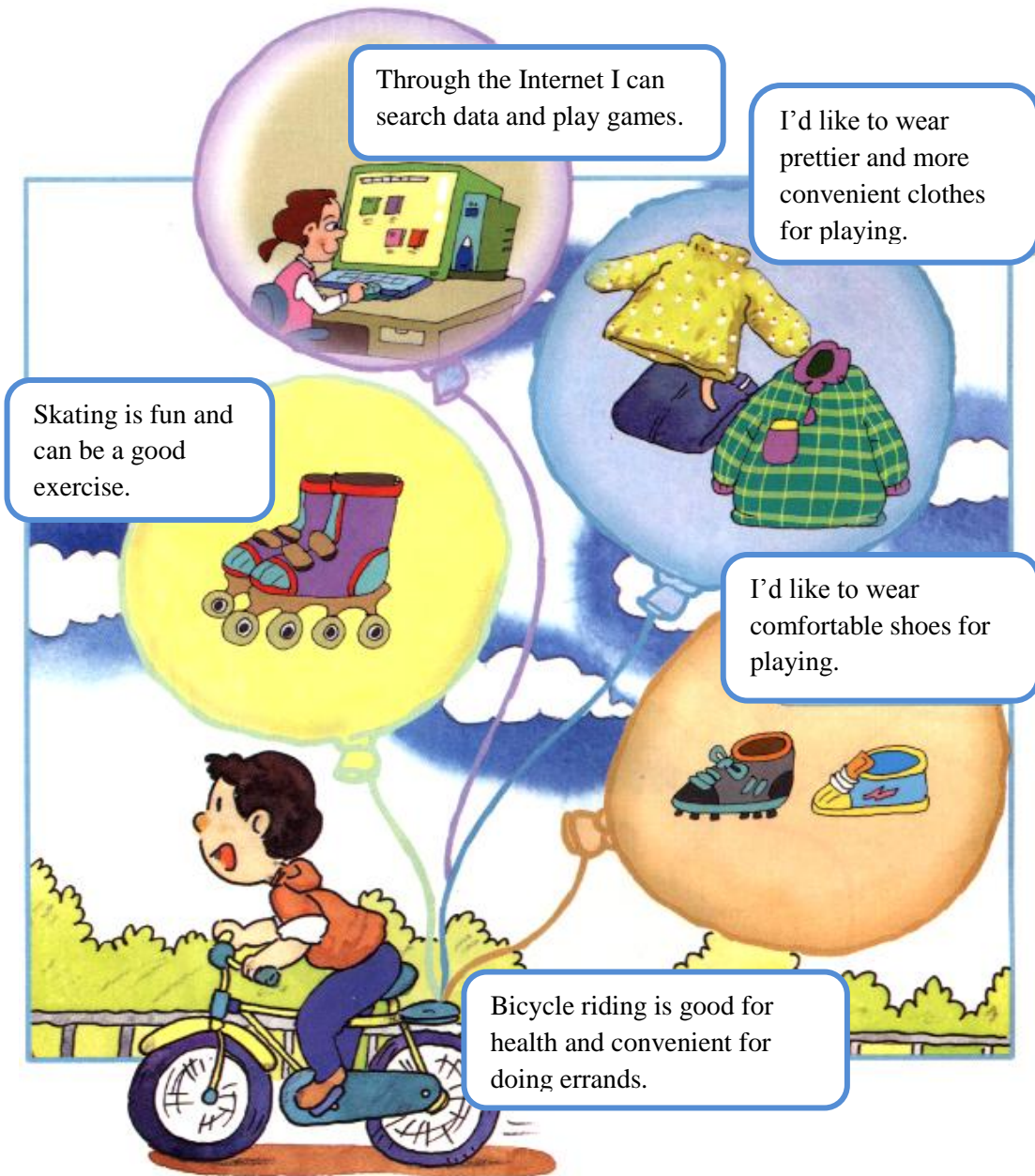
Hyunsoo's class decided to choose five items that classmates want to have.

Hyunsoo's group in charge of the survey made a questionnaire and gave it out to classmates. The classmates wrote down five things they wanted to have all the time, why they wanted them, and why they did not have them yet.

According to the findings from the data, the five most wanted items were as follows.



What Hyunsoo's classmates wanted to have and why varied. Hyunsoo's group talked together about why their classmates wanted to have these things.

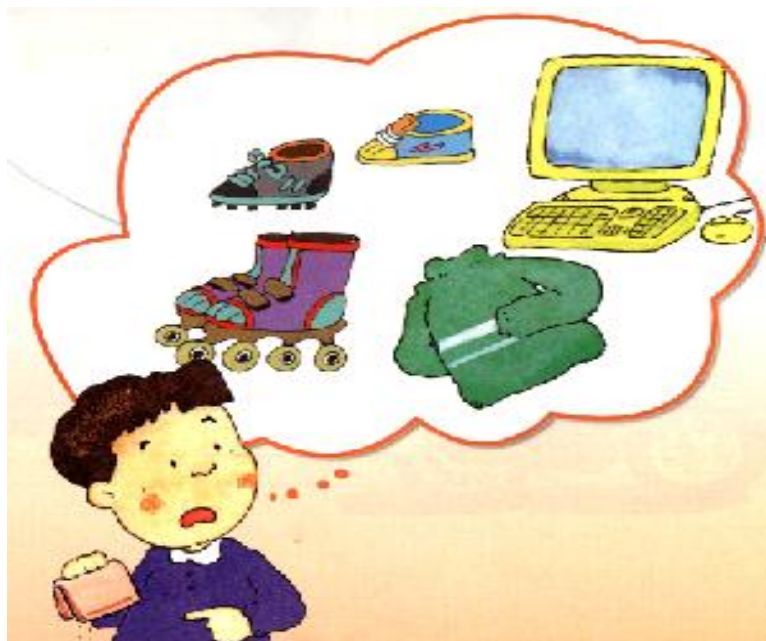


There are countless things that we need in our everyday lives. But like Hyunsoo's classmates, we cannot get everything we want. Why is that so?

Why can't our classmates get what they want?

	Why
1	Because I do not have money
2	Because my parents do not buy it for me, thinking it's dangerous
3	Because my parents do not buy it for me, thinking it disturbs my studying
4	?

Everyone has many things they want. But resources or income that is necessary to satisfy those desires are always scarce.



- **Let's think about what we should do when we cannot buy everything we want.**

Hyunsoo decided to spend the money he saved from his allowance for two months on buying what he always wanted to have. But the money was not enough for a computer game CD-ROM, a soccer ball, and a robot kit. Hyunsoo came to worry about which one of the three he should buy.

The computer game is best for having fun in my spare time.



Isn't a soccer ball better for health and fun?



Assembling a robot is very fun as well.



When buying things, Hyunsoo decided to choose what to buy after considering these things.

First, he decided the criteria for choice such as “Is it necessary for me?” and “Is it helpful for me?” He marked each item with ‘O, Δ, X’, according to the criteria. Then, he decided to set the priority among the three and buy one at a time.

I'm going to choose what can give me both fun and help first.



Item Criteria	Computer game CD-ROM	Soccer ball	Robot kit
Can I buy it with the money I have?			
Is it necessary for me?			
Does it give me both fun and help?			
Is it durable?			
How do I set the priority of the purchase?			



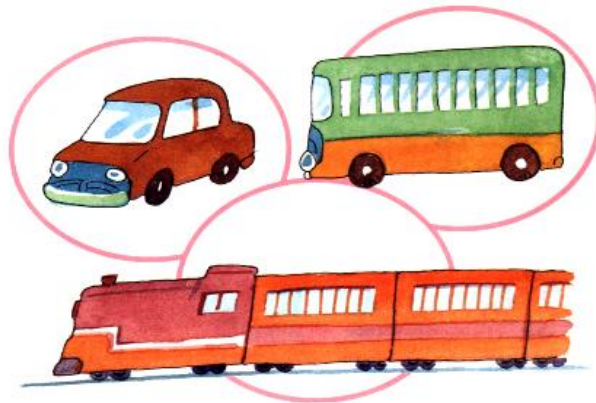
Since I cannot buy all at once, which one should I buy first?

- Let's find some examples where we have to make a good choice in everyday lives and discuss how to do that.

What transportation to choose

Hyunsoo plans to go to his grandmother's with his parents to celebrate her birthday. His grandmother lives in Chunjoo, far away from Seoul where Hyunsoo's family lives. Hyunsoo's family plans to use one of the transportation types among car, train, and bus. Which one is better to use?

Let's decide which transportation is better to choose, considering time, cost, safety, and convenience.

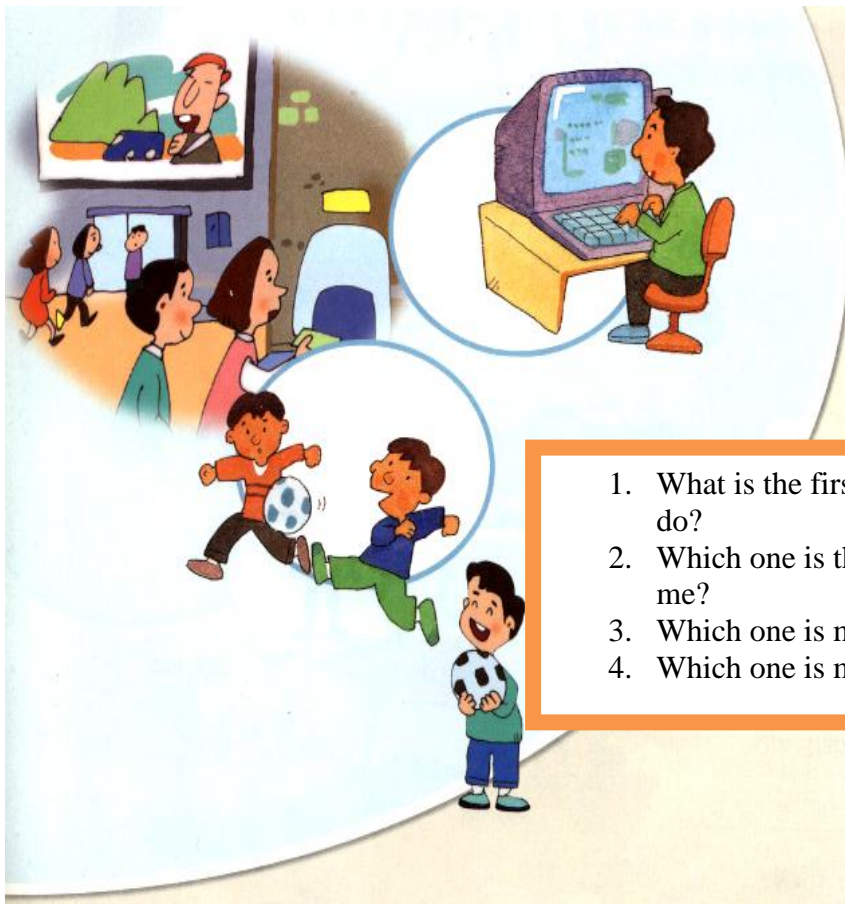


Criteria \ Transportation Type	Car	Train	Bus
Time			
Cost			
Safety			
Convenience			

What to do on Saturday afternoon?

Hyunsoo is thinking of what to do this Saturday afternoon.

This weekend, he wanted to play computer games with the new CD-ROM he bought. But Youngmi called, suggesting going to the Children's Center to watch a movie, and Jinwoo suggested playing soccer.



1. What is the first thing I promised to do?
2. Which one is the most beneficial to me?
3. Which one is most interesting?
4. Which one is most economical?

- If I were Hyunsoo, what would I do? Please tell why you think so?

Name: _____.

- ☺ Please think about what you have just read, and answer these questions as much as you can. You cannot go back to read the passage again. When you are finished, please turn it over on your desk and move onto the next section.

1. Why do people have to make choices about the things they want and how can they make a wise choice?
2. Please tell why HyunSoo's classmates cannot buy everything they want?
3. Please make a sentence, using the words, "wise choice".
4. Please read this and write what you would choose to buy if you were Chloe. Please write why you would choose it.

Chloe has 5 dollars. Next Wednesday is her mother's birthday. Chloe would like to buy a hair clip for her mom. It would look good on her. But Chloe also wants to buy some ice cream so that her family can have together. If I were Chloe, what would I choose and why?

Name: _____.

😊 **Free drawing** 😊

Some of your friends have not read this passage. If you could draw what you have learned from it, your friends would also learn from your drawing.

But you cannot draw everything. So, please draw what you think is most important for your friends to know.

***Note: You cannot go back to previous pages.**

If you need extra paper, please raise your hand to ask Ms. Huh.

When you use extra paper, do not forget to write your name on it.

When you are finished drawing, please turn it over on your desk and move onto the next section.

Name: _____.

- ⊕ Please answer these same questions now that you have read about making choices (Questions from 1 to 8).

1. Do you like reading about social studies?

- a. a lot
- b. some
- c. a little
- d. not at all

2. Do you think that reading about **making choices** is interesting?

- a. a lot
- b. some
- c. a little
- d. not at all

3. Do you want to know more about **making choices**?

- a. a lot
- b. some
- c. a little
- d. not at all

4. Do you think this text (“**We have many things we want to have but**”) is interesting?
- a. a lot
 - b. some
 - c. a little
 - d. not at all
5. How much do you think you know now about **making choices**?
- a. a lot
 - b. some
 - c. a little
 - d. not at all
6. How many ideas do you think you can write about **making choices**?
- a. more than 4
 - b. 3-4
 - c. 1-2
 - d. 0
7. How long a report do you think you could write now on **making choices**?
- a. a few paragraphs
 - b. a paragraph
 - c. a sentence
 - d. nothing

APPENDIX F-3

Packet 3 (US Civics/community involvement Passage)

Directions:

Please do not turn over this page until Ms. Huh says, “You can start now.” Ms. Huh has given you a packet with five sections. The packet has questions for you to answer, a passage for you to read, and then more questions to show her what you have learned. Please do not look ahead in the packet.

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You should complete each section silently at your own pace. You will have 40 minutes to complete everything. When you think you are finished with a section, please turn it over on your desk and then move onto the next section. Ms. Huh will then pick up the sections that you have turned over.

When you see the words, “Thank you so much!” you will know that it is the end of the packet. You can ask questions at any time. If you have any questions, please raise your hand.

Name: _____ .

Directions: I am interested in who you are, what you know, and what you think.

Please read each question and answer. There are no right or wrong answers. When you are finished, please turn it over on your desk and move onto the next section.

☺ **Please write down the following information.**

1. Gender (Boy or Girl):
2. Date of birth (Month/day/year):
3. Teacher's name:

☹ **Please circle one of the four choices for each question (Questions from 1 to 6).**

1. Do you like reading about social studies?

- a. a lot
- b. some
- c. a little
- d. not at all

2. Do you think that reading about **people working together for a better community** would be interesting to read about?

- a. a lot
- b. some
- c. a little
- d. not at all

3. Do you want to know more about **people working together for a better community**?
 - a. a lot
 - b. some
 - c. a little
 - d. not at all

4. How much do you think you know about **people working together for a better community**?
 - a. a lot
 - b. some
 - c. a little
 - d. not at all

5. How many ideas do you think you could write about **people working together for a better community**?
 - a. more than 4
 - b. 3-4
 - c. 1-2
 - d. 0

6. How long a report do you think you could write on **people working together for a better community**?
 - a. a few paragraphs
 - b. a paragraph
 - c. a sentence
 - d. nothing

Name: _____ .

For the Large-group Participants

- **Please read carefully everything from pages 5 to 8.**
- **After finishing reading them, you will be asked to answer some questions about what you have read.**
- **But do not look ahead at the questions before or during reading.**
- **When you are finished reading, please turn it over on your desk and then move onto the next section to answer questions.**

For the protocol students

- **Please read aloud everything from pages 5 to 8.**
 - **Whenever you see a red star, you should stop reading and tell what you were thinking as you read.**
 - **You can tell anything that comes to your mind at any time, even when you do not see any red star.**
 - **After you have finished reading aloud these pages, you will be asked to answer some questions about what you have read.**
 - **Do not look ahead at the questions before or during reading.**
- When you are finished reading aloud, please turn the section over on your desk and then move onto the next section to answer questions.**

Note. In a student version, one of the two directions appeared.

Citizens Make a Difference

VOCABULARY

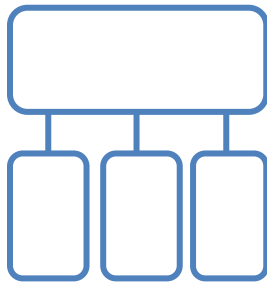
common good

volunteer

READING SKILL

Main idea and Detail

List details that show ways in which citizens help communities.



Build on What You Know Who helped you today? Perhaps someone in your family made your lunch. Perhaps your teacher taught you something new. When people help one another, they are practicing good citizenship.

Citizens Can Help

Every day, people in your community help one another. Helping the community is part of being a good citizen. You can practice good citizenship, too. You can speak up to make things more fair. You can obey laws, or help change them to make them better. By being a good citizen, you make your community a better place to live.



Community Helper

This crossing guard helps to keep people safe.





The Common Good Volunteering to work at an animal shelter or to help people are two ways to work for the common good.

Working Together

Citizens can help even more by working together. Suppose you want to pick up trash at a nearby park. If your classmates helped, the cleanup would go faster. If community groups and local leaders joined in, it might take just a few hours.

When people work together to benefit their community, they work for the common good. The common good is whatever helps the most people in a community. It can mean keeping parks clean, working to change unfair laws, and solving community problems.

Some people take part in their school or community by working as volunteers. A volunteer is a person who works freely, without pay. Volunteers care about other people, not just themselves.

Review

In what ways can students practice good citizenship?



Paradise Valley, Arizona These Arizona students helped build a new house in their town.



Students Help Others

In Paradise Valley, Arizona, a group of students wanted to help people in their community. The students talked with community leaders. After sharing their ideas, they decided to build 10 houses in 10 years. To reach this goal, the students worked with Habitat for Humanity (HFH). HFH is a volunteer group that helps families all over the world build houses. Working with HFH, the students came up with a plan to build their first house for a family in their town.

Raising Money

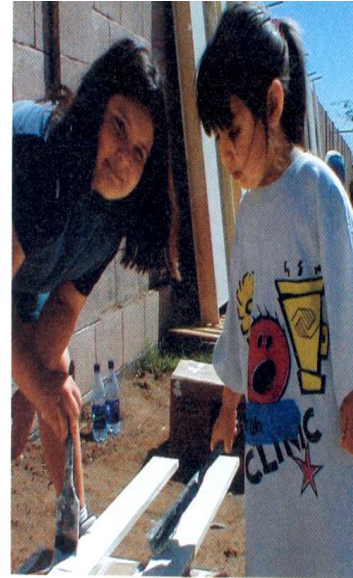
The students raised money for supplies and materials. Their school district organized a carnival. The students sold T-shirts, washed cars, and held a dance. They also asked community leaders for help. Teachers, principals, and parents volunteered. Many business owners gave money. Some gave supplies, such as paint and wood.



