e-FLT

Relationship between Higher-Order Thinking Skills and L2 Performance

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Abstract

This article details a study looking at learning outcomes in a foreign language course with a focus on intercultural learning. The main aim of this study is to examine the relationship between learners' L2 performance and their higher-thinking skills. In advanced Japanese language classes at an Australian university, students read articles regarding global issues written in Japanese, and engaged in discussions with peers from various cultural backgrounds. They then created videos on contemporary issues, and uploaded them to YouTube, where they were commented on by students in Japanese universities. This paper describes in detail L2 performance of six students with different backgrounds (two international students, two local students with an Asian background, and two local students with a relatively monocultural background). The findings suggest that there is no clear relationship between learners' L2 performance and the higher-order thinking skills exhibited in intercultural learning. The paper also discusses constructs of L2 performance required in intercultural communication.

1 Introduction

As global mobility opportunities increase, the development of intercultural competence has become one of the highest priorities for higher education. Intercultural competence refers to the ability to communicate effectively and appropriately in intercultural situations (Deardorff, 2006), involving people from different backgrounds, comprising a wide range of both visible and invisible factors (Lee, Poch, Shaw, & Williams, 2012). Among the awareness and many skills required for intercultural competence, foreign language ability is crucial (Byram, 2008; Crozet, Liddicoat, & Lo Bianco, 1999; Scarino, 2009). One needs to be able to communicate effectively and appropriately in a language other than one's own. In addition, one needs to have higher-order thinking skills (hereafter HOTS) to reflect, relate, interpret, analyse, and evaluate (Lee et al. 2012; Deardorff, 2006; Gopal, 2011; Laal & Laal, 2012; Sheets, 2009). In this respect, a foreign language course, providing opportunities for improving both language performance and HOTS, can be an ideal environment for enhancing intercultural competence.

Since 2012, in light of the demand for the development of intercultural competence, the curricula of the Japanese language courses at the University of Melbourne have been restructured to target the enhancement of effective and appropriate linguistic performance through experiencing interactions with people of various cultural backgrounds. In this paper, learning that is focused on the enhancement of intercultural competence is referred to as intercultural learning. For such learning, two learning objectives are set in the advanced Japanese course: 1) improving L2 performance and 2) developing HOTS (the following section will discuss L2 performance and HOTS in detail).

The aims of the course were to improve Learners' L2 performance by providing a number of opportunities to improve and exhibit L2 ability in intercultural exchanges, with abundant feedback from the teacher and Japanese students, and also to enhance HOTS by providing opportunities to think and talk about weekly texts (on global topics) and their own research, and by receiving feedback from the teacher, classmates and Japanese students. The domains of the two objectives, L2 performance and HOTS, are not separate, but closely interrelated. Effective and appropriate intercultural communication requires, as suggested by the literature, both substantial linguistic ability, and HOTS for evaluating what is effective and appropriate. However, the relationship between the two is still under-investigated.

The purpose of this paper is to investigate the relationship between the two aims set for the advanced Japanese course. The paper details the course activities and learning outcomes, and examines the relationship between learners' L2 performance and HOTS exhibited in the language course focusing on intercultural learning (i.e. not solely language-focused learning). It was hypothesised that there would be a relationship, probably a causal relationship, between learners' L2 performance and HOTS; the analytical and critical metacognitive ability, HOTS, resulting from activities that are not directly targeted at language performance (e.g. learning about global issues and different opinions on them) can be utilised in activities focusing on language performance (e.g. talking to people from different cultures), and hence enhances the performance.

2 Literature review

The term 'L2 performance' originated from the term 'linguistic performance' coined by Noam Chomsky, who differentiated it from linguistic competence (innate grammar knowledge that native speakers possess). However, more generally, the term 'linguistic performance' refers to the demonstration of linguistic competence (i.e. knowledge about the language; Cazden, 1967). Initially, linguistic competence only referred to phonological, lexical, syntactic and semantic knowledge. Later, the term 'communicative performance' prevailed, referring to the actual acts of 'communicative competence,' which was introduced by Hymes (1972). Hymes' communicative competence model included, in addition to conventional linguistic knowledge, sociocultural rules of use and non-cognitive factors such as capacity and motivation (Sun, 2014). Recently, researchers argue that models should incorporate the ability to consider cultural differences in an intercultural communication setting (e.g. Sercu, 2005; Sun, 2014; Wen, 1999). In this paper, the term 'L2 performance' refers specifically to what learners of Japanese did in the videos they created (to be detailed later). The term 'linguistic performance' is avoided, because, although linguistic performance refers to the expression of the knowledge about the language and language use, the word 'linguistic' may give an impression that it only refers to linguistic items such as vocabulary and grammar. The term 'performance' is also ambiguous in that it can refer to both spontaneous and prepared performance. The 'performance' in L2 videos was a prepared performance. One may claim that such a performance is not a naturally occurring utterance. However, it is a form of self-expression which can be seen in daily life such as in a video blog and a video job application. It may be equated to a musician performing at a concert, which is a realisation of his tacit musical knowledge, but with hours of practice. Hayes and Itani (2014) emphasise the importance of communication with the consideration of the audience, as follows: "It is important that the speaker thinks about the listener's response and considers the 'impact' of their words" (p. 135). The constructs of 'performance' should include how engaging the performance is. The music of a musician must reach and move the audience.

HOTS include skills to reflect, relate, interpret, analyse, and evaluate. As mentioned above, these skills are the core of intercultural competence. Only with the use of HOTS, do knowledge and experience become awareness and comprehension. HOTS is also known as: skill to discover, comparative thinking skill, academic skill, cognitive skill, metacognitive skill, higher-order cognitive skill, self-reflexive skill, critical thinking skill, and higher level reasoning skill (e.g. Deardorff, 2006; Gopal, 2011; Lee et al., 2012; Laal & Laal, 2012; Sheets, 2009). Since HOTS is also a criti-

cal requirement for language improvement, it was hypothesised that the development of general HOTS would likely enhance L2 performance in videos. Hence, the quality of L2 performance correlates with the degree of HOTS. A number of researchers and educators advocate the importance of HOTS in L2 language learning (e.g. Chamot, 1995; Roy, 2014; Tarvin & Al-Arishi, 1991; Zohar & Dori, 2003).

Artello (2014), for example, reports on a group work assignment, in which students synthesised information and then created public service announcement videos (i.e. products of research, collaborative learning, and creativity). In her study, the videos demonstrated increased levels of media literacy, creativity, and critical thinking skills. The current study attempted to improve students' L2 performance and HOTS by providing opportunities to deepen linguistic knowledge and world knowledge through a video-sharing project. The research question for this study is whether there is a relationship between L2 (video) performance and HOTS exhibited during the intercultural learning.

