Critical Thinking Skills and Teachers' Questioning Behavior in a Japanese University EFL Context

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Abstract

The importance of developing critical thinking skills has been extensively discussed in second language education literature (Natthanan 2009; Shen &Yodkhumlue, 2013). Research has indicated that asking questions is one of the means for enhancing learners' critical thinking skills (King, 1995; Ma, 2008). The current study investigates the cognitive levels of questions teachers asked based on Bloom's Taxonomy (1956), and how learners responded to teachers' questions in language classrooms in a Japanese university EFL context. Classroom observations, a questionnaire, and interviews with two teachers and their students were conducted. The results indicated that the teachers asked higher-order questions more frequently than teachers in other studies (Natthanan, 2009; Tan, 2007; Shoomossi, 2004). Despite holding different beliefs concerning how to teach critical thinking, both teachers were aware of critical thinking in their questioning behavior. In the questionnaire and interviews, students explained reasons for silence after some questions, and offered some suggestions to improve question-response interactions between teachers and learners, including the use of group work and sufficient wait time. Based on these results, this study offers recommendations for effective teachers' questioning behavior for the development of learners' critical thinking skills.

Introduction

Developing critical thinking skills has attracted attention at various levels of education. Therefore, educators have tried to teach critical thinking skills as one important skill for students. The importance of developing critical thinking skills is recognized and such skills havestarted to be incorporated in second language education, and how teachers can help learners enhance their critical thinking skills has gained significant attention (Davidson & Dunham, 1997; Natthanan 2009; Shen & Yodkhumlue, 2013). In Japan, the Ministry of Education, Culture, Sports, Science and Technology (MEXT) recognizes the importance of critical thinking skills, and incorporating the teaching of such skills has been promoted in language education (2013). Among other skills, researchers including Bloom (1956) maintain that asking questions that are cognitively demanding is an effective means to enhance the critical thinking skills of learners (Brown, 2007; King, 1995; Ma, 2008; Savage, 1998). Various studies have addressed critical thinking skills and teachers' questioning behavior in language classrooms (Natthanan, 2009). However, such studies conducted in a Japanese university EFL context are still scarce. Through both quantitative and qualitative methods, this study investigated the cognitive levels of questions asked by teachers and how learners respond to their teachers' questions in a Japanese university EFL context, and offers some educational suggestions for university level language teachers to more effectively use questions for the development of learners' critical thinking skills.

Literature Review

Teaching critical thinking skills is a major concern of educators. Critical thinking has attracted attention not only in general education but also in language education in the last few decades (Shen &Yodkhumlue, 2013). Although there are a variety of methods through which such skills can be developed, Bloom (1956) contends that asking questions to students is an effective means of improving learners' critical thinking skills. In fact, questions asked by teachers are considered to play a significant role in language classes (Brown, 2007; Fakeye, 2004; Shommossi, 2010; Wright, 2005), and a number of studies have addressed teachers' questioning behavior in

language classrooms in relation to the development of critical thinking skills. In the first section of the literature review, how critical thinking skills are incorporated into education in general and language education will be explained. This study will develop discussions on critical thinking skills based on Bloom's Taxonomy, which classifies different levels of cognitive ability. After discussing what critical thinking is and its importance in education, the literature regarding the questioning behavior of teachers in language classrooms will be reviewed by pointing out that critical thinking skills can be developed through teachers' questions. Then how critical thinking skills can be trained through questioning will be discussed. After describing a Japanese university EFL context, the literature review will closely look at how critical thinking skills can be integrated with teachers' questioning behavior in classroom interaction within a Japanese university EFL context.

Goals of English Language Education

Goals of second language teaching have changed over the years, and now enhancing the communicative ability of language learners is a significant focus. As globalization progresses, English is now used as a global language in many different fields including science, business and the academic world. Communicating with speakers of different languages with different cultures is a complex human activity composed of various factors. Therefore, such communication requires various knowledge, competences and attitudes in addition to linguistic ability (Murai, Watanabe, Ozeki & Tomita, 2012). Among various approaches and methods of second language teaching, the Communicative Language Teaching has been an accepted paradigm in second language education in recent years (Brown, 2007), and improving learners' communicative competence in English has been recognized as crucial in second language education. In order to define and explain communicative ability, researchers including Canale and Swain (1980) and Bachman (1990) have offered frameworks that explain communicative competence, and those works have been often cited in discussing communicative competence of second language

learners. Murai, Watanabe, Ozekiand and Tomita(2013) investigated various frameworks of communicative ability and suggested five components of communication ability: language competence, strategic competence, cognitive abilities, real-world knowledge and attitudes. Language competence, according to Bachman (1990) is composed of organizational competence and pragmatic competence. Organizational competence includes the ability to understand and use grammar and the ability to use a language at a supra-sentence level. Pragmatic competence refers to the ability to use a language in a culturally, socially and contextually appropriate manner (Bachman, 1990). The next component of communication ability, strategic competence, is the ability to compensate communication break downs. An example of such competence is the ability to say a word in a different way when the initially intended word was not recalled. In addition to those skills, cognitive abilities are also needed in language education, which is important not only in language learning but also in the real society. Such cognitive abilities include critical thinking skills, and this suggests the importance of teaching such skills in language education (Murai, Watanabe, Ozeki &Tomita, 2012). Possessing world knowledge is also an important element of communication ability. Furthermore, attitudes towards different cultures are also crucial in language education because such cross-cultural tolerance supports intercultural exchanges (Murai, Watanabe, Ozeki & Tomita, 2012).

Defining Critical Thinking

Critical thinking is now a term that frequently appears in education. As to what critical thinking is, a number of definitions have been offered. For example, Dewey (1933, as cited in Natthanan, 2009) views critical thinking as reflective thinking that requires mental activity of resolving doubt, hesitation or mental challenges, and advocates that critical thinking is what education of all levels should aim toward. Paul (1990, as cited in Natthanan, 2009) views critical thinking as "thinking about thinking." In the view of Ennis (1996, as cited in Natthanan, 2009), critical thinking includes mental skills such as skills to formulate hypotheses, viewing a problem

from multiple angles, forming questions, and offering solutions to problems. "Critical thinking is the process of analyzing and assessing thinking with a view to improve it (Elder & Paul, 2010)." Another often cited definition is that "critical thinking is a process of purposeful, self-regulatory judgment, which results in interpretation, analysis, and inferences as well as explanation of the evidential, conceptual, methodological, criteriological or contextual considerations upon which that judgment is based (American Psychological Association, 1990, as cited in Seker&Komur, 2008)." Cognitive skills that experts included as the core of critical thinking skills are interpreting, analyzing, evaluating, inferring, explaining and self-regulating. Self-regulation is defined as self-consciously monitoring one's cognitive activities (Facione, 2013). A variety of definitions of critical thinking have been offered; however, most of the definitions of critical thinking commonly refer to the exercise of cognitive skills or strategies by which desirable outcomes are likely to be produced (Seker & Kumor, 2008).

Critical thinking skills form a crucial part of education. For learning to occur, students should learn critically at every educational level (Elder & Paul, 2010). In this globalized society (Natthanan, 2009), due to the easy access to information, using such information in a wise manner is an essential task in education (Jacobs & Farrell, 2001). Therefore, thinking skills are tied with the current educational paradigm. For instance, thinking is a process, and the quality of such process is emphasized rather than just valuing the quality of a product. In addition, a particular problem can be examined through variety of thinking routes. Moreover, the current paradigm attempts to connect what is learned in school to society. Thus, learning is not just memorizing lower-order facts. Learning at school is for applying such knowledge toward an improved society (Jacobs & Farrell, 2001). Therefore, what is required in current education is beyond just acquiring knowledge. Through critical thinking skills, acquiring knowledge, comprehension, insights and skills related to any content are possible. In order to acquire any content, analytical and evaluative thinking is essential (Elder & Paul, 2010). Thus, teaching critical thinking skills can benefit learners.

Bloom's Taxonomy

Although a number of different researchers have defined critical thinking, Bloom's Taxonomy (1956) is the most cited work in terms of critical thinking, covering a number of commonalities of frameworks of such skills (Gall, 1970). As Table 1 shows, Bloom's Taxonomy is composed of six different levels of cognitive skills in education, and the six levels of cognitive abilities form a hierarchy. The levels are knowledge, comprehension, application, analysis, synthesis and evaluation (Bloom, 1956). In the hierarchy of cognitive skills, skills at lower levels of thinking are subsumed by higher levels of thinking. Therefore, if a student is to demonstrate the application level of thinking, the student has already accomplished the thinking stages of knowledge and comprehension. Bloom's Taxonomy is a frequently used tool in setting goals and objectives, and developing activities for learners and assessment materials (Krathwohl, 2002; Natthanan, 2009), and actually assessing learner achievement (Eber& Parker, 2007). Bloom's Taxonomy is now widely used in various educational settings.

Table 1

Bloom's Taxonomy by Bloom (1956)

Levels	Skills
Evaluation	Evaluating and justifying
Synthesis	Integrating parts or elements together into a whole new unit
Analysis	Breaking information into pieces
Application	Applying knowledge to new situations
Comprehension	Interpreting information
Knowledge	Retrieving information

The thinking process at the lowest level of the taxonomy is knowledge. According to Bloom (1956), this stage of thinking is a prerequisite stage for all other levels of the taxonomy.

This knowledge stage involves the retrieval of information from memory. Therefore, students are required to memorize factual knowledge (Eber& Parker, 2007; Natthanan, 2009).

The next level of Bloom's Taxonomy is comprehension. This level of learning is slightly more cognitively demanding than the knowledge level learning. At this level, in addition to the simple memorization of knowledge, students are required to understand the factual knowledge they have learned, and interpret the knowledge (Natthanan, 2009).

The third level is application. Together with the skills needed in the knowledge and comprehension stages, students are expected to be able to apply their knowledge to various new situations (Natthanan, 2009). Therefore, application is a more advanced cognitive skill. However, this stage of application, together with the previous two stages, are called lower-order thinking because these three levels of thinking skills require relatively less cognitively demanding thinking skills in comparison with the other three thinking levels that are referred to as higher-order thinking skills.

The other three stages are often recognized as higher-order thinking skills, and frequently mentioned when the teaching of critical thinking skills are discussed. As a whole, the higher-order thinking skills include analysis, synthesis and evaluation. Analysis is the stage where students need to be able to separate or break information into different parts, and apply them to different situations. The next level, synthesis, requires the ability to put elements or parts of a whole together so that the elements or parts can form a new whole. The highest level of Bloom's Taxonomy is evaluation. At this stage, students are expected to be able to judge ideas, opinions, values based on a set of criteria (Eber& Parker, 2007; Natthanan, 2009).

The original Bloom's Taxonomy was revised by Anderson and Krathwohl. The revised taxonomy is two dimensional, composed of the knowledge dimension and the cognitive process dimension. The cognitive dimension is similar to the original taxonomy, but several aspects were revised. In the new taxonomy, all the names of all the levels of the taxonomy were changed into verb forms. For example, the evaluation was changed into evaluating. There are a few other

changes. The knowledge level of the original taxonomy was renamed remembering, and the comprehension was changed into understanding. In addition, synthesis was renamed creation, and placed to the top of the taxonomy (Krathwohl, 2002). Table 2 compares the original version of Bloom's Taxonomy and the revised version if Bloom's Taxonomy.

Table 2
Comparison of the Original Version of Bloom's Taxonomy and Revised Version of Bloom's Taxonomy

Original version of Bloom's Taxonomy	Revised version of Bloom's Taxonomy
Evaluation	Create
Synthesis	Evaluate
Analysis	Analyze
Application	Apply
Comprehension	Understand
Knowledge	Remember

Critical Thinking in Non-Western Contexts

Although the importance of critical thinking in education has been emphasized, the teaching of critical thinking in Asian contexts has been questioned. There are researchers who claim that teaching such skills in Asian contexts is inappropriate (Kubota, 1999). Different cultures place emphasis on different values, and Asian cultures, in general, value collectivism rather than prioritizing clear self-expression and critical thinking (Kubota, 1999). Therefore, incorporating and teaching such skills could be a form of cultural imperialism (Atkinson, 1997). Thus, the teaching of such skills may not be appropriate in non-Western contexts (Atkinson, 1997).

Despite such claims against the teaching of critical thinking skills in Asian contexts, Asian countries have begun to incorporate the teaching of critical thinking skills into their education. Asian cultures tend not to see critical thinking skills as a primary focus of education, but this does

not apply to all contexts (Long, 2003b). What is dangerous is that overgeneralizations of target cultures are frequently presented in educational materials, and that such material can potentially limit the views of various target cultures (Long, 2003a). For example, Japanese students are often referred as students who are successful in critical thinking skills (Stapleton, 2002). As a result, misunderstanding or stereotypes of particular cultures could be formulated. Therefore, such arguments regarding the inappropriateness of critical thinking in Asian contexts are often based on such stereotypes of overgeneralization of Asian cultures (Long, 2003a). In contrast to criticism or the inappropriateness of the teaching of critical thinking skills in non-western contexts, a number of educational benefits of critical thinking skills such as increased GPA were identified (Facione, 2003). In fact, critical thinking skills are now considered crucial in education not only in western countries but also in Asian countries such as China (Ma, 2008; Tan, 2008) and Thailand (Natthanan, 2009).

Critical Thinking in Language Education

The importance of critical thinking skills has been recognized in language education in various contexts. The application of critical thinking in language learning started in the United States, but critical thinking skills are now recognized worldwide (Shen &Yodkhumlue, 2013). For the last few decades, researchers and practitioners have paid attention to the development of learners' higher-order thinking in language education (Davidson & Dunham, 1997; Natthanan, 2009; Shen &Yodkhumlue, 2013). As more focus is placed on the communicative ability of language learners, teaching linguistic aspects of a language is not the sole purpose of language education. Language education curriculum targets the actual use of a second language (Natthanan, 2009). In response to such a goal, educating language learners so that the learners can exercise the ability to analyze, provide reasons, solve problems, and evaluate judgment is now an important issue. An effective means of incorporating critical thinking skills is asking higher order questions that are likely to enhance learners' critical thinking skills.

Teachers Questioning Behavior in Classrooms

The questioning behavior of teachers is an important feature in explaining second language learning. Teachers' questioning behavior is one of the most frequently found phenomena in classrooms (Brown, 2007; Ernst, 1994), and has been investigated by a number of researchers (Brown, 2007; Lightbown &Spada, 2007; McNeil, 2010; Natthanan, 2009; Wright, 2005). Teachers' questioning behavior is an indispensable practice in classroom teaching (Ma, 2008; Seker &Komur, 2008). One of the roles of questions is to check learners' comprehension of class materials (Ma, 2008; Seker &Komur, 2008). In addition, questioning is considered to be beneficial for second language learners (Fakeye, 2007; Shen &Yodkhumlue, 2013). For example, generally, teacher questions are designed to enhance learners inproducing their target language (Brock, 1986). Because of the nature of questions that can elicit output on the part of learners, teacher questions are said to contribute to language acquisition (Farooq, 2007), enabling learners to practice their target language (Seker &Kumor, 2008). In addition, questions by teachers in a language classroom can be helpful in creating an interactive classroom because teachers' questions can initiate and facilitate interaction in the target language (Brown, 2007). Moreover, questions can create dialogic relationships in classrooms with relative ease (Ma, 2008). Therefore, the use of questions is one of the most effective means of initiating communication in language classrooms (Brown, 2007; Ma, 2008). When questions are skillfully asked, such questioning can enable learners to engage in the classroom, and encourage and challenge learners to think (Ma, 2008). Thus, questions play a variety of beneficial roles in language classrooms.

