

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

日本の大学の EFL 環境における、クリティカルシンキングと教師の質問行為について

Maho Sano  
Soka University

## *Abstract:*

The importance of developing critical thinking skills has been extensively discussed in second language education literature. Research has indicated that asking questions is one means for enhancing learners' critical thinking skills (Ma, 2008). The current study investigated the cognitive levels of questions teachers asked based on Bloom's Taxonomy (1956), and learners' reasons for non-response when silence occurred after the teachers' questions in language classrooms in a Japanese university EFL context. It was found that teachers asked higher-order questions more frequently than teachers in other studies (Natthan, 2009; Tan, 2007; Shoomossi, 2004). In addition, the study found that there were many cases where learners could not or did not answer questions even though they knew the answers. Learners' reasons for non-response included linguistic challenges and cultural influence. Based on these results, this study offers recommendations for enhancing teachers' effective questioning behaviors that develop learners' critical thinking skills.

クリティカル・シンキング(CT)を発達させる重要性は第二言語教育においてよく議論されてきた(Shen & Yodkhumlue, 2013). 研究によれば、質問をすることは CT の向上の手段の一つであることが示されている。本研究は、ブルーム分類学(1956)に基づき、日本の大学の EFL 環境における教師の質問のレベル及び質問後学習者の返答がない場合の理由を調査した。調査結果として、他の研究(Natthan, 2009; Tan, 2007; Shoomossi, 2004)に比べ、高い思考レベルの質問がより多くていことが分かった。また、質問への答えがわかっているにもかかわらず質問に学習者が返答しない場合、その理由には言語の難しさや文化的な影響が含まれることが分かった。これらの結果に基づき、本研究では CT 向上により効果的な質問のための教育的案を示す。

## Introduction

The importance of developing critical thinking skills is well-recognized. Such skills have started to be incorporated in second language education, and the ways in which teachers can help learners enhance their critical thinking skills has gained significant attention (Natthan 2009; Shen & Yodkhumlue, 2013). In Japan, the Ministry of Education, Culture, Sports, Science and Technology (2013) (hereafter MEXT) recognizes the importance of critical thinking skills, and incorporating the teaching of such skills has been promoted in language education. Among other skills, 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). Therefore, teachers can help learners engage in higher-order thinking by the common teaching practice of questioning. 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. The study also offers some pedagogical suggestions regarding how to help learners develop their critical thinking skills.

## Literature Review

Critical thinking skills form a crucial part of education. In this globalized society (Natthanan, 2009), an essential component of education is cultivating in students an ability to access and process information in a wise manner (Jacobs & Farrell, 2001). Learning is not just a matter of memorizing lower-order facts. Formal schooling, in particular, should help individuals apply such knowledge in order to improve society (Jacobs & Farrell, 2001). In addition, in the acquisition of content knowledge, analytical and evaluative thinking is essential (Elder & Paul, 2010). The incorporation of developing critical thinking skills into the broader curriculum, therefore, has become an important priority among educators.

By asking questions, teachers can play an important role in guiding learners to higher-order thinking. Asking questions has been a popular and well-established method of teaching, and a substantial amount of class time has been devoted to questioning (Tan, 2008). In classrooms, questions are asked by teachers for a variety of purposes. For example, questions are asked to check learners' comprehension, to let students practice the target language (Seker & Komur, 2008) as well as to initiate learners' interaction in it (Brown, 2007). In addition, teachers' questioning is highly influential on learners' cognitive processes (Seker & Komur, 2008). Thus, questioning has been seen as an effective tool for fostering the thinking skills of learners. However, the cognitive levels of questions that teachers raise are diverse. Some questions are asked just for recalling information or facts. Other questions require learners to exercise their reasoning skills.

When categorizing types of questions in terms of their cognitive levels, Bloom's (1956) Taxonomy is often cited. Bloom's Taxonomy is a frequently used tool in setting goals and objectives, developing activities and assessment materials for learners (Krathwohl, 2002; Natthanan, 2009), and assessing learner achievement (Eber & Parker, 2007). Bloom's Taxonomy is composed of six different levels of cognitive skills. These six levels of cognitive abilities form a hierarchy. The levels are knowledge, comprehension, application, analysis, synthesis and evaluation (Bloom, 1956). Table 1 provides examples of questions at each cognitive level of Bloom's Taxonomy (1956) (Brown, 2007). Questions at the first three stages of Bloom's Taxonomy (1956) are lower-order questions that are cognitively less demanding. They are 1) knowledge, 2) comprehension, and 3) application. Conversely, higher-order questions at the other end of the hierarchy that are cognitively more challenging are comprised of 4) analysis, 5) synthesis, and 6) evaluation (Khan & Inamullah, 2011).

