# Relationship between second language speaking and writing skills and modality preference of university EFL students 

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#### Abstract

This study compared the performance of second language learners between the written and spoken modalities in terms of three lexical aspects (fluency, lexical complexity, and grammatical complexity) for the same picture description task. It also examined their modality preference and whether it corresponded with their actual performance. The participants were 26 Japanese university EFL students. They described a six-panel cartoon orally and in writing, answered a questionnaire about their modality preference and educational experiences, and had a follow-up interview. Analysis of their spoken and written descriptions using four linguistic measures (text length, MTLD textual lexical diversity, content word frequency, and average sentence length) revealed that they used a wider variety of vocabulary and shorter sentences in writing than in speaking. About $70 \%$ of them preferred the written modality, but half of the students performed equally well in both modalities in terms of the four measures. Further analysis suggested that the variety of words available to learners in each modality may have affected their modality preference and that a study-abroad experience might have affected it as well.


## Introduction

Some people who have learned a second language are better at speaking it than at writing it while others are better at writing it. Those with better speaking skills may find that their writing skills eventually catch up with their speaking skills. On the other hand, their writing skills may never catch up because they get fossilized at some point in the learning process. Unfortunately, there has been little empirical investigation of the relationship between speaking and writing abilities for people learning a second language ("L2"). Japanese university students are generally considered to be better at writing than at speaking English and to feel that their English speaking skills are weak compared with their writing
skills. However, few studies have actually compared their speaking and writing abilities. The purpose of the study reported here was to examine the relationship between performances in these two modalities for Japanese university L2 students and to determine how their preferences affect performance. Our goal is to find ways to help students strengthen their weaker modality.

## Speaking-Writing Relationships for L1 Children

There is a consensus among researchers about the developmental relationship between the speaking and writing abilities of L1 children. Children start to speak their L1 long before they begin to write it because they need to learn written symbols and technical skills before starting to write. Writing a language is, after all, an artificial act that cannot be achieved without training and guidance. Therefore, it is natural for children to speak better than they write for a certain period of time. Kroll (1981), for example, compared younger ( $3^{\text {rd }}$ and $4^{\text {th }}$ graders) and older ( $6^{\text {th }}$ graders) children's speaking and writing performances when they explained a board game in the two modalities. He found that the younger children produced more information when speaking than when writing while the older ones produced a similar amount of information in both modalities. Moreover, the younger children wrote in the same manner as they spoke while the older ones tended to use a different form of explanation between the two modalities. That is, the older children's speaking and writing were more clearly differentiated than the younger children's.

Kroll (1981) used these findings to construct a model of language development in children: preparation, consolidation, differentiation, and integration. In the preparation stage, children's writing abilities are minimal compared to their speaking abilities. Their writing gradually improves in the consolidation stage, but their writing skills still greatly depend on their speaking skills. In the differentiation stage, the children begin to use different structures and styles between speaking and writing. Finally, in the integration stage, they choose an appropriate register for effective communication in both speaking and writing. The register is chosen in accordance with various factors such as the context, audience, and purpose.

Kroll's model suggests that children's writing proficiency develops on the basis of their speaking proficiency and that there is a strong connection between speaking and writing skills in L1 children as well as in L1 adults. Cayer and Sacks (1979), for example, investigated the writings of eight L1 English students with basic writing skills who were studying at a community college. Their writing showed various features of speech, indicating that their oral language ability greatly affected their written language ability. That is, their oral and written languages were not completely differentiated even at the college level.

A strong connection between the two modalities in L1 adults has also been suggested by the results of a syntactic processing study. Cleland and Pickering (2006) examined how adult L1 speakers produce language in different modalities. They found that L1 speakers use the same mechanism for syntactic encoding in speaking and writing, which corroborates the close connection between the two modalities in L1 adults.