Types of Questions Asked by Teachers

Teachers ask different types of questions in classrooms. In order to categorize questions, a variety of categorization systems have been presented by researchers in the field of language teaching (Brock, 1986; Gaies, 1983; Farooq, 2007; Ho, 2005; Lightbown & Spada, 2007; McNeil, 2010; Shomoossi, 2004). A major categorization of questions is the distinction between display

questions and referential or genuine questions (Kao, Carkin, & Hsu, 2011). Display questions are questions that ask learners for information that is already known to teachers. For example, teachers may ask questions about factual information that was already learned in previous lessons (Brock, 1986; Gaies, 1983; Farooq, 2007; Ho, 2005; Lightbown & Spada, 2007; McNeil, 2010; Shomoossi, 2004). On the other hand, referential questions are questions that are asked in order to elicit information that is not known to the questioner in advance (Brock, 1986; Gaies, 1983; Farooq, 2007; Ho, 2005; Lightbown & Spada, 2007; McNeil, 2010; Shomoossi, 2004). For example, teachers may ask learners for their ideas and opinions.

Another method to classify teacher questions is the categorization of questions into closed-questions and open-questions. Closed-questions are intended to elicit factual knowledge from learners. In contrast, open-questions ask learners to provide reasons and explanations (Ho, 2005; Lightbown & Spada, 2007). Therefore, closed-questions are more similar to display questions, and open-questions, on the other hand, are more similar to referential questions (Lightbown & Spada, 2007). Some researchers advocate that display questions and closed-questions, and referential questions and open-questions can be used interchangeably. In general, open questions are more likely to lead learners to produce more complex and longer answers because learners are often required to provide explanation and reasoning in order to respond to open-questions. Providing explanation and reasons requires more language use than simply providing factual information or answering yes-no questions. In addition, learners' answers to open questions tend to be more complex linguistically (Lightbown & Spada, 2007).

The role of referential questions asked by teachers in English language classrooms has been investigated in various studies in past years. In general, in comparison to display questions and closed questions, referential questions and open questions are considered more important to language learning (Lightbown & Spada, 2007). Referential or open questions are valued because referential questions are more likely to elicit longer and more complex output on the learners' part. For example, a study conducted by Shomoossi (2004) examined how different types of teacher

questions impact learners' response in English classes at Tehran University for two months. The study found that more complex output was elicited in response to referential questions. Another study conducted by Farooq (2004) also shows that referential questions can lead learners to produce longer, grammatically complex utterances. In that study, 40 Japanese EFL learners at a Japanese university were observed in English classes. In response to referential questions, the learners produced answers whose length was longer with increased grammatical complexity. Brock (1986) was another researcher who examined whether the more frequent use of referential questions influences adult English learners' classroom interactions. East Asian learners at the University of Hawaii with TOEFL scores ranging from 470 to 520 were participants of this study. When learner responses were analyzed, the length of responses to referential questions almost doubled in comparison with responses to display questions. On the other hand, an opposing result was found in a study by Fakeye (2007) who also examined if there were any differences in the distribution of display questions and referential questions asked by teachers in English classes at a Nigerian university. This study resulted in display questions promoting more classroom interaction. Although the results of these studies on teachers' questions are mixed, referential or open questions seemed to be more beneficial in terms of increasing learners' output.

Types of Questions Based on Cognitive Levels

Categorizing questions based on their cognitive levels is another means of classifying questions asked by teachers. A number of researchers have offered categorization systems regarding the cognitive level of questions (Brock, 1986; Gall, 1970).For example, questions can be divided into convergent questions and divergent questions. Convergent questions ask for factual information. In contrast, divergent questions deal with hypothesis or opinions (Khan & Inamullah, 2011). Among a variety of frameworks which categorize questions based on their cognitive levels, a famous and frequently used categorization of questions is a taxonomy proposed by Bloom (1956). In general, Bloom's Taxonomy is frequently used as a standard in classifying

types of questions. The frequent use of Bloom's Taxonomy can be accounted for by the fact that Bloom's Taxonomy can best present the commonalties of different systems for categorizing various question types (Gall, 1970). Therefore, although some limitations regarding the use of Boom's Taxonomy have been identified, Bloom's Taxonomy of questions serves as a reference standard for classroom questioning behavior (Gall, 1970; Wright, 2005).

Table 3 provides examples of questions at each cognitive levels of Boom's Taxonomy (1956) based on sample questions at various cognitive levels (Brown, 2007).Questions at the first three stages of Bloom's Taxonomy (1956) which are knowledge, comprehension, and application are lower-order questions that are cognitively less demanding. On the other hand, questions at the analysis, synthesis, and evaluation stages are higher-order questions that are cognitively more challenging (Khan & Inamullah, 2011). These higher-order questions are often referential and open questions (Wright, 2005), and display or closed questions are likely to be lower-order questions. When the distinction of convergent and divergent questions is applied to Bloom's Taxonomy (1956), higher-order questions (analysis, synthesis and evaluation) are divergent questions (Khan & Inammulah, 2011).

Table 3

Types of Questions and Example Questions

Levels	Question Words	Example Questions
Knowledge	Tell, list identify, describe, select, name, point out, label, define, recall, recite	Who? What?
Comprehension	Indicate, summarize, outline, explain, define, state in your own words, match	What is the main point of the article?
Application	Demonstrate how, apply, illustrate how,	How can you change this sentence into a passive voice?
Analysis	Distinguish, chart, plan, deduce, separate, classify, contrast, compare, differentiate, categorize	What is the relationship between A and B? What is the difference between A and B?
Synthesis	Compose, combine, invent, choose, hypothesize, build, solve, design, develop	What would happen if…? How can you improve…?
Evaluation	Evaluate, rate, defend, dispute, decide which, select, judge, grade, verify, choose why	Which is more important? Which is do you think is more appropriate?

Note. Adapted from "Teaching by Principles: An Interactive Approach to Language Pedagogy" byB. H. Douglas, 2007, p. 220.

Questioning Behavior and Critical Thinking

The development of critical thinking skills and questions asked by teachers are closely related. There have been a number of attempts to integrate thinking skills across curriculum (Halpern, 1997 as cited in Jacobs &Ferrell, 2001). For example, materials designed to teach higher-order thinking skills are utilized. Group activities are also utilized as a venue through which second language learners gain and use thinking skills because group work requires students to teach other classmates and provide constructive criticism for other learners (Ayaduray & Jacobs, 1997 as cited in Jacobs & Ferrell, 2001). Among a variety of strategies for teaching critical thinking skills, teachers' questioning is one of the most influential on learners' thinking (Seker &Komur, 2008). Questioning plays an important role in developing critical thinking skills (Seker &Kumur, 2008). Including Bloom (1956), researchers contend that critical thinking skills can be taught through questioning (King, 1995; Savage, 1998). The levels of learners' thinking are proportional to the levels of questions asked by teachers (Clasen, 1990 as cited in Seker &Komur, 2008). Once critical thinking skills are taught, students can maintain and use the skills in other situations (Facione, 1998 as cited in Stroupe, 2006). Asking higher-order questions is an effective means of developing learners' critical thinking skills because in the process of responding to such cognitively demanding questions, learners are encouraged to think at a cognitively higher level (Bloom, 1956; McNeil, 2010). Although there are a variety of types of questions that teachers could ask, learners are more likely to develop their critical thinking skills when teachers ask questions that are cognitively more demanding (Natthanan, 2009). Asking learners more cognitively challenging questions can help the learners improve their thinking skills, specifically critical thinking skills. For example, Cole and Williams (1973) investigated whether there is any relationship between the cognitive levels of questions teachers ask and those of learner responses in English classrooms. This study showed that the more cognitive demanding questions teachers asked, the higher the cognitive levels of responses learners provided.

Instead of categorizing questions using a specific level of Bloom's Taxonomy, questions can be also referred to as "lower-level" and "higher-level" questions. Questions at the knowledge, comprehension, and simple application stages of the taxonomy are lower level questions. Questions that require analysis, synthesis and evaluation skills are higher-level questions (Goodwin, Sharp, Cloutier, & Diamond, 1983). Lower-level and higher-level questions are used for various purposes. Lower-level questions are usually appropriate for the assessment of students' comprehension and preparation, and the review of content. On the other hand, higher-level questions are usually appropriate to encourage learners to think critically and deeply, to encourage discussions and promote learners to seek information independently (Goodwin and et al, 1983).

A number of studies have addressed the effects of the cognitive levels of teacher questions in language classrooms. In general, higher-order questions have been seen as effective in language learning situations, contributing to various aspects of language learning (Wilen& Clegg, 1986 as cited in Wilen, 2001). For example, cognitively challenging questions are more likely to promote longer and more complex responses from learners. With regard to this point, studies have indicated that higher-order questions, in comparison with lower-order questions, are more likely to result in greater amount of learners' output in classroom interaction (Shomoossi, 2004). Shen and Yodkhumlue (2013) investigated the questioning behavior of language teachers in English classes in a Chinese university context, focusing on the cognitive level of teacher questions. After classroom observation and interviews with teachers, questions asked by the teachers were classified into lower-order questions and higher-order questions based on Bloom's Taxonomy. In this study, teachers asked lower-order questions about four times as often as higher-order questions. One reason accounting for the distribution of lower- and higher-order questions is that teachers sometimes could not use higher-order questions effectively. Considering that higher-order questions can lead to longer and more complex learner responses, learners' use of higher-order thinking skills, the researchers conclude that teacher training is needed so that teachers can more effectively ask higher-order questions in language classrooms. Other researchers such as

Farooq (2007), Long and Sato (1983), Brock (1986), McNeil (2010), and Wilson (1973) commonly found that higher-order questions resulted in longer answers from learners. In addition to the length of learner response, the study results showed that higher-order questions also contribute to the complexity in syntax and grammar of learner responses. These results of higher-order questions might occur because more cognitively demanding questions from teachers need more reasoning and explanation rather than simple presentation of factual knowledge. Asking higher-order questions should be encouraged because such questions can provide more opportunities where learners can produce their target language (Natthanan, 2009).

English Language Education in Japan

Asking questions of quality in language classrooms will be beneficial in Japanese contexts. In Japan, English is a required subject in primary, secondary and tertiary education. English used to be a required subject in junior high school and high school, but in recent years, English started to be implemented as a mandatory subject even at elementary level education (O'Donnel, 2003). Although English classes focus on easy vocabulary and English sounds in elementary school, more grammatical aspects are introduced from junior high school. Japanese English language education at high school tends to focus on grammar and reading comprehension because the majority of Japanese universities require English as a mandatory subject in their entrance examinations (Kavanagh, 2012; O'Donnel, 2003) that traditionally focus on grammar knowledge and reading comprehension.

In Japan, more attention has been paid to how to improve learners' communicative ability in English. For achieving this aim, various guidelines for language education have been issued, and educational reform regarding English education has been implemented. For example, instruction in English started to be implemented in elementary level education in 2011, and 35 hours of English instruction in an academic year is required in the 5^{th} and 6^{th} grades of elementary schools in Japan, though English used to be a required course only in secondary and tertiary

education. In addition, MEXT introduced the Course of Study for Senior High Schools that is going to be implemented within four years (MEXT, 2013). One aspect of the guidelines that has triggered debates is that the course of study announced that teachers at high school are required to use English as the language of instruction. The use of English as the language of instruction is encouraged because in EFL contexts such as in Japan, learners' daily exposure to English is limited. In response to these movements to promote Japanese students' ability to communicate in English, more communicative approaches have been emphasized at university level English language education (Kavanagh, 2012).

Despite the fact that Japan has tried to improve English communication skills among Japanese students, their proficiency in English is still regarded lower with a strong focus on grammar playing a significant role in current Japanese language education contexts. Although Japanese university EFL learners have received at least six years of English as a required subject, Japanese university learners' English ability is behind that of students from other Asian countries(Kavanagh, 2012). For example, among Japanese, Korean, and Chinese, Indonesian and Thai learners, the average score of TOEFL was the lowest for Japanese learners (Takanashi, 2004). One significantly unique feature regarding English language education in Japan is the university entrance examination system because entrance examinations can significantly influence on what instructors and learners can focus in language classrooms (Cook, 2009; Gorsuch, 2001; Kavanagh, 2012). According to studies that analyzed Japanese university entrance examinations, most of the examinations are designed for the purpose of measuring learners' ability to understand written messages, sentences and grammatical structures (Gorsuch, 2000). Students and parents frequently believe passing entrance examinations for universities with a high reputation is important, linking the entrance to such universities and learners' future success (Cook, 2009).

Therefore, Japanese students and their parents often expect teachers to help students prepare for university entrance examinations. Although MEXT encourages English teachers to implement more communicative approaches in their language classes, the goals of classes shift

from more communicative goals to ones that focus on grammar and translation skills because of the needs and expectations of learners and their parents (Kavanagh, 2012). Because teachers feel pressure to help prepare their students to pass entrance examinations that focus on reading, translation, grammar and vocabulary, teachers naturally place their class focus on translation exercises and vocabulary quizzes in class even if teachers believe that other teaching methods would more effectively help students improve their English skills (Cook, 2009; Sakui, 2007).This is a situation that could hamper active interaction between teachers and students in language classrooms.

Critical Thinking in Language Education in Japan

In recent years, critical thinking is one of the abilities encouraged at a national level in Japan. For example, in an educational reform in 2003, one of the goals set by MEXT was to produce independent thinkers who are able to learn and think independently and develop skills of problem-solving (Long, 2003).In addition, one of the abilities or competencies that MEXT emphasizes is cognitive abilities in which logical thinking is included (Murai, Watanabe, Ozeki, & Tomita, 2012). In addition to primary and secondary education, critical thinking is now significant in university level education in Japan. In fact, critical thinking is an important factor in evaluating higher education in Japan (McKinley& Thompson, 2011). Thus, the development of critical thinking ability is now promoted nationally.