3   Learning environment and data

Students in two consecutive advanced Japanese language subjects (12 wks x 2 sem, 4 hrs/wk) in an Australian university gained knowledge about issues arising in Japanese language and society due to globalisation and the effects involving other countries, and linguistic items (vocabulary and expressions) necessary for discussing the issues. The students learnt how to communicate effectively and appropriately through working on a video-sharing project, which involved interactions with classmates from various cultural backgrounds as well as with students in Japanese universities. Students were then required to reflect upon their language, culture and intercultural learning in the form of diary-writing.

The weekly structure of the course is: 1) lecture with video material for providing background information on a weekly topic (e.g. overuse of loanwords, over-emphasis of English learning, problems surrounding foreign workers, discrimination against migrants, etc.); 2) comprehension of online reading material on the topic to pique curiosity and to provide a catalyst for discussion; 3) linguistic exercises with the phrases and expressions from the reading material, focusing on the similarities and differences between Japanese and English; and 4) face-to-face discussion in class to deepen understanding about the topic and to broaden perspectives by exchanging opinions with others (teacher and classmates).

Besides these classroom-based activities, students were engaged in: 5) individual research pertaining to the topic to explore further and to pursue the quest; 6) online group discussion with members (from different cultural backgrounds) of a group formed for sharing information and opinions; 7) video presentation on an unlisted YouTube site, in groups of three to four, for conveying knowledge and opinions to students in Japan (people living in a different culture); 8) communication with Japanese students, through a Facebook group page linked to the YouTube site, to exchange and become aware of various opinions; 9) individual diary-writing to reflect on learning (language, culture and intercultural relationships).

Students created six video clips over one year, four videos in semester one with one group and two in semester two with another group. In the videos, students talked about, in Japanese, what they had learnt and discussed in class, what they had investigated outside the classroom, and what they had thought about. Students were encouraged to focus on appropriate and effective communication in consideration of their audience (i.e. students in Japan). In return, they received feedback on Facebook from students in Japan in the form of responses to questions posed by the Australian students, as well as opinions on the content. The Australian students interacted with the Japanese students by replying to their comments. Throughout the video creation and interaction period, the students kept diaries to reflect on their own learning in the language, culture, and intercultural aspects, within which they were encouraged to use HOTS to transform their intercultural knowledge and experiences into awareness and comprehension.

Of 35 students who completed the whole year of the advanced Japanese course, 31 students submitted both videos and diaries on all the six occasions. An initial examination found that 11 of

the 31 students kept nothing more than a record of their activities in their diaries, which was not sufficient for the analysis of HOTS. Therefore, the data of these students were not further analysed. After examining the data of the remaining 20 students (6 diaries x 20 students), the results of six students were selected to report the relationship between students' cultural backgrounds and the HOTS they developed through the intercultural learning (see Toyoda, 2015, for details). These six students were chosen because: a) they came from different cultural backgrounds (see Table 1) – two Australian students with a fairly monocultural upbringing (Mike and Rob), two international students relatively new to Australia (Shu and Mei), and two students with multicultural and multi-lingual life experiences (Joy and Lisa); and b) the two students within each category exhibited distinct learning experiences (i.e. not as a representative sample).

Although the six students all expressed satisfaction towards the intercultural learning environment, close examination of the data indicated that their learning experiences varied considerably (see Table 2 for a summary). Intercultural learning models and theories suggest that the degree of HOTS varies according to prior life experiences (e.g. Deardorff, 2006; Lee et al., 2012). Therefore, it was hypothesised that students with richer multicultural experience would exercise HOTS, and would construct and confirm meaning through discourse and reflection, more than those with less experience. In the study (Toyoda, 2015), where students' diary entries suggested their intercultural knowledge/experience turned into awareness/comprehension using HOTS, it was identified as an occurrence of intercultural learning. The students' HOTS were examined in terms of the frequency and types of skills (e.g. interpret, analyse, etc.). The key finding from the investigation of the use of HOTS was that, while the prior intercultural experience of individual students plays a key role, the understanding level of the teacher's intention (i.e. course objectives and the reasons for setting those objectives) and the amount of peer support also affect the exercise of HOTS.

Table 1. Background information of participants

Name (Pseudonym)	Status	Languages (in the order of proficiency)	Parents' languages	Education
Mike	Local – mono	English, Japanese	English	Australia
Rob	Local – mono	English, Japanese, Italian	English	Australia
Shu	International	Mandarin, English, Japanese	Mandarin	China
Mei	International	Mandarin, Cantonese, Shanhainese, English, Japanese	Mandarin	China
Joy	Local – multi	English, Mandarin, Cantonese, Hokken, Japanese	Cantonese, Hokken (Mandarin)	Australia
Lisa	Local – multi	English, Gaelic, Japanese, Vietnamese	Gaelic, Vietnamese (English)	Australia

Table 2 shows a brief summary of the demonstration of HOTS exhibited by the six students.

Table 2. Intercultural competence of participants

Name (Pseudonym)	Status	Use of HOTS in intercultural learning
Mike	Local – mono	Reflection did not go beyond language learning
Rob	Local – mono	Showed an improvement in intercultural understanding, but only to a small degree.
Shu	International	Did not benefit greatly from the intercultural learning opportunities. She had a fixed mindset towards learning, and she performed excellently within the boundaries of her way of learning.
Mei	International	Utilised HOTS at the time of the interaction with text and people around them, and post-discourse reflection.
Joy	Local – multi	Focused on completing the task, and let opportunities for intercultural learning from others pass by.
Lisa	Local – multi	Utilised HOTS at the time of the interaction with text and people around them, and post-discourse reflection.

In the current study, the relationship between the use of HOTS and L2 performance of these six students was investigated. To this end, the above six students' videos, the transcriptions of these videos, reflective diaries, and teacher's observation notes are used as data for analysing the relationship. These are all treated as time-based individual data, that is, comparisons are made between different times within an individual student, not between different students. This study is effectively qualitative, because, although the transcriptions are analysed numerically, the computed figures are not accurate enough to be handled statistically due to various reasons described in the next section. It is by no means a quantitative comparison or a numerical measurement. The aim of this study is to describe in detail the learning performances of individual learners focusing on the relationship.

4 Analysis

4.1 Fluency, accuracy and complexity

The six students' L2 performances in the six videos (total of 36) were transcribed word for word including fillers and pauses, and analysed using conversation assessment criteria such as fluency, accuracy and complexity[1]. The analysis was conducted using an online lexical analyser for Japanese texts called J-Lex (http://www17408ui.sakura.ne.jp/index.html; Suganaga & Matsushita, 2013). Each sentence of each transcription (of each student/each video) was fed through J-Lex. Non-lexical fillers (etto, ano, etc.) and erroneous elements were included in the transcription. J-Lex counts the total number of 'words,' and classifies them into six categories: five levels of difficulty judged by frequency of occurrence, assumed known words (proper nouns and non-lexical fillers), and not-applicable. Since the definition of a 'word' is not well-defined in Japanese due to the difficulty of word segmentation (because lexical elements agglutinate with no space between them), for convenience' sake, the units used in J-Lex are referred to as 'words' in this paper. J-Lex does not count punctuations as part of 'words.' Erroneous words are purported to be classified as not-applicable, although this was not always the case. In such cases, erroneous words were re-counted manually.

