

Interaction Opportunities With Generative AI: Their Effects on EFL Learners' WTC, Anxiety, and Perceived Competence

Takahiro IWANAKA, Ph.D.
Yamaguchi Prefectural University
E-mail: tiwanaka@yp4.yamaguchi-pu.ac.jp

Abstract

For EFL learners to develop their interlanguage (IL) system efficiently, input, output, and interaction are indispensable. Advancements in ICT have made it possible to access high-quality input, such as TED and YouTube. Learners can also practice producing output by writing diaries, self-talk, giving a presentation, etc. However, interaction can only be done with an interlocutor. Recent remarkable technological advances have enabled natural interactions between generative AI and EFL learners, allowing learners to practice interactions at their own pace with less anxiety. This study aims to elucidate the effects of interaction opportunities with generative AI on the Willingness to Communicate (WTC), anxiety, and perceived competence of EFL learners. Sixty-six undergraduates were recruited as the participants. They had opportunities to interact with generative AI regularly. A questionnaire consisting of 24 items was employed to evaluate their WTC, anxiety, and perceived competence. The analysis of the collected data suggests that interaction opportunities with generative AI raise WTC and perceived competence and lower anxiety.

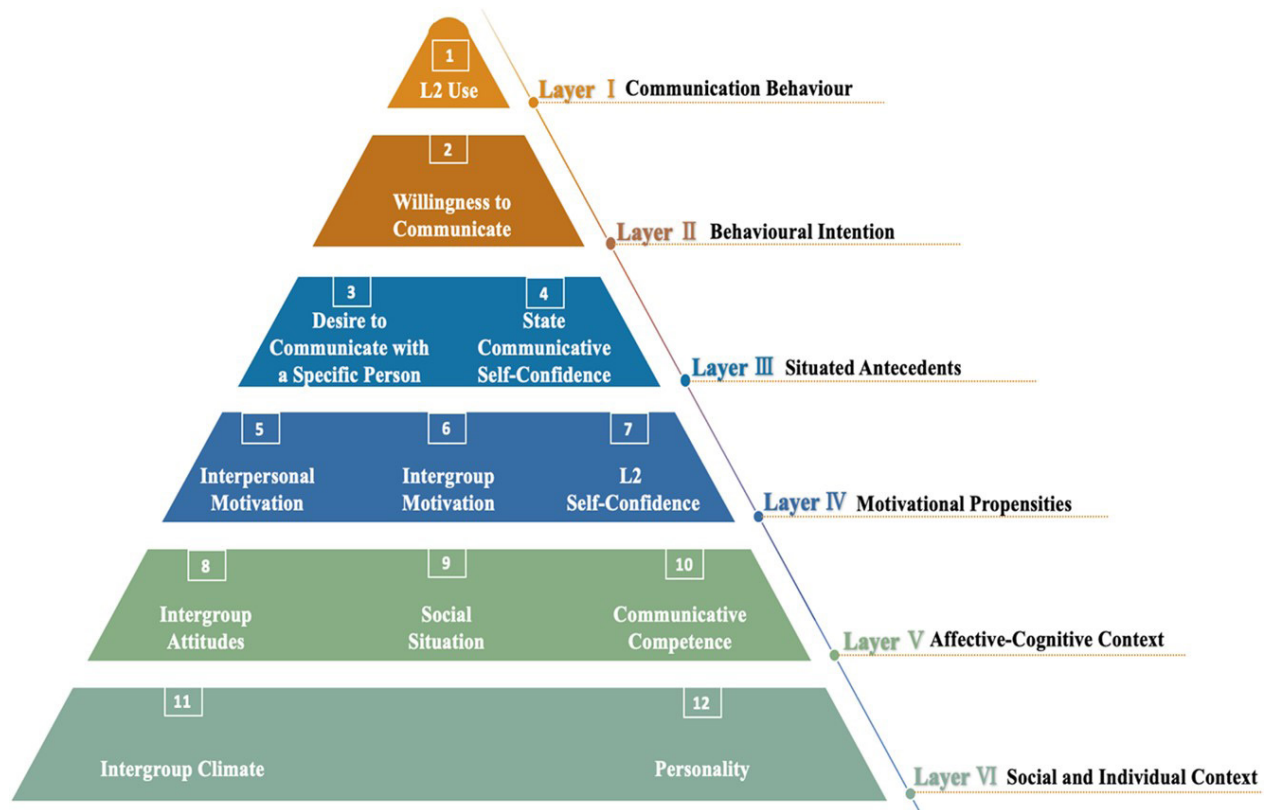
Key Words: Generative AI, WTC, Anxiety, Perceived Competence

Introduction

Learning grammar and vocabulary is essential for EFL learners to gain a high command of English. However, explicitly learning grammar and vocabulary is not enough to help learners be able to use English as a means of communication. It seems that the main problem that a lot of EFL learners have in common is how to move from an initial state, where target forms are not known at all, to an end state, where they have some command over the system of the target language (TL) and some capacity to use that system for communication.