In more recent years, MEXT revised the previous course of study, and the Ministry has sought ways through which Japanese learners can improve their thinking skills. In this rapidly changing society, students need skills to make judgments based on ample knowledge and the ability to think in a flexible manner. In addition, students need the ability to various changes in this international community. For example, students are required to work together with those who are from different cultural backgrounds. However, the results of both domestic and international investigations on learners' ability have shown a lack of ability to think, judge and express

opinions and ideas among Japanese students (MEXT, 2013). In response to such a reality, MEXT announced that there is a crucial need for developing Japanese students' critical thinking ability including the ability to find and solve problems, think logically, and examine ideas and events from various perspectives. Thus enhancing Japanese students' critical thinking ability is supported and encouraged at a national level.

In addition, critical thinking has been more emphasized in English language education in recent years. A proposal for developing learners' English proficiency was issued in June 2011 by the Commission on the Development of Foreign Language Proficiency. According to the report, the foreign language abilities required in the international community today are defined as the ability to actively communicate with speakers from different countries and cultures, to provide logical and reasoned explanation of opinions and ideas, and to convince and persuade others (MEXT, 2013).Although these official guidelines regarding language education do not directly mention critical thinking, the skills that are encouraged match the skills that are included in critical thinking skills.

In conclusion, according to the literature, critical thinking skills can be developed through teachers' questions in language classes. Researchers contend that teachers' questioning is a crucial aspect of classroom interaction, and teachers' questioning behavior has been examined (Brown, 2007). Questions asked by teachers are divided into different categories with different categorization frameworks. A major categorization of questions is the distinction between display and referential questions, and other categorization frameworks are based on the cognitive levels of teacher questions. A number of studies have examined teachers' questions and learner responses in relation to critical thinking skills, and in general, such studies have commonly found that learners can utilize higher-order thinking skills when teachers ask more cognitively demanding questions. Although there are some arguments that the teaching of critical thinking skills is based on Western perspectives and thus not appropriate for Asian contexts, Japan has recognized the importance of critical thinking, and MEXT(2013) includes the development of critical thinking

skills in their latest version of the Course of Study. As to English language education in Japan, the development of communicative skills in English is now targeted, and more emphasis is placed upon communicative aspects in the language classroom. Considering that teachers' questioning behavior can be an important feature of classroom interaction, examining teachers' questions in Japanese contexts might be significant. Thus, the development of critical thinking skills of learners in second language education has been encouraged. Japan has also started to include the development of critical thinking skill as a goal. According to the literature, asking cognitively challenging questions is beneficial to enhance learners' critical thinking skill in language classrooms. Therefore, teachers' questioning behavior in relation to critical thinking skills in a Japanese EFL context should be worth investigation.

Purpose of the Research

The purpose of this study is to examine the cognitive levels of questions that teachers ask for learners at different proficiency levels, and how learners respond to teacher questions of different cognitive levels in English-only classes in a Japanese EFL context. For this purpose, the questioning behavior of teachers and learner responses in terms of critical thinking skills will be examined by observing English classrooms, categorizing teacher questions based on Bloom's Taxonomy (1956) of questions, and conducting follow-up questionnaires and interviews with learners and teachers.

Research Questions

In order to investigate what types of questions teachers ask in terms of the cognitive levels of questions, and how learners respond to teacher questions, the following three research questions were set.

1. What cognitive levels of questions do English teachers ask Japanese EFL learners in English-

only classrooms?

2. What are the reasons behind teachers' questioning behavior?
3. Why did learners not respond to particular questions asked by the teachers?

Significance of the Study

Examining the cognitive levels of teacher questions and learner response will provide a more in-depth understanding of the structure of question-response interaction between teachers and learners in English classrooms at a Japanese university. Research results will provide a clear picture of the tendency of teacher questions in terms of cognitive levels of questions and learner response in classrooms of differing proficiency levels. Thus, this research may help university level English teachers re-consider their own questioning behavior in language classrooms and appropriately incorporate more higher-order questions so that teacher-learner interaction during classroom can further enhance the critical thinking skills of Japanese EFL learners of different proficiency levels.

Methodology

A variety of data collection methods were employed, and such data were analyzed differently in order to answer the research questions of this study. Triangulation is the process of gaining data from multiple sources for claiming validity (Rudestam & Newton, 2007; Dörnyei, 2007). For increasing the validity of the research, the concept of triangulation is reflected in this study. For the purpose of gaining information on the questioning behavior of teachers, and learners' response to teacher questions, classroom observations were conducted as other studies also employed (Brock, 1986; Fakeye, 2004; Farooq, 2007; Long & Sato, 1983 as cited in Natthanan, 2009). In order to investigate possible reasons for why learners do and do not respond to particular questions, a questionnaire regarding learners' rationales for not responding to teachers' questions was conducted (Natthanan, 2009). In addition, interviews were used with both

teachers and learners for further understanding the data obtained from the classroom observations and the questionnaire surveys (Natthanan, 2009). In this research, data were analyzed both quantitatively and qualitatively. This section will explain the instruments that were used for data collection, the procedure for how the instruments were implemented, methods of data analysis, and ethical considerations regarding this research study.

Data Collection

Participants. The participants in this research study are two teachers and their 30 first-year students in their English for Academic Purposes (EAP) classes at Soka University, Japan. The two classes are exclusively offered to students who are registered to the Global Citizenship Program (GCP) of the university. The GCP program is a special program that was established to teach various skills including language skills and critical thinking skills so that graduates of the program can be competitive in international society (Soka University, 2013). For entrance to this program, students are selected based on their performance in essays in English and Japanese, and interviews. Regarding the two classes that will be observed, 15 students are in each class. The two EAP classes are different in the learners' proficiency levels. The two teachers who are teaching the EAP courses are both native speakers of English.

Classroom observations. Information on what cognitive levels of questions teachers ask and how learners respond to different cognitive levels of questions were gained through classroom observations. Classroom observations are effective in closely examining what is occurring in real classroom practice (Dörnyei, 2008). Classroom observation was used in a variety of studies that examined teachers' questioning behavior in language classrooms and learners' responses to questions (Brock, 1986; Fakeye, 2004; Farooq, 2007; Long & Sato, 1983, as cited in Natthanan, 2009). Questions asked by the teachers, and how learners responded to teachers' questions were the focus of classroom observations and were recorded.

The length of classroom observations was based on previous studies. The number of lessons observed in previous studies range from five to 10 lessons (Gaies, 1983; Natthanan, 2009; Shomoossi, 2004). For example, in a study conducted by Natthanan (2009), two English teachers participated in classroom observation surveys, and their two classes with 52 students in total were observed. The period of classroom observation varies from two weeks to two months (Gaies, 1997; Shomoossi, 2004; Natthanan, 2009). In this study, the two classes were observed for a two-week period of time. For each teacher, because each class meets twice a week, eight lessons were observed in the two weeks.

Classroom practices were videotaped. Video recording is useful when there are multiple participants speaking in an observation because researchers can identify which speaker is speaking at a particular timing. In addition, video recording can enable researchers to observe non-verbal aspects of interaction such as facial expressions, eye movements, and gestures (Dörnyei, 2007). Therefore, the use of video recording was employed in this study. Videotaped observations were conducted with two cameras. One camera was set at the front of the classroom to mainly record how participants reacted to questions. The other camera was set at the back of the classroom as a back-up camera.

Questionnaire. A questionnaire was conducted in order to ask the reasons for not responding to teacher questions. Questionnaires have been used in various studies addressing teachers' questioning behavior and learners' responses (Shomoossi, 2004; Natthanan, 2009). In this study, a questionnaire developed by Natthanan (2009) was employed because the questionnaire could help participants clarify the reasons for non-responses to teachers' questions (see Appendix B). In this questionnaire, the reasons for non-response are classified into three categories. The first category of reasons is designed to explain non-response when learners understood the question but could not answer. The second category regarded reasons for non-responses when learners understood the question but did not answer. Reasons that explain non-responses when learners did not understand the question and could not answer questions fall into

the last category. After selecting a category that can match the participants' reason for their non-response, the participants were presented with detailed reasons for their non-response within the category they have chosen (see Appendix B). Although the participants are allowed to choose more than one answer from the detailed reasons, the participants are required to choose only one category for their non-response.

However, due to inconsistency in translation from English to Japanese, the meaning of Category 1 was changed to when learners understood the teacher's question and knew the answer, but could not answer. Therefore, there was no category for learners to select when learners understood teachers' questions, but could not answer because they did not know the answer. As a result, during the survey, learners arbitrarily chose a category and selected "others" and wrote "I did not know the answer," or learners chose "I did not have required knowledge" under Category 1. Through interviewing participants, the investigator confirmed that learners meant that they did not know the answer to the question in either case. Therefore, in the presentation of the questionnaire results, an extra category was added so that the learners' rationale that learners understood the teacher's question but did not know the answers was reflected.

In this questionnaire survey, participants were asked to indicate their reason for non-response to 10 questions that were asked in class but were not followed with learners' response. In order to provide such a list of questions, immediately after each classroom observation, 10 questions which did not elicit any response from learners were selected and were presented in the questionnaire. After this process, the questionnaire was distributed to participants via email, and the participants were asked to complete the questionnaire by the next class. This is an online questionnaire, and an online-software for conducting a questionnaire is used in designing the questionnaire. Via email, the link to the questionnaire was sent to the participants. Due to the high motivation of participants, high return rates of questionnaires were expected. In this questionnaire, participants are asked to select one or more reasons for their non-response to the deliberately selected ten questions. However, participants were not allowed to choose multiple reasons across

different categories of reasons. The questionnaire was administered in Japanese so that participants of differing proficiency levels could understand each questionnaire item.

The questionnaire was translated into Japanese. The original questionnaire was developed in Thai, and the questionnaire was translated into English by Natthanan (2009). After the English version of the questionnaire was translated by the investigator, a Japanese professor specializing in English grammar revised the translated questionnaire. Based on the advice of the professor, the translation was revised to modify several points so that the meaning of the original questionnaire was maintained in Japanese.

Pilot study. In order to ensure the translated version of the questionnaire was understandable, the questionnaire was piloted with a group of students who were compatible with the participants of this study. The participants of the pilot study were 14 second year students who enrolled in an English class for the Global Citizenship Program. After gaining the permission of the instructor of the class, the investigator provided an explanation of this study, the purposes and procedure of the classroom observation, and the questionnaire to the 14 students before the beginning of the class. Then informed consent forms were distributed to the students, and they signed the forms if they agreed to participate in the pilot study. In addition, the students provided their e-mail address to the investigator after their consensus on the pilot study because the questionnaire was designed an online questionnaire. In this study, all of the students signed the consensus form (see Appendix A).After the classroom observation, questions that were followed by non-response were chosen from all the questions asked in class. Then those questions were added on the questionnaire. Soon after the class, the link to the questionnaire was attached to an e-mail and sent to the participants' computers. The questionnaire was administered in Japanese in order to ensure the participants' comprehension of the questionnaire items. Out of the 14 students, nine students completed the questionnaire and provided feedback on the questionnaire.

Based on the feedback of the participants, the questionnaire was slightly modified. In the questionnaire, for each question that was followed with non-response, participants are asked to

choose one out of three broad categories of reasons why they did not or could not answer the particular question. The three categories are presented below.

Category 1: You understood the teacher's question and knew the answer, but could not answer.

Category 2: You understood the teacher's questions and knew the answer, but did not answer.

Category 3: You did not understand the teacher's question, and could not answer.

The Japanese wording of the first two categories was changed because the difference between those categories turned out to be unclear. Therefore, the wording was changed so that the difference between "did not" and "could not" would be clear for participants. In addition, a statement was added to the detailed reasons for the second category. The statement is that "You understood the teacher's question and knew the answer, but did not answer because you thought another classmate would answer the question." The original reasons for Category 2 included reasons for non-response due to personal reasons such as shyness, and teacher factors such as an expectation for teachers to provide answers. However, none of the detailed reasons under the category were related to other classmates. When a teacher asks a question to the entire class, waiting for other classmates to answer can be a reasonable reason regarding not responding to the question. Therefore, the statement was added to the questionnaire.

The pilot study revealed a need for another framework for categorizing questions in addition to the use of Bloom's Taxonomy (1956). During the classroom observation, the teacher asked multiple follow-up questions after a question so that the teacher can help students to answer the original question. For example, the students did not respond after the teacher asked a comprehension level question. Then the teacher asked the same question in a different way, maintaining the meaning and the cognitive level of the original question. In this case, the assumption that the teacher asked two different comprehension level questions will not accurately

present the teacher's questioning behavior. Thus, teachers often ask follow-up questions for a single question as the study by Natthanan (2009) shows. Therefore, a framework for follow-up questions will be added.

Focused group interviews. Focused group interviews were conducted with four groups of three to four students. The composition of groups of student participants was based on their responses to teachers' questions in class (Natthanan, 2009). Therefore, a few students who were always able to answer questions, those who did not respond to questions, and those who tried to respond but failed to answer were selected. Although usually one to two hours are preferred in focus group interviews, the length of interview with each group was approximately 30 minutes due to the relatively smaller number of interview questions. In addition, interviews were used to enhance data from the questionnaire rather than gaining completely new information.

In the focused group interviews, questions regarding the views of learners on teachers' questioning behavior and their explanations on their response behavior were asked (see Appendix C). Interview questions were adopted from Natthanan's study (2009) so that the interview questions can cover the participants' experiences and backgrounds, values and opinions, feelings, and knowledge (Dörnyei, 2007). For example, the first question asks the participants' backgrounds related to English language that they have received. In other questions, interviewees were asked to explain their views on their own behavior regarding question-answer interactions with their teacher. For example, the participants were asked the reasons why they were able to or not able to answer questions. Another question, for instance, asks whether the participants think that teachers' questions can help learning or not. At the end of the interview, participants were provided with an opportunity to leave their final comments. However, through classroom observations and questionnaire surveys, other interview questions emerged. Therefore, extra interview questions were added later after classroom observations and questionnaire surveys.

Regarding the grouping of learners, some changes were added during the interview process. Due to participants' schedules, some of the interviews were conducted individually. In

addition, there were cases where both active and not active learners were mixed in the same groups.

Individual interviews. In addition to the focused group interviews with several students, individual interviews with the two teachers were conducted. In the interviews, the teacher participants were asked approximately ten questions based on interview questions developed by Ketabi, Zabihi, and Ghadiri (2012) and Natthanan (2009) who studied teacher views on critical thinking skills in language teaching (see Appendix D). The questions are regarding their views on critical thinking skills, their incorporation of the skills in language classrooms, and their own questioning behavior in classrooms. The last question asks the participants whether they would like to mention any additional information which was not discussed during their interviews (Dörnyei, 2007). However, in the process of classroom observations and classification of teachers' questions, other interview questions emerged. Accordingly, additional interview questions were asked.

In both focus group interviews with students and individual interviews with teachers, interviews were recorded. According to the literature, the idea of recording interviews is usually used when the interview is a semi-structured interview or an unstructured interview. Recording is recommended because note-taking alone cannot capture the details and subtle personal meaning of those who are involved in interviews (Dörnyei, 2007). However, in general, participants will not be comfortable with recording, and therefore there is a need to discuss this matter with interviewees before interviews (Dörnyei, 2007). For these reasons, all the interviewees were informed in advanced that they would be recorded. Interviews were conducted after those interviewees consented to recording.