Fluency was assessed by the proportion of unnecessary pauses occurring within a word (e.g. omowa...reru) and non-lexical fillers in total utterance. Fluency rates were calculated by the proportion of pauses and fillers in the total number of words (the number of pauses and fillers divided by the total number of words), although it must be conceded that this is an approximation since pauses had not been included in the total number of words. Accuracy was assessed by the propor-

tion of errors in the whole utterance. For example, if a student produces 312 words in a whole ut-terance (the total of the number of words in individual sentences) and 34 of them are erroneous, the error rate is 34/312*100 = 10.9%. It should be noted that, as mentioned above, J-Lex is not always accurate in terms of counting errors. When errors were re-counted by hand, it could have affected the total number of words. The fluency rates and error rates, therefore, should be taken as indicative only, not as statistics. The errors identified were further classified into six categories manually: pronunciation; grammar; vocabulary; unnecessary utterance; repetition; and incompre-hensible utterance.

Complexity was assessed by the average number of words per sentence in combination with the proportion of intermediate/advanced level vocabulary marked by J-Lex. For example, when a student produced 312 words in 17 sentences (4 words in the first sentence, 16 in the second sen-tence, 31 in the next one, and so on), the average number of words in a sentence was calculated as 4+16+31+…/17=18.4. Thus, the higher the number of words there are in a sentence, the higher the complexity. The number of intermediate/advanced words per sentence was obtained from J-Lex, and was aggregated to derive the total number of such words in the whole utterance in one video. If a student produced atotal of 312 words, and 53 of them were intermediate/advanced words, the proportion was calculated as 53/312*100 = 17%. Some problems were identified with the use of J-Lex for the analysis of complexity. For example, some loanwords in Japanese were counted as high level words because they are not commonly used words. Also some erroneous words (e.g. wrongly pronounced words) happen to exist as real words with different meanings. In these cases, J-Lex showed the word levels of the real words, which were not the words that students intended. Therefore the results for the number of intermediate or higher level words need to be viewed with cautionTo minimise erroneous analysis, when counting the number of words per sentence, English words (if any) were excluded before running J-Lex. Likewise, any appropriate pause was excluded from the count.

4.2 Engagement

Apart from the three conventional criteria for linguistic performance (i.e. fluency, accuracy and complexity), when assessing video performance, we need also to assess impact on the audience. These days, it has become common for people to communicate using smiley stickers, photos and music in daily life. In expressing one's message, the accurate use of linguistic items is only one aspect of effective and appropriate communication. Hayes and Itani (2014) emphasise that the speaker needs to consider the 'impact' on the listener. In this paper, the term 'engagement' is used to refer to the impact of the L2 video performance on the audience. Verbal engagement includes yobikake (form of address), ending particles, questions, and any other inclusive utterance. Non-verbal engagement includes eye-contact, facial expression, body movement and the use of props such as illustration, graphs, charts, characters, and pictures. Students' videos were viewed several times to observe their engagement behaviours, and noted descriptively. In the video-sharing pro-ject, the interaction did not stop at the completion of uploading the videos; the Japanese students commented on the video, and the Australian students replied to their comments. However, for this study, only the engagement during video performance was analysed.

4.3 HOTS for language learning (as reference)

To complement the above observable results, the students' use of HOTS specifically targeting their language and language-related learning, delivered in the form of entries in diaries, is reported. Teacher's observational notes were also used as a supporting source. Whereas the HOTS reported in the previous study (Toyoda, 2015) focused on the overall use of HOTS in the intercultural learning environment, the HOTS for language learning depict the students' degree of focus on, and awareness of, their language learning. To this end, the HOTS data analysed for the previous study were re-examined, and a sub-set of data comprising HOTS use (e.g. reflection, analysis, and eval-

uation, etc.) specifically for their language use and language learning, was compiled. In this paper, the findings in this aspect will be used as reference when discussing the relationship between the use of HOTS and L2 performance.

4.4   Summary

Lastly, the findings from the above-mentioned data analysis of each of the six students are summarised in relation to the student's HOTS exhibited in intercultural learning in general.

5   Results

Presented below are the results of students' language use (i.e. fluency, accuracy and complexity), engagement, and HOTS for L2 performance, followed by a summary of all of the above. Lisa and Mei showed a great deal of HOTS in their diaries. It was hypothesised that these high HOTS students would show the greatest improvement in L2 performance in the videos. However, the results of in-depth analysis suggest that these students were not the ones who showed most progress in L2 linguistic performance.

5.1   Rob

The most striking achievement in language learning was shown by Rob. This student did not show a great deal of HOTS in intercultural interaction, which was interpreted as due to his lack of previous intercultural experiences.

Fluency: His filler and pause rate began with 7.7% and finished with 4.7%, fluctuating in between.

Accuracy: His error rate dropped over the course of time from 10.9% to 2.9%. There were many incomprehensible and mispronounced words in his first video. In the second video, the number of incomprehensible words dropped, and from the third video onwards, all the words produced were comprehensible.

Complexity: Initially, Rob's utterances were fairly simple, containing about 18 words per sentence. After slight increases and decreases, in the last two videos, Rob produced about 26 words per sentence. The percentage of intermediate/advanced vocabulary per sentence fluctuated between11.7% and 19.9%.

Engagement: Rob looked extremely nervous in the first video, exhibiting an excruciating facial expression, and constantly shaking his legs. In the second video, Rob looked slightly less nervous. He looked blankly at the camera, rolling his eyes at times to recall lines that he had memorised. By the third video, although the speed of his talk was still much slower than the other group members, he was more at ease, and, in the fourth video, he looked relaxed and had good eye-contact with the audience (i.e. Japanese students who watched the videos). Around this time, Rob started to talk to, rather than talk at, the audience. He thanked the Japanese students for watching his videos and apologised for his poor Japanese. He replied to questions from counterparts and asked them questions. In the fifth video, Rob firstly appeared as an interviewee of the other member, disguised as a girl with his hair tied up, holding a handbag. His voice was replaced by a voice-over by the real interviewee. This hilarious scene attracted tumultuous acclaim from the Japanese audience. Rob looked very relaxed throughout the video. In the last video, Rob looked relaxed and at the same time confident in his presentation. Between individual talks, the members inserted short funny scenes, where Rob looked like a scallywag, which was probably his true self.