Table 1 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 the 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?

(Adapted from Brown, 2007, p. 220.)

Recently, the necessity of considering the learner's culture has been extensively discussed in studies dealing with the improvement of teaching practice (Stapleton, 2002). There are views against the teaching of critical thinking skills in non-Western contexts due to the Western nature of critical thinking. It has been argued that 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 viewed by some as a form of cultural imperialism (Atkinson, 1997). Nevertheless, making choices, evaluations and judgments is part of the daily life of learners who are non-native speakers of English (Howe & Warren 1989; Paul, 1992 as cited in Stroupe, 2006). Japanese students are no exception to this. In fact, in the Japanese context, critical thinking has been considered an important skill in language learning (Muranoi, Watabe, Ozeki & Tomita, 2012). In addition, the MEXT also include the ability to think as a goal in its curricula (Long, 2003).

## Research Questions

In order to ascertain what types of questions teachers ask in terms of their cognitive levels, as well as 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 is the rationale behind teachers' questioning behavior?
3. Why do learners not respond to particular questions asked by teachers?

## Methodology

### Participants

The participants in this research study were two teachers and their 30 first-year students in their English for Academic Purposes (EAP) classes at a private university in Japan. The two classes are exclusively offered to students who are registered in a program that was established to teach various skills, including language skills and critical thinking skills. The two EAP classes are streamed by proficiency level. The two teachers who are teaching the EAP courses are both native speakers of English.

### Classroom Observation

In the current study, the two classes were observed for a two-week period. As each class met twice a week, a total of eight classes were observed during that time. Each lesson ran for a duration of 90 minutes. Classroom practices were videotaped to record the non-verbal, paralinguistic aspects of interaction.

### **Questionnaire**

A questionnaire adapted from Natthanan (2009) was used to investigate learners' rationales for not responding to teachers' questions (Appendix A). The original questionnaire consisted of three categories of reasons for non-response. After choosing a category, learners were asked to choose detailed reasons under that category. After each observation, questions that were asked to the entire class but were followed with a non-response were analyzed. The questionnaire was administered in Japanese so that participants of differing proficiency levels could understand each questionnaire item without the need to clarify the meaning with the investigator. The questionnaire was conducted online. After each classroom observation, the link to the questionnaire was sent to the participants via e-mail.

### **Interviews with students**

Interviews with learners were conducted in order to gain their perspectives of their 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 scheduling constraints. From Class B, five learners participated in interviews, all of which were conducted individually. The interviews ranged in length from 20 to 30 minutes. Due to the difference in the interviewees' proficiency levels, interviews with Class A learners were conducted in English, while those with Class B students were conducted in Japanese. This was in line with their stated preferences regarding the interview language.

### **Interviews with teachers**

Semi-structured individual interviews were conducted with both teachers to investigate their views on their own questioning behavior in classrooms. Interviews with both teachers were voice-recorded. The interview with Teacher A lasted for approximately 10 minutes, while the interview with Teacher B lasted for approximately 30 minutes. This was because Teacher B explained his questioning behavior using various examples from his classroom activities. The teachers were asked to explain the purposes for having asked lower-order and higher-order questions, to provide their views on the efficacy of questioning as a means of developing critical thinking skills, and their beliefs regarding whether or not the cognitive levels of the questions were influenced by the learners' proficiency levels.

### **Data Analysis**

Data collected in this study were analysed both quantitatively and qualitatively. The classroom observation data comprised of both teachers' questions and learners' responses were transcribed and coded. Questions were categorized into the six categories from Bloom's Taxonomy (1956). The frequencies of question types asked by the teachers were calculated as percentages. Data collected through the questionnaire was used to analyze the types of reasons students gave for their non-responses by counting the number of reasons for each non-response. Following this, each reason category was tallied for frequency. Data collected from the interviews were transcribed, and thematically grouped into different categories.

## Results

### ***Cognitive Levels of Teachers' Questions***

As stated above, all of 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 and the frequency of questions of each cognitive level are summarized in Table 2. The table shows that the majority of questions (67.3%). The remaining questions were classified as higher-order questions (32.6%). Although lower-order questions were dominant, questions categorized as analysis questions (and therefore higher-order questions) were the third most frequent type of questions asked. When all of the questions were divided into the categories of 'initial questions' and 'follow-up questions' that were asked in a sequence of questions that followed the initial questions, the frequency of higher-order questions was higher in the follow-up questions. Therefore, the teacher seemed to focus on cognitively more challenging questions in his follow-up questions.