Data Analysis

Data gained through classroom observations were analyzed quantitatively. Event sampling was used for classroom observations in this study. Event sampling is often used when the focus is on a particular event in classroom practice such as teachers' questions (Dörnyei, 2007). In event

sampling, the investigator tallies the number of times a target action occurs (Dörnyei, 2007). In this research, the investigator entered such a mark when the teachers asked questions. Then observed classroom interactions were transcribed based on a partial transcription technique. Therefore, interactions that included teachers' questions and learners' responses were transcribed. After transcribing, the transcribed data were coded. Questions were categorized into the six categories of Bloom's Taxonomy (1956). Questions that could not be classified into any of the categories were grouped together as classroom management questions. The frequencies of question types asked by the teachers were calculated as percentages. In addition, the number of non-responses to each category of questions was calculated.

Data gained through the questionnaire were analyzed with the use of descriptive statistics. After each classroom observation, ten questions that students did not or could not answer were extracted. Because classroom observations were conducted eight times, approximately 80 questions followed by non-responses were chosen. The questions were classified based on Bloom's Taxonomy (1956). Then the types of reasons students chose for their non-responses to different types of questions were analyzed by counting the number of reasons for each non-response (Natthanan, 2009). Then, each category of reasons was tallied for frequency.

Data obtained from interviews were also analyzed qualitatively. Recorded interviews were first transcribed so that the audio data were converted into written data (Dörnyei, 2007). In other studies such as Natthanan (2009), interview data were first transcribed. The partial transcribing method was used in classroom observations. Recorded interviews were fully transcribed. After transcription, the transcripts were coded (Dörnyei, 2007). Coding is a process in which data are grouped into different categories. Thus comments from interviewees gained through interviews were categorized and labelled. Then grouped data were used to explain quantitative data. For example, data gained through focus group interviews were used to further explain the results of the questionnaire regarding students' rationales for not responding to particular questions asked their teachers.

Ethical Considerations

In this study, ethical issues are considered in order to deal with data collected through questionnaire surveys, classroom observations, and interviews with teachers and students. Before collecting data, all the participants were asked to sign an informed consent form (Appendix A) for confidentiality purposes and obtain the approval of the participants in this study. The consent form describes the research purpose, the research procedure, and how the data will be stored. In addition, the informed consent form informed the participants that their participation was voluntary and they were able to stop their participation at any time without punishment. Participants participated in this study only after they agreed to the information written on the informed consent form. In addition, all the participants were informed that all the data gained through this research will be stored in a password-protected computer so that only the investigator can access the data. There are no physical, psychological, social, or privacy risks related to the research. Student identification numbers or other identifying characteristics are not relevant nor necessary to the research. Data were organized based on unlinkable sequential numbering so that individuals cannot not be traced.

Results

Classroom Observation

All the questions were categorized into six cognitive levels based on Bloom's Taxonomy (1956), and the frequency of each type of question was calculated. Types of questions asked in Class A are summarized in Table 4. In Class A, the teacher asked 359 questions in total for the four classroom observations. Among 359 questions, knowledge questions accounted for 22%. The frequencies of comprehension questions and application questions were 31.1% and 13.6%, respectively. Therefore, as to the questions that were asked during the four observations, lower-order questions were the majority (67.3%). However, analysis questions were asked 95 times, accounting for 26.4% of all the questions asked. In fact, analysis questions were the third most frequent type of questions following comprehension questions and knowledge questions. With analysis, synthesis, and evaluation questions combined together, higher-order questions accounted for over 30% of all the questions.

All the questions were categorized as either initial questions or follow-up questions. In total, 75 questions were initial questions, and the other 284 questions were follow-up questions that were asked in a sequence of questions, following initial questions. In the initial questions, lower-order questions were approximately 85% of all the questions asked, and the remaining questions were higher-order questions. However, in the follow-up questions, the frequencies of higher-order questions increased to over 35%. Especially, analysis questions were more likely to be the focus of the follow-up questions rather than of the initial questions. In contrast, knowledge questions which accounted for 44% and was the most frequent type of questions decreased to 16% in frequency. Therefore, the teacher seemed to focus on higher-order questions during the follow-up questions.

Table 4

Frequencies of Different cognitive levels of questions asked in Class A

	All questions	Initial questions	Follow-up questions
Knowledge	79 (22%)	33(44%)	46 (16.2%)
Comprehension	114 (31.7%)	21(28%)	93 (32.7%)
Application	49 (13.6%)	9(12%)	40 (14%)
Analysis	95 (26.4%)	8(10%)	87 (30.6%)
Synthesis	6 (1.7%)	4(5%)	2(0.7%)
Evaluation	16 (4.5%)	0 (0%)	16(5.6%)
Total	359	75	284

Questions asked in Class B were also categorized into six different cognitive levels based on Bloom's Taxonomy (1956). All the questions asked in Class B are summarized in Table 5. In Class B, the teacher asked 162 questions. In this class, the most frequent types of questions (72.3%) were lower-order questions that required of students relatively less challenging cognitive skills. Of the lower-order questions, knowledge questions were asked 40 times (24.7%), and comprehension questions were asked 45 times (27.8%). Application questions were asked 32 times (19.8%). However, the second most frequent question type was the analysis level questions (24.1%). The frequency of evaluation questions was 3.7%, and the teacher did not ask a synthesis question during the four observations.

The 162 questions were divided into initial questions and follow-up questions that were asked in a sequence starting from one initial question. As a result, initial questions were asked 39 times, and 123 questions were follow-up questions. Most of the questions were lower-order questions in both initial questions (76.9%) and follow-up questions (70.3%). Although lower-order questions accounted for over 70% in both initial and follow-up questions, the frequency for each question level changed. For example, the frequency of knowledge questions dropped to

20.3% in follow-up questions from the frequency of 38.5% in the initial questions. Another change was found in application questions. In the initial questions, the frequency of application questions was 12.8%, but the frequency rose to 22% in the follow-up questions. Therefore, the teacher seemed to increase the cognitive levels of his questions during the follow-up questions.

Table 5

Frequencies of Different cognitive levels of questions asked in Class B

	All questions	Initial questions	Follow-up questions
Knowledge	40(24.7%)	15(38.5%)	25(20.3%)
Comprehension	45(27.8%)	10(25.6%)	35(28.4%)
Application	32(19.8%)	5(12.8%)	27(22%)
Analysis	39(24.1%)	7(17.9%)	32(26%)
Synthesis	0(0%)	0(0%)	0(0%)
Evaluation	6(3.7%)	2(5.1%)	4(3.2%)
Total	162	39	123

Questionnaire Results

In this study, learners' reasons for not responding to teachers' questions were investigated through conducting a questionnaire that was used in Natthanan (2009). In the questionnaire, learners were asked to select one category regarding their rationale for not responding to teachers' questions. The questionnaire was composed of three broad categories that explain learners' rationale for non-responses after teachers' questions. Category 1 concerned when learners understood the teacher's questions, but could not answer. Category 2 regarded when learners understood the teacher's question and knew the answer, but did not answer. Category 3 focused on when learners did not understand the teacher's question, and learners, therefore, could not answer the question. After choosing one category, learners selected one or more underlying

reasons for each category. However, due to inconsistency in translation from English to Japanese, the meaning of Category 1 was changed to when learners understood the teacher's question and knew the answer, but could not answer. Therefore, there was no category for learners to select when learners understood teachers' questions, but could not answer because they did not know the answer. As a result, during the survey, learners arbitrarily chose a category and selected "others" and wrote "I did not know the answer," or learners chose "I did not have required knowledge" under Category 1. Through interviewing participants, the investigator confirmed that learners meant that they did not know the answer to the question in either case. Therefore, in the presentation of the questionnaire results, an extra category was added so that the learners' rationale that learners understood the teacher's question but did not know the answers was reflected. The added category was labeled as Category 4. The frequencies for each category and learners' detailed rationales for non-response under each category were summarized in Tables. Table 6 summarizes the frequency of each category. According to Table 6, the most frequently chosen category was Category 1 regarding when learners understood the teachers' question and knew the answer, but could not answer (40.8%). The second most frequent category was Category 2 (20.5%). Therefore, learners' silence occurred even though learners understood the teachers' questions and knew the answers in most cases (61.3%). Category 4 regarding when learners did not know the answer accounted for 26% of all the reasons. The least frequent category was Category 3 when learners did not understand the teacher's question, and learners, therefore, could not answer the question.

Table 6

Learner's Reasons for Non-Response by Category

Categories of non-response after teacher questions	Students' Reponses to Questionnaire			
	Class A		Class B	
	Number	Percentage	Number	Percentage
Category 1: Students understood the question and knew the answer, but could not answer.	207	40.8%	52	29%
Category 2: Students understood the question and knew the answer, but did not answer.	104	20.5%	60	33.5%
Category 3: Students did not understand the question, and could not answer.	64	12.6%	23	12.8%
Students understood the teacher's questions, but did not know the answers	132	26%	44	24.5%
Total	507		179	

Table 7 summarizes the frequencies of each reason for non-response in Category 1. In both Class A and Class B, when learners could not answer despite the fact that they understood the teachers' questions and knew the answers, the most common reason for silence was because learners could not put their ideas into words (40% in Class A and 51.9% in Class B). According to Table 8, the second most frequent reason for silence was due to vocabulary related reasons (23.6% in Class A and 30.7% in Class B). These reasons were frequently found in both classes. On the other hand, the frequency of the reason related to teachers' waiting time differed. The frequency for this reason was 22.2% in Class A. In contrast, the reason was selected only once in the survey in Class B. As to "others," students from both Class A and Class B often stated that

they were not confident with their answers, and therefore could not answer. This was the common reason for "others", stated by 5 students. Another reason for "others" is that learners could not find answers that were prepared in their notebooks.

Table 7

Learners' Reasons for Non-Response: Category 1

Category 1	Students' Reponses to Questionnaire			
	Class A		Class B	
	Number	Percentage	Number	Percentage
You could not put ideas into words.	83	40%	27	51.9%
You did not know the vocabulary.	49	23.6%	16	30.7%
You did not know the grammar.	18	8.6%	4	7%
The teacher did not give sufficient time to formulate answer.	46	22.2%	1	1.9%
Others	11	5.3%	4	7.6%
Total	207		52	

Table 8 presents frequencies for detailed reasons for non-response under Category 2. Table 8 shows that for both classes, the most frequent reason for silence was because learners' waited for other students to answer teachers' questions. The frequency was 57.7% for Class A and 45% for Class B. Due to the high frequency of this particular reason, in interviews, underlying reasons for waiting for other classmates to answer were examined, and the results are presented in the interview results section. Another relatively frequent reason for non-response was related to the fear of mistakes in class. This reason was selected 27 times (26%) in Class A and 11 times (18.3%) in Class B. Fear of mistakes was the second most frequent reason for both classes. Detailed reasons for being apprehensive about mistakes were investigated in the interviews. Some

learners selected "others" and specified reasons. For Class A, two students mentioned that they decided not to answer because other students seemed to start speaking. Another reason was that learners were anxious whether their answers were correct or not. In Class B, "others" was chosen three times, and in all three cases, learners specified that they did not answer because they wanted to provide other learners with an opportunity to speak in class.

Table 8

Learners' Reasons for Non-Response: Category 2

Category 2	Students' Reponses to Questionnaire			
	Class A		Class B	
	Number	Percentage	Number	Percentage
You waited for other students to answer the question	60	57.7%	27	45%
You waited for answers from the teacher.	0	0%	4	6.7%
You were afraid of making mistakes.	27	26%	11	18.3%
You did not like to talk in class.	0	0%	1	1.7%
You did not like speaking English.	0	0%	1	1.7%
You did not want to answer the questions which required your opinions.	4	3.8%	2	3.3%
The teacher's questions were not interesting.	0	0%	1	1.7%
The teacher's questions were too easy and not challenging.	3	2.8%	5	8.3%
You are shy.	3	2.8%	0	0%
You are having difficulty concentrating in class or occupied with a personal problem.	2	2.3%	9	15%
Others	5	4.8%	3	5%
Total	104		60	

The frequencies of different reasons for non-response under Category 3 are presented in Table 9. This category was the least frequent category, chosen by approximately 12% of students from each class. Within Category 3, the reason "You could not catch up with the pace of the teacher's question" was predominant for Class A (45.3%). The frequency of this reason in Class B

was 26%. The difficulty and complexity of class content seems to be also a relatively common source for why students did not understand teachers' questions, and therefore, could not answer. According to the questionnaire results, the frequencies for the reason due to the complexity and difficulty of class content were 28.1% for Class A and 26% for Class B. Some students stated various reasons for silence due to not understanding teachers' questions in "others." For example, students did not understand teachers' questions because the learners could not understand the reading, and therefore could not understand the teacher's question which was based on the content of the reading. Another reason was that students did not know what types of answers were expected for the particular questions.

Table 9

Learners' Reasons for Non-Response: Category 3

Category 3	Students' Reponses to Questionnaire			
	Class A		Class B	
	Number	Percentage	Number	Percentage
You could not keep up with the pace of the teacher's question.	29	45.3%	6	26%
You did not hear the teacher's question.	12	18.7%	3	13%
The content was too difficult and complex.	18	28.1%	6	26%
The teacher used vocabulary that was too difficult.	3	4.6%	1	4.3%
The teacher used grammar that was too difficult.	1	1.5%	0	0%
The teacher asked the question only once.	1	1.5%	1	4.3%
The teacher asked the question in a very soft voice.	0	0%	0	0%
Other (Please specify.)	15	23.4%	6	26%
Total	64		23	

Some learners did not respond to teachers' questions because they did not know the answer. Due to the inconsistency issue in the translation process, detailed rationales for not knowing answers were not collected in this questionnaire. Therefore, in order to gain a deeper understanding of why learners did not know answers, learners' perspectives on this category of non-response were investigated in the interviews with the learners. The results of the interviews are presented in the next section.

Teacher Interviews

Semi-structured interviews were conducted with the teachers from Class A and Class B in order to gain a deeper understanding of the cognitive levels of questions asked in class, and to know the teachers' views on the role of questions in class in relation to critical thinking skills. Both interviews were voice-recorded with the teachers' consent. The interview with Teacher A lasted for 10 minutes, and the length of the interview with Teacher B was approximately 30 minutes. In the interviews, the following questions were asked. Some additional questions emerged and asked based on each teacher's patterns of questioning in classroom.

1. Knowledge and comprehension questions were the dominant question types. Why and what is the purpose of asking knowledge and comprehension questions?
2. Compared with other studies, you asked more higher-order questions. Why do you ask higher order questions or what is the purpose of asking higher-order questions?
3. Do you think questioning is an effective means of enhancing learners' critical thinking skills?
4. Do you consciously think of critical thinking skills when you ask questions?

