

日本人英語学習者の英語力は彼らの国語力と 関連があるのだろうか。

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概要

日本人にとって英語は難題である。グローバル化が叫ばれている今日、これから社会に巣立っていく学生にとって特に深刻である。しかしこのような状況にあっても、望まれる英語レベルを達成できずにいる学生も多い。特に努力の割に英語力が向上しない学生の存在が特に気になるところであるが、筆者らは少なくとも一部は、それらの学生の国語力が十分でないことに起因していると考えている。というのも言語は単語と文法のみで成立しているわけではなく、十分に機能を果たす上では豊かな談話力が必要であり、また環境から得られる一般的な知識も言語の種類に関わらず重要であるからである。では、もし一定レベルまで英語力を到達させるに足る国語力がないとしたらどうなるのだろうか。我々はこれを確かめるために、「学生の英語力は国語力を超えることはない」との仮説のもと、学生の英語力が日本語による表現力を高めるための授業「国語表現法」の受講によってどのように影響を受けるかを調べた。その結果、小論文作成を目的とする「国語表現法」を受講した学生では受講していない学生と比べ、日本語の読解力と英語の読解力の両者が向上することを見出した。今後、さらに詳細な検討を重ねることにより、従前、英語訓練のみによって英語力の向上を図ってきた英語教育に代わる、英語と国語の両者を効果的に配置する新しい英語教育システムの構築が期待される。

IS JAPANESE VERBAL APTITUDE RELATED WITH PERFORMANCE OF ENGLISH LEARNING OF JAPANESE?

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Introduction

According to Golestani & Zattore (2009), there is huge variability in an individual's ability to acquire a second language (L2) during adulthood. The observation does empirically make sense to us. What then causes this to happen? It must partly be motivation that determines the results of learning as suggested by countless of studies and experiments (Maslow, 1970; Deci, 1975; Weiner, 1986). However, it is also obvious that there is a situation where some learners are successful in learning but the others not even with high motivation. This is where the learners' L1 comes in. Language transfer, referred to as the carryover of previous performance or knowledge to subsequent learning, often occurs positively or negatively from L1 to L2. In sufficiently broader sense, Kellerman & Sharwood Smith (1986) suggested the term cross-linguistic influence to additionally include avoidance, language loss and rate of learning as an effect of L1. In bilingualism, a cognitively and academically beneficial form is hypothesized to be achieved only on the basis of adequately developed L1 skills (Cummins, 1979). Then L1 must somehow determine the outcome of L2 acquisition. How? The answer to the question is not necessarily clear. The language transfer and cross-linguistic influence show us how some aspects of L1 affect L2, but not how L2 development varies depending on individual learners.

Some neuroimaging technologies have recently become tools to break the barrier. The language network identified by resting-state functional connectivity show highly reproducible patterns that

are consistent with those reported in task-based brain imaging studies (Tomasi & Volkow, 2012). Individual differences in resting-state connectivity have been associated with language learning abilities of L2 sounds (Ventura-Campos et al., 2013) and L2 words (Veroude et al., 2010). On L2 reading abilities in a more general sense, Chai et al. (2016) found that pretraining functional connectivity within two different language subnetworks correlated strongly with learning outcome in two different language skills: lexical retrieval in spontaneous speech and reading speed where subjects were homogeneous in L1 (English) proficiency based on a subjective questionnaire. The work indicates that the human capacity to learn a second language can be predicted by an individual's intrinsic functional connectivity within the language network in the brain.

The work by Chai et al. (2016) reported no surface difference was found in L1 of the participants even with differences in the brain network connectivity. What does this mean? One possible answer to the question is that, in the experiment, the L1 proficiency was not properly assessed because only a questionnaire was used for the purpose. It seems possible to differentiate participants with regards to L1 proficiency if some proper ways of doing assessment are used.

To address the issue, here we designed an educational experiment to confirm that L1 (Japanese) proficiency predicts L2 (English) learning outcome and if L1 training further improves L2 learning outcome. Once L1 is proved to predict L2 performance, L2 education should drastically be changed to introduce L1-L2 combined teaching methods in place of prevailing teaching only of L2.

