

Linguistic Proficiency Acquired by Students Through Learning Two Languages

Reiko YAMAMOTO

〈要旨〉

英語教育開始の低年齢化と中高大の目標数値を明示化するなどの高度化に代表される英語教育改革は、国語教育軽視や英語至上主義助長を危惧する反対論にも晒されている。しかし多言語教育の長い歴史を持つヨーロッパでは、低年齢から開始する複数の言語学習こそが、母語や自分の所属する文化だけを基準に置くことなく他者と関係を築くことのできる人間性の構築と社会言語能力の向上に直結するという考え方が一般的である。本研究では、母語と第二言語は独立して習得されるのではなく基底言語能力を共有しているとする *dual-iceberg* 理論に、日本の英語教育の実態に沿った考察を加え、身体的同調及び情動的共感の視点からの展開を試みた。同時に、欧州評議会により開発された CEFR を応用し、国語・英語の統合を意図して開発した言語教育カリキュラム及び *can-do* リストを使用し、文部科学省研究開発指定校を協力校として1年間の実践授業を実施した。言語能力に関する質問紙調査の結果から、身体的同調及び情動的共感を伴う言語活動の増加が確認され、第二言語学習が母語を含む基底言語能力の向上に貢献することが実証された。

1. Introduction

A radical change — the introduction of English activities in primary education — has been carried out by the Ministry of Education, Culture, Sports, Science and Technology (MEXT) in Japan since 2011. In the 1990s, many non-English-speaking countries had designated English as a subject in elementary school, but Japan did not follow the global trend. Now it seems that the MEXT is in a hurry to succeed in reforming English education for students of all ages. In Japan, a monolingual country, Japanese has always been the only language subject taught in elementary school. Even now, there is a counterargument against introducing a second language (L2) to elementary school. Since elementary school students still lack proficiency in their first language (L1), it is natural that improving L1 proficiency has been believed to be a priority in elementary school language education. However, the situation seems different from that of traditional Japanese language classes. Moreover, it has been observed that elementary school students are likely to use body language extensively to express their emotions in L2 class¹⁾. It has become apparent that L2 education is quite distinct from L1 education. The present study was largely inspired by this observation. This radical change in primary education therefore has the potential to revolutionize

language education. This consideration leads to this study²⁾.

2. Previous Studies

The idea of learning more than two languages leads to the concept of plurilingualism, which is different from multilingualism: The Council of Europe (2001) defines multilingualism as a term used to describe a society as a whole, and plurilingualism as a term used to express an individual person's competency or attributes. Hence, multilingualism refers to a situation wherein some languages are used in a society, whereas plurilingualism refers to a situation wherein one person has competence in using more than two languages, and his or her skills do not limit communication only to the L1. Plurilingualism is therefore the appropriate term to view what language education should aim to achieve. Education for plurilingualism is described as the development of a learner's language repertoire from the beginning of that person's education and extending this development throughout his or her lifelong learning (Council of Europe, 2003). Language education is not limited to schools. Nevertheless, schools have a central function and have no alternative but to realize the goal of plurilingualism (Council of Europe, 2005).

Can-do statements are used in establishing standards of linguistic proficiency in any language with regard to the action-oriented approach in the Common European Framework of Reference for Languages (CEFR). The aim of language education in the CEFR is to grow communicative competence (van Ek & Trim, 2001). The concept of can-do statements has become increasingly popular in English education in Japan. This concept is also expected to contribute to the introduction of the concept of plurilingualism in language education. Integrated learning being appropriate for primary education, elementary school students' lack of proficiency in L1 can be advantageous in the integrated learning of L1 and L2.

Japan, being an isolated country, was not afforded opportunities to develop the concept of plurilingualism. No previous studies have tried to prove the effect of teaching two languages in school, while Japan is now experiencing waves of globalization that are ushering in new L2 education reforms. Junior and senior high school students and university students are expected to prove their English language skills with some proficiency test, and English will be a taught subject in elementary schools in 2020. Such a drastic reform may entail the risk that students focus neither on languages (other than Japanese and English) nor on intercultural communication. In actual practice, there are some oddities: elementary school building signboards bear English words and phrases such as *Principal's Room*, *Music Room*, and *Greet Loudly*. However, first-year students may not understand why they are surrounded by English words since the first day of school. Yanase (2007) underlines that the attitude commonly referred to as exclusive bilingualism is widespread in Japan.