HOTS for language learning: Rob was always monitoring his language use. In the first video, he said that he had never recorded and listened to himself, and that he realised that speaking (speed and confidence) was the area that needed improvement. By the second video, he felt he had improved because he was able to create sentences from scratch using his own words without paraphrasing from the articles. In video 4, he summarised his experience as, "Overall I found this video project a great experience to actually practise my Japanese and use what I have learnt in class to do

something interesting." In the last diary, referring to the high Japanese proficiency levels of the other members of his group, he said, "I found that, not only were they both very supportive and helpful, but it also forced me to want to do better, and I believe that I have."

Summary: Although Rob did not demonstrate HOTS with regard to intercultural interaction, the current analysis focusing on the L2 performance revealed that he was using HOTS, such as analysing and evaluating, in language learning. The analysis of his data revealed that Rob showed considerable improvement in his L2 performance. As the project progressed, he produced longer sentences with less errors and fillers/pauses. He became more natural in presenting himself, and started to engage with the audience. Rob exhibited self-reflection and evaluation in language learning.

5.2   Mike

A trend of improvement was also observed in Mike, although to a lesser extent. Perhaps having little intercultural experience to reflect on favoured him in the sense that it steered him towards focusing on language learning.

Fluency: The proportion of fillers and pauses in his utterance was low (1.4%) in the first video, which could have been due to the simple sentences used in self-introduction. The filler and pause rate increased in the second video and remained high (4.9–6.2%) until the fifth video. In the last video, the rate decreased to 0.8%. This low filler rate coupled with the higher usage of intermediate/advanced vocabulary and the low error rate (as shown below) in the last video indicated an improvement.

Accuracy: His error rate decreased from about 6% to 1.4%. The errors were mainly grammatical and word repetitions.

Complexity: On average, his utterances remained at 17–20 words per sentence. His talks in the last two videos were slightly shorter (about 350 words) compared to the previous videos (500–700 words). However, the usage of intermediate/advanced vocabulary in these two videos was slightly higher (20.9–22.3%) than in the previous ones (15.3–17.3%).

Engagement: Despite his positive comments in his diaries about group cooperation, his first group did not show any interaction in the videos. In the first two videos, Mike looked above the camera with a deadpan facial expression, although he remembered to greet the Japanese students and asked them questions. In videos 3 & 4, he looked at the audience from time to time while talking to the Japanese students. His second group produced highly engaging films, entitled "What's happening in the world." In those last two videos, he spoke with some strength in his voice, and looked at the audience. He looked relaxed, and displayed much more facial expression.

HOTS for language learning: In the first diary, he mentioned that one of his group members helped him with his Japanese by reading over and offering suggestions on the script. In his next diary, he said that the members looked at each other's work to ensure their video flowed. He remarked again in the fifth diary that members checked each other's scripts. However, there was no reflection on his language learning until the last diary, where he wrote, "I think working in a group and being able to […] see each other's Japanese, you tend to pick up and learn a few expressions or words that you didn't already know which is a great complement to the normal learning method." In the last video, the group members co-scripted one group script on Google Drive. Mike remarked, "I found that this method of collaboration was really effective as […] we could also help each other by reviewing each other's work."

Summary: Mike demonstrated HOTS neither in intercultural interaction nor in his language learning. However, Mike showed some improvement in L2 performance. Eventually, he became able to produce less erroneous sentences with more intermediate/advanced words, and less fillers and pauses. His engagement showed minor improvement as well.

5.3 Shu

Initially Shu expressed a preference for studying grammar instead of making videos, implying a focus on the language learning. However, the results did not show much improvement.

Fluency: Throughout the videos, Shu spoke almost flawlessly. The maximum number of fillers was three, which was only 0.4% of her utterances.

Accuracy: There was a minuscule decrease in her error rate from a little over 3% to a little below 2%. Errors were mainly grammatical.

Complexity: Interestingly, the number of words that Shu produced showed a decrease from 37 in the first video to 17 in the fifth video, and then increased to 35 in the last video. The analysis revealed that the variance was due to the role that she played in the group video and the nature of her presentation. The number was higher when she presented her research findings and opinions, and lower when she led and summarised the group video as MC. It was higher when she presented without using any props, and lower when she used props such as characters or pictures. The percentages of intermediate/advanced vocabulary in her utterances were 13–24.5 %, being highest in the last video, but there was no clear pattern.

Engagement: In the first video, Shu spoke like a machine gun, and her eye movement suggested that she was reading her script. She posed questions to the audience, but they didn't sound like questions due to her deadpan face and monotone voice. In the second video, Shu explained the pros and cons of a current issue using two cartoon characters. This attracted audience acclaim. She looked straight at the audience when she asked a few questions. Shu also used rhetorical questions to include them in her talk and ending particles to convey friendliness. In the next video, Shu spoke naturally, as if she were talking to the Japanese students face-to-face, appropriately changing cadence to show emphasis. She also inserted a few funny comments with effective ending particles and smiled occasionally at the audience. Thus, Shu's engagement with the audience gradually improved, until she started to look nervous again when she was re-grouped with other members. The new members in her second video group preferred the videos to be serious, and one member took a leadership role, under which everyone else had to work as the leader planned. Shu's engagement with the audience disappeared, as she spoke without facial expressions and eye-contact. She continued to use ending-particles to convey friendliness, but less often.

HOTS for language learning: As mentioned above, Shu focused on grammar prior to the start of the video project. However, once she started to work with the first group members, she paid more attention to group work, as revealed in a comment such as "I didn't want to produce that was not acceptable and disappoint my group members." With the creative members in her first group, she put effort into making her part attractive. Since the second group was more research-oriented, Shu focused on her research. In her diaries, despite her initial desire to focus on grammar, there were negligible entries regarding the language. In the last diary, she remarked, "This video project has made me realise how much I love Japan and Japanese. Often I find myself talking to my friends about things I learnt in classes and through the video makings. I feel more like researching Japanese culture rather than studying the Japanese language." It seems that her focus shifted from language skills to cultural study.

Summary: Although she was exposed to various intercultural perspectives, Shu did not exercise HOTS in intercultural learning. In terms of L2 performance, Shu was the most proficient amongst the six students. From the beginning, she spoke long sentences embedded with intermediate/advanced vocabulary, with very few errors and fillers. Shu did not show signs of improvement apart from a slight decrease in the error rate (possibly due to her initial high proficiency). Interestingly, the number of words per sentence and the level of words changed depending on her role in the video (e.g. when she took on the role of MC, she spoke in shorter sentences). Moreover, her engagement level changed when she moved from the fun-loving group to the research-oriented group. It seems she was using her HOTS implicitly for monitoring and evaluating her role in relation to others.