Building a New Home

Then, the students and other volunteers started building. They had lots of help. Habitat for Humanity workers showed them how to plan and build. Carpenters showed older students how to cut wood. Painters taught younger students to paint walls. The family that would own the house also worked with the volunteers.

At last, the house was finished. Everyone celebrated. The students felt proud. By helping to build a house, the students and volunteers had worked for the common good.



Young volunteers paint.

Review

What steps did students take before starting to build the house?



Name: _____.

- ☺ Please think about what you have just read, and answer these questions as much as you can. You cannot go back to read the passage again. When you are finished, please turn it over on your desk and move onto the next section.

1. Why did the students in Arizona start their project and what steps did they take?

2. Please tell examples of practicing good citizenship.

3. Please make a sentence, using the word, “common good”.

4. Recently Emily found that the streets in her neighborhood are too dirty. Trash is everywhere and walls are dirty with ads and graffiti. She came to think about what she could do.

If you were Emily, what would you do and why?

Name: _____.

😊 **Free drawing** 😊

Some of your friends have not read this passage. If you could draw what you have learned from it, your friends would also learn from your drawing.

But you cannot draw everything. So, please draw what you think is most important for your friends to know.

*Note: You cannot go back to previous pages.

If you need extra paper, please raise your hand to ask Ms. Huh.

When you use extra paper, do not forget to write your name on it.

When you are finished drawing, please turn it over on your desk and move onto the next section.

Name: _____.

- ☺ Please answer these same questions now that you have read about making choices (Questions from 1 to 8).

1. Do you like reading about social studies?
 - a. a lot
 - b. some
 - c. a little
 - d. not at all

2. Do you think that reading about **people working together for a better community** is interesting?
 - a. a lot
 - b. some
 - c. a little
 - d. not at all

3. Do you want to know more about **people working together for a better community**?
 - a. a lot
 - b. some
 - c. a little
 - d. not at all

4. Do you think this text (“**Citizens Make a Difference**”) is interesting?
- a. a lot
 - b. some
 - c. a little
 - d. not at all
5. How much do you think you know now about **people working together for a better community**?
- a. a lot
 - b. some
 - c. a little
 - d. not at all
6. How many ideas do you think you can write about **people working together for a better community**?
- a. more than 4
 - b. 3-4
 - c. 1-2
 - d. 0
7. How long a report do you think you could write now on people working together for a better community?
- a. a few paragraphs
 - b. a paragraph
 - c. a sentence
 - d. nothing

APPENDIX F-4

Packet 4 (Korean Civics/community involvement Passage)

Directions:

Please do not turn over this page until Ms. Huh says, “You can start now.” Ms. Huh has given you a packet with five sections. The packet has questions for you to answer, a passage for you to read, and then more questions to show her what you have learned. Please do not look ahead in the packet.

You will be finishing each section before you go on to the next section and you won't be able to look back once you have finished a section. Each section will begin with a line for your name. Please don't forget to put your name on each section. Then you will see directions for how to complete the section.

You should complete each section silently at your own pace. You will have 40 minutes to complete everything. When you think you are finished with a section, please turn it over on your desk and then move onto the next section. Ms. Huh will then pick up the sections that you have turned over.

When you see the words, “Thank you so much!” you will know that it is the end of the packet. You can ask questions at any time. If you have any questions, please raise your hand.

Name: _____ .

Directions: I am interested in who you are, what you know, and what you think.

Please read each question and answer. There are no right or wrong answers.
When you are finished, please turn it over on your desk and move onto the next section.

☉ Please write down the following information.

1. Gender (Boy or Girl):
2. Date of birth (Month/day/year):
3. Teacher's name:

☉ Please circle one of the four choices for each question (Questions from 1 to 6).

1. Do you like reading about social studies?

- a. a lot
- b. some
- c. a little
- d. not at all

2. Do you think that reading about **people working together for a better community** would be interesting to read about?

- a. a lot
- b. some
- c. a little
- d. not at all

3. Do you want to know more about **people working together for a better community**?
 - a. a lot
 - b. some
 - c. a little
 - d. not at all

4. How much do you think you know about **people working together for a better community**?
 - a. a lot
 - b. some
 - c. a little
 - d. not at all

5. How many ideas do you think you could write about **people working together for a better community**?
 - a. more than 4
 - b. 3-4
 - c. 1-2
 - d. 0

6. How long a report do you think you could write on **people working together for a better community**?
 - a. a few paragraphs
 - b. a paragraph
 - c. a sentence
 - d. nothing

Name: _____ .

For the Large-group Participants

- Please read carefully everything from pages 5 to 10.
- After finishing reading them, you will be asked to answer some questions about what you have read.
- But do not look ahead at the questions before or during reading.
- When you are finished reading, please turn it over on your desk and then move onto the next section to answer questions.

For the protocol students

- Please read aloud everything from pages 5 to 10.
- Whenever you see a red star, you should stop reading and tell what you were thinking as you read.
- You can tell anything that comes to your mind at any time, even when you do not see any red star.
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- Do not look ahead at the questions before or during reading.
When you are finished reading aloud, please turn the section over on your desk and then move onto the next section to answer questions.

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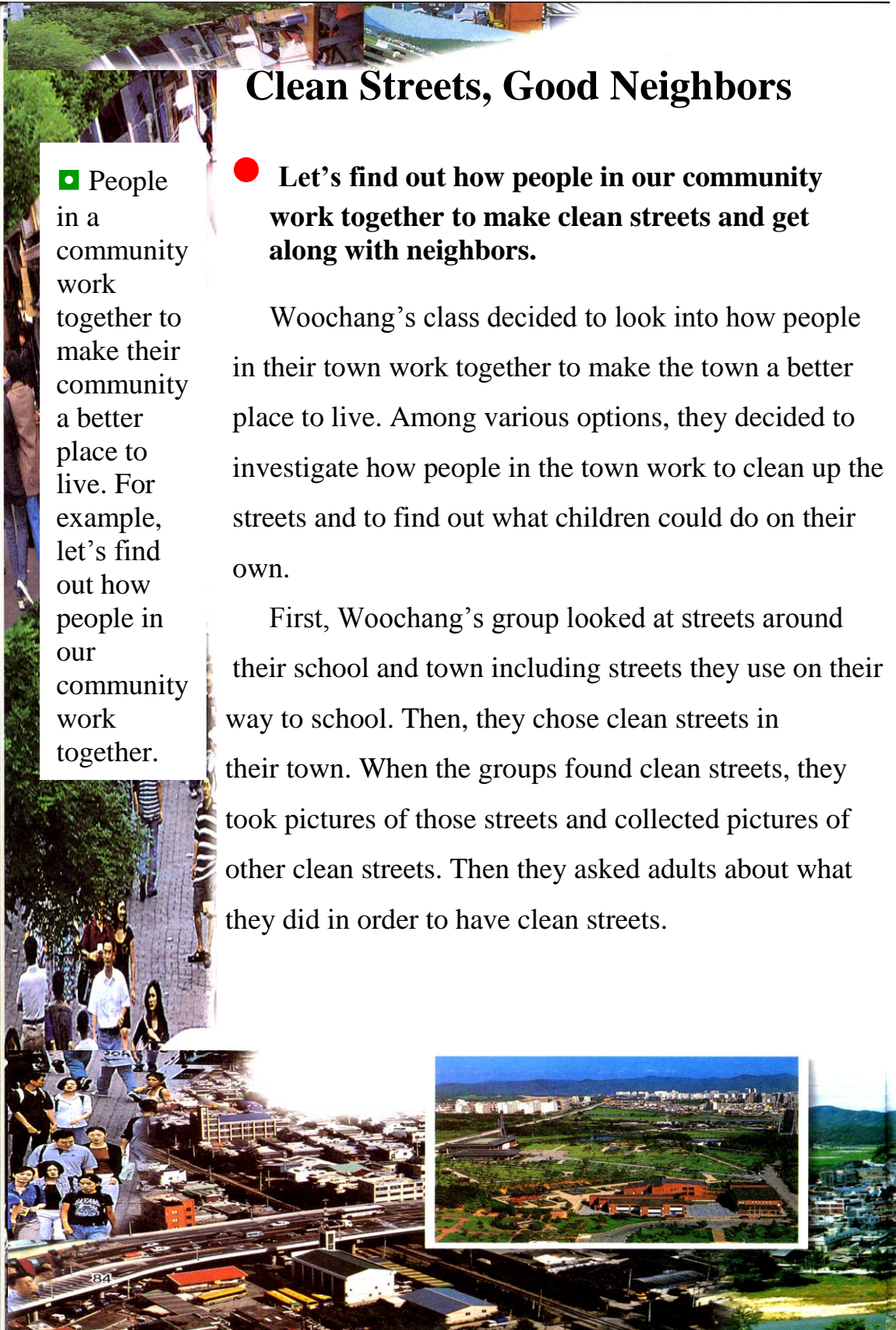
Clean Streets, Good Neighbors

■ People in a community work together to make their community a better place to live. For example, let's find out how people in our community work together.

- Let's find out how people in our community work together to make clean streets and get along with neighbors.

Woochang's class decided to look into how people in their town work together to make the town a better place to live. Among various options, they decided to investigate how people in the town work to clean up the streets and to find out what children could do on their own.

First, Woochang's group looked at streets around their school and town including streets they use on their way to school. Then, they chose clean streets in their town. When the groups found clean streets, they took pictures of those streets and collected pictures of other clean streets. Then they asked adults about what they did in order to have clean streets.



The adults said that they had noticed dirty streets. So, they held a town meeting.

The Results of the Town Meeting

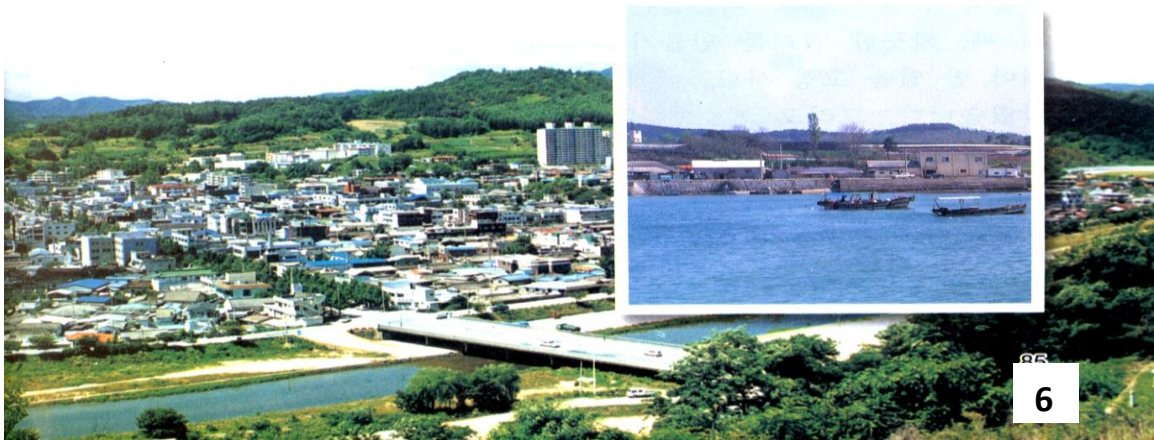
The town's problems

- There are many potholes in streets.
- Trash is everywhere, and some people recklessly throw trash away.
- Walls and store signs are dirty.

The town people decided.

“Let's clean our town and streets.”

- **Let's find out what problems our town's streets have.**



People in the town made a “Green Group” for a better town and clean streets. Then, they decided what to do for clean streets.

Things to do for clean

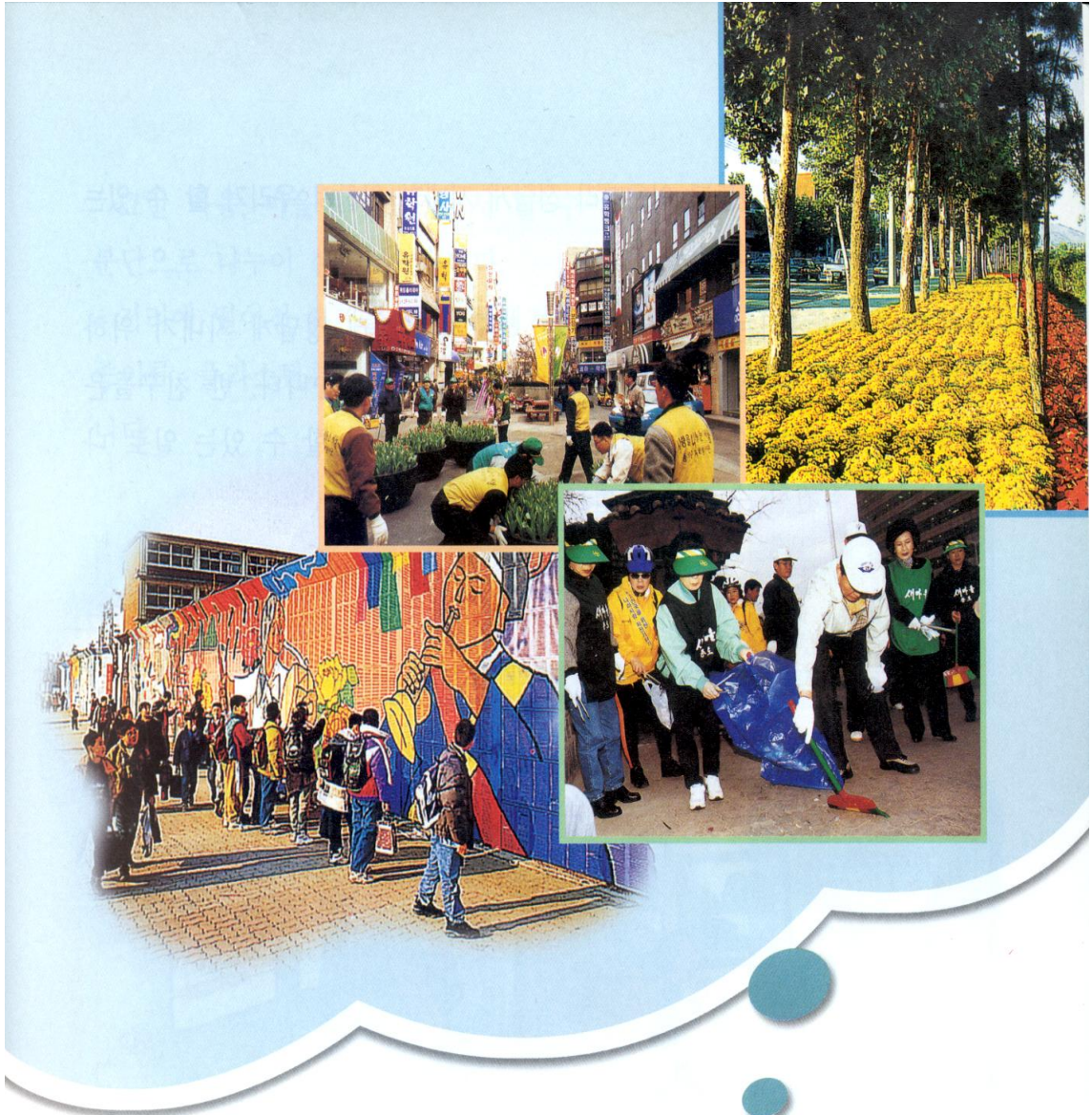
- Cleaning streets in front of their house
- Planting flowers along streets
- Fixing old street pavement with the help from the town officials
- Removing illegal ads from walls
- Cleaning the graffiti off walls
- Filling potholes and removing trash in street corners



During a town meeting, the adults in the Green Group passed along the things-to-do list for clean streets to other people in the town. Then, they participated in volunteer work every day. The town officials also helped them a lot.



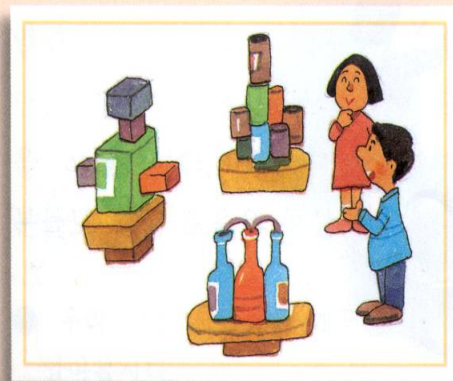
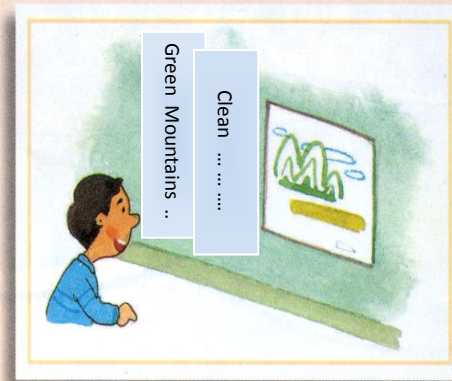
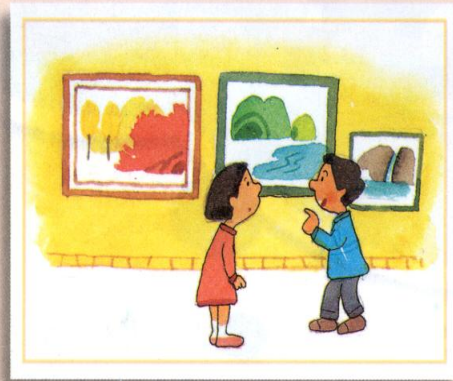
- **Think about what people in our town do for clean streets.**



- **Let's find out what we can do to make clean streets and work together with our neighbors, and let's practice.**

Woochang's class decided to find what they can do to make clean streets and work together with neighbors. They distinguished what they can do in their school from what they can do in their community. They also decided how they could practice.

Things we can do at school



Then they found what they could do in their town and community, and practiced in groups. They picked up trash in streets and put it into trashcans. They separated recyclable paper, plastic, glass, and other trash.



The students shared what they practiced.

They also discussed how they could practice better.

Then they summarized the discussion and decided to share the ideas with their parents.

- **Let's talk about why we need to actively participate in our community.**

Paper



Plastic



Glass bottles



Cans



Name: _____.

😊 **Free drawing** 😊

Some of your friends have not read this passage. If you could draw what you have learned from it, your friends would also learn from your drawing.

But you cannot draw everything. So, please draw what you think is most important for your friends to know.

***Note: You cannot go back to previous pages.**

If you need extra paper, please raise your hand to ask your teacher.

When you use extra paper, do not forget to write your name on it.

When you are finished drawing, please turn it over on your desk and move onto the next section.

Name: _____.

☺ Please answer these same questions now that you have read about making choices (Questions from 1 to 8).