There is an urgent need for the aim of language education to be clarified.

3. What is the aim of language education?

3.1. Emotional synchrony

When children interact with an adult, they mimic his or her gestures and body movements, with the same rhythm (Marsh et al., 2009). Marsh et al. (2009) define this reaction as “synchrony,” and state that it is necessary for children to connect with others and learn how to communicate with others. There is evidence that synchrony is an innate and necessary part of the human ability to engage in social interaction with other people, since people complete some shared communication tasks in the presence of one another (Richardson et al., 2005). Condon & Sander (1974) assert that synchrony can also more generally facilitate the performance of cognitive or linguistic tasks.

The author has experience in teaching both in elementary school and in junior high school. What impressed the author most, as an English teacher at elementary school, was that students’ body movements resembled those of their teacher, and the students even imitated the teacher’s pronunciation without explicit directions to do so. In contrast, junior high school students do not move their bodies or synchronize their gestures and pronunciations with teachers in English as much as they do in Japanese (Yamamoto, 2010). This might occur because junior high school students have been under pressure to acquire English language skills, and not to develop a communicative mind. With regard to elementary school students, their similar movements and synchrony with teachers or other students are observed more in English activities than in Japanese conversation. This occurs not only because communicative activities require a kind of movement imitation but also because the students utilize body movements to understand others or to be understood regardless of their poor English skills. This observation might help explain interpersonal synchrony. Elementary school students are steeped in communicative activities irrespective of L1 or L2. They are at the appropriate stage to perform those tasks both in L1 and L2.

In acquiring a language, young children are more influenced by the experience of emotion (Harris, 1989). Gallese et al. (2007) argue that the automatic and unconscious embodied simulation of another person’s actions, intentions, and emotions is due to neuronal mechanisms, and the embodied simulation constitutes a fundamental and functional mechanism for empathy and understanding of another person’s mind. Internal representations of the body states associated with the emotions are evoked in the observer, “as if” he or she were doing a similar action or experiencing a similar emotion (Gallese et al., 2007).

Some children cannot simulate emotions, even in L1 (Inui, 2009). This leads to the argument that simulating another person’s emotions is part of a common underlying proficiency skill in all

languages. Yamada (2006) adopted the dual-iceberg model, which was propounded by Cummins & Swain (1986), to embody what language education should aim at: digging in the iceberg to reach common underlying proficiency in languages, not building a bridge between the top (surface features) of the L1 iceberg and that of the L2 iceberg. However, what if students lack common underlying proficiency itself? They might easily acquire common underlying proficiency in L1, having had enough experiences in L1 since their birth, but they might fail to do so in L2. English education should focus not only on skills but on primitive senses to interact with others in body and mind.

3.2. Linguistic Proficiency

The present research was conducted to specify what kind of linguistic proficiency elementary school teachers expected their students to acquire in school (Yamamoto, 2018). All teachers of a public elementary school, a pilot school designated by the MEXT, were brought to a meeting room and were asked the following question: “What kind of linguistic proficiency do you expect your students to acquire in school?” This question was too difficult for the teachers to answer instantaneously. Almost none of these elementary school teachers had majored in linguistics at university. Moreover, they had no idea how to integrate L1 and L2. Therefore, a brainstorming of the teachers was arranged using the K-J method. This method involves integrating ambiguous ideas of group members by writing ideas on tag paper sheets and putting them on a large sheet (Kawakita, 1970). This led to concrete descriptions of linguistic proficiency. The teachers described linguistic proficiency as the competency needed to synchronize with others — teachers or peers — physically and emotionally. Here is a rendition of their utterances during the brainstorming exercise:

The linguistic proficiency of students involves:

- 1) Utilizing gestures or eye contact to be understood
- 2) Modulating voice tones or strength in speaking
- 3) Noticing another person’s movement or rhythm, and synchronizing with them
- 4) Putting oneself in another person’s position
- 5) Perceiving friends’ sadness even when they are smiling.

The above utterances referred to embodied simulations of others. It is interesting to note that the teachers judged non-verbal communication and physical or emotional movement as linguistic proficiency.