5.4 Joy

Joy had a good friend, a high-proficiency student, in both of her groups, which placed her in a good position to be positively affected by the friend. However, her L2 performance did not see much improvement in fluency or accuracy.

Fluency: The filler and pause insertion rate was lowest (1.9%) in the first video, possibly due to a routine self-introduction. In later videos, the filler and pause rates remained around 3–5%.

Accuracy: There was no clear pattern in her error rates (which fluctuated between 2.6–4.8%), nor in the types of her errors (various kinds).

Complexity: Joy produced 18–26 words per sentence, in which 12.4–22.1% were intermediate/advanced vocabulary. The average number of words decreased slightly from 23–26 in the first four to 18–20 in the last two videos. The intermediate/advanced vocabulary rate was slightly higher (17.8–22.1%) in the last two videos than in the previous four (12.4–16.4%).

Engagement: There was no interaction between group members. In the first video, Joy spoke rapidly with little eye contact. In the next three videos, she continued her rapid delivery, but looked at the audience occasionally and thanked them individually, by name, for their comments. Joy also replied to the Japanese students' questions, addressing each by name. In the last two videos where she uttered shorter sentences, she looked more relaxed, showing some facial expressions. In these two videos, Joy talked to the Japanese students using an iPad showing some illustrations, photos, and pictures, although the screen was hard to see due to reflection.

HOTS for language learning: The first two diaries suggested a triple focus on language learning, researching Japanese society and effective task completion. Regarding the language, she wrote that she re-read assigned articles using online dictionaries and revised new phrases and expressions before writing a script. She also mentioned that she asked her group members and her Japanese friends whenever she had some difficulties in understanding. With regard to the research, she remarked, "It is actually good because we can explore our interests by doing research. It made me consider things that I'd never thought about." However, Joy mainly focused on how to efficiently complete the task of video creation. From the third diary, almost all the comments she made were about the strict division of labour, equal workload, efficient work, and feeling of success (in working efficiently). In the last two videos, Joy showed her awareness of the audience to some extent. She remarked that she used an iPad for diagrams and props in the hope that the Japanese students would find it more interesting to watch.

Summary: The analysis of her diaries revealed that Joy's main focus was on how to complete the task of video creation efficiently, and that was the area where she utilised HOTS. Joy did not benefit from having members with different backgrounds or from the Japanese students, and thus did not show any clear development in HOTS in terms of intercultural learning. With regard to L2 performance, Joy did not exhibit any clear improvement either in fluency or accuracy (possibly due to her few errors and fillers), but she used slightly more intermediate/advanced vocabulary towards the end. There was a slight improvement in engagement, and she showed HOTS in this area. Joy stood out among the six students, as she focused firmly on the completion of the tasks.

5.5 Mei

In this and the next section, we examine Mei and Lisa who exhibited HOTS in intercultural learning. Mei focused on language learning. She claimed, "Vocabulary and grammar are the most basic things in language learning. These things help you set a solid foundation," and in order to improve her Japanese, she always asked her Japanese friends to check her pronunciation, grammar and word usage. However, as can be seen below, we did not see any clear indication of improvement in her fluency, accuracy and complexity. On the other hand, her engagement showed a clear improvement.

Fluency: The rate of use of fillers was 0.7–2.8%, which fluctuated in the course of her six videos.

Accuracy: Error rate fluctuated between 2.6% and 6.0%, although there was no pattern. The errors were mainly grammatical.

Complexity: Mei produced complex sentences with 18–37 words per sentence. 19.1–23.7 % of the words were of intermediate/advanced level. The number of the words per sentence and the rate of the intermediate/advanced vocabulary show that Mei is a high proficiency learner of Japanese. However, there was no clear pattern of improvement.

Engagement: Both as a group and as an individual, there was an improvement in the degree of engagement. Initially group members presented themselves one by one without any linkages between them. In the third and fourth videos, the three members appeared on the screen at the same time introducing their topic and concluding the videos. They showed a moving caption thanking each of the Japanese students for viewing and making comments. The members took several short turns instead of talking sequentially. Mei steadily became more natural in speaking. In the first two videos, she talked without any props while sitting still on a chair, looking at the audience at times. In the third and fourth videos, Mei inserted some pictures, captions and music between sub-topics. In the last two videos, she also included graphs and tables to show her research findings. She kept good eye contact in these last four videos.

HOTS for language learning: Mei was always keen to have her grammar corrected. Instead of discussing among the group members to improve their scripts, she turned to her own Japanese friends. For each video, before filming herself, she asked her Japanese friends to check her grammar, vocabulary and pronunciation. Once a student from the partner university in Japan commented not only on the content, but also on the language use. To this, Mei expressed her appreciation by writing, "Thank you, Hiroko-san. Thank you for your comments. We'll try to do better in the next video!!" She felt that "this video project contributed to improvement of our writing and reading skills, since we needed to prepare our script, reading research articles, reading comments, etc., and improved our speaking skills, too." In her diary, in addition to comments pertaining to her language skills, there were many entries suggesting that she became culturally more aware and became motivated in research. Mei also reflected on her life experiences, triggered by her research findings, and reviewed them critically.

Summary: In her diaries, she noted that the video project gave her opportunities to reflect on her past experience and to view issues with critical eyes. Her diaries also suggested she improved in language and culture knowledge/skills, and research skills, and was using HOTS in these areas as well. However, close analysis of her L2 performance revealed that her utterances did not show any improvement in fluency, accuracy and complexity. Nevertheless, Mei demonstrated a considerable degree of improvement in engagement.

5.6   Lisa

Throughout the year, Lisa and her group members produced highly engaging videos, which received many positive comments from the audience. The analysis, however, revealed no improvement in her L2 performance.

Fluency: Lisa's filler rate was 2.8% in the first video, the highest in her six videos. The rest of the videos contained 0.3–1.4% fillers.

Accuracy: Her second video had a high error rate of 5.6%. The rest had an error rate of 2.4–3.9%. Despite the conspicuous grammatical errors, her speeches were easy to follow due to a very small number of incomprehensible words; there were in fact only two in all six videos.

Complexity: Lisa produced relatively simple sentences of 11–19 words. Her first video had the smallest number of words and the last one contained the most, with the rest containing 14–16 words per sentence. The rates of intermediate/advanced vocabulary were 11.5–17.7% with no pattern of improvement.