1. Do you like reading about social studies?
 - a. a lot
 - b. some
 - c. a little
 - d. not at all

2. Do you think that the topic, people working together to make our community a better place to live in, is interesting?
 - a. a lot
 - b. some
 - c. a little
 - d. not at all

3. Do you want to know more about people working together to make our community a better place to live in?
 - a. a lot
 - b. some
 - c. a little
 - d. not at all

4. Do you think this text (“Clean Streets, Good Neighbors”) is interesting?
- a. a lot
 - b. some
 - c. a little
 - d. not at all
5. How much do you think you know now about people working together to make our community a better place to live in?
- a. a lot
 - b. some
 - c. a little
 - d. nothing
6. How many ideas do you think you can write about people working together to make our community a better place to live in?
- a. more than 4
 - b. 3-4
 - c. 1-2
 - d. 0
7. How long a report do you think you could write now on people working together to make our community a better place to live in?
- a. a few paragraphs
 - b. a paragraph
 - c. a sentence
 - d. nothing

APPENDIX G

Procedure, Direction, and Passages for Modeling and Practicing Think-aloud

Procedure for Think-aloud:**1. Introduction:**

I am interested in what you think while you are reading. You can show me your thought by telling me as soon as anything comes to your mind while reading. We call this “Think Aloud.” Anything you say cannot be wrong. This is not a test and there is no right or wrong answer. Everything you say is valuable.

Now, I will explain how to think aloud while reading. You will read aloud a passage and whenever you see a red star, you should stop reading and tell what you are thinking at that moment. But you can tell anything that comes to your mind at any point before you reach a red star. You can say anything about what you are reading, including words, sentences, titles, pictures, and captions.

2. Modeling:

This time I will show you how to do think-aloud. You will see what’s going on in my head. After that, you will practice it on your own.

“Ancient Egypt” *This sounds interesting. I think that this passage is probably about pyramids or mummies. Let’s see. ...* “The story of ancient Egypt has survived for thousands of years. Egypt was one of the greatest countries of ancient times.” *I do agree. I think this is the main idea of this passage. As I read it further, I may read in detail why Egypt was one of the greatest. (Look at pictures of Nile floodplain) Hm.... These pictures show pyramids and the Nile river. I know about pyramids but what is so important about the Nile river? What is flood plain? I don’t know. Maybe I’d better read it further.* “The strong pharaohs and strong armies kept Egypt safe.” “Pharaoh” *is another name for Egyptian King. But it is a little tricky to sound this word out.* “The strong Nile kept invaders out.” (Reread it). *This is not clear to me. How can a river be so strong to keep invaders out? What does this mean? Maybe it is hard to cross the Nile river and takes a long time? I am not sure. I may read further.* “The numerous harvests of flax, barley, papyrus,” (Reread “flax, barley, papyrus”). *What is flax? I haven’t heard of it before. Isn’t papyrus paper? Is it a crop?* “The numerous harvests of flax, barley, papyrus and other crops kept the Egyptian people fed and healthy and also kept the treasury full from payments made by other civilizations.” *I guess the ancient Egyptians farm many things in the floodplain in the pictures on the left. But why did other civilizations pay? Hm.... Oh I see why. it may be because the Egyptians sold the crops to other countries as we export things to other countries today Wait a minute! But still there is no information why the Nile is so strong to keep invaders out. Anyway, I’ll keep reading.* “The Egyptians gave us hieroglyphs, papyrus, and the pyramids.” “Hieroglyphs” *I have no idea what it is. I’ll just skip it. “papyrus” Wait a minute. (Looking at the picture on the right). It looks like paper to me. But in the*

last paragraph, it sounded like some kind of plant. It's confusing. Maybe papyrus is plant from which paper is made? "They gave us a story of unity in government. They gave us a lesson in agriculture how to farm on a flood plain. They also gave us an example to follow: Even though these people are long gone, their story lives on." I like the last sentence. It is true. This may be the theme of this story. Maybe this is why Egypt was one of the greatest countries of ancient times. This makes me think that the Egyptians seemed very smart and rich. But unfortunately, this story does not give much information about pyramids and mummies. I'd like to know more about them.

3. Practice:

Do you understand how to do think-aloud? Here is another passage about Egypt. You can practice think-aloud with this passage on your own. Please remember that you can say anything at any point even when you do not see a red start. But make sure that whenever you see a red start, you should tell what you are thinking while reading that part. Please read aloud instead of silent reading for me so that I can see where you are at. Are you ready? Go ahead.

4. Think-aloud with a test passage:

Now you will tell what you are thinking while reading a little longer passage. Again, this is not a test and there is no right or wrong answer. There is no time limit. It would be of great help if you could tell anything that comes to your mind. Please read the written direction carefully again and you can start think-aloud whenever you feel ready.

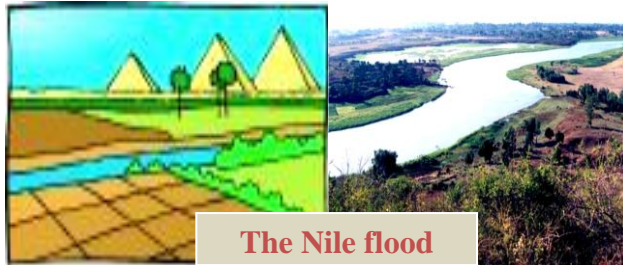
Written direction:

This is not a test and there are no right or wrong answers. Everything you say is valuable. There is no time limit.

1. You will be given a passage to read aloud.
2. As you are reading, anytime you want, talk out loud about what you are doing and thinking as you read.
3. When you see a red star, stop reading and
 - a. Explain what was happening in the passage;
 - b. Explain what you thought about as you were reading;
 - c. Explain what you did as you read; and
 - d. Discuss anything else about what you read or how you read it.
4. You will not be interrupted or assisted once you begin.
5. When you have finished reading and responding to the passage, I will ask you to complete a questionnaire and answer questions about what you read.

Passage for modeling:**Ancient Egypt**

The story of ancient Egypt has survived for thousands of years. Egypt was one of the greatest countries of ancient times. ★

**The Nile flood****Farmers on the Nile**

The strong pharaohs and strong armies kept Egypt safe. The strong Nile kept invaders out. The numerous harvests of flax, barley, papyrus, and other crops kept the Egyptian people fed and healthy and also kept the treasury full from payments made by other civilization

The Egyptians gave us hieroglyphs, papyrus, and the pyramids. They gave us a story of unity in government. They gave us a lesson in agriculture how to farm on a flood plain. They also gave us an example to follow: Even though these people are long gone, their story lives on. ★

**Rolls of papyrus**

<http://www.socialstudiesforkids.com/articles/worldhistory/introancientegypt1.htm>

Retrieved on April 6, 2009.

Practice passage 1:**The Pyramids**

How the ancient Egyptians got those heavy stones so high in the air to put on top of the Pyramids is still a mystery. But they did it. ★



Giza is the site of several large Old Kingdom Pyramids. The Sphinx is also nearby.

Huge blocks of rock were cut from places many miles away and taken by boat to Giza and other places where pyramids were being built.

The slaves used a series of logs rolling on the ground to move the giant stones. Then, they put them in place as parts of a pyramid. ★

The first pyramids were called "Step Pyramids" because they looked like giant steps. The pyramids we most recognize today, the smooth ones, were built later. ★



Step pyramid

<http://www.socialstudiesforkids.com/articles/worldhistory/introancientegypt1.htm>

Retrieved on April 6, 2009.

Practice passage 2:**Why were these pyramids built?**

The pharaohs wanted to use them as tombs.

The Egyptian people had a strong belief in the afterlife. They believed that life here on Earth was just a stage in a long journey. ★

They believed that the spirit continued on after the body died. That's why you can find so many

earthly things in the tombs of the times. ★

The pharaohs were buried with gold, jewelry, and other goods that they would find familiar in the afterlife. The tombs were also decorated with the names of the pharaohs and pictures and messages wishing them well. These pictures were believed to give the pharaoh whatever was in the picture. ★

To make sure the pharaohs made it to the afterlife, the people made them into mummies. ★

<http://www.socialstudiesforkids.com/articles/worldhistory/introancientegypt1.htm>

Retrieved on April 6, 2009.

Practice passage 3:

Mummies

A mummy was created using special chemicals. The body was wrapped tight and preserved so that the person inside would have protection for his or her soul. ★



Egyptian mummy coffin

The Egyptians made their dead pharaohs into mummies because they believed that the pharaohs would be their link to the gods even in the afterlife. The people wanted the gods to continue to smile on them, so they kept their pharaohs protected by strong chemicals and strong buildings (the pyramids). The current pharaoh was a child of the gods, but it sure didn't hurt to have other pharaohs still protecting people. ★

The amazing thing about mummies is that we are still finding them. Every year or so, an archaeologist announces finding another mummy. The special chemicals the Egyptians used, along with the desert climate of Egypt, has allowed mummies to survive for thousands of years. ★



Mummies, people from the past

<http://www.socialstudiesforkids.com/articles/worldhistory/introancientegypt1.htm>

Retrieved on April 6, 2009.

APPENDIX H

Semi-structured Interview Questions

- Was this passage interesting? (Or not interesting?)
Why do you think so? Why not?
- What did you like about this passage? Why do you think so?
- What didn't you like about this passage? Why do you think so?
- Was there anything in this passage that you have already learned about or knew?
- Was there anything new in this passage?
- As you read this passage, did you feel that this passage was different in content or format from social studies textbook passages you have read at your school? If so, would you give me some examples of what was unfamiliar or strange to you?
- Do you think now you know more about this topic? Why do you think so? Why not? What did you learn from this passage?
- Was this passage easy to read? Why do you think so? Why not?
- Did you use any special strategies in order to understand this passage better? Did you have any special ways that helped you understand this passage better? For example, rereading the part you didn't understand well, comparing text and the matching pictures, thinking about and connecting to your own experiences or what you have already known and so on.
- What part of this passage helped you understand it, for example, pictures, captions, tables, titles, headings, and so on?
- Was there any confusing part in this passage? What part of this passage particularly made you confused, for example, pictures, captions, tables, titles, headings, and so on?

- (Looking at the student's answer to each question,) Why did you answer like this? Can you point in this passage where you got that answer?
- (Looking at the student's free drawing,) Please explain your picture to me. How did you decide what you should draw? Can you point in this passage that helped you draw this picture?
- What do you think of the side box for reading skills and vocabulary, headings and subheadings, highlighting, underlining, charts, and pictures? Did any of these help you understand the passage better? Or did any of these make the passage a little confusing? (Only for the participants who read the US texts)
- What do you think of the side box in the beginning of the text, bulleted sentences, charts, and pictures? Did any of these help you understand the passage better? Or did any of these make the passage a little confusing? (Only for the participants who read the Korean texts)
- Do you think that the charts, tables, or pictures helped you understand the passage better or they were confusing? Which types of pictures do you like better, real photo-like pictures or cartoon-like pictures?

APPENDIX I

Pilot Studies

I had conducted pilot studies in both countries. I conducted two separate pilot studies for different purposes. The purpose of Pilot Study 1 was to see whether the questions and directions in each packet were understandable to children and if not, how they might be reworded in a better way. The purpose of Pilot Study 2 was to gather information about the logistics for the main study, including the procedures for distributing materials and establishing a reasonable time limit for children to complete the tasks.

Pilot Study I

For the purpose of checking the readability of questions and directions, I asked four children who were nine, ten, or eleven, to review each question and directions for each section with me in a one-on-one situation. Each of the four US children reviewed one of the four packets in English, while each of the four Korean children reviewed the Korean version of each packet. Based on these children's feedback, I reworded the questions and directions in each packet in both Korean and English.

Participants. Four students at the age of nine, ten, or eleven participated in this study in both Korea and the United States. I developed four packets both in Korean and in English for this study. Since the purpose of this pilot study was to see if the wording and length of questions and directions in the four packets were understandable to ten-year-old children, at least four students around the age of ten from each country needed to participate in Pilot Study 1. Accordingly, one nine-year-old, two ten-year-old, and one eleven-year-old child participated in Korea and the US. The US participating students

attended the summer reading clinic run by the Reading Center in the department of Curriculum and Instruction at the University of Maryland held at a local elementary school. The Korean participating students attended a local elementary school in the same city where the main study was conducted.

Materials. For the main study, I developed four packets based on the four passages that I selected from the two countries' textbooks and the related measures that I developed. There were both Korean and English versions of these four packets (See Appendices E to H for English versions and Appendices e to h for Korean versions). Because the purposes of the two pilot studies were to prepare for the main study, I used these four packets for the first pilot study and revised the wording and the length of the questions and directions in these packets based on the results from the first pilot study. I used these revised versions of the four packets for the second pilot study.

Each packet consisted of five sections: a pretest Background Knowledge/Interest Questionnaire (*KIQ*); a test passage; four questions about the test passage (two questions about main ideas, a question about the conceptual understanding of key vocabulary, and a problem-solving question); a free drawing; and a posttest *KIQ* in this order. Packet 1 contained a US Economics/choices passage, while Packet 2 contained a Korean Economics/choices passage. Packet 3 contained a US Civics/community involvement passage, while Packet 4 contained a Korean Civics/community involvement passage.

Procedures. I met with each student to review each question and written direction in the packet. I gave each student one of the four packets in their first language. Then, I held a conversation with each student about the wording and the length of questions and written directions in each packet. I read aloud each item and asked what the student

thought the question or direction was asking him or her to do, while he or she was looking at that item. I asked the same question for each written set of directions and questions. I did not ask the student to read the test passage. However, if necessary to clarify the directions or items, I provided an oral summary of the passage to any student who seemed confused. I followed the same procedure to the last question and set of directions in the packet. I audiotaped each session with consent and assent from parents and students. The whole procedure took approximately 30 minutes or less.

Results. There was no major change in either Korean versions or English versions of the four packets. There were only minor changes in some of the Korean and English wordings. Most changes occurred in the Knowledge/Interest Questionnaire (*KIQ*). First, I made two changes in the items for the personal information in the English version of the pre-reading questionnaire. I changed “male or female” into “boy or girl” and “class” into “teacher’s name.” I also shortened the topic in the *KIQ* for the Civics/community involvement packets from “people working together to make our community a better place to live in” into “people working together for a better community.” Finally, I decided to make the topic in the *KIQ* bold. I also chose to provide lines on which children can write their ideas on a separate page for the demonstrated knowledge questions. The same changes applied to the Korean versions, and there was only one additional change in the Korean versions. One of the Korean children suggested using another term for a paragraph (“Moondan”) in Korean than the one I originally used (“Dallak”) in the Korean versions of the packets, because that was what he and his classmates often used in class.

Pilot Study 2

In order to gather information about the logistics for the main study, I conducted Pilot Study 2 in a similar manner with students from the same target age group as I was planning for the main study. I conducted this pilot study in a fourth-grade Korean classroom in the same school where the main study was conducted. Children read and answered one of the packets in their classroom with all of their classmates.

However, I was not able to conduct the same pilot study in a US classroom because access to the site was unavailable. Although it would have been ideal if I could have done it in a US school as well, I could hold the logistics of the main study constant by relying on the results of the same pilot study for the main study both in Korea and the US.

Participants. I conducted this pilot study a week before the main study in the same school where I conducted the main study. Since the purpose of this study was to inform how to set up logistics in a classroom situation before the main study, similar groups of participants and settings were necessary. Therefore, one class of ten-year-olds who attended the same Korean school where I conducted the main study participated in Pilot Study 2.

Materials. The four packets for the main study had been revised according to the results from the first pilot study. I used these revised versions of the four packets for the second pilot study. I had prepared a stack of packets with the four packets for the class ordered randomly.

Prior to the second pilot study when I tried out the procedures for the main study, I also prepared standard introductory directions and had a native English speaker read

these directions while being recorded. To standardize the procedures across the two countries, I prepared a comparable recording of a native speaker of Korean.

Procedures. For the second pilot study, I visited the same Korean elementary school where I planned to conduct the main study. I met with a class of ten-year-olds in their classroom to introduce myself and inform them that they were going to read one passage and answer some questions about the passage.

First, I gave each student one packet from the randomly ordered stack of the four packets. After I had distributed the packets, I played the recorded standard introductory directions to children through their classroom computer system. The recorded directions informed students of what the packet contained and what they were supposed to do with the packet in general (See Appendix E to H for the exact wording for the recorded directions).

After the introductory directions were over, following the written direction of the section, students started working on the first section of their packet, a pretest *Knowledge/Interest Questionnaire (KIQ)*. When they were finished, they turned it over and moved on to the next section. I collected the completed section from students' desks as they finished and privately answered the questions to any student who raised his or her hand. This procedure was repeated throughout the five sections of the packet. The whole procedure took approximately 40 minutes.

Results. There was no major change in the logistics and procedures of the study. But it seemed to be time-consuming and complicated to collect each completed section instead of waiting for students to complete all the sections in the packet. Thus, I decided to change how I collected the packets in order to save time and prevent any

inconvenience. I concluded that in the main study, it would be better to wait for students to finish up the whole packet and then collect the whole packet instead of each section.

APPENDIX J

Consent and Assent Forms

*Page 1 of 3**Initials _____ Date _____*

Parent or Guardian Consent Form (For Pilot Study 1)

Project Title	Children's comprehension and learning from social studies passages among elementary school children in Korea and the United States
Why is this research being done?	This interview is part of a research project being conducted by Ms. Hyejin Huh under the direction of Dr. Marilyn J. Chambliss in the Department of Curriculum and Instruction at the University of Maryland, College Park. The purpose of the interview is to determine whether the wording of the questions and directions that Ms. Huh created is understandable to children.
What will I and my child be asked to do?	<p>This is what your child will do during his/her participation in the interview:</p> <ol style="list-style-type: none"> 1. Your child will review with Ms. Huh each question and direction in a given packet. 2. Your child will listen to and read each question and direction. 3. Your child will give Ms. Huh feedback about whether the wording of the question and direction makes sense. 4. Your child will also share ideas about how the wording could be revised to help other children understand the questions and directions better. 5. The interview will be tape recorded. <p>We are asking your permission to have your child interviewed, to have the interview tape recorded, and to have your child's responses be used to improve a research study.</p>
What about confidentiality?	We will do our best to keep your child's personal information confidential. All information related to the study will be considered confidential. Ms. Huh will assign each student a code number that she will use for the study rather than names. She will use numbers instead of names to identify all the interview information including the packets with students' notes, the file and transcriptions of the voice recordings. Ms. Huh will store all collected information on her personal home computer with strict password security. She will store all papers in a locked file drawer in her home. Ten years after the end of the study, she will destroy everything either by deleting the data from the computer disk or by shredding papers.