As previous studies suggest, English education should not focus on imparting skills but on developing instinctive interaction with others. At this time, when elementary school English educa-

tion seems to have enough dynamism to accomplish this goal, a new perspective on the role of English education has emerged, to deal with the following question: can L2 education help students who cannot simulate emotions even in their L1 (Inui, 2009)? With the aim to illustrate the situation of students who lack common underlying proficiency in any language, the model made by Yamada (2006) was arranged into a new version (Figure 1). If introducing L2 education could result in reforms in L1 instruction, and if the L1 curriculum can include some tasks and concepts in common with the L2 curriculum, it is expected that the dual-iceberg will be penetrated all the way to the bottom, which is the level of common underlying proficiency (Figure 2).

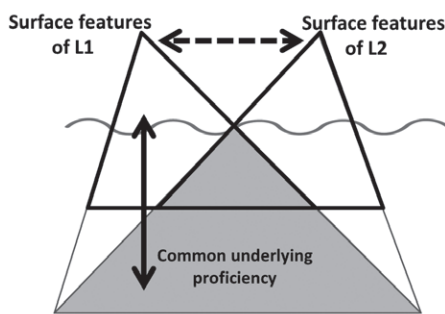


Figure 1. The lack of common underlying proficiency in L1 and L2

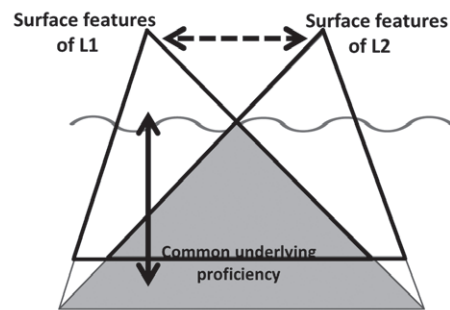


Figure 2. Acquired common underlying proficiency in L1 and L2

Figure 2 illustrates the concept using which L1 and L2 will be integrated in this study in order to help increase students' common underlying proficiency. Previous researchers have asserted that physically synchronizing with others leads to sharing the same emotions. In this study, the term "emotional synchrony" is used to mean "sharing the same emotions and understanding others in communication." This study is based on the idea that common underlying proficiency is equivalent to the simulation of another person's emotions. As children can associate bodily states with emotions, physical synchrony with others can be associated with emotional synchrony. This study is based on the consideration that common underlying proficiency can be improved through the mutual effects of two languages on the linguistic proficiency of students. It is necessary to integrate L1 and L2 education by developing an L1 and L2 cross-curriculum. This cross-curriculum should focus on realizing synchrony in a classroom.

4. Curriculum development

Yamamoto (2018) reports the preparation process for the experiment including three steps: 1) Developing the L1 and L2 cross-curriculum, 2) Forming can-do statements, 3) Forming a can-do

checklist.

In Step 1, the team of the author and the elementary school teachers integrated L1 and L2 curricula into a cross-curriculum³⁾ by focusing on tasks for stimulating movement synchrony and emotional synchrony with teachers or peers. After analyzing the L1 and L2 curricula in use in the school, the project members identified the items that the two curricula had in common, such as recitation and discussion. They categorized and arranged each item in one integrated curriculum.

In Step 2, original can-do statements in language proficiency were formulated on the basis of this integrated curriculum. Forming can-do statements was easier than developing a curriculum. This is because can-do statements overlapped with the skills that teachers expected their students to have. Some examples are 1). Can greet in an appropriate manner, and 2). Can make a presentation showing some chart or pictures. Not all the factors in the teachers' definition of linguistic proficiency, however, overlapped with can-do statements. In fact, some of the teachers' utterances about linguistic proficiency were more focused on a higher, less practical level, that could be defined as perceptual; hence, they could scarcely be regarded to be can-do statements.