## Speaking－Writing Relationships for L2 Adults

Unfortunately，there has been very limited research on the relationship between speaking and writing for L2 adults（Belcher \＆Hirvela，2008；for a research overview，see Williams，2008）．It is self－ evident that Kroll＇s theory for L1 children cannot be directly and simplistically applied to L2 adults as a few researchers have pointed out（Weissberg，2006；Williams，2008）．Cognitive and social factors more greatly affect the acquisition and use of L2 by adults than they do the acquisition and use of L1 by children．This means that the speaking－writing relationship for L2 adults is more complex and varied than it is for L1 children and thus should be investigated from a broader perspective with individual factors taken into account．

The general findings of the few studies on the speaking－writing relationship for L2 adults can be summarized into two points．First，unlike for L1 children，the development of speaking proficiency does not always precede that of writing proficiency．Weissberg（2000）investigated how five adult Spanish learners of English developed syntax in their speech and writing over one semester．The five learners engaged in various oral and written tasks，both casual and formal，and the syntactic features in their speech and writing were analyzed in terms of accuracy and syntactic innovation．Syntactic innovation is＂the emergence in writing or speech of any hitherto unused morphological or syntactic features＂（p． 44）．Weissberg found that syntactic accuracy in writing developed to a greater extent than in speech over the semester and that more than half of the new syntactic forms appeared first in writing while about $20 \%$ appeared first in speech（the others appeared in both simultaneously）．In particular，the learners tended to try new syntactic forms in dialog journals，probably because they could take risks in such a non－evaluative task．These findings suggest that the written modality can be stronger than the spoken modality，at least for some learners，and that the development of writing proficiency may facilitate and promote that of speaking proficiency．

The second general finding is that there is a wide interindividual variability in the development of the two modalities and that some learners experience asymmetrical development．Weissberg（2006）， for example，conducted case studies on three adult learners with different ages，first languages，and educational backgrounds and exhaustively described how they developed their speaking and writing skills in an ESL class．One learner，who was an adept language learner，showed a balanced development between speaking and writing．The other two learners，who were not adept，showed quite asymmetrical development．

One of these less adept learners，Francisco，had graduated from a high school in Mexico．He was sociable and enjoyed conversing with his classmates and with native English－speaking friends．His L2 language development was similar to that of L1 children in Kroll＇s（1981）theory．When he started the ESL class，he wrote the same way as he spoke．Gradually，he came to learn a written register，but new syntactic structures and vocabulary usually appeared in his speech first and then in his writing several weeks later．

The other less adept learner，Oscar，was starkly different from Francisco．He was 32 years old and had been a teacher at a university in Mexico．He came to the U．S．to earn a doctorate．He liked
reading and writing in Spanish, and, in the ESL class, he exhibited advanced English writing skills with a large vocabulary and accurate grammatical structures. In addition, he had little difficulty in acquiring an academic writing style. However, his oral proficiency was very limited, so he was very quiet in class and did not look for opportunities to talk in English outside class. He was keenly aware of his limited listening and speaking skills. As Weissberg (2006) reported, even after Oscar wrote his doctoral dissertation, "his conversational English never develop[ed] much beyond the dysfluent, telegraphic style of speech he displayed at the beginning of the course" (p. 36). His oral proficiency had fossilized at a much lower level than his writing proficiency.

In terms of the big picture, or from an educational point of view, it does not matter whether L2 learners exhibit symmetrical or asymmetrical development. That is, it matters little whether oral or written proficiency develops first as long as proficiency in the other modality reaches the same level in the long run. Nevertheless, a case like Oscar's is problematic. The major obstacle to his progress in speech seemed to be that he felt he was weak at speaking in English. This perception probably caused him to avoid speaking in and outside of class and thus deprived him of the opportunity to practice his L2 speaking skills.