Page 2 of 3

Initials _____ Date _____

Project Title	Children's comprehension and learning from social studies passages among elementary school children in Korea and the United States
What about confidentiality? (Continued)	<p>If we write the information from the study in an article, we will present the results as averages, not individual scores. If a child's responses from the interview need to be reported, we will give the information under a different name.</p> <p>Your child's information may be shared with representatives of the University of Maryland, College Park or governmental authorities if your child or someone else is in danger or if we are required to do so by law.</p>
What are the risks of this research?	Your child may feel nervous about participating in an interview. However, Ms. Huh will do her best to make your child feel as comfortable as possible at every step.
What are the benefits of this research?	Your child will feel proud of himself or herself in helping a researcher improve her future study by giving her feedback as a student expert. Your child will also receive one-on-one attention during the interview and have the opportunity to share their thinking with Ms. Huh.
Does my child have to be in this research? May my child stop participating at any time?	Your permission for your child to participate in the interview is completely voluntary. If you decide to allow your child to participate in the interview, you may change your mind at any time. If you decide not to have your child participate in the interview, or if you decide to withdraw your permission to have your child's responses used for the future study, your child will not be penalized or lose any benefits to which he or she might otherwise qualify.
What if I have questions?	This interview, a part of the research project is being conducted by Ms. Hyejin Huh, a graduate student at the University of Maryland, under the supervision of Dr. Marilyn J. Chambliss in the Department of Curriculum and Instruction at the University of Maryland, College Park, MD 20742. If you have any questions about the research study itself, please contact Ms. Hyejin Huh at Department of Curriculum and Instruction, University of Maryland, College Park, MD 20742, telephone 609-356-2522, or at hhuh@umd.edu .

Page 3 of 3

Initials _____ Date _____

Project Title	Children's comprehension and learning from social studies passages among elementary school children in Korea and the United States	
What if I have questions? (Continued)	<p>You may also contact Dr. Marilyn J. Chambliss at Department of Curriculum and Instruction, University of Maryland, College Park, MD 20742, telephone 240-460-1810, or email her at marilyn@umd.edu.</p> <p>If you have questions about your child's rights as a research participant or wish to report a research-related problem, please contact: Institutional Review Board Office, University of Maryland, College Park, Maryland, 20742; (e-mail) irb@deans.umd.edu; (telephone) 301-405-0678</p> <p>This research has been reviewed according to the University of Maryland, College Park IRB procedures for research involving human subjects.</p>	
Statement of Age of Subject and Consent	<p>Your signature indicates that:</p> <ul style="list-style-type: none"> you are at least 18 years of age; the research has been explained to you; your questions have been answered; and you freely and voluntarily allow your child to be interviewed by Ms. Huh individually. <p>In addition, your check mark below indicates that you understand that the interview will be audio recorded.</p> <p>_____ Parental consent for an individual interview that will be audio recorded.</p>	
Signature and Date	NAME OF PARENT/GUARDIAN	
	SIGNATURE OF PARENT/GUARDIAN	
	DATE	

Page 1 of 3

Initials _____ Date _____

Parent or Guardian Consent Form (For Large Group Paper-and-Pencil Test)

Project Title	Children's comprehension and learning from social studies passages among elementary school children in Korea and the United States
Why is this research being done?	This is a research project that Ms. Hyejin Huh will be conducting under the direction of Dr. Marilyn J. Chambliss in the Department of Curriculum and Instruction at the University of Maryland, College Park. The purpose of the research project is to find out if students who read different textbook passages understand and learn from text differently and if so, what makes that difference.
What will I and my child be asked to do?	<p>This is what your child will do during his/her participation in the study:</p> <ol style="list-style-type: none"> 1. Your child will fill out a questionnaire about his or her background knowledge and interest in a social studies topic. 2. Your child will read a social studies passage silently. The passage will come either from a US textbook or be an English translation of a passage from a Korean social studies passage. 3. Your child will write answers to questions about the passage and draw a picture about what they have read. 4. After that, your child will fill out the same questionnaire about background knowledge and interest. <p>We are asking your permission for your child's participation in this study. You have two options: to have your child's data included as part of data from the whole class or to have your child's data excluded from data from the whole class.</p>
What about confidentiality?	We will do our best to keep your child's personal information confidential. All information related to the study will be considered confidential. Ms. Huh will not use the school district and school name. She will assign each student a code number that she will use for the study rather than names. Ms. Huh will store all collected information on her personal home computer with strict password security. She will store all papers in a locked file drawer in her home. Ten years after the end of the study, she will destroy everything either by deleting the data from the computer disk or by shredding papers.

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 Initials _____ Date _____

Project Title	Children's comprehension and learning from social studies passages among elementary school children in Korea and the United States
What about confidentiality? (Continued)	<p>If we write the information from the study in an article, we will present the results as averages, not individual scores.</p> <p>Your child's information may be shared with representatives of the University of Maryland, College Park or governmental authorities if your child or someone else is in danger or if we are required to do so by law</p>
What are the risks of this research?	Your child may feel nervous about reading a passage and answering questions. However, Ms. Huh will do her best to make your child feel as comfortable as possible at every step.
What are the benefits of this research?	Your child will have the opportunity to read a social studies textbook passage in depth and develop higher-order thinking skills to use to learn and understand social studies information. The study will also provide teachers resources and information that they can use for effective social studies lessons.
Does my child have to be in this research? May my child stop participating at any time?	Your permission for your child's data to be included in the study is completely voluntary. You may choose not to have your child's data included in the study. If you decide to allow your child's data to be included in the study, you may change your mind at any time, and your child will not be penalized or lose any benefits to which he or she might otherwise qualify, and your child's grades will not be hurt in any way.
What if I have questions?	<p>This research is being conducted by Ms. Hyejin Huh, a graduate student at the University of Maryland, under the supervision of Dr. Marilyn J. Chambliss in the Department of Curriculum and Instruction at the University of Maryland, College Park, MD 20742. If you have any questions about the research study itself, please contact Ms. Hyejin Huh at Department of Curriculum and Instruction, University of Maryland, College Park, MD 20742, telephone 609-356-2522, or at hhuh@umd.edu.</p> <p>You may also contact Dr. Marilyn J. Chambliss at Department of Curriculum and Instruction, University of Maryland, College Park, MD 20742, telephone 240-460-1810, or email her at marilyn@umd.edu.</p>

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Project Title	Children's comprehension and learning from social studies passages among elementary school children in Korea and the United States	
What if I have questions? (Continued)	<p>If you have questions about your child's rights as a research participant or wish to report a research-related problem, please contact: Institutional Review Board Office, University of Maryland, College Park, Maryland, 20742; (e-mail) irb@deans.umd.edu; (telephone) 301-405-0678</p> <p>This research has been reviewed according to the University of Maryland, College Park IRB procedures for research involving human subjects.</p>	
Statement of Age of Subject and Consent	<p>Your signature indicates that:</p> <ul style="list-style-type: none"> you are at least 18 years of age; the research has been explained to you; your questions have been answered; and you freely and voluntarily allow your child to participate in this research project. 	
Signature and Date	NAME OF PARENT/GUARDIAN	
	SIGNATURE OF PARENT/GUARDIAN	
	DATE	

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 Initials _____ Date _____

Parent or Guardian Consent Form (For Protocol Students)

Project Title	Children's comprehension and learning from social studies passages among elementary school children in Korea and the United States
Why is this research being done?	This is a research project that Ms. Hyejin Huh will be conducting under the direction of Dr. Marilyn J. Chambliss in the Department of Curriculum and Instruction at the University of Maryland, College Park. The purpose of the research project is to find out if students who read different textbook passages understand and learn from text differently and if so, what makes that difference.
What will I and my child be asked to do?	<p>This is what your child will do during his/her participation in the study:</p> <ol style="list-style-type: none"> 1. Your child will meet with Ms. Huh individually in a quiet room away from others outside of class time (e.g., before school, during lunch, or after school). 2. Your child will fill out a questionnaire about his or her background knowledge and interest in a social studies topic. 3. Your child will learn and practice with a short passage how to talk about their thinking as they read it. 4. Your child will think aloud while reading a social studies passage. The passage will come either from a US textbook or be an English translation of a passage from a Korean social studies passage. 5. Your child will write answers to questions and draw a picture about what they have read. 6. After that, your child will fill out the same questionnaire about background knowledge and interest. 7. Your child will have an interview with Ms. Huh to explain what they are thinking as they answer the questions and read the passage. Ms. Huh will audio record the think-aloud and the interview instead of taking notes to keep the think-aloud and the interview as natural as possible. <p>We are asking your permission for your child's participation in completing the tasks and being interviewed, and the the audiotaping of your child's responses to the think-aloud and the interview.</p>

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Initials _____ Date _____

Project Title	Children’s comprehension and learning from social studies passages among elementary school children in Korea and the United States
What about confidentiality?	<p>We will do our best to keep your child’s personal information confidential. All information related to the study will be considered confidential. Ms. Huh will not use the school district and school name. She will assign each student a code number that she will use for the study rather than names. She will also use numbers instead of names to identify the interview information. Ms. Huh will store all collected information on her personal home computer with strict password security. She will store all papers in a locked file drawer in her home. Ten years after the end of the study, she will destroy everything by either deleting the data from the computer disk or shredding papers.</p> <p>Ms. Huh will store the audio-recordings on her personal home computer with strict password security and will destroy them by deleting ten years after the study is completed. If we write the information from the study in an article, we will present the results as averages, not individual scores. If a child’s responses from the interview need to be reported, we will report your child’s responses under a different, fictitious, name.</p> <p>Your child’s information may be shared with representatives of the University of Maryland, College Park or governmental authorities if your child or someone else is in danger or if we are required to do so by law.</p>
What are the risks of this research?	Your child may feel nervous about reading a passage, answering questions, and doing a think-aloud and interview. However, Ms. Huh will do her best to make your child feel as comfortable as possible at every step.
What are the benefits of this research?	Your child will have the opportunity to read a social studies textbook passage in depth and develop higher-order thinking skills to use to learn and understand social studies information. Your child will also receive individual attention during the interview and have the opportunity to share with Ms. Huh his or her thinking.

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Initials _____ Date _____

Project Title	Children's comprehension and learning from social studies passages among elementary school children in Korea and the United States
Does my child have to be in this research? May my child stop participating at any time?	Your permission for your child to participate in the study is completely voluntary. You may choose not to have your child participate in the study. If you decide to allow your child to participate in the study, you may change your mind at any time, and your child will not be penalized or lose any benefits to which he or she might otherwise qualify, and your child's grades will not be hurt in any way.
What if I have questions?	<p>This research is being conducted by Ms. Hyejin Huh, a graduate student at the University of Maryland, under the supervision of Dr. Marilyn J. Chambliss in the Department of Curriculum and Instruction at the University of Maryland, College Park, MD 20742. If you have any questions about the research study itself, please contact Ms. Hyejin Huh at Department of Curriculum and Instruction, University of Maryland, College Park, MD 20742, telephone 609-356-2522, or at hhuh@umd.edu.</p> <p>You may also contact Dr. Marilyn J. Chambliss at Department of Curriculum and Instruction, University of Maryland, College Park, MD 20742, telephone 240-460-1810, or email her at marilyn@umd.edu.</p> <p>If you have questions about your child's rights as a research participant or wish to report a research-related problem, please contact: Institutional Review Board Office, University of Maryland, College Park, Maryland, 20742; (e-mail) irb@deans.umd.edu; (telephone) 301-405-0678</p> <p>This research has been reviewed according to the University of Maryland, College Park IRB procedures for research involving human subjects.</p>
Statement of Age of Subject and Consent	Your signature indicates that: you are at least 18 years of age; the research has been explained to you; your questions have been answered; and you freely and voluntarily allow your child to participate in this research project.

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Initials _____ Date _____

Project Title	Children's comprehension and learning from social studies passages among elementary school children in Korea and the United States	
Statement of Age of Subject and Consent (Continued)	<p>In addition, your check mark below indicates that you understand that the think-aloud and the interview will be audio recorded.</p> <p>_____ Parental consent for an individual interview and think-aloud that will be audio recorded.</p>	
Signature and Date	NAME OF PARENT/GUARDIAN	
	SIGNATURE OF PARENT/GUARDIAN	
	DATE	

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Initials _____ Date _____

Student Assent Form (For Pilot Study 1)

Project Title: Children's comprehension and learning from social studies passages among elementary school children in Korea and the United States

Dear Student,

My name is Ms. Hyejin Huh. I am a graduate student at the University of Maryland in College Park, MD. I am doing a project to find out if students who read different textbook passages understand and learn from text differently and why.

For this future study, I developed some questions that students will answer after reading a social studies passage. Before conducting this study, I want to make sure that these questions make sense to children. I am asking you to give me some feedback as a student expert about how easy the directions and questions will be to children.

I, a graduate student at the University of Maryland, am conducting this study under the direction of Dr. Marilyn J. Chambliss in the Department of Curriculum and Instruction, University of Maryland, College Park, Maryland 20742. You are willing to be interviewed by me. You understand you must get your parent/guardian's written permission to participate in the interview or for your comments to be used for the future study.

During the interview, you will give me feedback about whether each question and direction you will read may sound awkward or confusing to children of your age or younger.

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Initials _____ Date _____

You and I will read each question and direction together and talk about whether they make sense and whether there are better ways to say them. Your feedback as a student expert will greatly help my future study. I will audio tape what you say in the interview.

You can choose whether I can have an interview with you and use your feedback for my study to find out if the questions and direction that I developed would make sense to children.

You understand that I will protect you by keeping your information confidential. That means I will not use your name when I use your responses for my future study. I will keep all the data and information from the interview on my home computer with a security password and paperwork in a drawer of a locked filing cabinet. I will be the only one who can use this information and will destroy everything ten years after the study is over. I want to remind you that you can ask questions at any time during the interview and that it is not a problem if you change your mind during the interview and decide not to be part of it.

You may feel nervous about being interviewed and sharing your thoughts. But I will help you feel as comfortable as possible. There are no right or wrong answers and what you say will not change your grade at all. By being part of the study, you will help improve my future research greatly as well as children and teachers around the world. Without your help, this research project may not be successful.

You understand that if you have questions about the study, your parents can contact me or my advisor, Dr. Marilyn J. Chambliss at the University of Maryland.

You agree to participate in this study including being audio taped.

Your Name _____

Date _____

*Page 1 of 2**Initials _____ Date _____*

Student Assent Form (For Large Group Paper-and-Pencil Test)

Project Title: Children's comprehension and learning from social studies passages among elementary school children in Korea and the United States

Dear Student,

My name is Ms. Hyejin Huh. I am a graduate student at the University of Maryland in College Park, MD. I am doing a project to find out if elementary school children would understand and learn from different social studies textbook passages differently and why. I am also interested in what children would be interested, know and think about social studies textbook passages.

I am going to ask everyone in your class to read a social studies textbook passage and answer some questions about what you have read. If both you and your parents agree, I will use your work to answer my questions.

I, a graduate student at the University of Maryland, am conducting this study under the direction of Dr. Marilyn J. Chambliss in the Department of Curriculum and Instruction, University of Maryland, College Park, Maryland 20742. You are willing to let me use your work for my study about social studies textbook passages. You understand you must get your parent/guardian's written permission for your work to be used in the study.

For this study, you will first fill out a questionnaire about what you are interested in, what you think, and what you know about social studies. Then, you will silently read one social studies

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Initials _____ *Date* _____

passage and answer questions about what you have read. Finally, you will fill out the same questionnaire once again.

You can choose whether I can use your work for my study to find out if the different social studies passages help students learn social studies information differently.

You understand that I will protect you by keeping your information confidential. That means I will not use your name or your school's name. I will keep all of your work and information on my home computer with a security password and paperwork in a drawer of a locked filing cabinet. I will be the only one who can use this information and will destroy everything ten years after the study is over. I want to remind you that you can ask questions at any time during the study.

You may feel nervous about reading a passage and answering questions. But I will help you feel as comfortable as possible. There are no right or wrong answers and your answers will not change your school grade at all. By being part of the study, you may help make social studies textbooks better around the world and help children around the world learn better.

Since you are part of the class, you will do all the work your classmates are doing even if you decide not to have your work included in this study. You know that if you choose not to have your work included, it will not hurt your grades in any way.

You understand that if you have questions about the study, your parents can contact me or my advisor, Dr. Marilyn J. Chambliss at the University of Maryland.

You agree to let me use your work for my study.

Your Name _____

Date _____

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Initials _____ Date _____

Student Assent Form (For Protocol Students)

Project Title: Children's comprehension and learning from social studies passages among elementary school children in Korea and the United States

Dear Student,

My name is Ms. Hyejin Huh. I am a graduate student at the University of Maryland in College Park, MD. I am doing a project to find out if elementary school children would understand and learn from different social studies textbook passages differently and why. I am also interested in what children know and think about social studies textbook passages.

I am going to ask you to meet with me individually outside of class time. You will read a social studies textbook passage and write answers to questions about what you have read. You will talk about what you are thinking as you read and answer some interview questions. If both you and your parents agree, I will have a one-on-one interview with you.

I, a graduate student at the University of Maryland, am conducting this study under the direction of Dr. Marilyn J. Chambliss in the Department of Curriculum and Instruction, University of Maryland, College Park, Maryland 20742. You are willing to participate in my study about social studies textbook passages and be interviewed by me. You understand you must get your parent/guardian's written permission for your participation in the study.

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Initials _____ Date _____

For this study, you will first fill out a questionnaire about what you are interested in, what you think, and what you know about social studies. Then, you and I will practice how to talk about what you think as you read. Then, you will talk about your thinking as you read a social studies passage and write answers to questions about what you have read. You will fill out the same questionnaire once again. Finally, I will have an interview with you to share your thoughts about the social studies passage you read. I will audiotape what you say as you read a passage and during the interview.

You understand that I will protect you by keeping your information confidential. That means I will not use your name or your school's name. I will keep all of your work, responses, and information on my home computer with a security password and paperwork in a drawer of a locked filing cabinet. I will be the only one who can use this information and will destroy everything ten years after the study is over. I want to remind you that you can ask questions at any time during the study and that it is not a problem if you change your mind during the study and decide not to be part of it.

You may feel nervous about reading a passage, answering questions, and talking about your thinking as you read and during an interview. But I will help you feel as comfortable as possible. There are no right or wrong answers and what you say will not change your school grade at all. By being part of the study, you may help make social studies textbooks better around the world and help children around the world learn better.

You can choose whether you would participate in the study or not. You know that if you choose not to participate, it will not hurt your grades in any way.

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Initials _____ Date _____

You understand that if you have questions about the study, your parents can contact me or my advisor, Dr. Marilyn J. Chambliss at the University of Maryland.

You agree to participate in this study including being audio taped.