The author has been teaching English at a university in Japan for more than 30 years. In Japan, English is taught as a foreign language, and learners have few opportunities to use the language for authentic communication. This is one of the reasons why quite a few Japanese learners of English lack confidence in speaking despite being highly successful in written tests. Where English is learned and used as a foreign language, teachers must consider how to ensure learners have opportunities to use the TL for interaction.

This study aims to clarify the impact of interaction opportunities with generative AI on EFL learners' WTC, anxiety, and perceived competence. The concept of WTC was developed initially in the context of first language acquisition. It aims to shed light on the likelihood of a speaker engaging in a conversation of their own volition. MacIntyre et al. (1998) applied this concept to second language learning and presented the L2 WTC model. They define L2 WTC as "readiness to enter into discourse at a particular time with a specific person or persons, using a L2" (p. 547).

Figure 1*L2 WTC Model (MacIntyre et al., 1998)*

Cross-cultural communication factors are placed on the left side of the model, and individual factors such as personality and communicative competence are placed on the right. The author will not discuss cross-cultural communication-related factors in this study but focus on individual factors. The top three layers are viewed as factors likely to change depending on the situation, while the bottom three are considered relatively stable factors.

The first layer is “L2 Use,” or communication behavior. WTC is placed in the second layer and is considered to influence communication behavior directly. On the third layer’s right side is “State Communicative Self-Confidence.” When people are placed in situations they have never experienced, they become more nervous, and their “State Communicative Self-Confidence” decreases. It is safe to assume that confidence and anxiety are inextricably linked. It is believed that as confidence increases, anxiety will decrease.

It is not uncommon for EFL learners to experience anxiety, which is often referred to as “foreign language anxiety.” This anxiety can result from such factors as communication fears and low self-esteem. High anxiety is considered to interfere with cognitive processes of language learning, such as memory and production (Nakahira et al., 2010).

For EFL learners to communicate confidently in English, they need opportunities to engage in interaction in less anxious situations. However, in places where English is used as a foreign language, such as Japan and China, learners have limited opportunities to use English for communication. The author believes that interaction opportunities with generative AI can solve this problem.

This study aims to determine the impact of interaction opportunities with generative AI on WTC, anxiety and perceived confidence of EFL learners. In the next section, the author will explain the three aspects of language competency with reference to Cummins (2001) and discuss why WTC cannot be fostered by learning which focuses on success on exams such as TOEIC® and TOEFL.

Next, the author will present studies on language learning beliefs and argue that opportunities for affirmative

interaction are essential for encouraging EFL learners to use English to negotiate meaning confidently. How can teachers, then, provide EFL learners with positive interaction opportunities? After introducing three ways to provide such interaction opportunities in class, the author will explain the advantages of interaction with generative AI.

The author will then report on a survey he conducted to determine the impact of interaction opportunities with generative AI on EFL learners' WTC, anxiety, and perceived competence, as well as the survey results. Finally, the author will mention educational implications and potential future research.

Three Aspects of Language Competency

In many countries and regions where English is taught as a foreign language, including Japan, tests such as TOEIC® and TOEFL are used as objective indicators of English proficiency. What specific aspects of language competency are these tests designed to measure, and what aspects of language competency do they fail to capture? At the university where the author works, TOEIC® is used to assess students' English proficiency. Quite a few students have demonstrated high TOEIC® scores but have limited spoken English proficiency. What factors contribute to this discrepancy?

The author would like to examine three aspects of language competency with reference to Cummins (2001). He divided the competency into three factors: Conversational Fluency (CF), Discrete Language Skills (DLS), and Academic Language Proficiency (ALP). CF refers to everyday conversational skills. It relates to language use that is closely related to everyday situations and does not require high cognitive demand. It is said that second language learners can acquire these skills in a few years.