In Step 3, a can-do checklist was developed from the can-do statements formed by the teachers. The checklist was designed in such a way that the students would be able to evaluate themselves with regard to their linguistic proficiency, and it was written using simple expressions to make it

Table 1. Items in the can-do checklist

Categories	Items
Reading	1. I can read aloud paying attention to sound. 2. I can read aloud conveying contents and scenes. 3. I can read silently tasting images and beauty.
Listening	4. I can listen tasting sound and rhythm. 5. I can listen not to miss what is significant. 6. I can listen to peers' thoughts, comparing them to my own.
Speaking/ Speech	7. I can speak to make my idea understood. 8. I can speak clearly, caring my posture and voice. 9. I can make presentations showing pictures or some charts.
Speaking/ Interaction	10. I can change my manner of speaking according to the person I speak to. 11. I can use gestures or eye contact in speaking. 12. I can express my feeling of thanks or happiness. 13. I can change my voice pitch, strength, or pauses. 14. I can react to my peers' speech.
Writing	15. I can write paying attention to connections of words or sentences. 16. I can express my ideas clearly in writing. 17. I can write with interest in the shape or meaning of Japanese letters.

easy to understand. It comprised 17 items divided into the same five categories of the CEFR: Reading, Writing, Listening, Speaking/Speech, and Speaking/Interaction. The original checklist was written in Japanese, and Table 1 shows the translated English version.

5. Experiment

5.1. Aim

This study focuses on the mutual effects of two languages on students' linguistic proficiency. As referred, younger students being able to associate bodily states with emotions, physical synchrony with others can be associated with emotional synchrony. Therefore, the aim of the experiment is to prove the effect of cross-curriculum of L1 and L2 focusing on realizing emotional synchrony in a classroom.

5.2. Participants

The elementary school mentioned earlier, an average-size metropolitan school whose teachers had participated in the research on linguistic proficiency description, participated in this experiment one year later. The students who participated in this experiment were 40 third graders, 40 fourth graders, 40 fifth graders, and 40 sixth graders. First and second graders were judged to be incapable of understanding the items and appropriately choosing responses in the questionnaire because they had just started to learn how to read Japanese. Accordingly, they were excluded from the participants.

5.3. Procedure

A self-estimation questionnaire was created for the experiment. The perceptual items based on the teachers' brainstorming were added to the questionnaire. The questionnaire was intended to let the students evaluate themselves outside of the language classes. It comprised 26 items in total, and it requested the students to provide their answers using a 4-point Likert scale (1: I never think so; 2: I do not think so very much; 3: I think so a little; and 4: I think so). Each item was translated into English in Table 2.

The experiment comprised three steps:

- 1) The students answered the questionnaire at the beginning of the school year.
- 2) The students were given one year of instruction in Japanese and English classes using the cross-curriculum (Japanese: five times a week; English: once a week).
- 3) The students answered the same questionnaire at the beginning of the second school year.

Table 2. Items in the questionnaire

1.	I prefer sentences to short words when I talk.
2.	I do not want teachers to use simple and easy words.
3.	I am good at expressing my feelings in words.
4.	I am good at expressing my experiences.
5.	I want to try various words or expressions.
6.	I want to speak neatly using sentences.
7.	I speak in different ways depending on whom I speak with.
8.	I am sure I can make myself understood with words.
9.	Spoken language is different from written language.
10.	I have a large vocabulary.
11.	I obey teachers who do not deliver sharp scolding but gently admonish students.
12.	I am sure I understand the speaker when he/she speaks precisely and sincerely.
13.	I speak in a loud voice when I speak in front of an audience.
14.	I am good at speaking in front of an audience.
15.	I am good at expressing my feelings in writing.
16.	I sometimes change my mind after listening to others' opinions.
17.	There are several things that I can communicate without using words but with gestures or facial expressions.
18.	I easily notice others' gestures or habitual practices.
19.	I easily trust others.
20.	I am conscious of the rhythm of others' breathing.
21.	I always watch others' gestures or movements.
22.	I easily go pit-a-pit.
23.	When something happens to a friend of mine, I feel as if I were in his/her position.
24.	I pay attention to others' behavior.
25.	I often use onomatopoeia.
26.	I easily open my mind to others.