Your Name _____

Date _____

APPENDIX K

Scoring Rubrics for Each Measure with Student Examples

APPENDIX K-1

Scoring Rubric for Packet 1 (US Economics/choices Passage)

Rubric for scoring the demonstrated (background / acquired) knowledge questions (UE)

Level of understanding	Definition	Example	Score
Expert-like deep conceptual understanding	<p>The answer shows the conceptual understanding of both why and how we should make a choice clearly.</p> <p>The answer belongs to this level of understanding, although one of them (i.e., why or how) is clearly explained, while the other is less elaborated.</p>	<ul style="list-style-type: none"> Sometimes you make opportunity cost. It is when you want a CD and a bike and you pick the bike the CD is your opportunity cost. And you go to buy the bike and they only have one of the ones you want and a whole mess of others. The one you want is only for show. That is scarcity something so you get the other bike instead. 	4
Combination of expert-like and naïve understanding	<p>The answer shows some understanding of either why or how we should make a choice.</p> <p>In terms of the reasons why we should make a choice, the answer belongs to this level of understanding, if it shows more than simply saying “it’s good, nice, easy, hard, or best to make choices.” with some supporting details such as specific examples or consequences of choice.</p> <p>In terms of how to make a choice, the answer belongs to this level of understanding, if the answer shows two or more specific criteria or steps about how to make a choice.</p>	<ul style="list-style-type: none"> Making choices is about what to do or what should I get. Sometimes it is hard to make choices. Like in the passage a bike or CD, or coat or CD. Or should I go to the store or do we have enough. You should think of many things before making a choice. You want to buy many things. But you cannot get all. If you have two things in mind, think carefully of things like cost and choose one of them. Although you want to buy two things, you have to choose only one, otherwise, it costs too much. 	3
Naïve understanding based on everyday thinking	<p>The answer may show shallow understanding of either why or how we should make a choice.</p> <p>It shows only general ideas about the given topic such as simply defining “a choice” or listing</p>	<ul style="list-style-type: none"> You should follow your heart when you make choices and always take in consideration of the future and how it would affect you. Making a choice is 	2

	<p>examples or consequences of choices (e.g., good, bad, easy, or hard choices).</p> <p>Or the answer may show why we should make a choice, but it simply says “it’s good, nice, easy, hard, or best to make choices.”</p> <p>Or the answer may show how to make a choice, but the answer shows only one simple strategy or some strategies that are very naïve or vague (e.g., think, follow your heart, or eni meeni miny mow).</p>	<p>choosing one thing out of many. What I learned from here is what making a choice is and what it means, and what opportunity cost means.</p>	
Grossly inaccurate or incomplete answer	<p>The answer is inaccurate, incomprehensible, incomplete, or not related to the given topic.</p> <p>The answer that simply says that he or she came to know more or wants to know more is considered incomplete.</p>	<ul style="list-style-type: none"> • Maybe sometimes you should save money and do more expen..? • I didn’t know about making a choice. But I came to know about it after reading this text. 	1
“I don’t know” or no answer		<ul style="list-style-type: none"> • No example found. 	0

Rubric for scoring short-answer questions (UE Q1): Why do people have to make choices about the things they want most?

Level of understanding	Definition	Example	Score
Expert-like deep conceptual understanding	<p>The answer shows the conceptual understanding that because of limited resources and income and unlimited wants, people cannot have everything they want. They must choose some things and give up others.</p> <p>Why we should make choices should be clearly explained through the answer.</p>	<ul style="list-style-type: none"> • No example found 	4
Combination of expert-like and naïve understanding	<p>The answer shows some understanding that because of limited resources and income and unlimited wants, people cannot have everything they want. They must choose some things and give up others.</p> <p>In other words, the answer shows either unlimited wants or limited</p>	<ul style="list-style-type: none"> • If they get their second most favorite they may change their mind to their favorite thing but it would be too late. Also maybe it is limited or it’s on sale or something like that. 	3

	resources but does not explain the relation between the two clearly.		
Naïve understanding based on everyday thinking	<p>The answer simply shows other reasons why people should make choices but does not show any understanding of the relation between limited resources and income and unlimited wants.</p> <p>Or the answer simply says that we can't get everything we want without why, or that it's because there is many things we want.</p> <p>Or the answer simply shows examples of making choices in life, defines what is making choices, and / or how people can make a wise choice without mentioning why we should do that.</p> <p>Or the answer simply says that we should make choices about the things we want most without explaining why and / or that we should make choices about the things we want most because we don't have enough money.</p>	<ul style="list-style-type: none"> • To make sure they have enough money in the future. • Because If they buy too much, they waste money. • Because there are more than one that they want. 	2
Grossly inaccurate or incomplete answer	<p>The answer simply repeats the fact that we should make choices about the things we want most without explaining why.</p> <p>Or the answer is inaccurate, incomplete, Incomprehensible or unrelated to the question.</p>	<ul style="list-style-type: none"> • Because they want something. • Because they like it. 	1
"I don't know" or no answer		<ul style="list-style-type: none"> • No example found. 	0

Rubric for scoring short-answer questions (UE Q2): Why does competition between stores benefit buyers?

Level of understanding	Definition	Example	Score
Expert-like deep conceptual understanding	<p>The answer shows the conceptual understanding that competition between sellers can be one of the things that we should consider in making a wise choice.</p> <p>That is, the answer clearly explains that competition between stores makes them lower the price</p>	<ul style="list-style-type: none"> • Because when they lower their prices, more people will go to their store the buyers don't have to pay as much as they originally were going to pay. • When stores compete, each store will lower the price to get more people to 	4

	<p>to get more buyers and therefore buyers can get what they want at a lower price.</p> <p>So the answer belongs to this level of understanding if it includes all of the three parts, that is, what stores do (i.e., lower the price), why they do (i.e., to get more buyers), and what the result is (buyers can get what they want at a lower price).</p>	<p>buy things at their store. So it benefits buyers, because they can buy things cheaper.</p>	
Combination of expert-like and naïve understanding	<p>The answer shows some understanding that the competition between sellers can benefit buyers by influencing the price of products.</p> <p>That is, the answer does not clearly explain that competition between stores makes them lower the price to get more buyers and therefore buyers can get what they want at a lower price.</p> <p>So the answer belongs to this level of understanding if it includes only two of the three parts (e.g., people can get things at a lower price because stores will lower the price.)</p>	<ul style="list-style-type: none"> • It benefits buyers because the store lowers prices so they get a cheaper price. 	3
Naïve understanding based on everyday thinking	<p>The answer shows naïve understanding why competition between sellers benefits buyers.</p> <p>The answer belongs to this level of understanding if it includes only one of the three parts (e.g., the stores lower the price or buyers can get things at a lower price).</p>	<ul style="list-style-type: none"> • Because the stores will usually lower prices. • They can save money. • They can buy at a lower price. 	2
Grossly inaccurate or incomplete answer	<p>The answer simply repeats the fact that competition between sellers can benefit buyers without explaining why or how.</p> <p>Or the answer is inaccurate, Incomprehensible, incomplete or unrelated to the question</p>	<ul style="list-style-type: none"> • They really want those things but there are some things you.... • To sell things 	1
"I don't know" or no answer		<ul style="list-style-type: none"> • No example found. 	0

Rubric for scoring short-answer questions (UE Q3): Please make a sentence, using the words, “opportunity cost”.

Level of understanding	Definition	Example	Score
Accurate	The answer shows the conceptual understanding that the opportunity cost is the most highly valued alternative forfeited when a choice is made, that is, what is given up when a choice is made.	<ul style="list-style-type: none"> I wanted to buy a bike and a CD. But I decided to save more money to buy a bike. So I gave up the CD. CD is the opportunity cost of the bike. 	3
Developing	<p>The sentence is inaccurate but reveals some understanding of the opportunity cost.</p> <p>In other words, the sentence does not clearly show that “opportunity cost” is what’s given up when a choice is made. However, the sentence shows that the student at least started to see “opportunity cost” is related to the situation where one thing is chosen, while the other is given up.</p>	<ul style="list-style-type: none"> I will buy that game later. My opportunity cost will be that candy bar. Chulsoo wanted to eat a cookie and an ice cream. He came up with opportunity cost. So he gave up the cookie and decided to buy the ice cream. 	2
Inaccurate or Incomplete	The sentence is grossly inaccurate and incomprehensible.	<ul style="list-style-type: none"> An opportunity cost is an opportunity to buy something when you are saving. The store has an opportunity cost. 	1
“I don’t know” or no answer		<ul style="list-style-type: none"> No example found 	0

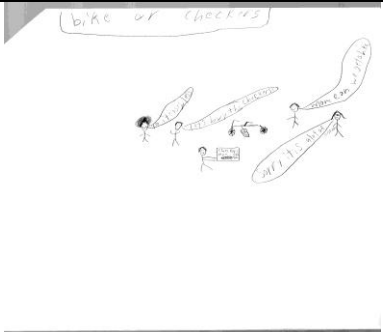
Rubric for scoring short-answer questions (UE Q4): John wants to buy a music CD and a new bike. He has 20 dollars that he saved. If you were John, how would you decide what to buy?

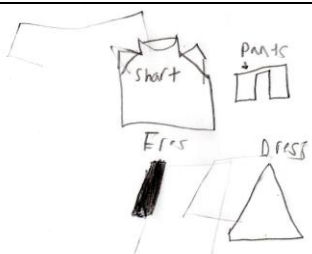
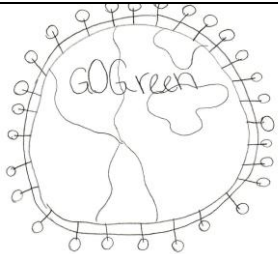
Level of understanding	Definition	Example	Score
Expert-like deep conceptual understanding	<p>The answer shows the conceptual understanding that we must choose some things and give up others because of limited resources and income and unlimited wants, and that’s why it is important to consider various things before making choices.</p> <p>So the answer belongs to this level of understanding, if the student clearly explains why or how he or she decided what to</p>	<ul style="list-style-type: none"> No example found. 	4

	buy, presenting three or more criteria of the choice, including criteria that the passage suggested (e.g., scarcity of resources, budget, competition between sellers, opportunity cost, interest, etc.) and/or other criteria that may not be mentioned in the passage.		
Combination of expert-like and naïve understanding	<p>The answer shows some understanding that we must choose some things and give up others because of limited resources and income and unlimited wants, and that's why it is important to consider various things before making choices.</p> <p>So the answer belongs to this level of understanding, if the student presents two criteria of the choice, including criteria that the passage suggested (e.g., scarcity of resources, budget, competition between sellers, opportunity cost, interest, etc.) and/or other criteria that may not be mentioned in the passage.</p>	<ul style="list-style-type: none"> I would see what the prices were from each store that had it and the one that's cheaper or if the one I want more is in my budget I would get that. 	3
Naïve understanding based on everyday thinking	The student presents only one reason for his or her choice. The answer lacks elaboration of why or how.	<ul style="list-style-type: none"> I would decide to save for the bike because it is more important than a CD. I would think about the opportunity cost then decide which one I want more. 	2
Grossly inaccurate or incomplete answer	<p>The answer simply shows the choice that the student made without supporting explanation of how or why.</p> <p>Or the answer is incomplete, Incomprehensible or unrelated to the question</p>	<ul style="list-style-type: none"> New bike 	1
"I don't know" or no answer		<ul style="list-style-type: none"> No example found. 	0

Rubric for scoring Free Drawing (UE): Some of your friends have not read this passage.

If you could draw what you have learned from it, your friends would also learn from your drawing. But you cannot draw everything. So, please draw what you think is most important for your friends to know.

Level of understanding	Definition	Example	Score
Expert-like deep conceptual understanding	<p>The drawing shows the conceptual understanding that we must choose some things and give up others because of limited resources and income and unlimited wants, and/or that we should make a wise choice by considering various things before making choices.</p> <p>So the drawing belongs to this level of understanding, if it shows almost full thought process of making choices and decision making with captions.</p> <p>The full thought process consisted of three parts: 1) the situation that requires a choice, 2) how to make a choice by considering some criteria of a choice, 3) the result of the choice.</p> <p>So, if the drawing had all the three parts clearly, it was level 4, if 2 parts, level 3, if only one part, level 2.</p> <p>However, depending on how much drawing and / or caption was elaborated, a rater can move it one level up or down. For example, although a drawing has all the three parts, if it is less elaborated and less clear, it is level 3, instead of level 4.</p>	<ul style="list-style-type: none"> No example found 	4
Combination of expert-like and naïve understanding	<p>The drawing shows some understanding that we must choose some things and give up others because of limited resources and income and unlimited wants, and/or that we should make a wise choice by considering various things before making choices.</p> <p>So the drawing belongs to this level of understanding, if it shows examples of making choices with some captions explaining the thought related to decision-making</p>	 <p>Bike or Checkers A: Ya, it costs less. B: Let's buy the checkers. C: Mom, can we get a bike?</p>	3

	process.	Mom: Sorry, it is a lot of money.	
Naïve understanding based on everyday thinking	The drawing simply shows examples of making choices without any captions explaining the thought related to decision-making process.	 <p>Shirt, Pants, Dress</p>	2
Grossly inaccurate or incomplete answer	The drawing is inaccurate, incomprehensible, incomplete, or not related to the given topic or the main ideas of the passage.	 <p>Go Green</p>	1
No drawing		<ul style="list-style-type: none"> No example found. 	0

APPENDIX K-2

Scoring Rubric for Packet 2 (Korean Economics/choices Passage)

Rubric for scoring the demonstrated (background / acquired) knowledge questions (KE)

Level of understanding	Definition	Example	Score
Expert-like deep conceptual understanding	<p>The answer shows the conceptual understanding of both why and how we should make a choice clearly.</p> <p>The answer belongs to this level of understanding, although one of them (i.e., why or how) is clearly explained, while the other is less elaborated.</p>	<ul style="list-style-type: none"> I cannot get everything I want. From now on, instead of buying anything, I would make a wise choice after thinking about whether I really need it, or what's good about it. Among many things, I would buy baseball stuff, because I like baseball and it's good for exercise. Second, I would have books, because I would be smarter and wise. 	4
Combination of expert-like and naïve understanding	<p>The answer shows some understanding of either why or how we should make a choice.</p> <p>In terms of how to make a choice, the answer belongs to this level of understanding, if the answer shows two or more specific criteria or steps about how to make a choice.</p> <p>In terms of the reasons why we should make a choice, the answer belongs to this level of understanding, if it shows more than simply saying "it's good, nice, easy, hard, or best to make choices." with some supporting details such as specific examples or consequences of choice.</p>	<ul style="list-style-type: none"> Making some choices are hard like figuring out what to buy some for their birthday. Some choices are good and some are bad. Bad choices might get you in trouble and good choices you may get something in return. Most of the time you should make good choices, after thinking of the consequences. 	3
Naïve understanding based on everyday thinking	<p>The answer may show shallow understanding of either why or how we should make a choice.</p> <p>It shows only general ideas about the given topic such as simply defining "a choice" or listing examples or consequences of choices (e.g., good, bad, easy, or hard choices).</p>	<ul style="list-style-type: none"> Always make wise choices and choose only what you need. Making a choice is choosing one thing among many. After thinking of which friend I wanted to be in the same team with, I chose one friend. 	2

	<p>Or the answer may show why we should make a choice, but it simply says “it’s good, nice, easy, hard, or best to make choices.”</p> <p>Or the answer may show how to make a choice, but the answer shows only one simple strategy or some strategies that are very naïve or vague (e.g., think, follow your heart)</p>		
Grossly inaccurate or incomplete answer	<p>The answer is inaccurate, incomprehensible, incomplete, or not related to the given topic.</p> <p>The answer that simply says that he or she came to know more or wants to know more is considered incomplete.</p>	<ul style="list-style-type: none"> • If somebody is being a bully you should tell them to stop. If there is something like a book you have to read and you think you can’t do it, think again. • Choosing what they want to choose? 	1
“I don’t know” or no answer		<ul style="list-style-type: none"> • Three students did not answer. 	0

Rubric for scoring short-answer questions (KE Q1): Why do people have to make choices about the things they want most? How can they make a wise choice?

Level of understanding	Definition	Example	Score
Expert-like deep conceptual understanding	<p>The answer shows the conceptual understanding that because of limited resources and income and unlimited wants, people cannot have everything they want. They must choose some things and give up others.</p> <p>Why we should make choices should be clearly explained through the answer.</p>	<ul style="list-style-type: none"> • Why do people have to make a choice among the things they want most? Because buying many things cost a lot and parents may not buy many things for you. Or what you want are not always there and after buying many things, some things can be thrown away if they are out of fashion. So, you should think about what you want most, what you really need, and the stuff. 	4
Combination of expert-like and naïve understanding	<p>The answer shows some understanding that because of limited resources and income and unlimited wants, people cannot have everything they want. They must choose some things and give up others.</p> <p>In other words, the answer shows either unlimited wants or limited resources but does not explain the</p>	<ul style="list-style-type: none"> • The reason why we make a choice is that we cannot get or do everything. If people satisfy what they want, someone else cannot get what they want because of that. And if they are not satisfied with what they have and want to have more, there could be a problem. 	3

	relation between the two.		
Naïve understanding based on everyday thinking	<p>The answer simply shows other reasons why people should make choices but does not show any understanding of the relation between limited resources and income and unlimited wants.</p> <p>Or the answer simply says that we can't get everything we want without why, or that it's because there are many things we want.</p> <p>Or the answer simply shows examples of making choices in life, defines what is making choices, and / or how people can make a wise choice without mentioning why we should do that.</p> <p>Or the answer simply says that we should make choices about the things we want most without explaining why and / or that we should make choices about the things we want most because we don't have enough money.</p>	<ul style="list-style-type: none"> • Because they might not have enough money. • Because they do not have money, so choose only what they really need. 	2
Grossly inaccurate or incomplete answer	The answer is inaccurate, incomplete, Incomprehensible or unrelated to the question.	<ul style="list-style-type: none"> • By doing the right thing. 	1
"I don't know" or no answer		<ul style="list-style-type: none"> • Two students did not answer. 	0

Rubric for scoring short-answer questions (KE Q2): Please tell why Hyunsoo's classmates cannot buy everything they want.

Level of understanding	Definition	Example	Score
Expert-like deep conceptual understanding	<p>The answer shows the conceptual understanding that limited resources and income and unlimited wants are the important reason why people cannot have everything they want and that there are other various reasons as well.</p> <p>So the answer belongs to this level of understanding if it includes the economic reason (i.e., lack of money or limited resources or income) plus two or more other appropriate reasons</p>	<ul style="list-style-type: none"> • It may be too expensive, they may not need it, safety, and don't have enough money. 	4

	why Hyunsoo's classmates cannot buy everything they want, such as parents' concerns about safety and disturbing studying, usefulness, individual interest, and other reasons that each individual may have.		
Combination of expert-like and naïve understanding	<p>The answer shows some understanding that limited resources and income and unlimited wants are the important reason why people cannot have everything they want and that there are other various reasons as well.</p> <p>So the answer belongs to this level of understanding if it includes the economic reason (i.e., lack of money or limited resources or income) plus one other appropriate reason why Hyunsoo's classmates cannot buy everything they want, such as parents' concerns about safety and disturbing studying, usefulness, individual interest, and other reasons that each individual may have.</p>	<ul style="list-style-type: none"> • They probably cannot afford it. It might be dangerous. It might not be appropriate for that time. • Because they do not have enough money and parents say no. 	3
Naïve understanding based on everyday thinking	The answer shows naïve understanding why people cannot have everything they want by simply presenting one reason why (e.g., lack of money).	<ul style="list-style-type: none"> • Some stuff just costs too much these days. • Because they do not have money. 	2
Grossly inaccurate or incomplete answer	<p>The answer simply repeats the fact that Hyunsoo's classmates cannot get what they want without explaining why.</p> <p>Or the answer is inaccurate, incomplete, Incomprehensible, or unrelated to the question</p>	<ul style="list-style-type: none"> • No example found 	1
"I don't know" or no answer		<ul style="list-style-type: none"> • One student did not answer. 	0

Rubric for scoring short-answer questions (KE Q3): Please make a sentence, using the words, “wise choice”.