This study takes up the following research questions:

1. Could the Japanese verbal aptitude of Japanese students be improved through Japanese expression skills training?

The Japanese expression skills course was primarily introduced at TUT in order to improve students' ability to effectively express themselves in Japanese. However, the effectiveness has not been assessed so far. We have several classes under the name of the course and the content varies depending on the instructors in charge. The present study selected a class that focuses on an essay writing and, probably in the next step, would focus on other aspects that would be able to improve Japanese verbal aptitude.

2. Could there be any difference in achievement of English proficiency between the students with Japanese expression skills training and the others without it?

The focus is crucially on this question in the present study (Figure 2). If Japanese verbal aptitude has an influence on a learning process of other languages, the results of English proficiency tests could differ depending on whether the students receive the Japanese expression skills training or not. If there found to be any difference between them, the current English language education should take account of the students' Japanese aptitude and take actions to be tied with some trainings where Japanese expression skills are to be improved.

3. What could the relation be like between Japanese verbal aptitude and English proficiency?

English is considered a logical language and Japanese is not. However, with regard to functional aspects like discourse, for example, which plays a crucial role in conversation, a certain universality such as a control of consistency holds for whatever the languages in use. Therefore, such an inherent knowledge of L1 could work in L2 or FL as well. The Kokugo-ryoku Kentei and EIKEN IBA, to be explained later, are the ones that assess multiple aspects of skills: basic verbal aptitude, reading, writing, listening, and speaking for Kokugo-ryoku Kentei, and vocabulary, reading, and listening for EIKEN. What aspects of skills are correlated with each other is another question.

Method

Participants: Two sets of participants were recruited from the 3rd graders at Toyohashi University of Technology (TUT). The first group (Group 1) is the students who took the Japanese expression skills training course in 2016 spring semester and the second one (Group 2) to take it in 2016 fall semester. Because of a limitation caused by a class schedule, we could recruit 20 students for Group 1 and 10 students for Group 2. Group 1 and 2 were designated 01 and 00, respectively, in Figure 1 at the beginning of the study. The first digit indicates whether or not the students receive an English language training (ET) and the second digit Japanese expression skills training (JT).

Working hypothesis: We hypothesized that English proficiency of the Japanese learners of English does not exceed their Japanese verbal aptitude as shown in Figure 2. The students at 00 move to 01 after taking the Japanese expression skills training course. Even with the same English training, the students at 00 and 01 move differently to 10 and 11, respectively, because of the difference in the positive effect varied depending on the level of their Japanese verbal aptitude.

Japanese expression skills training course: As shown in Figure 3, the class activity consists of three

activities. First, students are given an instruction for 45 minutes on a topic with its background at the beginning. Then the students are given another 45 minutes to write an essay on the topic with more than 800 characters in Japanese. Finally the essay is checked and assessed by the instructor based on logicity, appropriateness of word-use and properness of expressions. The students are to receive such an activity 15 times during one semester.

English language training: Due to using ordinary classes, all the participants are to attend regular English classes at TUT. Therefore, there are no actual participants who are, at the end of the study, designated 00 or 01 in Figure 1 and 2.

Assessment of language proficiency: Japanese verbal aptitude and English proficiency of the participants are assessed by the Kokugo-ryoku Kentei (Z-kai Incorporated) and the EIKEN Institution Based Assessment (IBA) (Eiken Foundation of Japan), respectively. Kokugo-ryoku Kentei, consisting of reading and listening comprehension test, each of which has 50 minutes, is designed to measure five skills in Japanese verbal aptitude, namely cultural and educational knowledge, skills for reading, writing, listening and speaking. Each of the last four skills has five specific skill segments and the test score is given to each skill segment. EIKEN IBA, also consisting of reading and listening, is designed to measure learners' English proficiency relatively quickly (45 minutes) and more cost-effectively (about one tenth the ordinary proficiency tests) and its score corresponds to CEFR (European Framework of Reference for Languages).