A learner's modality preference may affect the levels eventually achieved in oral and written proficiency. However, there has been little research on modality preference except for the series of studies by Weissberg. A small study on foreign language anxiety felt by Japanese university students (Ushiba \& Sano, 2012) found that $50 \%$ of the 50 participants felt anxious when speaking in English while $18 \%$ felt anxious when writing in English. Apparently, more of them felt that they were weak at speaking in English, and this self-assessment affected their performance in the oral and written modalities.

As mentioned above, there have been very few empirical studies that compared speaking and writing performance for the same group of L2 learners. Mochizuki (2008) investigated whether the lexical features of language production by 81 university students differed between the speaking and writing modalities. The students performed picture and graph description speaking tasks and an expository writing task. Mochizuki found that on average they used more low-frequency words in speaking than in writing. This finding, however, may not be generalizable to other contexts for two reasons. First, since he used different tasks for speaking and writing, the results reflect a task effect. Second, spelling errors were treated differently between the two modalities. There were no spelling errors in the transcribed descriptions while those in the written ones were left as they were. This likely affected the lexical features in the spoken and written descriptions. In addition, if the purpose of the research is to compare learners' speaking and writing performance (which was not the purpose of Mochizuki's study), examining only the lexical aspects is insufficient. It is necessary to examine other aspects as well.

Kormos and Trebits (2012) conducted a comprehensive study on various aspects of narrative tasks, a part of which was devoted to the effect of modality difference. They assessed four aspects of task performance (fluency, lexical variety, syntactic complexity, and accuracy) when 44 EFL learners
receiving bilingual secondary education were engaged in storytelling and picture description tasks in speaking and writing．They found that，in general，the learners used a wider variety of vocabulary in writing than in speech while syntactic complexity was similar between the two modalities．

The present study investigated whether the findings of Mochizuki（2008）and Kormos and Trebit（2012）are applicable to Japanese university EFL students when they perform the same picture description task in both modalities．It also investigated how the students assessed their modality strengths and to what extent that assessment reflected their actual performances in the two modalities． It posed two research questions：（1）Do Japanese EFL students perform differently between speaking and writing English in terms of fluency，lexical complexity，and grammatical complexity？（2）Does a student＇s modality preference correspond to their actual performances in speaking and writing？

## Methods

## Participants

The participants were 26 students majoring in English literature or linguistics at a university in Japan．All were female，aged 18 to 22 （seven freshmen，six sophomores，seven juniors，and six seniors）． All had had at least six years of experience learning English at the secondary level．Their average TOEIC score was 573.85 （ $\mathrm{SD}=175.26$ ）．Twelve of them $(46.2 \%)$ had studied abroad for more than two weeks．

Participation was voluntary．We visited several classes and explained our study．Students interested in participating gave us their contact information．We thus assumed that the participants were well motivated to perform the study tasks．The participants gave their written consent when they came to the data collection session．

## Tasks and Procedures

The participants performed a speaking task and a writing task and then answered a questionnaire and were interviewed．The order of the speaking and writing tasks was randomized to eliminate the task－ order effect．We devised four task orders and randomly assigned them to the participants．An analysis of variance（ANOVA）was used to compare the four task－order groups separately for each measure．It revealed that no measure showed any significant difference among the four order groups．Therefore，it is assumed that there was no task－order effect．

The participants individually performed the tasks in a quiet room．One of the authors explained the tasks and sat quietly while the participant carried them out．A small pilot study had shown that participants finished the speaking and writing tasks within a reasonable amount of time，so we did not set a time limit for completing them．

Picture description tasks．Each participant performed a picture description task by speaking and another one in writing．There were two six－panel cartoons，and they were asked to describe them．The cartoons were taken from Heaton（1997）．Before the actual tasks，we had a brief practice session．First， we orally described a cartoon（picture \＃27＂The chase＂）in Japanese to show the participant how to perform a picture description task．Then we asked the participant to describe a different cartoon（picture
\#22 "The winner!") in Japanese for practice. After this practice session, the participant described one of two cartoons orally and the other in writing (pictures \#25 "Waiting for a bus" and \#26 "A surprise"). There was no time limit, but most of them completed each task within 10 minutes (the writing task tended to take longer than the speaking task, but no participant spent more than 30 minutes on the writing task).