Engagement: Lisa's group videos were very engaging from the first one, while most of the first videos made by other groups simply delivered a series of non-linked individual presentations without using any props. Lisa interviewed the other group members, and finished with a short conclusive remark. There was a good connection between interviewer (Lisa) and interviewees (the

other two members), and Lisa managed to include the audience by asking them about the current situation in Japan (e.g. "In Japan, you use ….. don't you?"; "I heard you ….. Is that right?"). The group also used moving captions to add explanatory comments. Lisa considered how to get the audience's attention. For example, she plaited her hair and wore black-framed glasses just like the girl on her T-shirt. Lisa talked animatedly while keeping good eye-contact with the audience. The rest of the videos took a similar form. Lisa sometimes appeared in the video as different characters, all in different clothes with different tones of voice, expressing knowledge and opinions from each of their perspectives. At other times, she also used people outside the group (e.g. her family members) to take part in skits, moving captions to add explanations, and a variety of props such as words and pictures on a whiteboard, and stuffed animals to represent different views. In each video, Lisa talked to the audience animatedly with pleasant facial expressions and gestures. She did not forget to sprinkle 'inclusive' remarks such as "Isn't this interesting?" and "Do you think so, too?" in her talk. Her videos were all well-received by the audience.

HOTS for language learning: The video project provided her opportunities to find out about things of interest by investigating more widely and deeply than in classroom learning. Writing diaries helped her reflect on languages, cultures, herself and other people. She exhibited HOTS in intercultural learning on many occasions. Lisa remarked, "I like making these videos because they really make me think about both Japanese culture, and about myself and the world I live in." Along with reflections and critical analyses regarding global issues such as migration, discrimination, and identity issues, Lisa also made reflective entries pertaining to language in her diaries. However, those comments were mostly about linguistic features or the linguistic history of her mother tongue, her mother's language and the Japanese language rather than about how she used Japanese. Only two comments in the six diaries were about her language learning.

Summary: Lisa had plenty of life experiences that she could relate to, reflect on and analyse, and indeed she exhibited HOTS on various occasions. Her HOTS seemed to have contributed positively to her L2 video performance as well. Although she was not a high-proficiency student, she knew how to communicate and produce 'impact.' Throughout the year, she produced very engaging videos. However, apparently, her HOTS were not used in improving her language use: she did not show any improvement in terms of fluency, accuracy and complexity, except for a slight tendency to produce longer sentences.

6   Discussion

This study examined the relationship between HOTS and L2 performance. Presented in this paper are only a small number of samples, and the described L2 performance and HOTS use of the students are only those exhibited in their videos and expressed through their diaries (complemented by the teacher's observation notes). However, even within the limited data, we have more questions than answers to the topic of the study. In short, the results of the in-depth analysis did not show a clear relationship between the general use of HOTS and L2 performance. Lisa and Mei were the two students who exhibited HOTS actively in intercultural learning (as reported in Toyoda, 2015), which developed steadily throughout the year. In the videos, Lisa showed great engagement skills, but no improvement in the use of linguistic items. Mei showed significant improvement in engagement, but no increase in fluency, accuracy and complexity. On the other hand, Rob and Mike, who did not exhibit HOTS in intercultural learning, showed improvement in L2 performance.

Apart from HOTS, various other factors may affect the development (or otherwise) of L2 performance, such as the current level of L2 performance ability, focus on language learning, relationship with other group members, and input from higher proficiency peers. Each of these factors alone cannot explain the improvement (or otherwise) of L2 performance. A combination of some of these factors affects the student's performance, as can be seen in the performances of the six students in this study. For example, Lisa had a high level of engagement skills. The linguistic items used and delivered in Lisa's L2 performance were not of a high standard. However, the rela-

tively simple short sentences with occasional errors were compensated for by her high level of engagement. She must have utilised HOTS to assess her interaction with the audience, and she explicitly or implicitly knew that she was on the right track. This self-approval coupled with acclaims from the audience might have hindered her effort to improve her language use per se. On the other hand, Shu had a high level of linguistic ability, but there was room for improvement in her engagement. Shu demonstrated that she could do better in engagement. However, her engagement level lapsed, when she moved to the second group that focused on research. If she focused had more on improving her engagement, she would have shown a high level of L2 performance. Shu was overly concerned with meeting her group members' expectations, which might have diverted her attention from improving her L2 performance.

The term 'focus' may be ambiguous. 'Focusing' is similar to 'paying attention,' which can be compared with 'awareness,' 'consciousness' and 'noticing' (the differences between these terms are discussed in Truscott, 1998). In the current discussion, 'focus' and 'attention' have been used to indicate the area of interest of students (effectively their mindset). Rob had a firm focus on improving his Japanese, and he used HOTS to monitor and evaluate his language learning. Gopal (2011) claims that "there must be willingness, a conscious attempt, and a desire to achieve intercultural competence" (p. 374). The results of this study suggest that, for intercultural learning to succeed, learners need to focus on individual components (e.g. L2 performance) of intercultural competence.

Rob was fortunate to have group members whose Japanese was more advanced and who supported Rob's L2 performance. Mike was also fortunate in this respect. He had very supportive group members, whose Japanese levels were higher than his. From social constructivism perspectives (e.g. Vygotsky, 1978), knowledge is seen as something that is created and shared in social settings (Gunawardena, Lowe, & Anderson, 1997). The video-sharing project was designed and implemented in an advanced language learning course so that students could enjoy a learning environment where students with various linguistic and cultural backgrounds could support each other and together improve their HOTS and L2 performance. However, in the current study, learning from peers seems to have occurred only for lower-proficiency students. Vygotsky (1978) introduced the concept of ZPD (zone of proximal development). The upper limit of ZPD is the level of potential skill that one is able to reach with the assistance of more capable people (Vygotsky, 1978). In the current study, Rob and Mike benefited from capable peers' assistance. The form of the assistance could have been explicit input (e.g. direct feedback) or implicit input (e.g. unintentional exhibition of better utterances). A tendency that a lower-proficiency student benefits from having a high-proficiency partner has also been identified in the research investigating the effects of L2 proficiency differences in paired assessment (Davis, 2009; Iwashita, 1996). As learning is socially constructed, having input from higher proficiency peers seems to make a difference. However, Lisa, who was a relatively low-proficiency student, did not show the ZPD effect in her language use, probably because she was not focusing on the language learning.

The higher-proficiency students in the current study did not show much improvement in their language use (fluency, accuracy and complexity). Although they also had the Japanese students as 'more capable people,' the linguistic input from them was almost limited to the occasions when they commented on the videos. Mei received regular support from her own Japanese friends. However, she did not benefit from this support to an observable degree. It could be because she was passively relying on her friends to correct her language, and did not actively use HOTS in her language learning. During the preparation periods, these higher-proficiency students were perhaps in the position of 'teaching' lower-proficiency peers, rather than 'learning' from them. Some researchers, however, claim that higher-proficiency students can also benefit from working with lower-proficiency peers, as they learn from tutoring lower-proficiency peers (van Lier, 1996; Watanabe & Swain, 2007). In this study, we have no data to examine this claim. However, the claim accounts for the contradiction between the perception of development in language use and the actual achievement shown in data. Both Shu and Mei expressed that they had improved their Japanese, although little showed in the data. This may have been because their learning was to 'consolidate' their existing knowledge.