Data analyses: Average scores of Kokugo-ryoku Kentei and EIKEN IBA before and after JT are compared with an independent *t*-test when the test score of each skill segment is improved after JT.

Japanese Expression Skills Training

		N	Y
English Language Training	N	00	01
	Y	10	11

Figure 1. Classification of students by the trainings received.

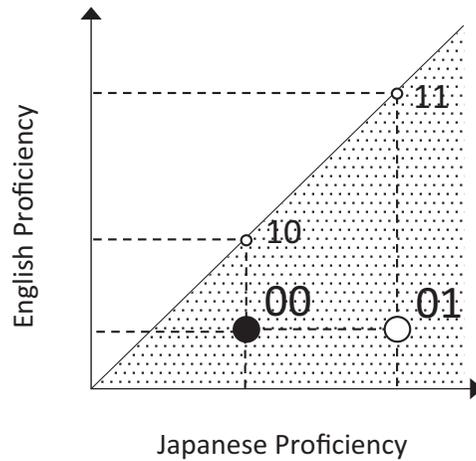


Figure 2. Hypothesis: English proficiency never exceeds Japanese proficiency.

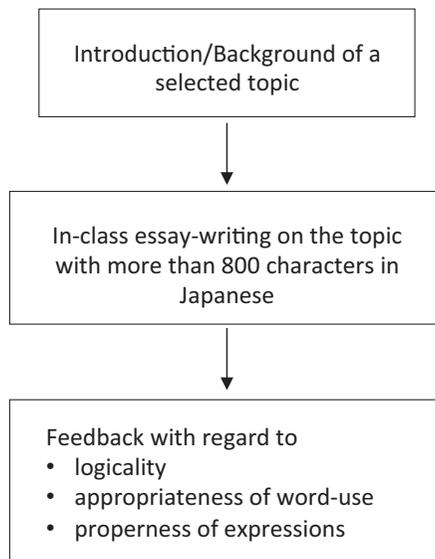


Figure 3. Activity flow of Japanese Expression Skills Course at TUT.

Results and discussion

Nearly at the end of the spring semester, on July 23, all participants in Group 1 and 2 took Kokugo-ryoku Kentei (“Japanese” hereafter) and Eiken IBA (“English” hereafter). Figure 4 shows the relation between the total score of English and that of Japanese. The line is drawn based on the points where English and Japanese are equivalent. To produce the line, we assumed that the full

mark of each test, namely 300 points for Japanese and 1700 points for English, is proficient. As seen in the figure, most of the data points, excluding some exceptions, were found in the area where English proficiency is lower than Japanese proficiency as hypothesized earlier. It is also interesting that both data set from Group 1 and 2 distributed flat on nearly the same proficiency level of English. The centre of gravity is seen improved after JT. These results infer that most students become capable of developing English proficiency and still in their latency even after the Japanese training. Turning our eyes to the results of a linear regression of each group, it is intriguing that the coefficient of determination R^2 shifts from 0.56: medium correlation, for Group 1 (before Japanese training) to 0.08: no correlation, for Group 2 (after Japanese training). What this might mean is, as a result of Japanese training, the difference in Japanese verbal aptitude among the students becomes larger, namely some students become more proficient, but the others not. This could also show in other words that the students' potential to improve English increased after the Japanese training as will be discussed later.