ALP refers to the ability to use language effectively and appropriately in academic settings. It includes reading, writing, listening, and speaking skills tailored to the demands of academic tasks. It also includes understanding and using specialized vocabulary, complex sentence structures, and discourse patterns typical of academic texts and discussions. Critical thinking, argumentation, and the ability to comprehend and produce academic content in various subject areas are also included. Compared to CF, ALP requires a more extended learning period.

DLS is a new concept added by Cummins after the 1990s. It refers to specific, individual language skills such as grammar, phonology, and vocabulary knowledge. These skills are often taught separately and can be measured independently. DLS provides the foundation for more complex language use and is critical in both L1 and L2 acquisition. Mastery of discrete language skills enables learners to apply these skills in various contexts, enhancing overall language competence.

Although DLS should be acquired along with CF and ALP, instruction is often focused solely on DLS. This is because DLS can be measured through testing, and proof of results is easy to obtain. So, do learners who achieve high scores on TOEIC® and other tests feel confident and willing to communicate actively in English?

Unfortunately, the author feels that this is not the case. Instruction that improves DLS rarely increases learners' CF or ALP (Iwanaka, 2023/January). This ultimately leads to learners who excel in test-taking but lack the ability to speak English with assurance. To circumvent such a scenario, it is imperative to integrate interaction opportunities within the classroom from the nascent stages of learning and to foster the three aspects of language competency in a well-balanced manner.

Language Learning Beliefs

Language learning beliefs are the language learners' preconceived ideas or notions about various issues related to second or foreign language learning. These beliefs exert a considerable influence on learners' preferred learning strategies, which significantly impact their learning outcomes. Numerous researchers have observed that learners who engage in experiential learning tend to exhibit greater confidence and proficiency in their use of English than those who adopt an analytical approach to language learning (ex., Ogawa et al., 2015; Yang, 1999).

Language learning beliefs are shaped over an extended period. Do they change after entering college? SLA researchers have yet to achieve a consensus on this topic. The author has been working on this research topic for several years and has

concluded that it is uncommon for college students to alter their language learning beliefs without external influence and that college teachers can facilitate positive shifts in their students' language learning beliefs by implementing appropriate pedagogical strategies. (Iwanaka, 2024/August).

The author believes that affirmative interaction opportunities will likely positively impact motivational enhancement and the internalization of experiential learning beliefs. He also believes that they exert a beneficial influence on EFL learners' WTC, anxiety, and perceived competence. One primary role of English teachers is to consider how they might provide such opportunities.

How to Provide Opportunities for Interaction

It seems reasonable to suggest that EFL learners may benefit significantly from affirmative interaction opportunities. How could teachers achieve this? There are three possible ways: in-class interaction opportunities, Collaborative Online International Learning (COIL), and interaction opportunities with generative AI.

In-class Interaction Opportunities

Teachers can allow students to interact with each other in class using English. In his English courses, the author always tries to provide opportunities for students to interact with each other in English at the beginning of the class. No special preparation is required; it is a quick and easy way to start.

It is a practical and feasible method of providing opportunities to use the target language regularly. However, it also has some potential drawbacks. When no international students are in the classroom, interacting with learners with the same L1 and cultural background could make conversations somewhat stale.

COIL (Collaborative Online International Learning)

COIL is a pedagogical approach that facilitates collaboration and learning between students from diverse cultural backgrounds across geographical boundaries. COIL is a cost-effective method for international education, global learning, and intercultural experiences. By participating in a COIL program, students can develop the ability to communicate and collaborate effectively with people from different cultural backgrounds. Consequently, using English will become ubiquitous, and students will confidently employ English to communicate.

The author has been practicing COIL for the last few years. Although it is an exemplary pedagogical approach, he has encountered two significant challenges: time zone differences and participation. Coordinating schedules across different time zones represents a significant challenge, making synchronous collaboration a formidable undertaking. Ensuring active participation from all students can also be challenging. There were instances when introverted students could not articulate their thoughts in synchronous situations.

Interaction with Generative AI

Today's remarkable technological advances have made natural interactions between generative AI and learners possible. This allows learners to practice interactions at their own pace with less anxiety, which can be an effective learning tool for introverted learners. The author posits that interaction with generative AI can compensate for the potential deficiencies of the two ways mentioned above. A description of the interaction with generative AI utilized in this study will be provided subsequently.

Study

Research Questions

Based on the literature review and discussion, the following research questions were formulated. This study aims to answer these questions.