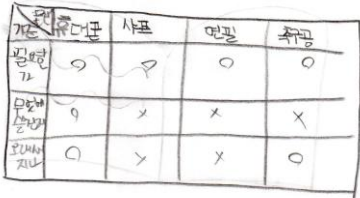
Level of understanding	Definition	Example	Score
Accurate	The sentence reveals the conceptual understanding of what can be considered wise choice, why a wise choice is important and necessary, and / or how we can make a wise choice with a specific example.	<ul style="list-style-type: none"> • Today, mother asked me to make a wise choice among many kinds of food. • A: I want to buy all of this. B: No. you can't buy all at a time, because you do not need them all. A: Then, I'll save money and buy one thing at a time. B: Yeah. That's a wise choice. 	3
Developing	<p>The sentence reveals some understanding of what can be considered wise choice, why a wise choice is important and necessary, and / or how we can make a wise choice.</p> <p>The sentence simply says that we should make a wise choice and / or that it is important to make a wise choice for some broad reason.</p>	<ul style="list-style-type: none"> • Every kid should make a wise choice. • Making a wise choice could save your life. 	2
Inaccurate or Incomplete	The sentence is grossly inaccurate, incomplete, or incomprehensible.	<ul style="list-style-type: none"> • I don't understand why they cannot buy everything. 	1
“I don't know” or no answer		<ul style="list-style-type: none"> • Four students did not answer. 	0



Rubric for scoring short-answer questions (KE Q4): Jason has 5 dollars. Next Wednesday is his mother's birthday. Jason would like to buy a hair clip for his mom. It would look good on her. But Jason also wants to buy some ice cream so that his family can eat it together. If you were Jason, what would you choose and why?

Level of understanding	Definition	Example	Score
Expert-like deep conceptual understanding	<p>The answer shows the conceptual understanding that we must choose some things and give up others because of limited resources and income and unlimited wants, and that's why it is important to consider various things before making choices.</p> <p>So the answer belongs to this</p>	<ul style="list-style-type: none"> • No example found. 	4

	level of understanding, if the student clearly explains why or how he or she decided what to buy, presenting three or more criteria of the choice, including criteria that the passage suggested (e.g., scarcity of resources, budget, interest, usefulness, etc.) and/or other criteria that may not be mentioned in the passage.		
Combination of expert-like and naïve understanding	<p>The answer shows some understanding that we must choose some things and give up others because of limited resources and income and unlimited wants, and that's why it is important to consider various things before making choices.</p> <p>So the answer belongs to this level of understanding, if the student presents two criteria of the choice, including criteria that the passage suggested (e.g., scarcity of resources, budget, interest, usefulness, etc.) and/or other criteria that may not be mentioned in the passage.</p>	<ul style="list-style-type: none"> • The hair clip because they are both not necessary but ice cream will always be there the hair clip might not. • If I were Jason, I would buy a hair clip. It is because she can keep using the hair clip but ice cream will go away when you eat it and it is not good for health. 	3
Naïve understanding based on everyday thinking	The student presents only one reason for his or her choice. The answer lacks elaboration of why or how.	<ul style="list-style-type: none"> • If I were Jason I would choose the ice cream because his mother probably didn't care what she looked like. • If I were Jason, I would buy a hair clip for mother. Because it's a special day for her, I would buy mother a hair clip. 	2
Grossly inaccurate or incomplete answer	<p>The answer simply shows the choice that the student made without supporting explanation of how or why.</p> <p>Or the answer is incomplete, Incomprehensible or unrelated to the question</p>	<ul style="list-style-type: none"> • I would give the five dollars to my mother. • Hair clip 	1
"I don't know" or no answer		<ul style="list-style-type: none"> • Two students did not answer. 	0

Rubric for scoring Free Drawing (KE): Some of your friends have not read this passage. If you could draw what you have learned from it, your friends would also learn from your drawing. But you cannot draw everything. So, please draw what you think is most important for your friends to know.

Level of understanding	Definition	Example	Score
<p>Expert-like deep conceptual understanding</p>	<p>The drawing shows the conceptual understanding that we must choose some things and give up others because of limited resources and income and unlimited wants, and/or that we should make a wise choice by considering various things before making choices.</p> <p>So the drawing belongs to this level of understanding, if it shows almost full thought process of making choices and decision making with captions.</p> <p>The full thought process consisted of three parts: 1) the situation that requires a choice, 2) how to make a choice by considering some criteria of a choice, 3) the result of the choice.</p> <p>So, if the drawing had all the three parts clearly, it was level 4, if 2 parts, level 3, if only one part, level 2.</p> <p>However, depending on how much drawing and / or caption was elaborated, a rater can move it one level up or down. For example, although a drawing has all the three parts, if it is less elaborated and less clear, it is level 3, instead of level 4.</p>	 <p>A: Wow, look at this. This hair band is pretty. Let's buy this. B: Wait a minute! How much do you have? A: 5000won. B: Look at this price tag. (10000Won) A: Oh, it's 10000 Won. B: You cannot buy anything, just because it's pretty. You should make a wise choice. A: I see. B: How about that one? (3000Won) A: Wow, it's pretty.</p>	4
<p>Combination of expert-like and naïve understanding</p>	<p>The drawing shows some understanding that we must choose some things and give up others because of limited resources and income and unlimited wants, and/or that we should make a wise choice by considering various things before making choices.</p> <p>So the drawing belongs to this level of understanding, if it shows examples of making choices with</p>	 <p>저는 표가 중요합니다. This table is important.</p>	3

	some captions explaining the thought related to decision-making process.		
Naïve understanding based on everyday thinking	The drawing simply shows examples of making choices without any captions explaining the thought related to decision-making process.	 <p>Ice cream , Hair clip ?</p>	2
Grossly inaccurate or incomplete answer	The drawing is inaccurate, incomprehensible, incomplete, or not related to the given topic or the main ideas of the passage.	 <p>Store A: Let's play ball. B:Ok.</p>	1
No drawing		<ul style="list-style-type: none"> • Three students did not draw. 	0

APPENDIX K-3

Scoring Rubric for Packet 3 (US Civics/community involvement Passage)

Rubric for scoring the demonstrated (background / acquired) knowledge questions (UC)

Level of understanding	Definition	Example	Score
Expert-like deep conceptual understanding	<p>The answer clearly shows understanding that we as a child and citizen can make a big difference in making a better community by practicing good citizenship in many ways.</p> <p>Or the answer shows that by practicing good citizenship, we work for the common good and working together is better than working alone for making a better community.</p> <p>The answer should have a topic sentence that includes the main ideas mentioned above and supporting details.</p>	<ul style="list-style-type: none"> Helping your community can make a big difference. Helping someone and teaching someone something is called citizenship. It's that easy and if you do these things it will make you a great person. As I read this text, I realized that citizens can really make a big difference. As I wrote before, I thought that it would be great if all the citizens do as the people in this text did. I came to know that there were more people who worked for a better community than I expected, including children, animal doctors, and other citizens. I'd like to do lots of volunteer work and be introduced in a text like this. 	4
Combination of expert-like and naïve understanding	<p>The answer shows some understanding that we as a child and citizen can make a big difference in making a better community by practicing good citizenship in many ways.</p> <p>Or the answer shows some understanding that by practicing good citizenship, we work for the common good and working together is better than working alone for making a better community.</p> <p>Or the answer may present several examples of what can be done for a better community, briefly explaining why it helps and is important, although it may not show clear understanding of the main ideas mentioned above.</p>	<ul style="list-style-type: none"> I think you should recycle because if you do recycle it could make a better habitat for animals. I think you should use trash cans so you don't make your community all dirty and stuff like that. I also think you should get some friends and family to make a group and clean up your neighborhood. Those are my 3 reasons of making a better community. I thought that only people like mayor and street cleaners could work together for a better community. But now I came to know that students like us and common citizens could do it as well. I think we all work together to make our community a better place to live in. 	3

	The answer does not have a clear topic sentence and supporting details.		
Naïve understanding based on everyday thinking	<p>The answer does not reveal any understanding of the main ideas mentioned above.</p> <p>It shows only general ideas about the given topic by simply listing what can be done or who works for a better community without explaining why and how it would help, which may be important but tangential to the main ideas of the passage.</p>	<ul style="list-style-type: none"> • First people working together for a better community is like how they recycle paper and everything else. Then like they should try not to cut very many trees down. • I came to know more about people working together for a better community. This text was not interesting at first but became more and more interesting. I'd like to read a text like this in the future. 	2
Grossly inaccurate or incomplete answer	<p>The answer is inaccurate, incomprehensible, incomplete, or not related to the given topic or the main ideas of the passage.</p> <p>The answer is considered incomplete, if it includes only one simple example of practicing good citizenship without any explanation, or simply lists people who work for a better community (e.g., city hall, government workers, firefighters), or simply says that they came to know more about the topic without saying what.</p>	<ul style="list-style-type: none"> • I came to know that there are people who like to build a house. • I wish for a better community. • Make a youngsters' volunteer group. 	1
"I don't know" or no answer		<ul style="list-style-type: none"> • Two students did not answer. 	0

Rubric for scoring short-answer questions (UC Q1): Why did the students in Arizona start their project and what steps did they take?

Level of understanding	Definition	Example	Score
Expert-like deep conceptual understanding	<p>The answer clearly shows the conceptual understanding that what the students in Arizona did (helping to build a house) was one way to work together for a better community and for the common good and citizens can help even more by working together.</p> <p>Why and how should be clearly</p>	<ul style="list-style-type: none"> • No example found. 	4

	<p>explained through the answer.</p> <p>In other words, the answer shows that the students started the project for a better community and includes the three major steps as shown in the given passage (i.e., meeting with HFH and set the goal, raising money, building a house for a family in need with volunteers and other community members.)</p>		
Combination of expert-like and naïve understanding	<p>The answer shows the emerging understanding that what the students in Arizona did (helping to build a house) was one way to work together for a better community and for the common good and citizens can help even more by working together.</p> <p>The answer should both include why and how to some extent, although why and how may not be explained clearly.</p> <p>The answer simply says that the students in Arizona started the project to help people or community or because some people need houses rather than working together for a better community.</p> <p>And the answer includes two major steps as shown in the given passage.</p>	<ul style="list-style-type: none"> • They wanted to help a family in need of a home. First they asked HFH to help them build the house. Then they held a carnival to raise money to get supplies. The (they) got enough money and bought all the supplies. Finally they put the house together for the family. • To help people in their community. They set the goal to build 10 houses in 10 years by helping volunteers in the town, raised money and got money from office of education, and built a house. 	3
Naïve understanding based on everyday thinking	<p>The answer simply says that the students in Arizona started the project to help people or community or because some people need houses rather than working together for a better community.</p> <p>And the answer may include only one major step and / or some tangential steps rather than the major ones as shown in the given passage or may not include any steps.</p>	<ul style="list-style-type: none"> • They started their project to build houses for people. The steps they used were they built 1 house every year to reach their goal. • They started to help build houses for people that needed a house to live in and they went one thing at a time and they did their best. • Because they wanted to help people in their community. They built a house after watching carpenters build it. 	2

	<p>Or the answer only shows why they did without how they did.</p> <p>Or the answer shows how they did by showing all the three major steps, although it does not show why they did.</p>		
Grossly inaccurate or incomplete answer	<p>The answer simply repeats that the students built a house or started their project without explaining why or how.</p> <p>Or the answer just includes some tangential steps without explaining why.</p> <p>Or the answer is inaccurate, incomplete, Incomprehensible, or unrelated to the question.</p>	<ul style="list-style-type: none"> • The students in Arizona started their projects by making money. Then they got the older students to cut wood, and the younger students paint. (1UC-1A) • In order to build ten houses. 	
“I don’t know” or no answer		<ul style="list-style-type: none"> • Four students did not answer. 	0

Rubric for scoring short-answer questions (UC Q2): Please list examples of practicing good citizenship.

Level of understanding	Definition	Example	Score
Expert-like deep conceptual understanding	<p>The answer clearly shows the understanding that we as a child and citizen can make a big difference in making a better community by practicing good citizenship in many ways.</p> <p>The student lists four or more appropriate examples of practicing good citizenship, revealing such understanding.</p> <p>If similar examples (something about trash, something about saving resources, etc.) are listed repeatedly, they will be counted as only one example all together.</p>	<ul style="list-style-type: none"> • Pick up trash, help build buildings, help your friends if they need a helping hand, stand up to make things fair.(1UC-5A) • Citizens who can help each other when difficult things happen in the community, citizens who pick up trash, citizens who use public transportation to prevent air pollution, citizens who save water, citizens who show good manners in public places, citizens who do their best in everything. 	4
Combination of expert-like and naïve understanding	<p>The answer shows the emerging understanding that we as a child and citizen can make a big difference in making a better community by practicing good citizenship in many ways.</p> <p>The student lists two to three</p>	<ul style="list-style-type: none"> • Helping people, Donate money to a charity, recycling, use trash cans • Do not litter trash, Pick up trash, help neighbors when they work, do not disturb other people in the community. 	3

	appropriate examples of practicing good citizenship.		
Naïve understanding based on everyday thinking	The answer does not reveal any understanding that we as a child and citizen can make a big difference in making a better community by practicing good citizenship in many ways. The student simply presents one example or one category of examples.	<ul style="list-style-type: none"> Finding trash, pick it up. 	2
Grossly inaccurate or incomplete answer	The answer is inaccurate, Incomprehensible, incomplete or unrelated to the question	<ul style="list-style-type: none"> No example found. 	1
“I don’t know” or no answer		<ul style="list-style-type: none"> One student did not answer. 	0

Rubric for scoring short-answer questions (UC Q3): Please make a sentence, using the words, “common good”.


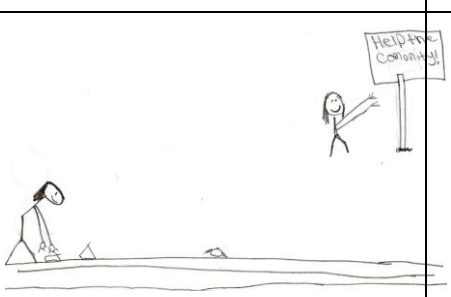
Level of understanding	Definition	Example	Score
Accurate	The sentence reveals the conceptual understanding that the “common good” is “whatever helps the most people in a community” and people should work together for a better community and for the common good.	<ul style="list-style-type: none"> By helping build a house, students and volunteers work for the common good. 	3
Developing	The sentence may be inaccurate but reveals the some understanding of “common good” to the extent that it is something good for other people.	<ul style="list-style-type: none"> You should do a little common good thing to help someone. It’s a common good to help out your community. I said to myself common good so I could help my community. 	2
Inaccurate or Incomplete	The sentence is inaccurate, incomplete, or incomprehensible.	<ul style="list-style-type: none"> In the passage I read people being common good. You are a common good. 	1
“I don’t know” or no answer		<ul style="list-style-type: none"> Three students did not answer. 	0



Rubric for scoring short-answer questions (UC Q4): Recently Emily noticed that the streets in her neighborhood are too dirty. Trash is everywhere and walls are dirty with ads and graffiti. She began to think about what she could do. If you were Emily, what would you do and why?

Level of understanding	Definition	Example	Score
Expert-like deep conceptual understanding	<p>The answer shows the conceptual understanding that we as a child and citizen can make a big difference in making a better community by practicing good citizenship in many ways.</p> <p>Or the answer shows that by practicing good citizenship, we work for the common good and working together is better than working alone for making a better community.</p> <p>In other words, the student elaborated what he or she would do and why, putting emphasis on the importance of working together with other community members for a better community.</p>	<ul style="list-style-type: none"> I would work together with volunteers and community leaders by picking up trash and removing graffiti and ads. It is because however hard it may be, if we leave the trash, graffiti, and ads, people who visited our community will never come again. In addition, because working alone is too difficult, I would work together with volunteers and leaders. 	4
Combination of expert-like and naïve understanding	<p>The answer shows the emerging understanding that we as a child and citizen can make a big difference in making a better community by practicing good citizenship in many ways.</p> <p>Or the answer shows emerging understanding that by practicing good citizenship, we work for the common good and working together is better than working alone for making a better community.</p> <p>In other words, the student did not elaborate enough but suggested what he or she would do and why he or she would do so in the way that is related to the main ideas of the passage.</p>	<ul style="list-style-type: none"> I would get a group together and we would spread out and try to clean up as best you can. Then put up signs that say help the town don't let it be trashed. I would clean the walls and get together with some friends and pick up garbage because birds and other animals can die of garbage and the graffiti can influence the kids to do graffiti. 	3
Naïve understanding based on everyday thinking	<p>The answer does not reveal any understanding of the main ideas mentioned above.</p> <p>In other words, the student</p>	<ul style="list-style-type: none"> I would ask friends, family and adults to help clean up the neighborhood. I would clean the walls and put ads in the paper for help. 	2

	presented what he or she would do and why he or she would do that is just tangential or too general to the main ideas of the passage or their answer may lack why.	<ul style="list-style-type: none"> I would pick up the trash and hand papers out about the trash everywhere so I can help the neighborhood be clean. 	
Grossly inaccurate or incomplete answer	The answer is inaccurate, incomplete, Incomprehensible, or unrelated to the question.	<ul style="list-style-type: none"> I would sit all day and eat salits and chips. It is healthy and not healthy at the same time. 	1
“I don’t know” or no answer		<ul style="list-style-type: none"> Two students did not answer. 	0

Rubric for scoring Free Drawing (UC): Some of your friends have not read this passage. If you could draw what you have learned from it, your friends would also learn from your drawing. But you cannot draw everything. So, please draw what you think is most important for your friends to know.