Researchers who investigate the effects of L2 proficiency differences in paired assessment report that the interlocutors' proficiency generally has no observable effect on the proficiency of students' performance (Davis, 2009; Galaczi, 2008; Iwashita, 1996; Watanabe & Swain, 2007). Regardless of L2 proficiency differences, students can benefit from a harmonious collaborative relationship between participants (Watanabe & Swain, 2007). It seems that more learning occurs in pairs with a collaborative orientation (collaborative or expert/novice) than in pairs with a non-collaborative orientation (dominant/dominant or dominant/passive; Storch, 2002). The present study where students worked in a group saw a similar pattern. There was little improvement observed in Joy who was a dominant member, and in Shu and Mei who were passive members in dominant/passive groups. On the other hand, Mike who was in a collaborative group and Rob who was in an expert/novice group both exhibited L2 performance improvement. Lisa seemed to have been enjoying a harmonious environment. However, her extraverted character might have been seen as dominant by other members.

7 Conclusion

At the start of the current study, it was hypothesised that there could be a causal relationship between HOTS and L2 performance. However, the relationship between HOTS and L2 performance is not straightforward. While HOTS may be a factor in the improvement of L2 performance, it is not the sole factor; all the factors mentioned in the discussion section are intricately intertwined, and affect L2 performance in a complex manner. Also, it appears that evidence of HOTS in one area (e.g. focusing on intercultural interaction in general) is not necessarily a predictor for HOTS in another area (e.g. focusing specifically on language learning).

A major implication of this study is: In order to enhance HOTS and improve L2 performance, it is critical to make learners aware of the importance of active learning. Active learning emphasises that learners should be engaged in two aspects: doing things and thinking about the things they are doing (Bonwell & Eison, 1991). At the same time, learners should be told to what areas (i.e. components of intercultural competence) they need to pay attention. A few orientation sessions and repeated follow-ups may be necessary to ensure learners focus on L2 performance while engaging in non language-focused activities, and consequently on the intentional use of HOTS in this particular area, as well as in other areas (such as critically analysing global issues happening in Japan). Equally important is assessment. Development of L2 performance and HOTS is only achievable when objectives and assessment are coupled. The use of both facilitation responses (i.e. teacher's guidance and feedback) and a rubric (i.e. a graded grid) as scaffolding may be necessary (Giacumo, Savenye, & Smith, 2013).

Previous e-learning related studies mostly report findings generalised across participants, and few describe individual learning differences. This article looked into the L2 performance of six students with different cultural backgrounds and varied degrees of HOTS, and discussed their complex interwoven relationship with L2 performance. It should be noted that the above interpretation is based on a small sample of students with highly variable profiles. The current study by no means revealed all complex relationships. However, the author believes that this study acted as a window to complicated interrelationships between L2 performance, HOTS and the other related factors mentioned above. More research is required in the pursuit of the whole picture.

For future projects or teaching aimed at the enhancement of L2 performance in intercultural learning, the following points are also suggested.

1. The importance of the relationship between individual members in group work cannot be over-emphasised. Learners need to be aware of various types of collaborative learning (i.e. collaborative, expert/novice, dominant/dominant or dominant/passive) and their likely outcomes; learners need to make an effort to avoid a dominant/dominant or dominant/passive relationship.

2. Learners need to be aware that they can learn from peers. Not only can lower-proficiency learners learn from high-proficiency learners, but higher-proficiency learners can also learn

from teaching others. Lower-proficiency learners should maximise opportunities where they can learn from higher-proficiency learners; they need to be proactive in making such opportunities, rather than simply waiting to be taught. At the same time, for higher-proficiency learners, the benefits of learning through teaching should be emphasised; these learners can consolidate and further their learning by explaining to lower-proficiency learners.

3. Learners should be provided a threat-free environment where they share life experiences. Learners with less intercultural experience can learn from the more experienced by asking questions (i.e. active listening). Through answering these questions, those with abundant intercultural experience can analyse and evaluate their own experiences.

4. It is essential that international students and first year students who are not familiar with collaborative learning be given guidance and support.

Note
[1] Numerical data are attached as appendices. Videos can be made available for viewing upon request. Diaries are generally not available for privacy reasons except those with written permission from their authors.

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Appendices

Appendix A: Fluency, accuracy and complexity data

	Video 1	Video 2	Video 3	Video 4	Video 5	Video 6
Rob						
Total number of words	312	352	290	282	317	384
Average number of words per sentence	18.4	23.5	22.3	21.7	26.4	25.6
Number of fillers and pauses	24	20	21	24	19	18
Percentage of fillers and pauses	7.7%	5.7%	7.2%	8.5%	6.0%	4.7%
Number of errors	34	37	18	17	10	11
Percentage of errors	10.9%	10.5%	6.2%	6.0%	3.2%	2.9%
Number of Int/Adv words	53	70	51	33	63	73
Percentage of Int/Adv words	17.0%	19.9%	17.6%	11.7%	19.9%	19.0%
Mike						

Total number of words	503	498	597	677	359	355
Average number of words per sentence	20.1	17.8	17.6	19.9	17.1	18.7
Number of fillers and pauses	7	31	32	33	20	3
Percentage of fillers and pauses	1.4%	6.2%	5.4%	4.9%	5.6%	0.8%
Number of errors	30	28	34	31	14	5
Percentage of errors	6.0%	5.6%	5.7%	4.6%	3.9%	1.4%
Number of Int/Adv words	77	77	102	117	75	79
Percentage of Int/Adv words	15.3%	15.5%	17.1%	17.3%	20.9%	22.3%

Shu

Total number of words	560	719	506	856	667	797
Average number of words per sentence	37.3	24.0	20.2	19.5	17.1	34.7
Number of fillers and pauses	2	1	0	3	0	3
Percentage of fillers and pauses	0.4%	0.1%	0%	0.4%	0%	0.4%
Number of errors	19	26	13	15	12	15
Percentage of errors	3.4%	3.6%	2.6%	1.8%	1.8%	1.9%
Number of Int/Adv words	105	119	66	124	92	195
Percentage of Int/Adv words	18.8%	16.6%	13.0%	14.5%	13.8%	24.5%

Joy

Total number of words	520	727	632	702	498	411
Average number of words per sentence	23.6	24.2	23.4	26	18.4	19.6
Number of fillers and pauses	10	35	25	37	17	21
Percentage of fillers and pauses	1.9%	4.8%	4.0%	5.3%	3.4%	5.1%
Number of errors	21	35	20	18	21	15
Percentage of errors	4.0%	4.8%	3.2%	2.6%	4.2%	3.6%
Number of Int/Adv words	66	90	92	115	110	73
Percentage of Int/Adv words	12.7%	12.4%	14.6%	16.4%	22.1%	17.8%