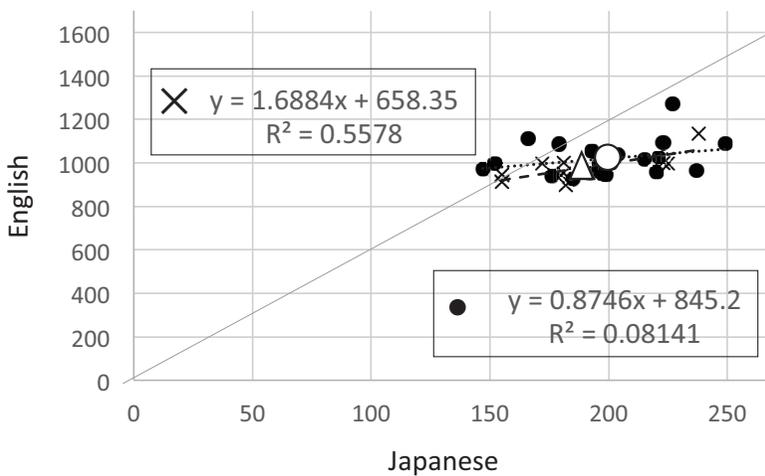


Figure 4. The relation between the total scores of Japanese and English proficiency test. The solid line represents the place where English and Japanese are equivalent. X: before and ● : after taking the Japanese expression skills training course. △ and ○ are the centre of gravity of X and ● , respectively.

The centre of gravity improved after JT as noted earlier. Did this really happen as the result of the training? We examined the average scores of skills in English and Japanese and listed all skill segments that showed improvements on Table 1. As seen in the table, all three skill segments for English and six segments for Japanese improved after the training. Among these skill segments, only two were statistically significant: “reading” for English and “reading” for Japanese. Interestingly, English reading skill improved in accordance with Japanese reading skill after JT. Why did this happen? The answer possibly be hidden in the aim of the Japanese expression skills training course.

The course deals with an essay writing and is designed to teach students how to effectively express one's thought in Japanese and hence help students to focus more on the structure of Japanese language. Japanese language is often said illogical as subject omission often occurs and the language distance away from English is categorized furthest among other languages in the world. On the contrary to that, English is acknowledged one of the logical languages, and therefore, the attention of Japanese students to the Japanese language structure through the course training might help those students focus on the English structure and hence reading improvement. Taking account of the discussion about the decrease in R^2 in the course of Japanese training, it might suggest that the weakened correlation is a sign of accumulation of potential to be higher than that before training.

Accumulation of the potential to improve English proficiency by the Japanese training should need more evidence to conclude. If English proficiency improves irrespective of the objective of the Japanese expressions skills course should further be discussed in order to answer the 3rd research question mentioned earlier. In any case, what we observed here not doubt contribute to a novel approach in English education in Japan where English is only focused in improving students' proficiency, by suggesting the need to improve Japanese proficiency of Japanese learning other languages.

Table 1
Skill Segments Improved after the Japanese Expression Skills Training Course

Language	Skill	Average		
		before	after	difference
English	total	977.8	1019.2	41.4
	reading	496.7	524.55	27.85 *
	listening	481.1	494.75	13.65
Japanese	total	189.2	198.95	9.75
	reading	58.27	66.14	7.87 *
	transmission	71.25	73.75	2.5
	constitution	61.62	66.43	4.81
	analytic listening	80	83.75	3.75
	enthusiastic listening	55	67.5	12.5

* $p < 0.05$

Note. English reading section and Japanese reading proficiency were only judged significant by an independent t -test

Conclusions

Here we designed an educational experiment to confirm that Japanese verbal aptitude predicts English learning accomplishment and showed that the Japanese expression skills training in an essay writing improves English reading proficiency as well as Japanese reading proficiency in Japanese learners of English. The result is in its infancy and we need to conduct additional educational experiments, however once Japanese verbal proficiency is proved to predict English performance, English education should drastically be changed by introducing something like Japanese-English combined teaching by changing our attitude toward English education where English proficiency of Japanese is considered to be improved at a similar rate as long as their motivation to learning is the same. Japan is struggling to increase the number of Japanese who use English without any barriers by setting up lots of programs including the one TUT was selected for. However, such a program would probably be a good news only for those who have already been motivated enough to learn English. Thing is most Japanese are not motivated enough to learn English because they feel no need to use English in everyday life and lose confidence to be able to accomplish certain goals of English learning. The latter Japanese might not understand why they can't achieve the goals even with full motivation to learn. This is where the results of the present study give an answer. Languages a person use are intertwined with each other. One could help the other, and vice versa. Above all, the first language could no doubt be the basis of the languages learned later. Japanese, the first language of us, could therefore be significantly important even when English learning is in mind.

Acknowledgements

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