Level of understanding	Definition	Example	Score
Expert-like deep conceptual understanding	<p>The drawing shows the conceptual understanding that we as a child and citizen can make a big difference in making a better community by practicing good citizenship in many ways.</p> <p>Or the drawing shows the conceptual understanding that by practicing good citizenship, we work for the common good and working together is better than working alone for making a better community.</p> <p>The drawing shows almost full thought process of working together with other community members for a better community and common good with some captions.</p>	 <p>I'm going to pick up trash Can we come to? Let's put it in the trash bag I found.</p> <p>Let's build a house. Let's make carpenters to .. We'll help. We've got enough money. Let's start the house.</p>	4
Combination of expert-like and naïve understanding	<p>The drawing shows the emerging understanding of the main ideas of the given passage, although it does not show clear understanding of the main ideas.</p> <p>The drawing shows some thought process of working together with other community members for a better community with or without some captions.</p>	 <p>Help the community.</p>	3

Naïve understanding based on everyday thinking	<p>The drawing does not reveal any understanding of the main ideas of the given passage.</p> <p>The drawing simply shows one example of practicing good citizenship or working together for a better community without any captions or if any, the caption does not mean much in the aspect of the main ideas and simply says what it is.</p>		2
Grossly inaccurate or incomplete answer	The drawing is inaccurate, incomplete, incomprehensible, or not related to the given topic or the main ideas of the passage.	<p>Erison mit friend</p>  <p>Friend's name, my friend</p>	1
No drawing		<ul style="list-style-type: none"> • One student did not draw. 	0

APPENDIX K-4

Scoring Rubric for Packet 4 (Korean Civics/community involvement Passage)

Rubric for scoring the demonstrated (background / acquired) knowledge questions (KC)

Level of understanding	Definition	Example	Score
Expert-like deep conceptual understanding	<p>The answer clearly shows the conceptual understanding that we as a child and citizen can make a big difference in making a better community by practicing good citizenship in many ways.</p> <p>Or the answer shows that by practicing good citizenship, we work for the common good and / or working together is better than working alone for making a better community.</p> <p>The answer should have a topic sentence that includes the main ideas mentioned above and supporting details.</p>	<ul style="list-style-type: none"> Teamwork to me is the best way to accomplish things. There are many ways you could help your community with team work too. One way is, if you have a litter problem you could form groups and pick the trash up. Another way is, if you have an argument with somebody you could work together with them to work it out. My last way is, if building or repairing something you could work together as a group to get the job done. Those are things I think you could do to get a better community. 	4
Combination of expert-like and naïve understanding	<p>The answer shows some understanding that we as a child and citizen can make a big difference in making a better community by practicing good citizenship in many ways.</p> <p>Or the answer shows some understanding that by practicing good citizenship, we work for the common good and / or working together is better than working alone for making a better community.</p> <p>Or the answer may present what can be done for a better community, briefly explaining why it helps and is important, although it may not show clear understanding of the main ideas mentioned above.</p> <p>The answer does not have a clear topic sentence and supporting details.</p>	<ul style="list-style-type: none"> People could pick up trash, clean graffiti off walls, plant flowers, or clean illegal ads off walls to help their community. I think that people all around the world should get together, clean up their community, and the world will look a lot cleaner. For a better community, we should plant more trees for good environment, develop and use electric cars to prevent pollution, pick up trash and put it in a trashcan when finding trash in a park, and should not keep water running. By practicing these things, our town can be a better place. 	3
Naïve	The answer does not reveal any	<ul style="list-style-type: none"> People help us in many 	2

understanding based on everyday thinking	<p>understanding of the main ideas mentioned above.</p> <p>It shows only general ideas about the given topic by simply listing what can be done or who works for a better community without explaining why and how it would help, which may be important but tangential to the main ideas of the passage.</p>	<p>ways by cleaning the earth. They can fill potholes, clean streets, and parks, and they can also tell people not to litter by picking up trash. Cleaning is helping the earth. (1KC-11C)</p> <ul style="list-style-type: none"> For a better community, I should do my best and everyone in the world should work their best. I think that If a community gets better, the economy will get better. So, I think that it is great if people think they will make a good community. 	
Grossly inaccurate or incomplete answer	<p>The answer is inaccurate, incomprehensible, incomplete, or not related to the given topic or the main ideas of the passage.</p> <p>The answer is considered incomplete, if it includes only one simple example of practicing good citizenship without any explanation, or simply lists people who work for a better community (e.g., city hall, government workers, firefighters), or simply says that they came to know more about the topic without saying what.</p>	<ul style="list-style-type: none"> They can help clean up and they can buy new thing. Don't litter. Keep it clean. 	1
"I don't know" or no answer		<ul style="list-style-type: none"> One student did not answer. 	0

Rubric for scoring short-answer questions (KC Q1): Why did the adults in the "Green Group" start their project and what steps did they take?

Level of understanding	Definition	Example	Score
Expert-like deep conceptual understanding	<p>The answer clearly shows the conceptual understanding that what "Green Group" did was one way to work together for a better community and for the common good and citizens can help even more by working together.</p> <p>Why and how should be clearly explained through the answer.</p> <p>In other words, the answer shows that the group started the project</p>	<ul style="list-style-type: none"> No example found. 	4

	<p>for a better or cleaner town (community) and includes Three major steps as shown in the given passage (i.e., town meeting to solve the town's problems, deciding what to do for clean streets, practicing what they decided to do with people in town)</p>		
Combination of expert-like and naïve understanding	<p>The answer shows some understanding that what "Green Group" did was an example that people work together for a better community and for the common good and citizens can help even more by working together.</p> <p>The answer simply says that the adults in Green Group started the project to clean the streets or community or earth or because the streets were dirty.</p> <p>And the answer includes two major steps as shown in the given passage.</p>	<ul style="list-style-type: none"> • The adults made the Green Group because they saw trash on the ground, dirty walls and signs, and they found spray paint on walls. So, the adults decided to clean the streets, walls, and floors. The green Group started as a town meeting. • First, they noticed it (the problem of dirty streets) as they thought about the problems of their community. They had a town meeting and thought about how they could prevent it. They shared opinions about what they could do, such as cleaning the street in front of their house, removing the graffiti on walls, and painting the walls again. They thought that more people work together for a clean street. 	3
Naïve understanding based on everyday thinking	<p>The answer shows shallow understanding that what "Green Group" did was an example that people work together for a better community and for the common good and citizens can help even more by working together.</p> <p>The answer simply says that the adults in Green Group started the project to clean the streets or community or earth or because the streets were dirty.</p> <p>And the answer may include only one major step and / or some tangential steps rather than the major ones as shown in the given passage or may not include any steps.</p>	<ul style="list-style-type: none"> • They didn't want a dirty community. First they look at the streets. They cleaned the streets. Then they picked up trash. • They started because the streets were dirty. They cleaned graffiti and illegal posters off walls and picked up trash. • They cleaned the streets because they were messy and removed illegal ads. 	2

Grossly inaccurate or incomplete answer	<p>The answer simply repeats that the adults started their project or cleaned the streets without explaining why or how.</p> <p>Or the answer just includes some tangential steps without explaining why.</p> <p>Or the answer is inaccurate, incomplete, Incomprehensible, or unrelated to the question.</p>	<ul style="list-style-type: none"> • They started to clean up the school. (1KC-10B) • The adults started the project in order to find out who work for our community, and they took the steps to find clean streets. And after finding clean streets, they are investigating that project. They picked up glass or paper and put them in a trash can. 	1
"I don't know" or no answer		<ul style="list-style-type: none"> • Two students did not answer. 	0

Rubric for scoring short-answer questions (KC Q2): Please, give some examples of what we can do to make our town a better place to live.

Level of understanding	Definition	Example	Score
Expert-like deep conceptual understanding	<p>The answer clearly shows the understanding that we as a child and citizen can make a big difference in making a better community by practicing good citizenship in many ways.</p> <p>The student lists four or more appropriate examples of practicing good citizenship, revealing such understanding.</p> <p>If similar examples (something about trash, something about saving resources, helping others or something about beautiful environment, etc.) are listed repeatedly, they will be counted as only one example all together.</p>	<ul style="list-style-type: none"> • Do not litter trash anywhere. Finding trash that someone threw away, pick it up and put it in a trashcan. Get along with neighbors and share food with them. Don't use violence such as hitting or kicking a friend. Greet adults politely by bowing to them. Don't be rude to adults. 	4
Combination of expert-like and naïve understanding	<p>The answer shows the emerging understanding that we as a child and citizen can make a big difference in making a better community by practicing good citizenship in many ways.</p> <p>The student lists two to three appropriate examples of practicing good citizenship.</p>	<ul style="list-style-type: none"> • We could recycle trash found on the streets, not litter, and not spray paint things on walls or signs. • Pick up trash, don't litter, use public transportation or walk, protect the nature (flowers, trees, and so on) 	3
Naïve understanding based on everyday thinking	<p>The answer does not reveal any understanding that we as a child and citizen can make a big difference in making a better</p>	<ul style="list-style-type: none"> • Go pick up the trash. • Don't litter paper. 	2

	community by practicing good citizenship in many ways. The student simply presents one example or one category of examples.		
Grossly inaccurate or incomplete answer	The answer is inaccurate, Incomprehensible, incomplete or unrelated to the question	<ul style="list-style-type: none"> No example found 	1
“I don’t know” or no answer		<ul style="list-style-type: none"> One student did not answer. 	0

Rubric for scoring short-answer questions (KC Q3): Please make a sentence, using the words, “volunteer”.

Level of understanding	Definition	Example	Score
Accurate	The sentence shows the conceptual understanding that people volunteer to work for a better community and for the common good and a “volunteer” is “a person who works freely, without pay and cares about other people, not just themselves”.	<ul style="list-style-type: none"> We could all volunteer to help clean up our community. When we needed people who could help our town, volunteers came to help. 	3
Developing	The sentence may be accurate but does not clearly show the understanding that people volunteer to work for a better community and for the common good and a “volunteer” is “a person who works freely, without pay and cares about other people, not just themselves”.	<ul style="list-style-type: none"> I’d like to volunteer for the green team. I volunteer to help. My neighbor is a volunteer. 	2
Inaccurate or Incomplete	The sentence is inaccurate, incomplete, or incomprehensible.	<ul style="list-style-type: none"> A volunteer is a person who serves for resources. 	1
“I don’t know” or no answer		<ul style="list-style-type: none"> One student did not answer. 	0

Rubric for scoring short-answer questions (KC Q4): Recently a huge storm swept Juni’s town. Some families lost their houses, pets, and belongings and suffered from lack of food, clothing, and shelter. Juni wants to do something for them. If you were Juni, what would you do and why?



Level of understanding	Definition	Example	Score
Expert-like deep conceptual understanding	The answer shows the conceptual understanding that we as a child and citizen can make a big difference in making a better	<ul style="list-style-type: none"> I would get a group of adults and kids together and help everyone by rebuilding the houses. I would do that 	4

	<p>community by practicing good citizenship in many ways.</p> <p>Or the answer shows that by practicing good citizenship, we work for the common good and working together is better than working alone for making a better community.</p> <p>In other words, the student elaborated what he or she would do and why, putting emphasis on the importance of working together with other community members for a better community.</p>	<p>because if that happened to me, I would want someone to help me out by doing that.</p>	
<p>Combination of expert-like and naïve understanding</p>	<p>The answer shows the emerging understanding that we as a child and citizen can make a big difference in making a better community by practicing good citizenship in many ways.</p> <p>Or the answer shows emerging understanding that by practicing good citizenship, we work for the common good and working together is better than working alone for making a better community.</p> <p>In other words, the student did not elaborate enough but suggested what he or she would do and why he or she would do so in the way that is related to the main ideas of the passage.</p>	<ul style="list-style-type: none"> • If I had food, I would give it to the poor. Also, if I had clothing that I don't need I would also give it to the poor. Last, if I could build shelter, I will make houses for the people. I would do it to help the world. • I would give them food and help them, because we should live together. 	3
<p>Naïve understanding based on everyday thinking</p>	<p>The answer does not reveal any understanding of the main ideas mentioned above.</p> <p>In other words, the student presented what he or she would do and why he or she would do that is just tangential or too general to the main ideas of the passage or their answer may lack why.</p>	<ul style="list-style-type: none"> • I would ask my friends to help build some stuff. I would start to try a fund raiser. • I would build them houses. Because they would need somewhere to live. • Give food and clothes so they have stuff to eat and to wear. 	
<p>Grossly inaccurate or incomplete answer</p>	<p>The answer is inaccurate, incomplete, Incomprehensible, or unrelated to the question.</p>	<ul style="list-style-type: none"> • I would report, because they may die. • I would prevent natural disaster, because they are suffering from natural disaster. 	1

"I don't know" or no answer		<ul style="list-style-type: none"> One student did not answer. 	0
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Rubric for scoring Free Drawing (KC): Some of your friends have not read this passage. If you could draw what you have learned from it, your friends would also learn from your drawing. But you cannot draw everything. So, please draw what you think is most important for your friends to know.

Level of understanding	Definition	Example	Score
Expert-like deep conceptual understanding	<p>The drawing shows the conceptual understanding that we as a child and citizen can make a big difference in making a better community by practicing good citizenship in many ways.</p> <p>Or the drawing shows the conceptual understanding that by practicing good citizenship, we work for the common good and working together is better than working alone for making a better community.</p> <p>The drawing shows almost full thought process of working together with other community members for a better community and common good with some captions.</p>	<p>You can recycle cans on the ground.</p> <p>We can recycle cans on the ground</p> <p>I announce that we clean the streets!</p> <p>Let's go.</p> <p>Please don't litter. Keep the world beautiful.</p>	4
Combination of expert-like and naïve understanding	<p>The drawing shows the emerging understanding of the main ideas of the given passage, although it does not show clear understanding of the main ideas.</p> <p>The drawing shows some thought process of working together with other community members for a better community with or without some captions.</p>		3

Naïve understanding based on everyday thinking	<p>The drawing does not reveal any understanding of the main ideas of the given passage.</p> <p>The drawing simply shows one example of practicing good citizenship or working together for a better community without any captions or if any, the caption does not mean much in the aspect of the main ideas and simply says what it is.</p>	 <p style="text-align: center;">Recycling Bin</p>	2
Grossly inaccurate or incomplete answer	The drawing is inaccurate, incomplete, incomprehensible, or not related to the given topic or the main ideas of the passage.		1
No drawing		<ul style="list-style-type: none"> • No example found. 	0

APPENDIX L

Taxonomy of Reading Strategies with Student Examples

Category	Subcategory	Example from the Protocol Students
A. Strategies for Sentence-level (Local) understanding, focusing on details	1. Coping with ambiguity	
	a. Stating failure to understand a portion of the text	<ul style="list-style-type: none"> • Oh. It's Hmm.... I'm not really sure what the word scarcity means. (A-1-a from Abigail U.E.)
	b. Skipping or murmuring unknown words	<ul style="list-style-type: none"> • Woo.... (He paused a while at the Korean boy's name, Woochang) (A-1-b from Andy K.C.)
	c. Formulating a question	<ul style="list-style-type: none"> • Uh.... What is graffiti? (A-1-c from Andy K.C.)
	d. Suspending judgment	<ul style="list-style-type: none"> • Makes me think of..... people saying..... listen to the law and that all.... (Murmuring and not completing the sentence.) (A-1-d from Ann U.C.)
	2. Establishing intrasentential ties	
	a. Gathering information	<ul style="list-style-type: none"> • "I mean, I know the words 'opportunity cost' but because it says the opportunity cost of the jacket Marisa wants, it means she has to give up one thing. Is this something that she did in the store?.... Store.... Hm... I need more time...." (A-2-a, A-1-c, A-1-d from Kuni U.E.)
	b. Rereading	<ul style="list-style-type: none"> • Good neighbors.... Does it mean neighbors who get along with? (A-2-b, A-2-c, A-1-c from Kyun K.C.)
c. Paraphrasing	<ul style="list-style-type: none"> • Citizens help in the world, people (A-2-c from Ann U.C.) 	
d. Using context clues to interpret a word or phrase	<ul style="list-style-type: none"> • The pictures look the same....but changing something, changing the places.. hm... (A-2-d, A-1-d from Kuni U.E.) 	

<p>B. Strategies for Global understanding, focusing on main ideas</p>	<p>1. Establishing intersentential ties</p> <p>a. Reading ahead</p> <p>b. Relating the stimulus sentence(s) to a previous portion of the text or the packet</p> <p>c. Making an inference or a prediction based on information presented in the text</p> <p>d. Confirming/disc onfirming an inference or a prediction</p> <p>e. Summarizing</p> <p>2. Using background knowledge</p> <p>a. Using background knowledge of the text structure</p> <p>b. Referring to the previous passage or what they have read before</p>	<ul style="list-style-type: none"> • No example • That makes me think back to what I just read before that. (B-1-b from Andy K.C.) • Well. They might be trying to ... some of them might be some of them might just want being lazy not like doing, running outside or doing something. And I thinkSome of them were, some of the statement I can tell probably maybe something about, maybe trying to look cool maybe or something like that. (B-1-c from Adam K.E.) • See. That's what I'm saying about laziness and stuff. (B-1-d from Adam K.E.) • She decided not to buy her CD and she decided not to go to the stores with higher prices and decided to buy the tan jacket that fit and not the maroon one that did not. (B-1-e from Abigail U.E.) • That kind of gives the way the main idea. (B-2-a from Adam K.E.) • Today in social studies, we were reading about economy and it sounds like the definitions are different from what they're trying to say in the passage 'cause what we were talking about was how they would trade and use money to buy... (B-2-b from Abigail U.E.)
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	<p>c. Visualizing</p> <p>d. Relating the stimulus sentence(s) to personal experience</p> <p>e. Putting the stimulus sentence(s) in one's own situation or saying personal opinions on the stimulus sentence(s)</p> <p>f. Speculating beyond the information presented in the text</p>	<ul style="list-style-type: none"> • The main character of the movie I watched with my sister was an animal doctor who could talk to animals. So seeing someone helping animals here reminds me of one of the scenes that I saw. (B-2-c, B-2-d from Kangmin U.C.) • Reading this, I remember that we did not have a crosswalk in front of our school. So, it was very dangerous when we went back home in the afternoons. At that time, there was no one like the elderly who helped us. But because these days we have a crosswalk and the elderly who helped us cross the road, it is much safer. (B-2-d from Kangmin U.C.) • Hm... most of them are probably what I would get because one...clothes or something you should always wear because you sneakers and soccer shoes.. mostly not the soccer shoes but I'll have sneakers I have to walk Hm...the rest. I don't know maybe I pick the inline states but then I have to make up my mind if I would choose one, probably be, or two, maybe probably be clothes and sneakers. (B-2-e from Adam K.E.) • It seems that in America, compared to our country, there are far more volunteer groups who voluntarily work without pay. (B-2-f from Kangmin U.C.)
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APPENDIX M

Korean Version of the Quotes from the Korean Protocol Students' Think Aloud and
Interview

Korean Protocol Students	Korean	English
Kijung K.E.	<ul style="list-style-type: none"> • “가지고 싶은 것이 많은 거는 욕심이 많다는 것 같아요.” • “아이들이 사는 것을 너무 많이 사면요 돈이 아깝기 때문에” • “현명한 선택을 하기 위한 방법은요 자기 용돈을 모아서 사는 것 같아요. “ • “인터넷에서는 자료를 구하거나 재밌는 게임을 할 수 있고요. 옷은요. 옷은요. 그거. 왜냐면요 예쁘잖아요. 그러면 그걸 입고 다니면요 아이들이 몰려들 것 같고요. 그리고 인라인 스케이트가 있으면요 운동도 되고요. 신발이 있으면요 그거 아이들한테 자랑도 할 수 있고... 자전거는요... 빨리 달릴 수 있고요 학원갈 때요 빨리 갈 수 있어요... 음.. 근데 자전거하고 인라인 스케이트하고 신발이 다른 것 같아요. 제 생각이랑 여기 있는거랑.” • “엄마가 안 사주니까. 어.. 한가지만 사라고 하는데요 계속 사고 싶다고 하니까 돈이 	<ul style="list-style-type: none"> • “It seems to say that we are greedy” • “If children buy too many things, they waste money.” • “The way to make a wise choice is to buy things with the allowances that you saved.” • “On the Internet, I can collect data and play fun games. Clothes... clothes... I like them because they are pretty. Then if you wear them, other children will come around you. You'll be popular. And with inline skates, you can do exercise. With shoes, you can show off to your friends. With a bicycle... You can move fast and go to Hakwon (a private institute for tutoring) fast... My ideas for choosing a bicycle, inline skates, and shoes seem different from what they say here.” • “Because my mom doesn't buy everything I want. She keeps saying 'just buy one thing,' but I keep saying 'I want to buy'