Table 2 Frequencies of Different Cognitive Levels of Questions asked in Class A

		All questions	Initial questions	Follow-up questions
Lower-Order 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%)
Higher-Order Questions	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

The frequencies of the different cognitive levels of questions asked in Class B are summarized in Table 3. Similar to the observation results of Class A, the majority (72.3%) of questions asked were identified as lower-order questions. The remaining questions were deemed to be higher-order questions. Although lower-order questions were dominant, the second most frequent question type were the analysis level questions (24.1%). The frequency of higher-order questions was higher in the teacher's follow-up questions. Therefore, as was the case in Class A, the teacher also seemed to increase the cognitive levels of his questions during follow-up questions.

Table 3 Frequencies of Different Cognitive Levels of Questions asked in Class B

		All questions	Initial questions	Follow-up questions
Lower-Order	Knowledge	40(24.7%)	15(38.5%)	25(20.3%)

Questions	Comprehension	45(27.8%)	10(25.6%)	35(28.4%)
	Application	32(19.8%)	5(12.8%)	27(22%)
Higher-Order Questions	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

### ***Learners' Reasons for Non-Response***

The questionnaire results suggested that when silence occurred after teachers' questions, students either could not or chose not to answer the questions even though they knew the answers (61.3% for Class A and 62.5% for Class B). Table 4 summarizes the frequency of each category of reasons for non-response. Detailed reasons for non-response under Categories 1, 2 and 3 are in Appendix B. With respect to Category 1, students from both classes reported that the primary reason for non-response was the difficulty in expressing ideas in English. Limited vocabulary seemed to be the second most frequent reason for silence. Regarding Category 2, waiting for other classmates to answer questions was cited as the main reason for non-response for both classes. The fear of making mistakes was the next most frequent reason for silence. Concerning Category 3, being unable to keep up with the pace of the teachers' questions, in addition to the difficulty of the content dealt with were frequent explanations for silence. "Others" under this category included a lack of understanding of readings assigned as homework. Although the original questionnaire consisted of three categories, due to the intricacies of the translation process, Category 4 was added.

**Table 4** Learner's Reasons for Non-Response by Category

Categories of non-response after teacher questions	Students' Responses to Questionnaire			
	Class A		Class B	
	Number	Percentage	Number	Percentage
Category 1: Students stated that they understood the question and knew the answer, but could not answer.	207	40.8%	52	29%
Category 2: Students stated that they understood the question and knew the answer, but did not answer.	104	20.5%	60	33.5%
Category 3: Students stated that they did not understand the question, and could not answer.	64	12.6%	23	12.8%

Category 4: Students stated that they did not know the answers	132	26%	44	24.5%
Total	507		179	

## **Interviews with Learners**

### ***The efficacy of teachers' questions on learning:***

Data collected from the learner interviews suggested that learners valued teachers' questions as an effective means of contributing to their learning. The most commonly-held view concerning teachers' questions was that the teachers' questions allowed learners to check their own comprehension of class content. Other widely-expressed views about the role of teachers' questions included the notion that learners can deepen their understanding, and that questions can stimulate their academic interest. For example, a student from Class A reported "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). Despite the difficulty of higher-order questions, cognitively demanding questions were considered effective by learners. According to one student, "This is difficult, but I like questions if we need to think and put different information together" (Mayumi, Class A).

### ***Linguistic challenges:***

One commonly-cited reason for not answering teachers' questions was related to language proficiency. Learners from both classes explained that they struggled when they did not know the appropriate vocabulary or grammatical structures with which to describe their ideas. Concerning the issue of verbalizing ideas in English, interviewed learners made some proposals. The most commonly suggested idea was the use of group work. One student said "If we have group work, we can have more preparation time to prepare our answers in English. Also, we can learn how to say things from other classmates" (Yuji, Class A). Another suggestion was the use of recasting as corrective feedback. One student said, "Even if my English was incorrect, if my teacher repeated the same thing in correct English, I could know how to say the idea in English" (Yuri, Class B).