5.4. Results

As for the questionnaire, the Likert scale point for each item was converted into equivalent score points (1 Likert scale point: 1 score point, 2 Likert scale points: 2 score points, etc.). Although no significant difference was found between pre- and post-questionnaire, the average of all items in the questionnaire increased from 2.65 to 2.79 score points. The average of each grade was compared item by item. The average of each grade in the pre- and post-questionnaire is shown in Figure 3. In order to analyze the same students' transformations before and after one-year instruction, the scores of the third graders in the first year was set against that of the fourth graders in the second year, and the same thereafter. The fourth graders' black bar shows their score from when

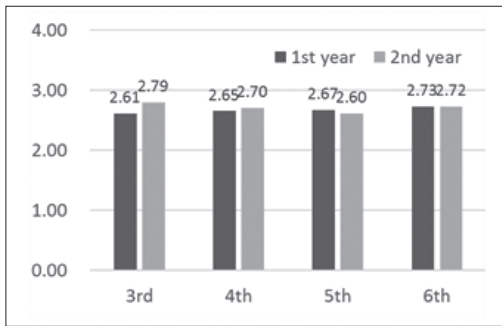


Figure 3. Averages of each grade in the pre- and post-questionnaire

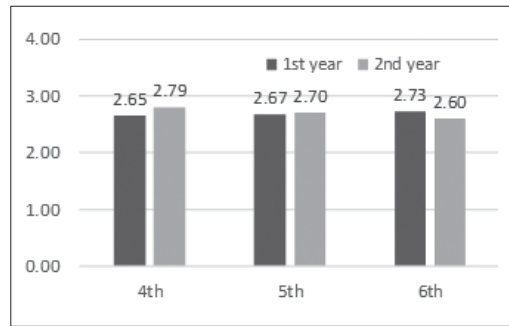


Figure 4. Comparison of the same students before and after one-year instruction

they were third graders, the fifth graders' one shows their score from when they were fourth graders, and the sixth graders' one shows their score from when they were fifth graders (Figure 4).

6. Findings

Although statistical analysis of the questionnaire showed no significant differences, the average score of the students at the end of the school year (2.79) exceeded that at the beginning of the school year (2.65). Judged from the results that scores of Item 9, *Spoken language is different from written language*, Item 12, *I am sure to understand the speaker when he/she speaks precisely and sincerely*, and Item 18, *I easily notice others' gestures or habitual practices*, increased, the L1 and L2 cross-curriculum might have had an effect on the students' synchrony with others in daily life.

The author later received the results of a survey conducted on the teachers independently from the experiment, organized by the school itself. A free description type of survey was used, where the teachers described what they noticed not only during language instruction but throughout school life moments like homeroom time or breaktime. Here are the excerpts from the survey:

- One student borrowed a book on proverbs from the school library, and said happily, "This school has many books on languages!"
- More and more students echo ALT's words or react with facial expressions.
- More and more students use their original gestures when they speak English.
- More and more students can make a presentation in Japanese, showing pictures or charts effectively.

The survey conducted on the teachers shows that they noticed a palpable improvement in their students' linguistic proficiency.

Besides, another data is going to be quoted here. Yamamoto (2018) made another survey in the same experiment simultaneously. The third-grade students evaluated themselves using the can-do checklist before and after one-year instruction. A statistical significance between pre- and post-check was found for items 6, 10, 12, 13, and the total score of the 17 items. The average of the total score increased from 11.013 (the full score is 17) to 11.903 between pre- and post-check. No significant difference was found in *t*-test, but the effect size was large ($d=16.60$). Item 6, *I can listen to peers' thought, comparing them to my own*, belonged to the category "Listening" in the can-do check list. Three items belonged to the category "Speaking/Interaction": Item 10, *I can change my manner of speaking according to the person I speak to*; Item 12, *I can express my feeling of thanks or happiness*; and Item 13, *I can change my voice pitch, strength, or pauses*. It is significant that the students paid more attention to interaction with others than before starting one-year instruction, which corroborated the statistical results. This data gives support to the analysis that the students learned to understand the person whom they speak, to make themselves understood, and to share emotions with him or her.

7. Conclusion

In this study, experimental L1 and L2 instruction was delivered to students on the basis of the cross-curriculum. The results of the questionnaire proved that the students were conscious of their improvement in linguistic proficiency. What kind of linguistic proficiency improvements can be achieved through one-year instruction? Probably without being conscious of it, the students used facial expressions or gestures, or arranged their ways of speaking, which stimulated the reaction of the person with whom they spoke (i.e., the listener's physical synchrony with the speaker). In contrast, the students embodied simulations of their teachers' or peers' actions and intentions, which led to the feeling that they listened to their peers' thoughts, comparing them to their own. They acquired what can be called common underlying proficiency of L1 and L2. This approach presents an opportunity to prove that L2 learning helps students realize that the essence of communication is the same in any language.