1. Do interaction opportunities with generative AI raise EFL learners' WTC?
2. Do interaction opportunities with generative AI lower EFL learners' anxiety?
3. Do interaction opportunities with generative AI raise EFL learners' perceived confidence?

Participants

This study recruited 66 undergraduates majoring in intercultural studies as the participants. The author divided them into three groups based on their TOEIC® scores. The TOEIC® test is widely used in Japan to measure English proficiency, making it a useful tool for language education in general.

Table 1

Participants

Group	High	Middle	Low
<i>N</i>	22	22	22
Average	750.67	625.00	520.50
<i>SD</i>	65.00	45.40	63.86

Questionnaire

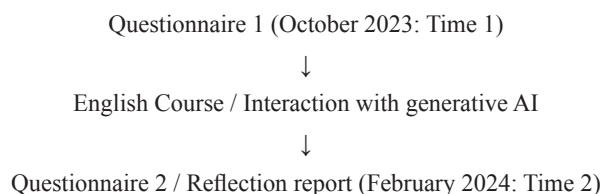
The present study employed the questionnaire used in Koga and Sato (2013). It was created initially by Yashima (2009) and modified by Koga and Sato (2013). The questionnaire comprises 24 items and measures learners' WTC, anxiety, and perceived competence (See Appendix).

Data Collection Procedure

Figure 2 shows the data collection procedure. The survey was conducted from October 2023 to February 2024. Prior to administering the survey, the author secured approval from the ethics review committee of the university to which he belongs.

Figure 2

Data Collection Procedure



At the beginning of October, or Time 1, the participants answered the abovementioned questionnaire. They then took an English course taught by the author. The details of the course will be given below. At the beginning of February, or Time 2, they answered the same questionnaire they had answered at Time 1. At Time 2, they also wrote a reflection report on interactions with generative AI.

English Course

As mentioned above, the participants took an English course taught by the author. The objective of the course was to

develop their five skills (reading, writing, listening, presentation, and interaction) in a balanced manner. Classes were held twice a week, and each lesson lasted 90 minutes. The course was designed to encourage the participants to develop experiential learning beliefs. The three psychological needs posited by Self-determination Theory were also addressed to enhance motivation (Deci et al., 1985).

Several researchers have observed that second language acquisition can be facilitated when the learning environment is similar to the L1 acquisition environment (ex., Krashen, 1982; Long, 1990; Swain, 2000). The author designed each lesson with the following conditions: 1) Focus is on meaning rather than form, 2) the students are exposed to abundant comprehensible input, and 3) the students can use English for interaction in low-anxiety situations. This course employed TED Talk and YouTube as teaching materials. Table 2 illustrates the lesson organization using Kelly McGonigal's TED Talk, *How to Make Your Stress Your Friend*, as the teaching material.

Table 2
Lesson Organization

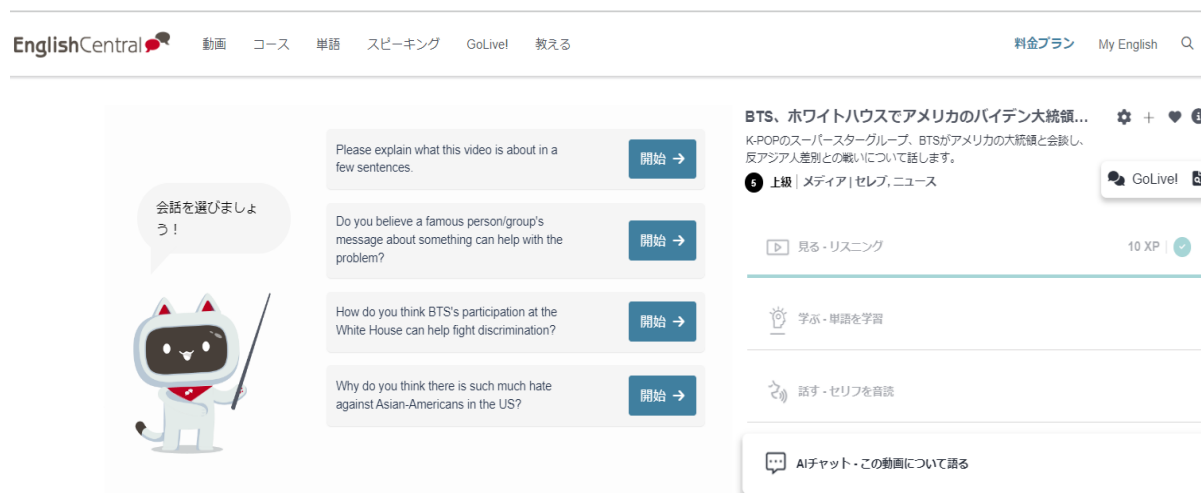
Time	Activity	Content	Remarks
0-15	Warm-Up	1. When do you feel stressed? 2. How would you relieve your stress? 3. Do you think stress is bad for your health?	At the beginning of each lesson, the students had a communication activity using English in pairs.
15-30	Presentation	Watching the TED Talk	
30-75	Comprehension	Examples of in-class interaction T: What does "inevitable" mean? S1: It means "certain to happen, unavoidable." T: How many Americans died prematurely over the eight years? S2: 182,000 Americans. T: That's right. What beliefs did those people have? S2: Stress is bad for them.	1. The instructor checked the meanings of the challenging words for the students. 2. The instructor asked questions to help them understand the content better.
75-90	Expression	1. Which part of the talk was the most impressive for you? 2. What did you learn from this talk, and how did it influence you?	The students presented their ideas in English based on the content of the Talk.