### ***The Influence of learners' experiences outside the English classes:***

Regarding reasons for not answering teachers' questions, the interview data suggested that learners' experiences in other classes might be influencing learners' behavior in the observed English classes. Being conscious of how other classmates might react, some learners mentioned they either waited for other students to answer, or that they could not answer because of the fear of making mistakes in front of other classmates. For example, according to one student, "In other Japanese classes, we don't raise our hands. If students raise their hands, their answers are always correct" (Tomomi, Class A). Another student said that, "In the Japanese [medium] classes that I am taking, I feel my answers should be always correct if I raise my hand and answer" (Maki, Class A). When learners were asked to provide their ideas regarding how teachers could help students deal with this issue, the use of group work or pair work was the suggestion that was offered from both those who were and were not anxious about other classmates' reactions.

## **Teacher Interviews**

### ***The role of lower-order questions:***

For both teachers, the main purpose of asking lower-order questions was to check learners' understanding. At the same time, this comprehension check seemed to play a role as a base for higher-order questions. For example, Teacher A commented that "It's a sort of checking their understanding and to set the stage for more higher-order questions." He continued, "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."

### ***The role of higher-order questions:***

Although both teachers' views on higher-order questions were similar in the sense that they both 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 could deepen their understanding beyond textbooks. However, for Teacher B, higher-order questions served as a transition to writing activities. For example, Teacher B stated that "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 often engaged in activities that were designed to transition learners to a writing assignment that was going to be assigned in the future.

### ***Questioning as a means of enhancing critical thinking skills:***

The teachers provided differing views regarding the efficacy of questions as a means of helping learners develop their critical thinking skills. Teacher A regards questioning as effective for developing learners' critical thinking skills, stating "I think the students have become much better at answering those questions, and I think they are asking each other those questions." Teacher B also recognized the importance of questioning as a way of enhancing the critical thinking skills of learners. Teacher B, however, believed 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 who 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.*

### ***Higher-order questions and students' proficiency levels:***

In the interview with Teacher A, it was revealed that critical thinking skills and language proficiency were viewed as separate issues. Teacher A expressed the view that asking higher-order questions in lower-level proficiency classes 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.*

On the other hand, for Teacher B, the level of the learners seemed to have influenced when he asked higher-order questions. Teacher B stated,

*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 [the students in the observed class] have the ability to respond to those higher-level questions in English, and that's a lot of it.*

Teacher B added that the high frequency of higher-order questions was probably due to the fact that the classes were engaged in pre-writing activities that was designed to help learners write a compare-contrast essay requiring high level cognitive skills.

## Discussion

Although in this study lower-order questions were dominant, a finding similar to other studies conducted in different EFL contexts (Natthan, 2009; Schoomossi, 2004; Tan, 2007), the teachers in the current study asked higher-order questions more frequently. The teachers' high awareness of the importance of encouraging critical thinking in their instruction may have contributed to the high frequency of cognitively demanding questions. In fact, developing learners' critical thinking skills has been part of the discourse of language instructors at the university in which the study was undertaken (Stroupe, 2006). Consequently, the development of critical thinking skills have been explicitly addressed in the language course syllabi of English classes. A quick search for online course syllabi at the university in which this study was conducted led to over 100 English courses that include critical thinking as a goal.

Although asking higher-order questions is important, mixing questions at different cognitive levels may be also important. In terms of developing critical thinking skills among learners, while higher-order questions are important, lower-order questions also play a significant role in the development of critical thinking skills. For example, 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 (Wilensky, 2001). Knowledge and comprehension questions are important because all higher-order thinking is based on knowledge and principles (Paul, 2005). This corresponds with what Teacher A stated regarding the purpose of asking lower-order question in his interview. Therefore, scaffolding critical thinking skills by asking both lower-order and higher-order questions is important, as is not stopping at lower-order questions or asking only higher-order questions.

According to the results of this study, cultural factors seem to have played a significant role in question-answer interactions among students and teachers. 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 states were further delineated in their interviews. According to several learners, their experiences in other Japanese classes seemed to have contributed to their decision to be silent. For example, students mentioned culture in Japanese classrooms influenced their behavior. In interpreting the questionnaire and interview results, prior studies investigating university level Japanese EFL learners are instructional. For example, Japanese students are often reluctant to speak because of the fear of making mistakes. This anxiety can often cause teachers to abandon speaking activities (Gorsuch, 2001). In addition, because of the culture of collectivism, a pivotal 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, 2009). From data collected from interviews with students, it can be surmised that 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 answered questions incorrectly. 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 face, and silence sometimes occurred after teachers' questions. Thus cultural factors can influence classroom interactions.