The role of lower-order questions. For both teachers, the purpose of asking lower-order questions, especially, knowledge and comprehension questions was to check learners' understanding. For example, Teacher B stated that the teacher asked a number of knowledge and comprehension questions in order to know what the learners could find or understand from assigned reading or listening materials. However, for Teacher A, comprehension check also plays a role as a base for higher-order questions.

Teacher A stated regarding knowledge and comprehension questions,

> "It's a sort of checking their understanding and to set the stage for more higher-order questions. I can't ask synthesis or evaluation questions until first I need to check their understanding. Make sure they understand, once they understand, then you can quickly move on to higher-order questions. So when you are working on questions, you always

> have to start with lower-order questions, and keep continuing up. So the goal is always to push the students to higher-order questions. Um…unfortunately a lot of teachers stop at just checking understanding and don't move on, but we like to push and challenge students to push them up to higher-order questions."Do I need quotation marks here?

As to the role of lower-order questions, both teachers seemed to ask lower-order question to check learners' understanding of class materials. However, Teacher A also used lower-order questions as a basis for asking higher-order questions. According to Teacher A, asking higher-order questions seemed to be another focus of asking lower-questions, not stopping with just checking learners' comprehension.

The role of higher-order questions. The purpose of asking higher-order questions was investigated in the interview. The perspectives of the role or purpose of asking higher-order questions were slightly different between Teacher A and Teacher B. For Teacher A, higher-order questions were asked so that learners could deepen their understanding of class content. Teacher A stated that

> I mean, if you, it's important for students to be able to explain what they know, not just know the answer to Question 3 is A, but why. If they are able to explain that clearly to a partner, to a group, or to the instructor, then probably they really do understand it. But oftentimes students may get correct answers, but they really may not understand why or have a deeper understanding of the content or the topic.

Although Teacher B agrees with the idea of deepening learners' understanding, Teacher B views higher-order questions as a foundation for activities in the next stage. The teacher asks a number of higher-order questions, especially analysis questions, in a class activity that serves as a pre-writing activity. In Teacher B's perspective, higher-order thinking is more likely to be exercised in writing. Regarding the role of higher-order questions in relation to writing, the teacher stated

> I am trying to also put in some content that I know they are going to have to work with in another stage, try to ask these questions, verbally they start thinking about how they are going to use this, but a lot of it is gonna happen in their writing, it is not gonna be verbalized, so I am gonna see most of their results "can they analysis, and can they synthesize and can they evaluate?" in their writing.

Although both teachers' views on higher-order questions are similar in that both teachers ask higher-order questions to deepen learners' understanding, there was a slight difference based on the intention with which the teachers asked those questions. Teacher A asked higher-order questions so that learners can deepen their understanding beyond textbooks. However, for Teacher B, higher-order questions served as a transition to writing activities. For example, Teacher B said 'a lot of higher-level thinking skills are actually in their written responses more than in their verbalized forms.' Although the teacher said that he asks questions keeping critical thinking in the back of his mind, higher-order questions were asked because learners were oftentimes engaged in activities that were designed to transition learners to a writing assignment that was going to be assigned in the next couple of weeks during the observation period.

Questioning as a means to enhance learners' critical thinking skills. In the interviews with Teacher A and Teacher B, the teachers provided their views on questioning as a means of developing learners' critical thinking skills. Teacher A regards questioning as effective for developing learners' critical thinking skills stating "I think so, I think the students have become much better at answering those questions, and I think they are asking each other those questions, umm. Yes." Teacher B also recognizes the importance of questioning as a way of enhancing critical thinking skills of learners. Teacher B, however, believes that questioning is an effective tool for enhancing critical thinking skills only for those who participate actively. According to teacher B,

> It is an effective means to enhance critical thinking skills for those who participate, yes, but um…for monitoring it is only good for those participate, but those who don't

> participate, I don't know. If I see critical thinking in their writing, then I can see whether they are really able to employ the skills.

Therefore, according to Teacher B, higher-order thinking is exercised more in writing than verbal question-answer interactions between teachers and learners. The teacher mentioned the difficulty of assessing learners' critical thinking skills in verbal interactions.

> That's not visually clear to me what they are doing or getting ideas….again I see it more in their writing if they get it or don't, so if their writing is all at the knowledge and comprehension level, then I know they are not engaged in higher-order critical thinking skills.

Thus, the two teachers held different views on the role of questioning in relation to the developing of critical thinking skills. Teacher A believes that questioning can enhance learners' critical thinking skills, and the teacher has started to see progress in learners' answers to the teacher's questions. On the other hand, Teacher B views questioning as an effective tool for training learners' critical thinking skills only when learners participate.

Higher-order questions and students' proficiency levels. In this study, both teachers asked a large number of higher-order questions, and the frequency for higher-order questions for both classes was over 30%. Especially, Teacher A asked almost double the number of questions compared with Teacher B. During the four observations of Class A, there were sequences of questions that were composed of consecutive analysis level questions. The large number of questions asked and the sequences of higher-order questions were unique to Class A. Learners from Class A who were advanced level proficiency students were able to answer those higher-order questions, though the learners seemed to be struggling. Therefore, Teacher A was asked if he would change cognitive levels of questions depending on learners' language proficiency. According to the interview with Teacher A, critical thinking skills and language proficiency are separate issues. Asking higher-order questions in lower-level proficiency class should be encouraged.

> So, you have to be aware of that as far as level, you know, just because students are at a lower proficiency level doesn't mean they cannot improve their critical thinking skills. But again, that's the job of the teachers to craft these, craft an activity so that you can scaffold it so that the learners will be able to use their critical thinking skills in class. So it's content and linguistic complexity that need to be level appropriate, it's not critical thinking skills being level appropriate.

Although Teacher A asked a number of higher-order questions, especially analysis questions, the tendency for asking higher-order questions was not influenced by the level of the learners observed in this study. The content was probably level appropriate because the learners were advanced level students in terms of their English proficiency, and the students were capable of dealing with complex linguistic features. The questions asked seemed to be challenging for some learners because of both the academic content and the cognitively demanding questions combined.

Although Teacher B was not asked if he would change his questioning behavior, the teacher provided his views on higher-order questions and learners' levels during the interview. For Teacher B, the level of learners seemed to have influenced the teacher when he asked higher-order questions. Teacher B stated as follows.

> I can push them more than other classes, if you were to come to a lower level class, you would see a lot of knowledge questions and comprehension questions, and not so much of the higher-level as well. I mean they have the ability to respond to those higher-level questions in English, and that's a lot of it.

Based on Teacher B's view on critical thinking skills and learners' language proficiency, the frequency of higher-order questions could be possibly influenced by the linguistic ability of learners. Then the teacher explained that the frequency of analysis questions could be due to the nature of the activities in which the learners were engaged in during the four observations. The teacher in the interview stated that "these are pre-writing, so just warming-up for their writing, in

this case. So these activities are connected to their writing assignment where I hope the students are using critical thinking skills."

Thus, Teacher A and Teacher B held different perspectives on the relationship between the cognitive levels of questions and learners' language level. According to Teacher A's perspective, higher-order questions should be encouraged even in lower proficiency English classes. Critical thinking is a separate issue from proficiency issues. Therefore, higher-order thinking should be promoted, ensuring that the content matter is level appropriate. In contrast, Teacher B seemed to change his questioning behavior depending on learners' proficiency levels.

Interviews with Learners

Interviews with learners were conducted in order to gain their perspectives on teachers' questioning behavior and to deepen the understanding of the questionnaire results. From Class A, 12 students participated in interviews. Ten students were interviewed in groups, and the other two students were interviewed individually due to their schedules. The language of the interviews was English. Group interviews lasted an average of 30 minutes, and individual interviews lasted for approximately 20 minutes. As for Class B, five learners participated in interviews. The interviews with the learners from Class B were all individual interviews due to their schedules. All the interviews with students from Class B were conducted in Japanese because the participants requested Japanese interviews. Their proficiency level was intermediate to upper-intermediate. Each interview was approximately 20 minutes. In the following sections of interview results, assumed names are used in order to keep the learners' information confidential.

Learners' opinions on the Efficacy of teachers' questions on learning. Interview data indicated that learners value teachers' questions as an effective means to contribute to their learning. The most common view on teachers' questions was that learners can check their own understanding of class content. For example, a learner stated that "By answering questions, I can check if I really understand or not. Even if, even if I think I understand, sometimes I realize I don't understand if I cannot answer" (Ken, Class A). As this opinion shows, questions can play a

role as a means of comprehension check. Another common perspective on the role of teacher' questioning was that learners can deepen their understanding, and questions stimulate their academic interest. A student from Class A said "I can go beyond our textbook, so questions are good" (Saki, Class A). In addition, a student from Class B commented in Japanese "questions stimulate my academic interest when the teacher asks questions from various perspectives" (Hirohiko, Class B). Some students recognized questions as stimulation for more interactions in English. Two students valued teachers' questions as a tool for training their thinking skills. One of the students stated "I think, probably, the teacher is trying to train our critical thinking skills" (Ken, Class A). Thus, questions in class were positively viewed by learners.

As learners provided positive views on teachers' questions, learners were also asked to provide opinions on what types of questions are effective for them. Some students stated that questions that ask students to define terms or concepts were effective for confirming their understanding of class materials covered. Those questions are knowledge or comprehension questions. For other students, questions that required learners to use cognitive skills were considered effective. For example, according to a student from Class A, "I like, this is difficult, but I like questions if we need to think and putting different information together" (Mayumi, Class A). The skill of combining different pieces of information together is the synthesis skill of Bloom's Taxonomy. Learners from Class A and Class B commonly found questions that can be categorized as higher-order questions as difficult questions. Specifically, learners stated that questions were difficult when those questions required reasoning, justifying, or inferring. Nevertheless, some learners seemed to value those higher-order questions that they regard as challenging. For example, a student from Class A said

> Difficult questions, when I have to say 'why' or think deeply, I think those questions are difficult. I can't answer sometimes, but I think Teacher A (the teachers' name) should not stop asking difficult questions because these are important for us (Tomoko, Class A)

Learners' views on the efficacy of teachers' questioning seemed to be similar among learners from both Class A and Class B. Both learners consider questions effective for their learning. Learners said that questioning was effective to check their own comprehension levels and deepening understanding. In addition, a few learners from both classes explained that they viewed their teachers' questions as effective for the development of their critical thinking skills.

Linguistics challenges. According to the questionnaire results, a number of learners experienced difficulty in forming ideas and verbalizing them in English. Learners provided detailed explanations on what caused them trouble in forming ideas and verbalizing the ideas in English, and suggested what could help them formulate their ideas in English. For learners, vocabulary and grammar were problematic. For example, some students did not know what English words to use in order to describe what they were thinking. In addition, finding grammatical structures that could convey their meanings was another challenge for learners. Concerning the issue of verbalizing ideas in English, interviewed learners proposed two suggestions in addition to their own efforts. One is teachers' feedback. A student said, "Even if my English was a mistake, if my teacher repeats the same thing in correct English, I know the way to say the idea in English"(Yuri, Class B). Several students also suggested the same idea of rephrasing what learners said in a grammatically correct way. Another suggestion was the use of pair and group work, which was suggested by 11 of the 17 students who were interviewed. A student said "if we have group work, we can have more preparation time to say my answer in English. Also, I can learn how to say from other classmates" (Yuji, Class A)

Learners from both classes mentioned linguistic challenges regarding the difficulty in putting their ideas in English. Learners from both classes explained that they struggled when they did not know appropriate vocabulary or grammar structures which could describe their ideas. As a suggestion for improving their answering behavior, the use of group work was frequently suggested. In addition, recasting as corrective feedback was also commonly mentioned by learners from both classes.

Reasons for not knowing answers. According to the questionnaire, one of the reasons for not responding to teachers' questions was because learners did not know the answers. In the interviews with students, students explained in what situations they did not know the answers. Several learners explained that they could not answer their teachers' questions when the content of an assigned reading was difficult and they had attended class without understanding the content. In addition, three students mentioned time-management. According to a student who explained how time-management caused learners problems, "We have a lot of homework, and time-management is my problem. Sometimes I do not have time to complete my homework or understand the textbook well. If I do not understand the text, teachers' questions are difficult (Rikako, Class B)". Another reason was because learners did not know what is expected as an answer to a question by their teacher. For example, a student said, "I sometimes did not know what I have to say, examples or reasons" (Yuji, Class A). In addition to those questions, learners seemed to have experienced situations where the students simply did not know knowledge necessary to answer because the teachers simply asked a question to know whether any learners knew a term. A student said, "When the teacher asked 'who is Al Gore?' I just simply did not know who Al Gore was. That's why I thought I did not have the knowledge required by the teacher and I answered so in the questionnaire" (Mika, Class B).

After clarifying why learners thought they did not possess necessary knowledge or did not know answers, the interviewees were asked to offer their opinions on what their teachers could do. Several students from both Class A and Class B suggested that teachers could provide a brief background of the content of the academic reading in advance so that learners can smoothly understand the content that is going to be covered in the next class. Another suggestion was concerning preparation for class and time-management on the learners' part. Similar comments regarding learners' preparation issues were marked by five learners. One of the students stated, "I think students need to prepare for class. This is a problem on the part of learners rather than my teacher"(Yoko, Class A).

Learners from both classes provided similar reasons regarding why they did not know the answers to teachers' questions. One reason was regarding time-management. Learners did not offer a suggestion for teachers because they considered that learners should be responsible for time-management. Another common reason was that the content dealt with was difficult, and they could not fully understand the content.

Reasons for waiting for other classmates to answer teachers' questions. In the interviews, learners provided an explanation on what caused them to wait for other classmates to answer teachers' questions. Among students from Class A who waited for other classmates, the most common opinion was that they waited for further information because they thought the teacher would provide hints after other learners answered. In addition, some Class A learners mentioned anxiety and lack of confidence. All the interviewed students from Class B said they had waited for other students to answer sometimes. One student stated:

> I think we have different types of people in my class: those who are good at English, who have a lot of knowledge, and who are good at researching class content. Even if I have some ideas, I think waiting for other people to say their answers is better because those people are better at expressing ideas in English than I am. I can express ideas in very simple English, but not academic English which others are better at than I am. I can speak in small groups, but I don't feel like speaking in front of many people in class. For me, pair work or group work is helpful (Hirohiko, Class B)

In contrast to this student, the four other students from Class B waited for other students for a different reason. The students commonly explained that they sometimes purposefully refrained from talking in order to create opportunities for other students to speak and practice English. A student said

> Of course, I sometimes wait when I did not finish my homework, but when I wait for other people. That is usually to create opportunities for other students to talk. Some students are quiet and sometimes do not talk at all in class. Those students talk in small

> groups, like groups of three or four people. Sometimes, I want the teacher to call on those students so that they can speak in class (Yukie, Class B)

Eight students from Class A sometimes waited for other students. Their reasons for waiting for other classmates to answer teachers' questions were categorized into two groups. One common reason was concerning learners' educational background. A student said,

> I think, in other Japanese classes, we don't raise our hands. If students raise their hands, their answers are always correct. In other words, only those who have the correct answers can raise hands and answer. I got used to this English style class, but I still care about how other people react (Tomomi, Class A)

The other frequently stated reason was because some learners waited for the teacher's hints that he provides after students answered. A student commented,

> I waited for other students to have more hints for answering questions. For example, when a student answered, and the answer was wrong or incomplete, the teacher often gives hints. Then answering the question becomes easier, so I wait for more information (Maiko, Class A).