Interaction With Generative AI

The generative AI interaction system utilized in this study was developed by EnglishCentral, Inc. (<https://ja.englishcentral.com/browse/videos>). The company offers a service that allows learners to gain English proficiency by using 30,000 video lessons. The service for interacting with generative AI began trial use in August, 2023. With the cooperation of the company, the author was able to implement the technology in his instructional settings.

Figure 3

Conversation Selection Screen



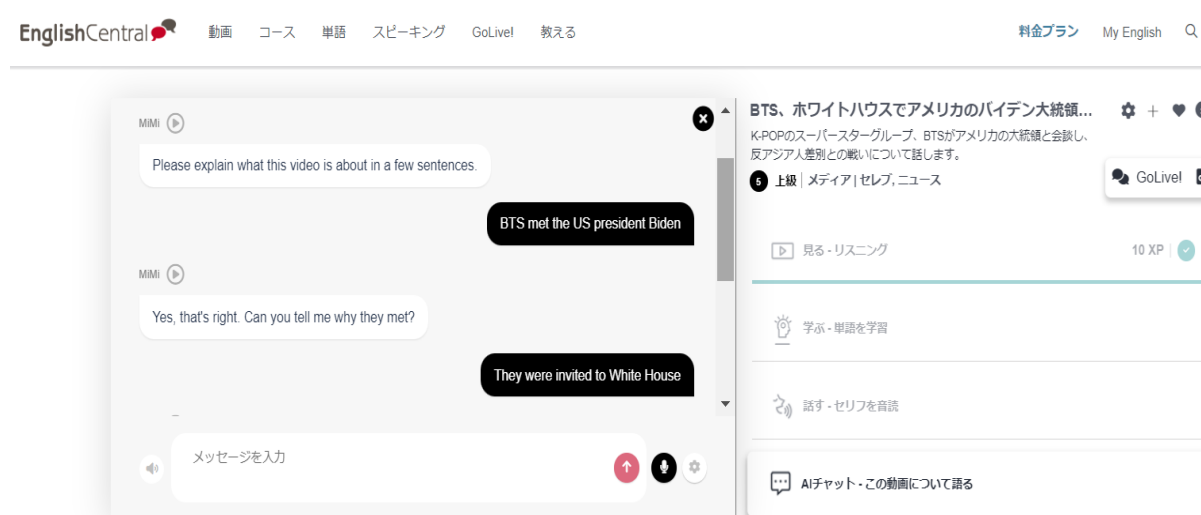
Figures 3 and 4 show the screens for interacting with the chatbot AI the company developed. Before interacting with the generative AI, learners are supposed to view a video. Upon completion of the video, they are presented with a selection of conversational options, as illustrated in Figure 3. A description of the situation and what is required is also shown here. The example in Figure 3 is for learners at the B2 level on the CEFR.

As illustrated in Figure 3, four conversation topics are presented. The learner is required to select one of the topics. Let us assume the learner has selected “Please explain what this video is about in a few sentences.”

The learner articulates their opinions, and the generative AI offers feedback and prompts further inquiry. The learner responds to subsequent inquiries and interacts with the generative AI. Figure 4 illustrates the sequence of this process.