As was suggested by the majority of learners interviewed, the use of group work and recasting may contribute to the improvement of question-response interactions between teachers and learners. The advantages of group work have been pointed out by several researchers and educators. For example, 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 do not stand out on public display where they would otherwise fear rejection and criticism (Brown, 2007). Providing students with a sense of security by letting them work in groups can have a positive influence on learners' participation in the Japanese context. 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 actively participate in whole-class discussions were able to talk and offer their opinions in small groups. Recasting as corrective feedback can also contribute to improved question-response interactions as many learners suggested. As the questionnaire indicated, linguistic challenge seemed to have undermined learners' responses after questions. If learners are conscious of linguistic accuracy, recasting can be an effective means of helping them. In addition, recasting is less likely to disrupt communication flow (Ellis, 2005). Therefore, Japanese EFL learners' anxiety related to other classmates' reaction to their answers or their fear of making mistakes can be reduced.

In reality, however, the difficulty of implementing such higher-order thinking skills in lower-proficiency classes may be a concern of language teachers. In the current study, the participants were generally a highly-motivated group of learners, and they were proficient enough to deal with academic content in English. Therefore, the generalizability of this study may be limited. In fact, critical thinking skills are typically reserved for learners who have attained higher levels of L2 proficiency (Stroupe, 2013). However, through using level appropriate materials, critical thinking skills should be encouraged in even basic level English classes. Nevertheless, the teaching of critical thinking skills is possible in classes other than advanced level language classes. For example, at the analysis level, teachers can ask what is similar or different about different learners' favorite movies. Topics such as movies are simple enough for learners of lower proficiency to talk about. Although the material dealt with may be simple, teachers can still incorporate higher-order thinking skills in lower proficiency classes (Stroupe, 2013). When the content and the linguistic complexity are under the control of lower proficiency students, asking higher-order questions is possible.

## Conclusion

In conclusion, this study investigated question-response interactions between teachers and learners in a Japanese university EFL context. The results indicated that both teachers asked higher-order questions relatively more frequently than teachers observed in other studies, though lower-order questions were asked more frequently. The higher frequency of higher-order questions can be attributed to the teachers' awareness of the importance of critical thinking skills. Regarding learners' perspectives on question-response interactions in their classes, there were many cases in which the students could not or did not answer teachers' questions even though they understood the teachers' questions and knew the answers. This was attributed to various reasons, such as the fear of making mistakes, the learners' cultural backgrounds, and the difficulty in formulating ideas in English. In order to improve question-response interactions, the use of group work, more wait time, and recasting were suggested. These suggestions may help learners in a Japanese context be more active in question-response interactions. By considering these pedagogical and cultural aspects of classroom interactions, teachers' questioning may be able to better contribute to the development of critical thinking skills of Japanese university EFL learners.

## References

- Atkinson, D. (1997). A critical approach to critical thinking in TESOL. *TESOL Quarterly*, 31(1), 71-89.
- Bloom, B. (1956). *A taxonomy of educational objectives. Handbook I: Cognitive domain*. New York: McKay.
- Brown, H. D. (2007). *Teaching by principles: An interactive approach to language pedagogy*, White Plains, NY: Pearson Education.
- Davis, R. L. (1997). Group work is not busy work: Maximizing success of group work in L2 classroom. *Foreign Language Annals*, 30(2), 265-279
- Eber, P. A., & Parker, T. (2007). Assessing student learning: applying Bloom's Taxonomy. *Human Service Education*, 27(1), 45-53.
- Elder, L., & Paul, R. (2010). Critical thinking: Competency standards essential for the cultivation of intellectual skills. *Journal of Developmental Education*, 34(2), 38-39.
- Ellis, R. (2005). *Instructed second language acquisition*. New Zealand : Ministry of Education of New Zealand.
- Goodwin, S.S., Sharp, G.W., Cloutier, E.F., & Diamond, N.A. (1983). *Effective classroom questioning*. Retrieved from ERIC database. (ED285497)
- Gorsuch, G. J. (2001). Japanese EFL teachers' perceptions of Communicative, Audiolingual and Yakudoku activities: The plan versus the reality. *Education Policy Analysis Archives*, 9 (10), 1-27.
- Jacobs, G. M., & Farrell, T. S. C. (2001, April). Paradigm shift: Understanding and implementing change in second language education. *The Electronic Journal for English as a Second Language*, 5(1). Retrieved from <http://www.tesl-ej.org/wordpress/issues/volume5/ej17/ej17a1/>
- Kavanagh, B. (2012). The theory and practice of communicative language teaching in Japan. *Academic Research International*, 2(2), 730-737.
- Khan, W. B., & Inamullah, H. M. (2011). A study of lower-order and higher-order questions at secondary level. *Asian Social Science*, 7(9), 149-157. doi:10.5539/ass.v7n9p149
- Krathwohl, D. R. (2002). A revision of Bloom's taxonomy: An overview. *Theory in Practice*, 41(4), 212-219.
- King, A. (1995). Inquiring minds really do want to know: Using questioning to teach critical thinking. *The Teaching of Psychology*, 22(1), 13-17.