The written descriptions were typed, and spelling mistakes were corrected. The spoken descriptions were audio-recorded and transcribed later.

Questionnaire. The questionnaire asked in Japanese how the participant assessed the strengths of her speaking and writing modalities on a five-point Likert scale ("Which mode of communication do you think you are better at in English, speaking or writing?" and "Which mode of communication do you like better in English"). The two questions were used to classify them into two groups (see below). The questionnaire also asked about study-abroad and educational experiences.

Interview. After the participant completed the two tasks and the questionnaire, she was asked to elaborate on her responses in the questionnaire. For instance, she was asked why she preferred one modality to the other or why she thought she was better at speaking or writing in English.

## Text Measurements

We used the Coh-Metrix Web-based computational tool (Graesser et al., 2004) available at http:// cohmetrix.memphis.edu/cohmetrixpr/index.html (version 3.0) to analyze the descriptions. Four linguistic measures (text length, textual lexical diversity, content word frequency, and average sentence length) were used for three aspects of text quality (fluency, lexical complexity, and grammatical complexity).

Fluency. Fluency was measured on the basis of text length, i.e., the number of words written for the writing task and the number of words spoken for the speaking task. Since a time limit was not set for either task, this is not a strict measure of fluency. However, it as a reasonable measure if we assume that a more fluent speaker or writer will describe a cartoon more elaborately than a less fluent one.

Lexical Complexity. Lexical complexity was assessed using two measures (lexical diversity and lexical sophistication). This is because Kormos and Trebits (2012) found a significant difference in lexical diversity between the speaking and writing modalities, and Mochizuki (2008) found a significant difference in lexical sophistication between the two modalities. The measure of textual lexical diversity (MTLD) was used to assess lexical diversity (McCarthy \& Jarvis, 2010). This measure is similar to the type-token ratio (TTR), but the TTR is strongly affected by text length and is therefore not well suited to comparing texts of different lengths. MTLD was developed to overcome this major weakness of the TTR. The content word frequency measure was used to assess lexical sophistication. It basically denotes the average appearance frequency of words found in a composition (or a set of utterances) and is calculated using the Centre for Lexical Information (CELEX) corpus. We used the mean logarithm of the word frequency (to base 10).

Grammatical Complexity. We used average sentence length to measure grammatical complexity. This is because Ortega (2003), synthesizing studies on syntactic complexity in L2 writing, found that it
differed greatly in accordance with the L2 proficiency level．It was also found to work relatively well with the texts of basic EFL writers（Nitta \＆Baba，in press）．

## Analysis

A one－way multivariate analysis of variance（MANOVA）was used to answer Research Question 1．Follow－up ANOVAs were then used to assess which aspects of text quality contributed most to the difference between the two modalities．To answer Research Question 2，the participants were first classified into two groups on the basis of their responses in the questionnaire：a written modality dominant group and a spoken modality dominant group．Two participants did not have a particular modality preference，so they were not included in the grouping．This grouping reflects the general tendencies of the participants，not the degrees of their preference．

To compare each participant＇s performance in the two modalities，the speaking and writing performances were ranked in terms of the four measures．This resulted in eight ranking lists（four measures $\times$ two modalities）．Each list was then divided into four order groups（from $1^{\text {st }}$ to $6^{\text {th }}$ ，from $7^{\text {th }}$ to $13^{\text {th }}$ ，from $14^{\text {th }}$ to $19^{\text {th }}$ ，and from $20^{\text {th }}$ to $26^{\text {th }}$ ，please note that the two students who had not shown modality prefecence were included at this point）．That is，each participant was placed in one of four groups for each measure for the two modalities．Each participant spositions in the eight lists were then compared．