Mei

Total number of words	499	497	467	605	409	520
Average number of words per sentence	26.3	26.2	22.2	25.2	17.8	37.1
Number of fillers and pauses	10	7	12	17	3	6
Percentage of fillers and pauses	2.0%	1.4%	2.6%	2.8%	0.7%	1.2%
Number of errors	23	26	12	28	16	31
Percentage of errors	4.6%	5.2%	2.6%	4.6%	3.9%	6.0%
Number of Int/Adv words	112	94	89	128	79	123
Percentage of Int/Adv words	22.4%	18.9%	19.1%	21.2%	19.3%	23.7%

Lisa

Total number of words	501	638	593	613	492	637
Average number of words per sentence	11.1	15.2	16.0	14.6	15.4	18.7

Number of fillers and pauses	14	5	2	8	7	3
Percentage of fillers and pauses	2.8%	0.8%	0.3%	1.3%	1.4%	0.5%
Number of errors	18	36	17	24	12	21
Percentage of errors	3.6%	5.6%	2.9%	3.9%	2.4%	3.3%
Number of Int/Adv words	83	99	68	86	87	91
Percentage of Int/Adv words	16.6%	15.5%	11.5%	14.0%	17.7%	14.3%

Appendix B: Types of errors data

	Video 1	Video 2	Video 3	Video 4	Video 5	Video 6
Rob						
Pronunciation %	32.4	43.2	44.4	11.8	30	54.5
(# of words)	(11)	(16)	(8)	(2)	(3)	(6)
Vocabulary %	2.9	2.7	0	11.8	0	9.1
(# of words)	(1)	(1)	(0)	(2)	(0)	(1)
Grammar %	17.6	13.5	5.6	0	10	0
(# of words)	(6)	(5)	(1)	(0)	(1)	(0)
Unnecessary utterance %	8.8	18.9	0	11.8	10	9.1
(# of words)	(3)	(7)	(0)	(2)	(1)	(1)
Repetition %	5.9	13.5	50	64.7	50	27.3
(# of words)	(2)	(5)	(9)	(11)	(5)	(3)
Incomprehensible %	32.4	8.1	0	0	0	0
(# of words)	(11)	(3)	(0)	(0)	(0)	(0)
Mike						
Pronunciation %	6.7	3.6	8.8	3.2	6.7	20
(# of words)	(2)	(1)	(3)	(1)	(1)	(1)
Vocabulary %	23.3	32.1	8.8	29.0	33.3	0
(# of words)	(7)	(9)	(3)	(9)	(5)	(0)
Grammar %	26.7	35.7	23.5	19.4	33.3	20
(# of words)	(8)	(10)	(8)	(6)	(5)	(1)
Unnecessary utterance %	13.3	3.6	17.6	16.1	0	0
(# of words)	(4)	(1)	(6)	(5)	(0)	(0)
Repetition %	26.7	17.9	32.4	25.8	26.7	40
(# of words)	(8)	(5)	(11)	(8)	(4)	(2)
Incomprehensible %	3.3	7.1	8.8	6.5	0	20
(# of words)	(1)	(2)	(3)	(2)	(0)	(1)
Shu						
Pronunciation %	36.8	23.1	7.7	20	25	20
(# of words)	(7)	(6)	(1)	(3)	(3)	(3)
Vocabulary %	15.8	7.7	23.1	20	25	33.3
(# of words)	(3)	(2)	(3)	(3)	(3)	(5)
Grammar %	31.6	61.5	46.2	33.3	50	26.7
(# of words)	(6)	(16)	(6)	(5)	(6)	(4)
Unnecessary utterance %	5.3	7.7	15.4	13.3	0	6.7

(# of words)	(1)	(2)	(2)	(2)	(0)	(1)
Repetition %	5.3	0	0	6.7	0	13.3
(# of words)	(1)	(0)	(0)	(1)	(0)	(2)
Incomprehensible %	5.3	0	7.7	6.7	0	0
(# of words)	(1)	(0)	(1)	(1)	(0)	(0)

Joy

Pronunciation %	28.6	31.4	20	38.9	28.6	20
(# of words)	(6)	(11)	(4)	(7)	(6)	(3)
Vocabulary %	9.5	2.9	15	11.1	42.9	20
(# of words)	(2)	(1)	(3)	(2)	(9)	(3)
Grammar %	19.0	11.4	15	16.7	9.5	46.7
(# of words)	(4)	(4)	(3)	(3)	(2)	(7)
Unnecessary utterance %	33.3	22.9	10	27.8	9.5	0
(# of words)	(7)	(8)	(2)	(5)	(2)	(0)
Repetition %	4.8	31.4	40	5.6	4.8	6.7
(# of words)	(1)	(11)	(8)	(1)	(1)	(1)
Incomprehensible %	4.8	0	0	0	4.8	6.7
(# of words)	(1)	(0)	(0)	(0)	(1)	(1)

Mei

Pronunciation %	21.7	23.1	25	14.3	25	38.7
(# of words)	(5)	(6)	(3)	(4)	(4)	(12)
Vocabulary %	13.0	15.4	16.7	3.6	18.8	3.2
(# of words)	(3)	(4)	(2)	(1)	(3)	(1)
Grammar %	47.8	50	41.7	46.4	37.5	38.7
(# of words)	(11)	(13)	(5)	(13)	(6)	(12)
Unnecessary utterance %	4.3	3.8	8.3	7.1	12.5	6.5
(# of words)	(1)	(1)	(1)	(2)	(2)	(2)
Repetition %	0	3.8	8.3	14.3	0	3.2
(# of words)	(0)	(1)	(1)	(4)	(0)	(1)
Incomprehensible %	13.0	3.8	0	14.3	6.3	9.7
(# of words)	(0)	(1)	(0)	(4)	(1)	(3)

Lisa

Pronunciation %	5.5	38.9	23.5	0	0	9.5
(# of words)	(1)	(14)	(4)	(0)	(0)	(2)
Vocabulary %	22.2	19.4	5.9	16.7	16.7	19.0
(# of words)	(4)	(7)	(1)	(4)	(2)	(4)
Grammar %	72.2	16.7	52.9	41.7	66.7	52.4
(# of words)	(13)	(6)	(9)	(10)	(8)	(11)
Unnecessary utterance %	0	16.7	11.8	12.5	8.3	9.5
(# of words)	(0)	(6)	(2)	(3)	(1)	(2)
Repetition %	0	2.8	5.9	29.2	8.3	9.5
(# of words)	(0)	(1)	(1)	(7)	(1)	(2)
Incomprehensible %	0	5.6	0	0	0	0
(# of words)	(0)	(2)	(0)	(0)	(0)	(0)