The main conclusion of this study is that students can understand other people's minds through physical movements or senses in any language when they are instructed appropriately, and that interaction with emotional synchrony should be the central concept in language instruction. It is significant that this study is the first to demonstrate the effect of teaching two languages in elementary schools in Japan. Introducing L2 education in elementary schools does not hinder L1 learning but, instead, might usher new possibilities in language education. When the students try to understand others' minds through physical movement and senses in any language, their values do

not limit communication only to their L1. That is what language education for students of all ages should aim for.

Acknowledgements

I would like to thank Professor Hideki Sakai, Shinshu University, for his helpful advice in designing the research. I also express my gratitude to the students and the teachers of the elementary school who participated in this survey. This study was supported by Grant-in-Aids for Scientific Research (#18K00860) from the Japan Society for the Promotion of Science.

Notes

- 1) Yamamoto (2018) reported that junior high school students neither move their bodies nor synchronize with rhythmic sound in English as much as in Japanese while younger students move their bodies extensively irrespective of L1 or L2.
- 2) The outline of this study was presented in the proceedings at the 20th ICCEDI, 2018.
- 3) The cross-curriculum and can-do statements are not displayed in this paper as their copyright belongs to the pilot school designated by the MEXT. Please refer to *Eigo Kyoiku Kenkyu Kiyō* [English Education Research Bulletin] edited and published by Uji Obaku Gakuen and Higashi-Uji High School in 2017 (pp. 48–50).

References

- Condon, W. S., & Sander, L. W. Synchrony demonstrated between movements of the neonate and adult speech. *Child Development*, 45, pp. 456–462, 1974.
- Council of Europe. *Common European Framework of References for Languages: Learning, Teaching, Assessment*. Cambridge: Cambridge University Press, 2001.
- Council of Europe. *Guide for the Development of Language Education Policies in Europe*. Strasbourg: Council of Europe, 2003.
- Council of Europe. *Plurilingual Education in Europe*. Strasbourg: Council of Europe, 2005.
- Cummins, J., & Swain, M. *Bilingualism in education*. London: Longman Group Ltd., 1986.
- Gallese, V., Eagle, M. N., & Migone, P. International attunement: Mirror neurons and the neural underpinnings of interpersonal relations. *Journal of the American Psychoanalytic Association*, 50(1), pp. 131–175, 2007.
- Harris, P. L. *Children and Emotion: The Development of Psychological Understanding*. Oxford: Basil Blackwell Ltd., 1989.
- Inui, T. *Image No* [Image Brain]. Tokyo: Iwanami Shoten, 2009.
- Kawakita, J. *Hassoho: KJ ho no tenkai to oyo* [A way of thinking: Display and method of KJ]. Tokyo: Chuokoron-sha, 1970.
- Marsh, K. L., Richardson, M. J., & Schmidt, R. C. Social connection through joint action and interper-

- sonal coordination. *Topics in Cognitive Science*, 1, pp. 320-339, 2009.
- Richardson, M. J., Marsh, K. L., & Schmidt, R. C. Effects of visual and verbal interaction on unintentional interpersonal coordination. *Journal of Experimental Psychology: Human Perception and Performance*, 31(1), pp. 62-79, 2005.
- van Ek, J. A., & Trim, J. L. *Vantage*. Cambridge: Cambridge University Press, 2001.
- Yanase, Y. A trial of analysing plurilingualism, *CASELE Research Bulletin*, 37, pp. 61-70, 2007.
- Yamada, Y. *Eigoryoku towa nanika* [What is English Proficiency?]. Tokyo: Taishukan Shoten, 2006.
- Yamamoto, R. A study on children's body and mind: Through instruction focused on rhythm and physical movement. *JASTEC Journal*, 29, pp. 31-45, 2010.
- Yamamoto, R. The effect of realizing emotional synchrony with teachers or peers on children's linguistic proficiency: The case study of Uji elementary school. *International Scholarly and Scientific Research & Innovation*, 12(9), pp. 1153-1156, 2018.