Figure 1 shows an example for a hypothetical person．This person was ranked in the highest group for grammatical complexity（i．e．，average sentence length）for speaking and in the third highest group for writing．Therefore，this person＇s grammatical complexity is stronger in speaking than in writing． That is，her speaking has more grammatical complexity than her writing．In this way，each participant＇s performances were compared to those of the other participants．It would have been inappropriate to directly compare the raw values of the measures between speaking and writing due to the possible modality effects．For example，the value for grammatical complexity for a written text may be higher than that for a spoken text merely because writing tends to require more complex grammatical structures， not because the person performs well in writing．

| group1 |  |
| :--- | :--- |
| group2 | group1 |
| group3 | group2 |
| group4 | group3 |
| SPEAKING | group4 |

Figure 1．Example showing a person＇s positions in grammatical complexity lists for two modalities．

Finally，each participant＇s performance and her modality preference were compared，and the participants were placed into three groups for each measure：balanced group，preference－performance
matched group, preference-performance mismatched group. The two participants who did not have a modality preference had been removed earlier from the analysis. First, we judged whether there was a discrepancy between each participant's performances between the two modalities. If there was no discrepancy, she was placed in the balanced group. If there was a discrepancy, her performances were compared with her modality preference. If the performance and modality preference were matched, she was placed in the preference-performance matched group, and, if not, into the preference-performance mismatched group. If the hypothetical person in the example in Figure 1, which shows that she uses more grammatical complexity in speaking than in writing, prefers speaking to writing, she is placed in the preference-performance matched group, and vice versa.

## Results

Research Question 1. The first research question was "Do Japanese EFL students perform differently between speaking and writing English in terms of fluency, lexical complexity, and grammatical complexity?" Table 1 shows the means and standard deviations for the four measures for the two modalities. A MANOVA was used to determine the effect of the two modalities (speaking and writing) on the four measures (number of words, MTLD, content word frequency, and average sentence length). Significant differences were found between the two modalities for the four measures: Wilks's lambda value $\Lambda=.40, F(4,47)=17.51, p<.001$. The multivariate partial $\eta^{2}$ based on Wilks's $\Lambda$ was strong, i.e., . 60 .

Table 1 Means and Standard Deviations for Four Measures for Two Modalities

| Measure | Speaking |  | Writing |  |
| :---: | ---: | ---: | ---: | ---: |
|  | $M$ | $S D$ | $M$ | $S D$ |
| Text Length | 146.08 | 68.38 | 166.38 | 68.58 |
| MTLD | 22.59 | 7.19 | 35.95 | 9.23 |
| Content Word Freq | 3.23 | .21 | 3.22 | .12 |
| Avg. Sent Length | 13.33 | 5.30 | 8.98 | 2.49 |

Note. MTLD = measure of textual lexical diversity

In the follow-up ANOVAs on each dependent variable, each ANOVA was done at the .012 level to control for Type I errors. The results showed that two measures were significant: $\operatorname{MTLD}(F(1,50)=$ 33.87, $p<.001$, partial $\left.\eta^{2}=.40\right)$ and average sentence length $\left(F(1,50)=14.34, p<.001\right.$, partial $\eta^{2}=$ .22). Text length and content word frequency were not significant. These ANOVA results suggest that the participants used a wider variety of words in writing and that they produced longer sentences in speaking.

Research Question 2. The second research question was "Does a student's modality preference correspond to their actual performances in speaking and writing?" As mentioned, the participants were placed in two modality groups on the basis of their responses in the questionnaire: written modality dominant group and spoken modality dominant group. Seventeen (70.8\%) were placed in the written
modality dominant group，and seven（ $29.2 \%$ ）were placed in the spoken modality dominant group． These results suggest that the majority of the participants preferred writing and felt that they were better at writing than at speaking．Interestingly，six of the seven participants（ $85.7 \%$ ）in the spoken modality dominant group had studied abroad．In contrast，only 4 of the 17 participants（ $25 \%$ ）in the written modality dominant group had studied abroad．This indicates that there is a relationship between modality preference and study－abroad experience（see discussion section）．