Figure 4

Chat Window With Generative AI



After the interaction, an evaluation indicates whether the conversation objectives were accomplished. The learner is then allowed to review what they said during the interaction, with feedback provided on any grammatical errors that may have been made.

In October, the participants were provided with an explanation of the use of generative AI and were afforded the

opportunity to utilize it in class. Subsequently, interactions with the generative AI were primarily conducted outside of class.

Results and Discussion

As previously stated, the participants answered the same questionnaire at Times 1 and 2. Differences in means at Times 1 and 2 were examined using the Wilcoxon signed-rank test.

The reflection reports submitted by the participants at Time 2 were analyzed using qualitative coding. This method involves attaching codes, or small headings that indicate the content of each section, to the collected text data. It is an analytical method for conceptualizing text data. Table 3 provides the answers to the research questions.

Table 3

Questionnaire Results

Research Question		Group	Results
1. Do interaction opportunities with generative AI raise EFL learners' WTC?		High	No
		Middle	Yes
		Low	Yes
2. Do interaction opportunities with generative AI lower EFL learners' anxiety?		High	No
		Middle	Yes
		Low	Yes
3. Do interaction opportunities with generative AI raise EFL learners' perceived confidence?		High	Yes
		Middle	Yes
		Low	Yes

The answers to the research questions for the Middle and Low Groups were all “Yes.” Thus, it is possible to conclude that interaction opportunities with generative AI brought about desirable changes in the participants. As a result of their interactions with generative AI, they exhibited an increase in their WTC and perceived competence and reduced anxiety levels.

The author would like to consider why the answers to research questions 1 and 2 were “No” for the High Group. The rationale for this is that the participants in the High Group already exhibited high WTC and low anxiety at Time 1. Consequently, no notable alteration was discerned.

As illustrated in Table 1, the mean TOEIC® score for the High Group was 750.67, commensurate with the B2 level on the CEFR. This is considered a high achievement level in Japan, where English is taught as a foreign language. Previous research has demonstrated significant differences in language learning beliefs between the B1 level or lower and the B2 level or above (Iwanaka, 2023/January). It is postulated that the participants in the High Group already exhibited experiential learning beliefs at the outset of the survey and that they could enjoy interaction with generative AI without any anxiety.

All groups demonstrated an increase in perceived competence. Many EFL learners exhibit a notable deficiency in their perceived competence, particularly in oral communication (Iwanaka, 2023/August). This study's findings indicate that perceived competence can be enhanced through interaction with generative AI.

At Time 2, the participants submitted reflection reports. The most frequently observed comment was that the interaction with generative AI diminished their reluctance to interact with their peers and teachers in class. Many also commented that they did not feel embarrassed if they made a mistake because they were talking to their ICT device.

Conclusion

The author believes affirmative interaction opportunities are essential for EFL learners to develop their English communicative competence. For them to engage in interaction, they need an interlocutor. The most optimal interlocutor for them would be experienced teachers. They are well-positioned to provide constructive feedback based on a nuanced understanding of their students' English language proficiency. This approach is thought to foster positive communication experiences, alleviate anxiety about using English, and enhance motivation, willingness to communicate, and international posture.

The findings of this study indicate that interaction with generative AI represents a promising avenue for fostering positive interaction opportunities. The level of interaction can be tailored to align with learners' current English language proficiency, allowing for a more anxiety-free interaction practice according to their level.

Finally, the author will examine the prospective research requirements. The participants in this study were students majoring in intercultural studies, and many of them were strongly motivated to acquire English language skills. Similar research targeting students majoring in other disciplines would be beneficial in the future.

Acknowledgments

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Appendix: Abridgment of the Questionnaire Used in the Survey: WTC

How much would you choose to communicate in English in the following situations? Please select the most applicable one.

- | | |
|--------------------------|----------------------------|
| 6. Always communicate | 5. Mostly communicate |
| 4. Sometimes communicate | 3. Do not communicate much |
| 2. Seldom communicate | 1. Never communicate |
-
1. When you have a chance to make a presentation in front of a large group
 2. When you find your acquaintance standing before you in a line
 3. When you have a group discussion in an English class
 4. When you have a chance to talk in a small group of strangers
 5. When you are given a chance to talk freely in an English class
 6. When you find your friend standing before you in a line
 7. When you have a chance to talk in front of the class in an English class
 8. When you discuss in a small group of friends

(Koga & Sato, 2013)