Reasons for waiting for other classmates to answer teachers' questions were different between those learners from Class A and Class B. Among learners from Class A, waiting for future information was a common reason for waiting for other students to answer the teacher's questions. In addition, lack of confidence and anxiety were another reasons. However, a unique opinion was provided by learners from Class B: providing opportunities for other learners to speak English in class.

Reasons for being afraid of making mistakes. Students provided their opinions on what caused them to be anxious about making mistakes because being afraid of making mistakes was another source of silence after teachers' questions, according to the questionnaire results. Some of the interviewees said they were not afraid of making mistakes, but those students understood why other students felt anxious about making mistakes. A student said, "I am not afraid of making

mistakes now because I got used to the style of the class. However, I used to be afraid of making mistakes because I cared about how other students might think of me if my answer was incorrect"(Kazuyo, Class A).Another student said "In my case, the experience of speaking in class helped me overcome my fear of making mistakes"(Toshie, Class A). However, there were students who were concerned with the consequences of making mistakes, associating sharing incorrect answers with their inferiority. A student said,

> I know I do not have to be afraid of making mistakes, but I am worried. Especially, I am afraid that probably other classmates will think I am a fool or I cannot catch up with the class. I am so sensitive to how I may look when my answer is not correct. I am not confident. I can speak in English with a few people, but not with all the classmates (Harue, Class A).

During the interviews, four students mentioned their lack of confidence as a cause of being anxious about incorrect answers. Another reason for being afraid of making mistakes was related to Japanese classrooms. A student stated "In Japanese classes I am taking, I feel my answers should always be correct if I raise my hand and answer"(Maki, Class A). Similarly to this student, several other students also mentioned the influence of classes conducted in Japanese.

In the interviews with learners, the learners offered some ideas regarding how teachers can help students overcome the fear of making mistakes. A few students mentioned how teachers react to learners' mistakes. According to one student, "Instead of saying 'no', more positive comments to our mistakes may reduce our fear"(Koji, Class A). Another student said, "My Japanese teacher of English said that we do not have to be afraid of making mistakes because making mistakes is a process every learner goes through. After that, I started to feel much less anxious" (Rikako, Class B). In addition to those comments, the use of group work or pair work was a major commonality found in several learners' opinions in the interviews. According to one student from Class A,

> Group work is helpful for me because I can feel that it is not only me who does not understand. Also, I can think sharing answers is acceptable even if answers are wrong. In

> a group, my anxiety level is low. After sharing ideas, saying my opinions in a class discussion is usually easier for me (Mami, Class A).

Overall, learners from both classes were similar in their opinions on the efficacy of teachers' questions, reasons for not responding to teachers' questions, and suggestions to improve question-response interactions between teachers and learners. The interviewed learners commonly considered teachers' questions as effective to check their comprehension, deepen their understanding, and develop their critical thinking skills. As to the learners' rationales for non-response after questions, a frequently stated reason for the difficulty regarding putting ideas into words in English concerned the difficulty in choosing appropriate vocabulary and grammar structures to describe opinions in English. The difficulty of the content of class materials also seemed to have contributed to learners' non-response. This led learners to a situation where they could not know answers to their teachers' questions despite understanding their teachers' questions. Being anxious about making mistakes was another common reason for non-response. The lack of confidence and anxiety related to how other classmates would react to mistakes seemed to underlie the fear of making mistakes. To overcome those difficulties, the students unanimously mentioned the use of group work. Another common suggestion offered during the interviews was the use of recasting after learners provided their opinions. Those opinions and suggestions were commonly provided from learners from both classes. A clear difference was found in the reasons for waiting for other students to answer the teachers' questions. Although many of the students from Class A waited for other students in order to gain hints to answer the teachers' questions, many of the learners from Class B waited for other students in order to provide opportunities for other classmates to speak in class.

Discussions

In this study, cognitive levels of questions asked by teachers based on Bloom's Taxonomy (1956) and learners' reasons for not responding to teachers' questions were investigated.

Although the majority of the questions asked during the classroom observations were lower-order questions, the frequency of higher-order questions was higher than that found in other studies. All the questions asked were categorized into initial questions and follow-up questions. When initial questions and follow-up questions were compared, lower-order questions tended to be focused on in initial questions in both teaches' classes. In contrast, higher-order questions, especially analysis questions, seemed to be the focus of follow-up questions. As to the learners' rationales for not responding to questions, some of the questionnaire results showed similarities to other studies. In this study, in most cases where silence occurred after teachers' questions, learners did not or could not answer for some reason even though the learners understood the teachers' questions and knew the answers. The most common reasons for non-response in this study were difficulties in putting ideas in English, waiting for other classmates to answer the teachers' questions, being afraid of making mistakes, and not knowing answers to teacher questions.

During the teacher interviews, both teachers provided similar opinions on the roles of lower-order and higher-order questions. However, the two teachers interviewed hold different views on the relationship between higher-level critical thinking and learners' proficiency level, and the efficacy of questioning in terms of developing learners' critical thinking skills. Teacher A claims that higher-order questions should be encouraged even in lower proficiency classes, but Teacher B believes that the cognitive levels of questions are influenced by learners' proficiency levels. In addition, although Teacher A views questioning as an effective means to enhance learners' critical thinking skills, Teacher B thinks questioning is effective only for those who actively participate question-response interactions. In learners' interviews, learners' from both classes provided similar opinions. Learners' think questions are effective for their language learning and developing their thinking skills. Learners also provided in-depth explanation on their questionnaire results, which were similar regardless of the classes they belong to. However, the reasons for waiting for other students to answer were different between the two classes. Major suggestions that learners offered to improve question-response interactions between teachers and

learners were the use of group work, the use of more wait time, the use of feedback, and simplifying initial questions or providing examples.

In this study, lower-order questions such as knowledge questions and comprehension questions were more frequently asked than higher-order counterparts. The tendency regarding the dominance of lower-order questions was the same as findings for other studies (Natthanan, 2009; McNeil, 2010; Shen &Yodkhumlue, 2013). Another study investigated types of questions in nine Chinese universities. Of all the questions asked during the investigation, 87% of the questions were categorized as lower cognitive questions. In contrast, higher cognitive questions that required skills to compare and contrast, identify cause and effect, and persuade were rare in the study by Tan (2007). Those lower-order thinking questions were asked to check the comprehension of the text (Tan, 2007). In addition, Cotton (1983, as cited in Tan, 2007) reviewed 37 studies concerning classroom questioning. According to the review, the average frequency of lower cognitive questions was 60%. Compared with the average, the frequency of lower-order questions asked in this study was lower.

Possibly, the higher frequency of knowledge questions and comprehension questions is because of the purpose of asking those questions. One of the purposes of asking questions to students in class is to check students' comprehension (Seker & Komur, 2008). For example, when a teacher presented a text to students, asking questions can enable teachers to check if the learners have understood the text or not (Seker & Komur, 2008). In fact, this purpose of asking questions to check comprehension check was mentioned in the interviews with the teachers. Both teachers answered that they asked lower-order questions to check understanding. In addition, lower-order questions can be asked as part of a scaffolding process toward higher-order thinking. Lower-order questions can prepare learners for higher-order questions (Wilen, 2001). The teachers in the current study mentioned the role of lower-order questions. One of the teachers claimed that higher-order questions should be asked after asking lower-order questions to check learners'

comprehension. The other teacher said that he increased cognitive levels of questions he asked when learners could answer cognitively lower-order questions successfully.

However, in comparison with other studies (Natthanan, 2009; Tan, 2007; Shoomossi, 2004; Cotton, 1983, as cited in Tan, 2007), the teachers observed in this study more frequently asked cognitively demanding questions that can be classified in the higher-order categories of Bloom's Taxonomy (1956). In general, classroom interactions are characterized by display questions (Fakeye, 2003; Brock, 1986) or questions that just ask for the recalling of information (Hamblen, 1984). A significant explanation for the higher occurrence of higher-order questions was the teachers' intent to develop learners' ability to think in depth. Teacher A, in his interviews, answered that the purpose of asking cognitively demanding questions was to help learners deepen their understanding. According to the teacher, "oftentimes students may get correct answers, but they really may not understand why or have a deeper understanding of the content or the topic." In order to learn, thinking critically is necessary for students (Paul, 2010). When subjects are studied, there are some fundamental concepts that are the core of the subjects. For students to internalize their understanding of such concepts, the learners need to be able to say what the meaning of the concept is in their own words (Paul, 2010). This corresponds to what Teacher A said in relation to the purpose of asking higher-order questions. The teacher said in the interview, "it's important for students to be able to explain what they know. If they are able to explain that clearly to a partner or group or the instructor, then probably they really do understand it." Then students need to provide examples related to the concept (Paul, 2010). This level of thinking of finding examples was what was frequently observed in both classes. For example, when the class was focusing on how to use the passive voice, the following interaction occurred:

T: Give me an example when we don't use a by phrase because the by phrase is too obvious?

S: we are taught English

T: by?

S: by teachers.

T: Another example?

S: diagnosed?

T: not a question, give me a sentence.

S: patients….

T: think about it, I will come back to yours (your sentence).

T: give me another example? One more when the by phrase is obvious.

S: Rice is grown.

T: why do we not use the by phrase that obvious?

S: because rice is grown by farmers.

T: yes, that's obvious. Ok?

S: a patient is diagnosed cancer.

T: Yes, so the by phrase will be?

S: a doctor.

T: Of course. Ok? Understand? Yes. No?

As the transcript from the observation shows, in this study, merely checking whether learners understood class contents was not the sole purpose of asking questions. Rather than a simple comprehension check, lower-order questions such as knowledge and comprehension questions seemed to be asked as a basis for deeper understanding of the learning materials. For example, Teacher A usually asked lower-order questions in his initial questions, and then asked higher-order questions in follow-up questions. Considering this pattern of questioning, the intention was learners' deeper understanding beyond a surface level understanding. Some researchers emphasize the importance higher-order thinking. For example, recalling information should not be a goal itself. Instead, the recalling of information (lower-order questions) should be a means to guide learners to the goal of accomplishing critical thinking skills (Wilen, 2001).In fact, if students are engaged in just rote memorization of information, the students are likely to forget what they have learned as they are learning, and rarely internalize their learning(Paul,

2010). On the other hand, in the long run, cognitively higher level questions are more important because those questions can result in the development of thinking skills that are related to the skills of problem-solving and decision-making (Wilen, 2001). In fact, in the interviews with learners, some of the learners from both classes said their teachers' questions were effective for deepening their understanding of the text. One of the students stated "I can go beyond the textbook" when teachers' questions were higher-order questions.

Although lower-order questions were the majority of the questions asked in this study, higher-order questions were also frequent. Teacher A said he usually asks lower-order questions first, and pushes students up to higher-order questions. Teacher B said he sometimes starts with lower-order questions, and gradually increases the cognitive levels of questions he asks. At the same time, Teacher B also said that there are cases where he starts with a higher-order question to see if learners can answer, and then lowers the levels of questions so that learners can answer the initial higher-order question. Thus, teachers were asking mixture of different levels of questions in this study. Although higher-order questions are important, combining them with lower-order questions was also important. Knowledge and comprehension questions are important because all higher-order thinking is based on knowledge (Paul, 2005). Therefore, as the two teachers in this study practice, not stopping with just checking learners' understanding of facts should be encouraged.

Another explanation of the high frequency of higher-order questions may be that the teachers were quite aware of critical thinking in their instruction. Such a high awareness may be due to their individual teaching beliefs. However, at the same time, the institutional support of the development of critical thinking skills of the university may be also an influential factor in terms of teachers' awareness of critical thinking skills. Developing learners' critical thinking skills has been part of the discourse of language instructors at the university (Stroupe, 2006). Consequently, the development of critical thinking skills have been explicitly addressed in the language course syllabi of English classes at various levels and English classes offered by the Language Center in

the collaboration with various departments. A quick search for online course syllabi led to over 100 English courses that include critical thinking as a goal. For example, the abilities to compare and contrast and classify are explicitly stated as goals on the syllabus of an English course for students majoring in bioinformatics (Soka University, 2014). Another example is an English course targeting literature major students who exhibit a range of proficiency levels. One of the course objectives is enhancing learners' ability to analyze the content of reading and videos and relate the content to non-violent actions (Soka University, 2014). Thus, the university context may have created an environment which enhances teachers' awareness of the integration of critical thinking skills into their lessons.

Not all questions can effectively elicit learners' responses. If original questions failed to elicit responses from learners, using different questioning techniques will be necessary in order to help learners answer the original questions. Such questioning techniques include asking the same question in a more understandable and less complex manner and repeating the same question (Natthanan, 2009).According to a study which examined more than a thousand questions, 53% of questions that were asked in the study stood alone. The rest of the questions were part of a sequence of questions that were asked to help learners to respond to original questions by teachers (Wragg and Brown, 2001, as cited in Vogler, 2005). Therefore, follow-up questions are often used in order to promote learners' responses to teachers' questions.

When follow-up questions are examined, both teachers in the current study seemed to have used a questioning technique for stimulating learners' ideas (Wu, 1993, as cited in Natthanan, 2009). Table 10 shows example questioning techniques based on Wu's Taxonomy (1993, as cited in Natthanan, 2009) that covers various types of questioning techniques that are used to encourage learners to respond to teachers' questions. According to Wu's Taxonomy, questioning techniques are grouped into five different categories. The categories are repetition, rephrasing, decomposition, simplification and probing (Natthanan, 2009). Repetition is a questioning technique when teachers hope that students are able to respond to the question when the question is asked again.

Table 10

Taxonomy of Questioning techniques based on Wu's Taxonomy (1993) as cited in Natthanan (2009)

Techniques	Examples
Rephrasing	Teacher (T): Can you tell me the advantages of this solution?
	Students (Ss): [Silence]
	T: What are the benefits of this solution?
Simplification	T: How was your weekend?
	Ss: [Silence]
	T: Did you do anything special on the weekend?
Repetition	T: How can you solve this problem?
	Ss: [Silence]
	T: How can you solve this problem?
Decomposition	T: Can you tell me about the English class?
	Ss: [Silence]
	T: How much homework do you have every week?
	Ss: We have a lot of homework.
	T: How about exams?
Probing	T: Do you think the solution is effective?
	Ss: Yes.
	T: Yes? Why do you think so?