Next，the participants＇performances for the two modalities were compared with those of the others． About half of them were placed in the balanced group for all measures though the percentage for content word frequency was somewhat low compared with the other measures： 13 （ $54.2 \%$ ）for text length， 12 （ $50.0 \%$ ）for MTLD， $11(45.8 \%)$ for content word frequency，and 12 （ $50.0 \%$ ）for average sentence length． That is，the participants in the balanced group performed the tasks equally well in terms of the three linguistic aspects in comparison with the other participants．

Table 2 Number of Participants in Preference－Performance Matched Group and Preference－Performance Mismatched Group for Four Measures

| Measure | Preference－Performance Group |  |
| :---: | :---: | :---: |
|  | Matched | Mismatched |
| Text Length | 4 | 7 |
| MTLD | 8 | 4 |
| Content Word Freq | 9 | 4 |
| Avg．Sent Length | 4 | 8 |

Note．MTLD＝measure of textual lexical diversity

The performances of the participants not in the balanced group were then compared with their modality preferences．Table 2 shows the number of participants in the two preference－performance groups．To grasp the general distribution of the three preference－performance groups，the percentages for the four measures are charted in Figure 2．A white fraction indicates the balanced group，a dark grey one the perception－performance matched group，and a light grey one the perception－performance mis matched group．

As described above and shown in the figure，the percentages for the four measures for the balanced group were almost the same，ranging from about 46 to $54 \%$ ．In contrast，the percentages for MTLD and content word frequency for the preference－performance matched group were much larger than those for text length and average sentence length．Accordingly，the relationship was reversed for the preference－ performance mismatched group．In other words，for the participants who showed asymmetrical performance between speaking and writing，the two measures of lexical complexity corresponded more closely to their modality preference．


Figure 2. Percentage of participants $(N=24)$ in three preference-performance groups: balanced, preference-performance matched, and preference-performance mismatched for four measures.

## Discussion

The results of our study revealed that there was a significant difference between the speaking and writing abilities of Japanese university students majoring in English literature or linguistics. The students used a wider variety of vocabulary and produced shorter sentences in writing than in speaking. The wider variety of vocabulary finding supports the finding of Kormos and Trebits (2012) that L2 learners produce more varied vocabulary in writing than in speaking.

The shorter sentences in writing finding was a bit surprising. This is partly attributable to our focus on sentences rather than clauses in both the speaking and writing. We identified the sentences in speech on the basis of pausing and grammaticality. Spoken sentences tend to be structured differently than written sentences. When speaking, the students often connected two t-units (main clauses plus any subordinate clause) into one sentence by using a coordinating conjunction (and, so, or but), which resulted in longer sentences. They did not do this as much when writing. They used and 205 times in total when speaking and 153 times in total when writing. The more frequent use of and when speaking is understandable considering that the students probably felt more pressure to produce connected speech and thus used this communication strategy to deal with the pressure. Therefore, it is not reasonable to assume that they normally produce more complex grammatical structures when speaking.

Nonetheless, the difference found between the two modalities in the way the students constructed sentences suggests that they do not normally write in the same way that they speak. That is, they intentionally or unintentionally incorporated different discourse features into their speaking and writing.