- Kubota, R. (1999). Japanese culture constructed by discourses: Implications for applied linguistics research and ELT. *TESOL Quarterly*, 33(1), 9-35.
- Larsen-Freeman, D. & Anderson, M. (2011). *Techniques and principles in language teaching*. Oxford: Oxford University Press.
- Long, C. J. (2003). Critical thinking in language education. *Pan-Pacific Association of Applied Linguistics*, 7(2), 215-224.
- Ma, X. (2008). The skills of teachers' questioning in English Classes. *International Education Studies*, 1(4), 92-100.
- Ministry of Education of Japan. (2013). Strategies for creating "Japanese citizens who can use English." [英語が使える日本人の育成のための戦略構想の策定について]. Retrieved from [http://www.mext.go.jp/b\\_menu/shingi/chousa/shotou/020/sesaku/020702.htm](http://www.mext.go.jp/b_menu/shingi/chousa/shotou/020/sesaku/020702.htm)
- Murai, H., Watanabe, Y., Ozeki, N., and Tomita, Y. (2012). *Methodology for Integrative English Teaching*. [総合的英語か教育法]. Japan: Seibido.
- Natthanan, D. (2009). *Teachers' questioning techniques and students' critical thinking skills: English language classroom*. Unpublished doctoral dissertation, Oklahoma State University, The United States.
- Paul, R. (2003). The state of critical thinking today. *New Directions for Community Colleges*, 130, 27-38.
- Savage, L. B. (1998). Eliciting critical thinking skills through questioning. *The Clearing House*, 71(5), 291-293.
- Seker, H., & Komur, S. (2008). The relationship between thinking skills and in-class questioning behavior of English language teaching students. *European Journal and Teacher Education*, 31(4), 389-402. doi: 10.1080/02619760802420784
- Shen, P. & Yodkhmlue, B. (2010). A case study of teachers' questioning and students' critical thinking in college EFL reading classroom. *International Journal of English Linguistics*, 2(1), 199-206.
- Shomoossi, N. (2004). The effect of teachers' questioning behavior on EFL classroom interaction: A classroom research study. *The Reading Matrix*, 4(2), 96-104.
- Soka University. (2013). Global program to develop human resources. Retrieved from <http://www.soka.ac.jp/en/departments/global/>
- Stroupe, R. R. (2006). Integrating critical thinking throughout ESL curriculum. *TESL Reporter*, 39 (2), 42-61.

- Stapleton, P. (2002). Critical thinking in Japanese L2 writing: Rethinking tired constructs. *ELT Journal*, 56(3), 250-257.
- Stoupe, R. (2013, December). *Beyond English: Developing students' critical thinking skills through an integrated institutional approach*. Paper presented at the meeting of Joint International Conference of the Pan-Asian Consortium of Language Teaching Societies (PAC) and the Philippine Association for Language Teaching, Inc, The Philippines.
- Tan, Z. (2007). Questioning in Chinese university EL classrooms: What lies beyond it? *RELC Journal*, 38(1), 87-103. doi: 10.1177/00336882067616
- Tanaka, T. (2009). Communicative Language Teaching and its Cultural Appropriateness in Japan. *Doshisha Studies in English* 84, 107-123.
- Wilen, W. W. (2001). Exploring myths about teacher questioning in the social studies classroom, *The Social Studies*, 92(1), 26-32. doi: 10.1080/00377990109603972

## Appendix A

### Questionnaire

Reasons Why Students Did Not Respond to the Teachers' Questions
<b>1. You understood the teacher's questions, but you could not answer them because...</b>
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.)
<b>2. You understood the teacher's questions and knew the answers, but you did not answer them because...</b>
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.)
<b>3. You did not understand the teacher's questions and could not answer because...</b>
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 B

### Questionnaire Results: The Frequency of Each Detailed Reason for Non-Response

Category 1	Students' Responses 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	

Category 2	Students' Responses 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	

Category 3	Students' Responses 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	