Rephrasing is when an original question is asked in a different manner without changing the meaning of the original question. By reforming the same question differently, the question can be easier for students to understand when the original question was followed with non-response on the part of students. The next questioning technique is simplification. Simplification is similar to rephrasing in that simplification is a technique of reforming the original question. However, when

this technique is used, the content of the original question is simplified so that the question can be easier and is more likely to be answered. The fourth technique is called decomposition. This is a strategy used by teachers in an attempt to divide an original question into different parts so that students can answer. The last technique is called probing. This is used for eliciting further information from learners (Wu, 1993, as cited in Natthanan, 2009). Although teachers used questioning techniques such as repetitions and rephrasing when learners did not respond, probing seemed to have been used most frequently by the two teachers observed. According to Teacher B, probing was used in order to help learners to complete answers when their answers were only partly correct. Another reason for using probing was to provide opportunities for more students to answer in class so that they could participate in interactions.

In the questionnaire, being afraid of making mistakes and waiting for other students to answer teachers' questions were found to be a source of silence after teachers' questions. These learners' affective state was further delineated in their interviews. According to several learners, their experience in other Japanese classes seemed to have contributed to their decision to be silent. For example, students mentioned culture in Japanese classrooms. This questionnaire and interview results can be explained by studies that investigated university level Japanese EFL learners. For example, Japanese students are often reluctant to speak because of the fear of mistakes. This anxiety can often cause teachers to abandon speaking activities (Gorsuch, 2000; Gorsuch, 2001). In addition, because of the culture of collectivism which is a main feature of Japanese culture (Kavanagh, 2012), learners feel uncomfortable if they attract attention from other learners by actively speaking up or voluntarily answering questions (Tanaka, 2004).From the interviews with students, some students seemed to be conscious of how other classmates might react to incorrect answers, though those students said they did not feel disrespectful to other students when other students said incorrect answers. Probably this sensitivity to the reaction of learners may be related to the concept of face. A study conducted at Chinese universities (Tan,

2007) reported that learners were conscious of saving their face, and silence sometimes occurred after teachers' questions. Thus cultural factors can influence classroom interactions.

With regard to the efficacy of teachers' questions, participants responded positively. As to teacher interviews, Teacher A viewed questioning as an effective tool for developing learners' critical thinking skills. Teacher B also considered questioning as an effective means for enhancing learners' critical thinking skills, but the teacher viewed such an advantage of asking questions was limited to those who actively participate in question-answer interactions. Similarly, learners recognized the effectiveness of teachers' questions for developing thinking skills in their interviews. Although the teachers did not mention their intention to integrate critical thinking skills in the observed classes, a few learners associated their teachers' questions with the training of critical thinking skills or thinking skills. As teachers and learners recognize in this study, asking questions can be a means through which critical thinking skills can be developed (Seker & Kumor, 2008). According to learner interviews, both lower-order and higher-order questions seem important for learning. For example, some learners explained that when their teachers asked learners to define or explain a concept, the learners can check whether or not they really understand the concept. Other learners answered that explaining reasons are difficult, but also effective because the learners can deepen their understanding. In addition to the contribution of questions to critical thinking skills, asking questions can be effective for practicing a target language (Seker & Kumor, 2008), and facilitating classroom interactions in English (Brown, 2007). During the learner interviews, some learners answered that by answering teachers' questions, learners can practice communicating in English. Thus, questioning by teachers can possibly be a tool for encouraging interactions in a second language and helping learners develop their critical thinking skills.

Recasting, as suggested by several learners during the interviews, can help learners to put their thoughts into words in English. Recasting is a technique of corrective feedback. In recasting, teachers rephrase what learners have said by changing components such as vocabulary and

grammar structures so that the rephrased utterance can repeat what the learners have said in a grammatically correct manner (Ellis, 2005; Lightbown & Spada, 2007). The transcripts of the classroom observations of this study included a number of cases where recasting was utilized after their utterances. In this study, the teachers did not interrupt learners in an attempt to finish learners' utterances when they stopped not knowing how to continue in English. Rather, the teachers employed different actions. One is waiting for the learners to finish their sentences. In most cases, both teachers asked other students to help the learners in trouble. For example, both teachers often said, "Does anyone want to help him/ her?" Then if the learner's answer is linguistically inaccurate, sometimes the teachers use the technique of recast. Although study results are mixed with regard to what types of corrective feedback can result in more learner uptakes, in general, explicit feedback techniques are more likely to be noticed by learners (Ellis, 2005). A possible explanation for the learners' preference for recasting is because recasting is less likely to disrupt communication flow (Ellis, 2005). Another explanation may be that the learners in this study were relatively conscious of how they could put their ideas in a linguistically accurate manner.

As a suggestion to improve question-answer interactions between teachers and learners, the use of group work was the suggestion from the majority of the learner interviewees in this study. Those learners suggested that teachers' use of group work was helpful for them in various ways. One significant benefit of the use of group work that learners suggested was that learners were able to speak with lower anxiety. Group work involves two or more students, and what is commonly called pair work is a group of two students (Brown, 2007). Therefore, although some learners mentioned the use of pair work in the interviews, in this section, group work is discussed. Lowering anxiety as a benefit of group work corresponds with the literature related to the use of group work in second language classrooms. Group work can lower anxiety in classroom interactions (Davis, 1997; Larsen-freeman & Anderson, 2011). Group work can offer students a sense of security in communicating because individual students does not stand out on public display which learners may view as rejection or criticism (Brown, 2007). In addition, Brown

(2007), in his observations of classes, saw reserved students transform into active speakers during group work. This type of behavioral change in quiet learners was reported in an interview in this study. One student from Class A said that even quiet students who did not talk in a whole class discussion were able to talk and offer their opinions in small groups.

Limitations

Several limitations can be pointed out regarding this study. The generalizability of the research results might be a limitation. Study results may differ depending on characteristics of learners and teachers being observed. In this study, both of the teachers were highly aware of critical thinking skills, and asked questions that required higher-order thinking skills on the learners' part. One of the teacher claimed that critical thinking skills should be incorporated in language classes regardless of learners' proficiency level as long as content being dealt with is level appropriate. Although the other teacher said that he asked higher-order questions because the learners' were capable of handling those questions, the fact is that the teacher consciously asked higher-order questions. However, if teachers are not familiar with critical thinking skills or learners are lower proficiency levels, different results will be seen. Nevertheless, this study results can be applicable to other intermediate to advanced level students. In addition, these results may be able to serve as an example of how higher-order questions can be asked.

Another limitation is regarding the difficulty of assessing learners' critical thinking skills in verbal interactions. Teacher B mentioned the difficulty of assessing whether learners exercised critical thinking skills or not in verbal communication, and the teacher claimed that usually he can see whether learners have achieved higher-order thinking in their writing. Some researchers claim that the cognitive levels of teachers' questions are influential on the cognitive levels of learners' responses to those teacher questions. However, the question of whether learners actually answered teachers' questions at the same cognitive level as the teachers' questions remains (Gall, 1970). Therefore, assessing whether learners' answers are what initial questions required may be a challenging task. Nevertheless, teachers may be able to encourage learners to practice their

thinking skills through questioning in classroom by asking appropriate follow-up questions so that learners can answer at a higher-order thinking level.

Educational Implications

Asking higher-order questions should be encouraged throughout various proficiency levels. Integration of the development of critical thinking skills should be encouraged throughout all levels of the curriculum rather than including such skills only in advanced level language classes (Stroupe, 2006). Some teachers confuse learners' cognitive skills and language proficiency (McNeil, 2010). However, higher-order critical thinking should be encouraged even in lower-proficiency level English classes. What should be level appropriate is the content that is going to be dealt with because the level of content can influence the level of linguistic ability that is necessary. For example, as Teacher A answered in his interview, the content that is going to be dealt with should be level appropriate. The levels of vocabulary and sentence structure may change when the levels of content change. In addition, two learners claimed that teachers should not stop asking questions that require learners to think deeply even though those questions were difficult for the learners.

In reality, although incorporating critical thinking in lower proficiency English classes is important, the difficulty of implementing such higher-order thinking skills may be a concern of language teachers. Although both the teachers and learners hold positive views on higher-order questions in classrooms in this study, whether such higher-order thinking should be incorporated in lower-level classes may be questioned. In fact, the participants in this study are generally highly motivated groups of learners, and the learners were proficient enough to deal with academic content in English. Therefore, the generalizability of this study may be limited.

However, through using level appropriate materials, critical thinking skills should be encouraged in even basic level English classes. Typically critical thinking skills are reserved for learners who have attained higher levels of English proficiency (Stroupe, 2013).Nevertheless, the

teaching of critical thinking skills is possible in classes other than advanced level language classes. Stroupe (2013) suggested a set of example questions at different cognitive levels of Bloom's Taxonomy which is level appropriate for lower-level classes. For example, at the analysis level, teachers can ask what is similar or different comparing a learner's favorite movie and his/ her partner's favorite one. At the synthesis level, teachers can ask learners to investigate the movie's director and main characters' life stories reporting back to a group by synthesizing information from multiple sources. In addition, learners can practice thinking at the evaluation level if teachers ask learners to explain why the learners like particular movies (Stoupe, 2013). In those example questions, the topic is a movie, which is simple and easy for even lower proficiency learners to talk about. Although the material dealt with is simple, the question examples by Stroupe (2013) indicate that teachers can still incorporate higher-order thinking skills in lower proficiency classes. When the content and the linguistic complexity are under the control of lower proficiency students, asking higher-order questions is possible. In order for teachers to ask questions at various cognitive levels of Bloom's Taxonomy, there is a set of sample question forms (Appendix E).

Mixing questions at different cognitive levels may be also important. In terms of developing critical thinking skills among learners, higher-order questions are important, but at the same time, lower-order questions are also important, as some students stated in their interviews. Questions at all levels are important, depending on the objectives for which they are intended (Wilen, 1991).In the short run, asking lower-order questions can be of greater importance because lower-order questions are helpful for teachers in diagnosing to what extent their learners are prepared to move up to higher-level understanding. If learners lack the essential knowledge upon which further opinions are based, their discussions may not be reflective and meaningful. What students learn by responding to lower-order questions forms the basis for answering higher-order questions that lead to learning at higher-order levels (Wilen, 2001). Higher-order questions are important. However, at the same time, knowledge and comprehension questions are important because all higher-order thinking is based on knowledge and principles (Paul, 2005).In addition to

the importance of asking different levels of questions in terms of critical thinking skills, mixing lower-order and higher-order questions in a lesson may be able to help learners to achieve higher-order thinking. Some learners, in their interviews, suggested that answering a difficult question would be easier to answer if their teacher simplified their initial questions. This suggestion seems to correspond with the idea that lower-order questions are the means to exercising higher-order thinking (Wilen, 2001).

Providing sufficient time to think is another factor that influences learners' responding behavior in language classes. In the questionnaire, a relatively large number of learners chose "the teacher did not give sufficient time to think" when the learners could not answer even though the learners understood the teachers' questions. In the interviews, several students from Class A mentioned the teacher's waiting time, and explained that more time to think would be helpful. This may imply that a longer time to think is necessary, especially when learners are asked to exercise cognitively more demanding thinking skills. Therefore, the time that teachers provide so that learners can think may play an important role in question-answer interactions in language classrooms.

As the learners' opinions show, wait time is an influential factor in the language classroom. Teachers provide a certain amount of time between an initial question and the next action such as calling on a learner or rephrasing the initial questions (Goodwin et al, 1983). Such pauses are called wait time or halting time. Wait time forms a significant part of the questioning skills of teachers (Ma, 2008). Wait time can influence what type of responses can be elicited from learners. In Tan's study (2007) the researcher claimed that the disparity between learners' ideas and their English competence was found especially when cognitively demanding questions were concerned. The researcher argued that although the participant learners were young adults who were able to think in depth, their English competence to express what they wanted to express was limited, relating this disparity to insufficient wait time by some teachers (Tan, 2007). Research on questioning and learners' information process shows that at least three seconds are necessary in

order to understand the question, consider necessary information, construct answers, and start responding. Studies show that a wait time of three to five seconds (Goodwin et al, 1983) or two to four seconds (Ma, 2008) positively contributed to learners' responses. Inappropriately long wait times, for example a 20-second wait time, is, however, detrimental to learner interactions in classrooms (Goodwin et al, 1983). The levels of teachers' questions are one of the factors on which the length of wait time is dependent (Goodwin et al, 1983). For recitations of previously learned knowledge, wait time is not needed in most cases (Wilen& Clegg, 1986). In general, relatively shorter wait-time such as only three seconds is needed for lower-level questions. In contrast, five seconds or more may be necessary for learners to answer higher-level questions. For more complex higher-level questions, sometimes a few minutes of wait-time can be provided for learners to consider a question and note their ideas (Goodwin et al, 1983).

As suggested by learners, the use of group work can benefit learners in a variety of ways. For example, as learners suggested in their interviews in this study, using group work can help learners enhance their participation in question-answer interaction more actively. In this study, the teachers used group work during observations, and continue to use group work may benefit learners. As researchers (Brown, 2007; Davis, 2001; Larsen-Freeman & Anderson, 2011) claim, the use of group work can lower their anxiety, and enable learners to talk more actively in English. These positive effects of group work were emphasized in the learner interviews. According to the learner interview results, group work can function as a factor for lowering anxiety and therefore encourage learners' participation. In addition, the use of group work can provide more sufficient thinking time during which learners can construct their ideas. Providing thinking time may be a significant benefit of using group work because thinking time and the difficulty of putting thoughts into English were major concerns that learners described in their interviews. Learning from each other was mentioned in learner interviews, and this may also be a benefit of group work that can encourage learners to participate in question-answer interaction between teachers and learners.