As mentioned in the introduction，Cayer and Sacks（1979）found that basic L1 writers tend to use surface phrases that are characteristic of spoken language（e．g．，＂I Well，＂＂Yes，＂and＂I guess＂）in their writing． That is，not all L1 adults completely differentiate their oral and written discourse．In contrast，L2 adults may recognize more clearly the distinction between the discourse features of the two modalities．To examine this possibility，we plan to delve more deeply into the textual features of L2 learners＇language production in future research．

The second research question was concerned with the students＇modality preferences and the correspondence with actual performance．We found that the majority of the students（about 70\％） preferred the writing modality．We also found that all the students（except for one）who preferred speaking had studied abroad．To establish a causal relationship between study－abroad experience and modality preference is beyond the scope of this paper．However，at least one student，Keiko（a pseudonym）said that she began to prefer speaking to writing after she had studied abroad．According to her，she did not like speaking in English before she went to the U．S．to study．For the first six months of her study abroad，she could not easily express herself in English，but then she gradually became able to speak more fluently．Her study－abroad experience gave her a strong sense of accomplishment．She now felt a keener delight when she could eloquently explain herself than when she could write a good essay． She thus came to prefer speaking rather than writing．If the other students had had similar experiences， study－abroad experience would have a positive impact on the performance of L2 learners in their weaker modality，which would likely eventually affect their modality preference．

The results of comparing the students＇performances for the two modalities with their modality preference showed that approximately half the students performed equally well on the four linguistic measures when they were compared with the other students．Since more than two－thirds of them preferred writing，some students might have felt weak at speaking even though they could speak and write in English equally well．For the students whose performances for the two modalities were asymmetric，we assessed whether the performance corresponded with their modality preference．We found that the degree of preference－performance correspondence was higher for the two measures of lexical complexity（MTLD and content word frequency）than for fluency（text length）and grammatical complexity（average sentence length）．This suggests that modality preference is affected by how well， both quantitatively and qualitatively，the learner can use vocabulary in a specific modality．For example， if a learner uses a wider variety of low－frequency words in writing，it is likely that she prefers the written modality for L2 communicating．In short，the findings for Research Questions 1 and 2 suggest that Japanese university students tend to use a wider variety of words in writing than in speaking，which might be why they tend to prefer the written modality．

The findings of this study are tentative due to three limitations．First，the number of participants was not large enough for rigorous statistical analysis，so we had to take a descriptive approach，particularly to the analysis of modality preference．While our findings are valuable given that research in this area has been very limited，they need to be validated by further studies with a larger sample size．Second，the picture description task that we used was de－contextualized．In reality，both oral and written discourse
cannot exist without context, and people may write and speak differently in specific and distinctive contexts. In other words, oral and written discourse may have a different socio-cultural function and role in real communications. Therefore, future research should not only compare L2 learners' speech and writing for the same task but also investigate further the contexts for the speaking and writing. It should also investigate in what way they speak and write in each context. Third, the study used average sentence length as a measure of grammaticality. However, as mentioned above, it did not turn out to be a reliable measure. It would be better to use average clause length instead, like the "Analysis-of-Speech unit" for spoken data used by Foster, Tonkyn, and Wigglesworth (2000).

## Conclusion

The results of this study support the general belief that a majority of Japanese university students feel that they are better at writing than at speaking and that they prefer writing. Helping them to become more comfortable with speaking in English should make them more open to opportunities to speak in English, which should lead to more balance between the strengths of the two modalities.

This study revealed two ways a student can strengthen her spoken modality: study abroad and use a wider variety of words in writing. Studying abroad in an English-speaking country or in a country in which English is widely spoken (e.g., Germany) would give the student more opportunities to practice speaking in English. Moreover, success in communicating with people who speak a different language and live in a different culture should increase the student's confidence in her speaking ability. Since the variety of words used is a factor in modality preference, if a student starts using a wider variety of words in writing, the broader vocabulary should eventually transfer to the student's speaking vocabulary. This is supported by Weissberg's (2000) and Williams' (2008) emphasis of the effect of writing on speaking. Journal writing is a good way for a student to broaden her vocabulary because journal writing is not evaluated. This enables the student to try new vocabulary and structures and to learn through trial and error without pressure. The effect of journal writing in L2 is reported elsewhere (e.g., Casanave, 1994, 2004; Liao \& Wong, 2010; Peyton, 1990), and it is not difficult to introduce it to classrooms in Japan.

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