	<p>아까워서요. 왜냐면 너무 많이 사면요 그거 유행이 지나버리면요 그것 가지고 또 안 놀고 그렇게 있더라고요.”</p> <ul style="list-style-type: none"> • “좀 전에 말한 거 처럼, 너무 많이 사고, 유행이 지나버리면 못 쓰기 때문에” • “음... 네, 그러니까 좀 전에 얘기한 것 처럼요 사고 싶은 걸 살 수 없을 때도 있는 거 같아요. 왜냐면 엄마가 그거 안 사주니까 잘 이거 못 살 것 같아요. 아마, 엄마가 우리집 수입 때문에 그러셨을 것 같기도 해요... 어... 또 어떨 땐 내가 원하는게 거기 없을 때도 있어요. 무슨 말이나면... 저번에 야구 장갑 사러 어떤 가게에 갔는데요 제가 원하는 걸 안 팔더라고요.” • “어.. 있잖아요. 부모님 심부름도 해 드리고요 좋은 일을 해서요 용돈을 벌어서 사면 될 것 같아요.” • “제가 만약에 현수라면요. 어.. 축구공을 살 거예요. 왜냐면요 축구공은요 바깥에서요 놀이기 때문에 그거... 몸에도 건강하고요 운동도 잘 될 것 같아서.. 그리고 친구도 같이 만나서 축구를 할 수 있기 때문에” 	<p>She thinks it's a waste of money, because if sometimes I buy too many things, they become out of fashion, and then I do not play with them anymore.”</p> <ul style="list-style-type: none"> • “Like I said before, because after you buy too many things, you may not use them because they become out of fashion.” • “Hm... yes, it's like what I just said. Sometimes I can't buy what I want because my mom won't buy it. It's like my mom maybe won't buy it because of our family income. Hm...also what I want is not always there. I mean... the other day I went to a store to buy a baseball glove, but they didn't sell the one I had in mind.” • “Hm... it's like... I think I can do errands for my parents and do good things and can buy things with the allowance that I earn.” • “If I were Hyunsoo, hm... I would buy a soccer ball. Because you play soccer outside, it would be good exercise for health... and you can also play soccer with friends.”
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	<ul style="list-style-type: none"> • “저는요 기차가 나아요. 왜냐면요 버스하고 값이 같고요 안전하고 제일 빨리 갈 수 있어요. 어... 생각이 달라졌어요...저는 승용차가 나아요. 아.. 그... 기차는요 쫄 빠르데요. 지하철에서 내려서요 다시 택시를 타고 가야 되기 때문에 그냥 승용차로 한번에 죽...그리고 휴게소도 갈 수 있고” • “저는요 놀러를 갈거예요. 휴가. 아니면 영화.. 친구들끼리 모여서 영화를 보던가 아니면 야구를 할거예요.” “저 같으면요 영미가 어린이회관에서 상영하는 영화를 보러 가자고 할 것 같아요. 왜냐면요 영화는요 매일 매일 볼 수 있는 게 아니고요 축구는요 매일 할 수 있고 그거 시디 롬 게임도 매일매일 할 수 있기 때문에.” • “왜 사람들은 가지고 싶은 것들 중에서 선택을 해야 하나면 여러가지 물건을 사면 비용도 많이 들고 부모님께서 여러가지 물건을 안 사줄 수도 있고, 자기가 원하는게 없을 수도 있고, 여러가지 물건 중에서 유행이 지나면 버릴 수도 있습니다. 그래서 그 중 자기가 가장 원하는 것, 꼭 필요한 지 등을 생각해 봐야 	<ul style="list-style-type: none"> • “I like the train the most, because its fare is almost the same as the bus, and it is safe and can move fastest. Hm... I change my mind.... I think a car is better. Hm... the train is the fastest, but after you get off, you should take a taxi. So in a car you can go straight... and you can stop by a gas station, too.” • “I would go somewhere. A vacation.... Or a movie.... I would get my friends together to watch a movie or play baseball.” After reading Hyunsoo’s choices for his Saturday afternoon, Kijung said, “If I were him, I would go to watch a movie at the Children’s Center with Youngmi. Because movies are not what you can watch every day, and soccer, you can play it every day, and you can play a CD-ROM game every day too.” • “Why do people have to make a choice among the things they want most? Because buying many things costs a lot and parents may not want to buy many things for you. Or what you want is not always there and after buying many things, some things can be thrown away if they are out of fashion. So, you should think about what you want most, what you really need, and so on.”
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	<p>합니다. 예를 들면, 저의 현명한 선택은 야구공과 야구 배트랑, 야구 글러버를 살 것입니다. 왜냐하면 요즘 야구는 유행이기도 하고 야구를 하면 스트레스도 많이 풀리기 때문입니다. 두번째로 현명한 선택은 책을 사는 것입니다. 왜냐하면 시간이 날 때 책을 보면 딱 좋기 때문입니다.“</p> <ul style="list-style-type: none"> • “내가 원하는 모든 것을 다 살 수는 없다. 나도 이제부터 물건을 살 때에는 모든 것을 사지말고 꼭 필요한지, 어떤 점이 도움이 되는지 등을 생각해서 현명한 선택을 해야겠다. 여러가지 중에서 나는 야구용품을 사겠다. 왜냐하면 나는 야구를 좋아하고 운동도 잘 되기 때문이다. 둘째로는 책을 갖고 싶다. 왜냐하면 똑똑해 지고 더욱더 현명해지기 때문에 입니다.” 	<ul style="list-style-type: none"> • “I cannot get everything I want. From now on, instead of buying anything, I would make a wise choice after thinking about whether I really need it, or what’s good about it. Among many things, I would buy baseball stuff, because I like baseball, and it’s good for exercise. Second, I would have books, because I would be smarter and wise.”
Kuni U.E.	<ul style="list-style-type: none"> • 음...이거는 잘 모르겠어요. 그냥 바로 선택하기가 나오니까. 떠오르는 생각이... 사회에 선택하기가 생각이 났어요. 선택하기는..음..아 왜 이렇게 생각이 안 나지? • “경쟁과 부족과 기회비용. 기회비...는 뭐예요?” • “저는 나라면 뭐..돈을 더 	<ul style="list-style-type: none"> • “Hm... I don’t know this well. All of a sudden, making choices shows up. I cannot come up with anything.... It reminds me of making choices in social studies.... Hm... it’s so hard to think about it.” • “Competition and scarcity and opportunity cost, what is opportunity co...? (murmuring)” • “As for me... I would save more to have something that doesn’t

	<p>저축해서 행복을 좀 더 오래 놔둬서...”</p> <ul style="list-style-type: none"> • “여기서 마리사가 많이 막힐 것 같아요. 자기가 사고 싶은 것은 2 개데 어떤 것은 나중에 사고 그리고 어떤 것은 바로 살 수 있고. 그런 것도 지금.. 그것도 자기가 다 좋아하는 것이기 때문에.. 저라면 나중에 옷을 살 것 같아요. 왜냐하면 만약에 밴드의 CD 는 나중에 유행이 지날 수 있지만, 셔츠는 유행이 지나도 어차피 계속 가잖아요. 어차피 자기가 다 입어야 하니까.. 그러기 때문에 저라면 셔츠를 살 것 같아요. 돈을 더 모아서...” • “아~! 그림이 다 똑 같은 건데.. 뭐 바꾸는 것... 위치만 바꾸는 것... 흠... 기회비용이라는 것도 잘 모르겠고 비용이 돈이니깐 돈이 비싸서 아닌가 아~! 이것을 만약에 다 사고 싶지만 자기가 원하는 것을 사지 못하니까 이것을 만약에 사면은 이게 또 못사니까 돈이 다 되서..그러니까 그런 것 같아요.” • “기회비용은 제가 앞에서 말했듯이 한 개를 목표를 잡아놨지만 만약에 목표가 2 개 있으면 그것을 또 골라야 하는 것이 어렵기 때문에 그런 것 	<p>go out of fashion quickly.”</p> <ul style="list-style-type: none"> • “Hm... here I think Marisa got stuck. There are two things she wants to buy. One thing she can buy later, and the other she can buy right away. And, what’s more... both are what she likes... If I were her, I would buy clothes later. Because the music group’s CD may become out of fashion later, but you can wear a shirt even after it becomes out of fashion. Somehow, she will wear it... so... if I were her, I would wait to buy a shirt by saving more...” • “The pictures look the same... but something changes, the places change.... Hm... I don’t know what opportunity cost is.... Because cost means money, does it mean that it costs a lot?.... Oh... I think although she wants to buy both, she can’t.... If she buys this one, then she can’t buy that one because she runs short of money.... I think that’s the way it is.... I don’t really know what it exactly means.” • “Opportunity cost, as I said earlier, you set one goal but if you have two goals and because it’s difficult to choose one of them.... That’s why.... I really don’t know what it is exactly.”
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	<p>같아요. 정확하게는 잘.. 진짜 정확하게는 잘 모르겠어요.”</p> <ul style="list-style-type: none"> • “음.. 그러니까 여기서 보면 사실은 점퍼를 먼저 사고싶어 했으니까 그거 CD를 포기했어야 한다는 말이에요.” • “음...기회비용... 이걸 잘 모르겠어요. 기회비용이란 말은 알겠는데 마리사가 원하는 자켓의 기회비용이라고 했으니까 한 개는 포기해야 한다. 이것도 가게 앞에서 그런건가... 가게... 흠... 좀 시간을...” • “네. 부족함 그러니까 뭔가 부족하면은 사람들은 무조건 다 완벽한 사람들을 좋아하잖아요. 그러기 때문에 이것도 자신이 원했던 것을 선택을 안 하는 것 같아요.” • “그러니까 여기서는 부족함이 없으면 사람들은 모두 기분이 좋고, 그리고 판매하는 사람들도 많이 사가니까 좋고, 그런 것 같아요...” • “음. 부족함은 정말 사람들을 혼잡하게 만드는 것 같아요. 왜냐하면 또 이런 가게에서 만약에 물건이 아무리 싸더라도 안 좋은 것이면, 뭔가 없으면 허접해 보이고, 그래서...” • “흠... 결국 결정했네요. 힘든 	<ul style="list-style-type: none"> • “Hm... so looking here, I think it means that because in fact she wanted the jacket first, she had to give up the CD.” • “Hm... opportunity cost... I don't know this. I mean, I know the words 'opportunity cost' but because it says the opportunity cost of the jacket Marisa wants, it means she has to give up one thing. Is this something that she did in the store?... Store.... Hm... I need more time....” • “Scarcity.... So... if something lacks, people always like people who look perfect. So... this means also that she is not going to choose what she wanted.” • “So here if there is no scarcity, then everyone will feel happy, and sellers are happy too because many people will buy. I think that's what it is....” • “Hm... I think scarcity really makes it hard for people to choose. Because in this store however cheap an item may be, if it is not good or lacks something, it will not look cool, so....” • “Hm... she finally made a decision, a tough decision. She
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	<p>결정을. 진짜 마리사는 자기 몸에 맞는 것을 먼저 생각했나봐요. 딱거가 자기가 원하는 거였어도. 음.. 마리사는 미리 다 공부를 한 것 같은데.. 사회적인 것. 그러니까 만약에 가게에서 일어날 수 있는 거. 자기가 어떤 것을 선택해야 하는가? 아니면 그쪽에 물건에 뭐가 부족한 가? 그런거.. 그래도 저는 일단은 자기가 원하는 점퍼를 샀을거예요. 그러니까 나중에 또 이런 점퍼를 사고 싶어서 돈을 모아서 사는 것 보다는 미리 사서 좀 커도 그래도 계속 입는 것이 기분이 더 좋을 것 같아요.”</p> <ul style="list-style-type: none"> • “왜냐하면 사람들은 아무리 뭔가 부족해도 자기의 목표를 세운 것을 다 실천하기 때문이다. 예를 들어 어떤 아이는 자기가 사고 싶은 만화책이 있었다. 그런데 더 재미있는 만화책이 나왔다. 그러면 자기는 재미있는 만화책을 살 것이다. 하지만 돈이 부족하면 살 수 없기 때문에 자기가 살 수 있는 만화책을 사야하기 때문이다.” • “기회비용은 자기가 가장 원했던 것을..그러니까 사는 것. 그러니까 맨 뒤에 선택한 목표는 포기해야 한다는 것.” • “부족은 뭐가 없는 거예요. 어떤 	<p>might have thought of what fit her first although she wanted something else.... Hm... I think Marisa had already studied about something like social thing (by social thing, he really means ‘opportunity cost.’ Note the description below.)... what could happen in the store... what she should choose, or whether the items in that store lack some features something like that. But if I were her, I would buy what I want. I think I feel much happier if I can buy it early although it’s a little big and keep wearing it rather than saving money to buy it later. ”</p> <ul style="list-style-type: none"> • “(People have to make a choice about the things they want most) because people achieve the goal they set no matter how much it lacks something. For example, a child might want to buy a comic book. But then a more interesting comic book has come out. Then he will buy the interesting comic book. But because if he doesn’t have enough money, he cannot buy it, he will buy a comic book that he is able to buy.” • “Opportunity cost means... so, it means... buying what you wanted most. So it means you have to give up the goal that you set to buy later.” • “Scarcity means a lack of
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	<p>물건이 있는데 만약 연필인데 더 좋은 거는 요쪽 뒤에 지우개가 달린 거 있잖아요. 그런건데 요쪽에는 이게 없기 때문에 부족하다는 것을 알 수 있었어요.”</p> <ul style="list-style-type: none"> • “보면은 요쪽에서 자기가, 홍길동이 원했던 그것을 사기 위해서 두개 (게임기와 야구 글러브)를 목표로 정해놨지만 맨 처음에는 게임기라고 했었어요. 그런데 애가 기회비용을 생각해서 게임을 게임기로하기로 했어요. 그런데 요쪽 게임기 파는 가게에서 보통은 거의 다 건전지를 주는데 여기는 안 줘요. 그래서 뭔가 부족해요. 그래가지고 그냥 글러브를 살려고 했지만 먼저 했던 이걸 뭔가 부족한 이유때문에 다시 기회비용을 생각해서 자기가 맨 처음에 원했던 그 제품을 사게 되었어요.” • “네. 왜냐하면 요쪽에서 예를 들어 봤기 때문에. 마리사의 이야기가 계속 나왔거든요. 이야기가 쉽고, 이해하기가 쉬웠어요. 우리나라 교과서도 그런 게 좀 있기는 있지요.” • “미국에선 벌써 3학년 때 기회비용이라는 것을 배우지만 우리는 3학년 때 여가..뭐 하는 것 	<p>something. Let’s say there is an item, for example, a pencil. Among the two pencils, the one with eraser at the end may be better. Because the other pencil does not have an eraser, you know there is scarcity.”</p> <ul style="list-style-type: none"> • “If you look here, the boy named Kildong Hong set two goals (a game and a baseball glove) to buy what he wanted. What he wanted first was a game. So he thought about opportunity cost and decided to buy the game. Then he went to a game store and found out that they did not give a battery, although the game stores usually did. So, there is scarcity (a lack of something). So he thought that it might be better to buy a baseball glove instead because of the scarcity. But he thought about opportunity cost again and bought the first thing he wanted to buy.” • “Yes (this passage was easy to understand.), because the text showed an example. It kept telling Marisa’s story. The story was easy, easy to understand. Our country’s (Korea) textbooks are sort of this way too.” • “In America they learn opportunity cost as early as third grade, while when we were in third grade, we learned about everyday things like leisure,
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	<p>여가시간에, 시민 단체, 그런걸 배웠거든요. 근데 제 생각에는 기회비용이나 부족함이나 그런걸 정말 빨리 배우는 것 같아요... 근데 저는 천천히 해도 될 것 같아요. 왜냐하면 토끼와 거북이에서 보면은 천천히 가도 멀리 가는 게 중요하다는 얘기가 있거든요.”</p>	<p>things people do in their leisure time, and groups to improve community. I think they learn things like opportunity cost or scarcity really early.... I think it's ok to learn them slowly because as you see in the story about a hare and a tortoise, they say that it's important to go steady and farther, although it may be slow.”</p>
Kyun K.C.	<ul style="list-style-type: none"> • “화보가 뭘까? 읽어보아야지.” • “깨끗한 거리를 어떻게 만들 수 있지? 나도 어른들한테 물어볼까?” • “반상회가 뭘까? 계속 읽어보아야지.” • “우리 고장에는 어떤 문제점이 있지? 계속 읽어 볼까?” • “녹색환경모임이 뭐지? 깨끗이 하기 위해 모인건가?” 	<ul style="list-style-type: none"> • “What's ‘hwabo’? I should read more.” • “How can I make clean streets? Shall I also ask adults?” • “What is ‘town meeting’? I should read more.” • “What problems does our town have? Shall I read more?” • “What is ‘Green Group’? Did they gather together for cleaning?”
Kangmin U.C.	<ul style="list-style-type: none"> • “우리반 학생이 30 명인데요, 그중에서 네명이 우리학교 뒤에 넓은 운동장을 손님 오신다고 1 학기 동안 청소를 했는데 처음엔 2 시간정도 넘게 걸리고 그랬는데 지금은 애들이 같이 하니깐 더 빨리 끝내고 더 좋아 졌어요. 10 몇 명에서 협동하면요 올림픽에서 이기는 것 처럼요 봉사도 더 잘 하고 일찍 일찍 금방 끝날수 있는거 같아요.” 	<ul style="list-style-type: none"> • “Among 30 students in my class, four of us have cleaned the large playground behind our school buildings for a semester. At first, it took more than 2 hours. But now that we work together with more classmates, we can finish it early and work better. If we, ten of us, work together, just as people win at the Olympic Games, we can do volunteer work better and finish it early.”

	<ul style="list-style-type: none"> • “저두 이런 일(집없는 사람들을 위해 집지어 주는 일)을 한번해 보고 싶고요. 불우이웃돕기 할때요 돈을 많이 넣었는데요 그 돈까지 합쳐져서 아프리카에 어디든지가서 물을 나르는거나 펌프같은걸 만든다고 생각하면 기뻐요” 	<ul style="list-style-type: none"> • “I’d like to do work (building a house for the homeless) like this. When they raised money to help poor neighbors, I donated as much as I could. I am very glad to think that my money together with other people’s donation can be spent on providing or pumping water for people in Africa.”
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