Conclusion

In conclusion, this study investigated the cognitive levels of questions asked by teachers and learners' responses to teachers' questions in a Japanese university EFL context. Data on question-response interactions between teachers and learners, learners' reasons for not responding to teachers' questions, and teachers' and learners' views on questioning in classrooms were gathered through classroom observations, a questionnaire and interviews with teachers and learners. In this study, learners were first year university EFL learners and two American teachers. All the data gained in this study were analyzed both quantitatively and qualitatively. Based on data gained through classroom observations, the cognitive levels of questions asked by teachers were classified based on Bloom's Taxonomy (1956). The result indicated that both teachers asked higher-order questions relatively more frequently than teachers observed in other studies, though lower-order questions were more frequent. The higher frequency of higher-order questions can be due to the teachers' awareness of critical thinking skill. When all the questions asked were divided into initial questions and follow-up questions, higher-order questions tended to be the focus in the follow-up questions. In addition, learners' rationales for not responding to particular questions were investigated. The questionnaire results showed that in most cases learners understood teachers' questions, but the learners were silent for various reasons. A common reason was that putting ideas into thoughts was challenging. Another reason was that learners waited for other students to answer teachers' questions. Being afraid of making mistakes was also a frequently chosen reason for non-response after teachers' questions. During the teacher interviews, teachers' explained their own questioning behavior. Asking lower-order questions was for the purpose of checking learners' comprehension for both teachers. However, the teachers held differing views on questioning. One teacher viewed questioning as an effective tool for developing critical thinking skills only for those who participate actively. In addition, the teacher explained that frequent higher-order questions in class were due to the level of the learners. In contrast, the other teacher viewed questioning as a tool for developing critical thinking skills in learners, and claimed

that asking higher-order questions should be encouraged regardless of learners' proficiency levels as long as the material dealt with is level appropriate. In interviews with learners, learners explained their perspectives on teachers' questions and their own responding behavior. According to the interview results, students from both classes viewed teachers' questions as effective for their learning, and some of the learners mentioned that they believed that their teachers were helping them to enhance their critical thinking skills or logical thinking. As to reasons for not responding to teachers' questions, putting their ideas into English was a challenge. In addition, learners clarified that they were conscious of other learners and teachers being afraid of making mistakes, and this is partly because of their experiences in other Japanese classes. In order to improve their responding behavior, the learners offered some suggestions to teachers. One was the use of wait time. Another suggestion was repeating what learners said in a grammatically correct manner so that the learners can learn how to express their ideas in English. In addition, the majority of the learner interviewees suggested the use of group work to enhance learners' answering behavior and generate more active interactions. Although there are some limitations regarding this study, the study may help teachers to effectively utilize their questions in language classrooms with the purpose of developing learners' critical thinking skills. If language teachers incorporate critical thinking skills in their questioning behavior with level-appropriate materials, such questioning behavior may contribute to the development of critical thinking skills of learners.

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Appendix A

Informed Consent Form for Student Interviews

Soka University

Title of Project: Teachers' Questions and Learners' Critical Thinking Skills in a Japanese University EFL Context

Principal Investigator: Maho Sano, Graduate Student
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080-1424-1775; maho.tesol@gmail.com

Advisor: Dr. Richmond Stroupe
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The purpose of this research study is to explore questions asked by teachers and learners' critical thinking skills in English classrooms. This research study was designed to examine cognitive levels of teachers' questions and how learners of different proficiency levels respond to questions. The results of the research can potentially be used in order to help language teachers to more effectively utilize questions that can develop critical thinking skills of learners.

You will be asked to answer several questions on your responses to teachers' questions in an individual interview with the investigator. It will take about 25 minutes to complete the interview. The interview will be conducted in a place agreed by you and the investigator. Yourparticipation in this research is confidential. The data will be stored and secured in a password-protected file. In the event of a publication or presentation resulting from the research, no personally identifiable information will be shared.

Please contact Maho Sano at 080-1424-1775, or Dr. Richmond Stroupe, with questions or concerns about this study. Your decision to be in this research is voluntary. You can stop at any time without any penalty. You do not have to answer any questions you do not want to answer. If you would like to receive a copy of the results of this research, please feel free to contact Maho Sano, Graduate Student.

If you agree to take part in this research study and the information outlined above, please sign your name and indicate the date below. You will be given a copy of this form for your records.

_____ _____
Participant signature Date

_____ _____
Investigator signature Date

Informed Consent Form for Teacher Interviews

Soka University

Title of Project: Teachers' Questions and Learners' Critical Thinking Skills in a Japanese University EFL Context

Principal Investigator: Maho Sano, Graduate Student
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The purpose of this research study is to explore questions asked by teachers and learners' critical thinking skills in English classrooms. This research study was designed to examine cognitive levels of teachers' questions and how learners of different proficiency levels respond to questions. The results of the research can potentially be used in order to help language teachers to more effectively utilize questions that can develop critical thinking skills of learners.

You will be asked to answer several questions on your questioning behavior in class in an individual interview with the investigator. It will take about 20 to 25 minutes to complete the interview. The interview will be voice recorded. Your participation in this research is confidential. The data will be stored and secured in a password-protected file. In the event of a publication or presentation resulting from the research, no personally identifiable information will be shared.

Please contact Maho Sano at 080-1424-1775, or Dr. Richmond Stroupe, with questions or concerns about this study. Your decision to be in this research is voluntary. You can stop at any time without any penalty. You do not have to answer any questions you do not want to answer. If you would like to receive a copy of the results of this research, please feel free to contact Maho Sano, Graduate Student.

If you agree to take part in this research study and the information outlined above, please sign your name and indicate the date below. You will be given a copy of this form for your records.

_____ _____
Participant signature Date

_____ _____
Investigator signature Date

Informed Consent Form for Classroom Observations

Soka University

Title of Project: Teachers' Questions and Learners' Critical Thinking Skills in a Japanese University EFL Context

Principal Investigator:Maho Sano, Graduate Student
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Advisor: Dr. Richmond Stroupe
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The purpose of this research study is to explore questions asked by teachers and learners' critical thinking skills in English classrooms. This research study was designed to examine cognitive levels of teachers' questions and how learners of different proficiency levels respond to questions. The results of the research can potentially be used in order to help language teachers to more effectively utilize questions that can develop critical thinking skills of learners.

You will be videotaped for four classes. Your questioning behavior will be observed. The focus is not students themselves, but the question-answer process. Your participation in this research is confidential. The data will be stored and secured in a password-protected file. In the event of a publication or presentation resulting from the research, no personally identifiable information will be shared.

Please contact Maho Sano at 080-1424-1775 or Dr. Stroupe, with questions or concerns about this study. Your decision to be in this research is voluntary. You can stop at any time without any penalty. If you would like to receive a copy of the results of this research, please feel free to contact Maho Sano, Graduate Student.

If you agree to take part in this research study and the information outlined above, please sign your name and indicate the date below. You will be given a copy of this form for your records.

_____ _____

Participant signature Date

_____ _____

Investigator signature Date

Informed Consent Form for Questionnaires

Soka University

Title of Project: Teachers' Questions and Learners' Critical Thinking Skills in a Japanese University EFL Context

Principal Investigator: Maho Sano, Graduate Student
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The purpose of this research study is to explore questions asked by teachers and learners' critical thinking skills in English classrooms. This research study was designed to examine cognitive levels of teachers' questions and how learners of different proficiency levels respond to questions. The results of the research can potentially be used in order to help language teachers to more effectively utilize questions that can develop critical thinking skills of learners.

You will be asked to answer a questionnaire by choosing or describing reasons why you did not respond to particular questions in four classes. You will be asked to answer the questionnaire after every class for two weeks. It will take about 10 minutes to complete each survey. Your participation in this research is confidential. The data will be stored and secured in a password-protected file. In the event of a publication or presentation resulting from the research, no personally identifiable information will be shared.

Please contact Maho Sano at 080-1424-1775, or Dr. Richmond Stroupe, with questions or concerns about this study. Your decision to be in this research is voluntary. You can stop at any time without any penalty. You do not have to answer any questions you do not want to answer. If you would like to receive a copy of the results of this research, please feel free to contact Maho Sano, Graduate Student.

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_____ _____
Participant Signature Date

_____ _____
Investigator signature Date

調査同意書

創価大学

題目: **Teachers' Questions and Learners' Critical Thinking Skills in a Japanese University EFL Context**

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この研究は、英語のクラスにおける教師の質問と学習者のクリティカル・シンキングの技能を調査することを目的としています。この研究では、教師の質問の認知的レベルと、異なる英語習熟度の学生がどのように教師の質問に返答するかが調べられます。研究結果は、学習者のクリティカル・シンキング技能を発達させられるような質問を教師がより効果的に行える手助けに使用されます。

授業観察のデータに基づき、先生の質問に答えない理由に関するアンケートに答えていただきます。合計 4 回アンケートを回答していただきますが、1 回のアンケートにつき 10 問の設問に答えていただきます。回答時間の目安は 10 分です。この研究への参加は守秘されます。データはパスワードで保護されたファイルに保管・保護されます。研究から出版や発表がある場合には、個人が特定される情報は一切公開されません。

この研究に関する質問や懸念につきましては、佐野真歩（080-1424-1775）あるいは Richmond Stroupe 教授までご連絡ください。この研究への参加決定はあなたの意志に基づくものです。何の罰則なく何時にも研究への参加をやめることができます。答えたくない質問には答えなくてもかまいません。この研究結果の複製受け取りを希望の場合は、佐野真歩（大学院生）までお気軽にご連絡ください。

この研究に参加すること、また上記の事項に合意していただける場合、氏名と日付、メールアドレスの記入をお願いいたします。

_____
参加者氏名

_____ _____
メールアドレス 日付

_____ _____
調査者氏名 日付

調査同意書

創価大学

題目: **Teachers' Questions and Learners' Critical Thinking Skills in a Japanese University EFL Context**

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授業観察のデータに基づき、インタビューに協力していただきます。このインタビューでは 5~10 問の質問に答えていただきます。インタビューは 20 分から 30 分です。この研究への参加は守秘されます。データはパスワードで保護されたファイルに保管・保護されます。研究から出版や発表がある場合には、個人が特定される情報は一切公開されません。

この研究に関する質問や懸念につきましては、佐野真歩（080-1424-1775）あるいは Richmond Stroupe 教授までご連絡ください。この研究への参加決定はあなたの意志に基づくものです。何の罰則なく何時にも研究への参加をやめることができます。答えたくない質問には答えなくてもかまいません。この研究結果の複製受け取りを希望の場合は、佐野真歩（大学院生）までお気軽にご連絡ください。

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_____
参加者氏名

_____ _____
メールアドレス 日付

_____ _____
調査者氏名 日付

Appendix B

Questionnaire

Reasons Why Students Did Not Respond to the Teachers' Questions
1. You understood the teacher's questions, but you could not answer them because…
You could not put ideas into words.
You did not know the vocabulary.
You did not know the grammar.
You did not have the knowledge required by the questions.
The teacher did not give sufficient time to formulate answer.
Other (Please specify.)
2. You understood the teacher's questions and knew the answers, but you did not answer them because…
You waited for answers from the teacher.
You were afraid of making mistakes.
You did not like to talk in class.
You did not like speaking English.
You did not want to answer the questions which required your opinions.
The teacher's questions were not interesting.
The teacher's questions were too easy and not challenging.
You are shy.
You are having difficulty concentrating in class or occupied with a personal problem.
Other (Please specify.)
3. You did not understand the teacher's questions and could not answer because…
You could not keep up with the pace of the teacher's question.
You did not hear the teacher's question.
The content was too difficult and complex.
The teacher used vocabulary that was too difficult.
The teacher used grammar that was too difficult.
The teacher asked the question only once.
The teacher asked the question in a very soft voice.
Other (Please specify.)

Appendix C

Interview Questions for Students

1. Do you think teachers' questions are helpful? If so, what types of teacher questions do you think are helpful for your learning?

2. What types of questions are difficult? Why? How can teachers help you?

3. When no one responded to teacher questions, many students said they did not have the required knowledge or could not think of the answer. Why? Specifically, what do you mean by "knowledge?" How can teachers help you with this problem?

4. Many students said they had a difficult time in putting their thoughts into words. Specifically, what were your troubles in putting ideas into words? How can teachers help you to put your thought in English words?

5. Many students pointed out that they sometimes waited for other students to answer? Why (what is your reason for waiting for other students?). How can teacher address this situation?

6. Based on the questionnaire results, some students said they were afraid of mistakes. How do you think you can improve this situation, and how can teachers help you not to be afraid of mistakes?

7. Is there anything you would like to add?

Appendix D

Interview Questions for teachers

Interview questions for Teacher A

1. Knowledge and comprehension questions are dominant question types. Why and what is the purpose of asking knowledge and comprehension questions?
2. (compared with other studies, you asked more higher-order questions) Why do you ask higher order questions or what is the purpose of asking higher-order questions?
3. Do you consciously incorporate critical thinking skills when you ask questions?
4. Do you think questioning is an effective means of enhancing learners' critical thinking skills?
5. Would you ask a number of higher-order questions even in a basic level class? Why or why not?

Interview questions for Teacher B

5. Knowledge and comprehension questions are dominant question types. Why and what is the purpose of asking knowledge and comprehension questions?
6. (compared with other studies, you asked more higher-order questions) Why do you ask higher order questions or what is the purpose of asking higher-order questions?
7. Do you consciously incorporate critical thinking skills when you ask questions?
8. Do you think questioning is an effective means of enhancing learners' critical thinking skills?
9. Probing (stimulating learners' responses for enhanced quality of responses) was the dominant questioning technique (anything else? Eliciting further information from learners). Why?
10. Do you consciously change types of questions when you ask follow-up questions after initial questions?
11. Is there anything you would like to add?

Appendix E

Bloom's Taxonomy Question Stems

Knowledge

• What happened after . . .?
• How many . . .?
• Who was it that . . .?
• Can you name the . . .?
• Described what happened at . . .?
• Who spoke to . . .?
• Can you tell why . . .?
• Find the meaning of . . .?
• What is . . .?
• Which is true or false . . .?

Comprehension

• Can you write in your own words . . .?
• Can you write a brief outline . . .?
• What do you think might happen next . . .?
• Who do you think . . .?
• What was the main idea . . .?
• Who was the key character . . .?
• Can you distinguish between . . .?
• What differences exist between . . .?
• Can you provide an example of what you mean . . .?
• Can you provide a definition for . . .?

Application

• Do you know another instance where . . .?
• Could this have happened in . . .?
• Can you group by characteristics such as . . .?
• What factors would you change if . . .?
• Can you apply the method used to some experience of your own . . .?
• What questions would you ask of . . .?
• From the information given, can you develop a set of instructions about . . .?
• Would this information be useful if you had a . . .?

Analysis

• Which events could have happened . . .?
• If . . . happened, what might the ending have been?
• How was this similar to . . .?
• What was the underlying theme of . . .?
• What do you see as other possible outcomes?
• Why did . . . changes occur?
• Can you compare your . . . with that presented in . . .?
• Can you explain what must have happened when . . .?

• How is . . . similar to . . .?
• What are some of the problems of . . .?
• Can you distinguish between . . .?
• What were some of the motives behind . . .?
• What was the turning point in the game . . .?
• What was the problem with . . .?

Synthesis

• Can you design a . . . to . . .?
• Why not compose a song about . . .?
• Can you see a possible solution to . . .?
• If you had access to all resources how would you deal with . . .?
• Why don't you devise your own way to deal with . . .?
• What would happen if . . .?
• How many ways can you . . .?
• Can you create new and unusual uses for . . .?
• Can you write a new recipe for a tasty dish?
• Can you develop a proposal which would . . .?

Evaluation

• Is there a better solution to . . .?
• Judge the value of . . .?
• Can you defend your position about . . .?
• Do you think . . . is a good or a bad thing?
• How would you have handled . . .?
• What changes to . . . would you recommend?
• Are you a . . . person?
• How would you feel if . . .?
• How effective are . . .?
• What do you think about . . .?

Cited from Bloom's Taxonomy Question Stems
http://www.meade.k12.sd.us/PASS/Pass%20Adobe%20Files/March%202007/BloomsTaxonomyQuestionStems.pdf