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Why learn Japanese?

Teachers' perceptions and students' reasons

Integrating language and content

Japanese supplementary schools in Victoria

'We can all count to 10 but we do it in different ways'

Learner diversity in the language classroom



Integrating language and content

Challenges in a Japanese supplementary school in Victoria



SHINJI OKUMURA AND YUMI OBARA

ABSTRACT

The Melbourne International School of Japanese (MISJ) is a supplementary Saturday school which offers Japanese language and mathematics taught in Japanese from kindergarten to senior secondary level. Classes are scheduled on Saturdays from 9am to 3pm and approximately half of the program is dedicated to mathematics. While mathematics education aims at developing both numeracy and Japanese language skills, many students struggle to understand mathematical concepts. Furthermore, the students have difficulties in solving worded mathematical problems due to poor command of Japanese. This lack of Japanese language competency is, thus, a significant issue for the students. In order to address this situation, one primary teacher and one secondary teacher attempted several strategies in mathematics teaching, incorporating strategies typical of second language teaching. The primary school teacher integrated teacher talk with the use of visual aids including video clips to assist the students' understanding of mathematical concepts. The secondary teacher employed vocabulary cards, so that the students would pay attention to key words in order to be able to comprehend mathematical concepts in Japanese effectively. Although both teachers incorporated these strategies, some students still had difficulty in understanding mathematical concepts because of their lack of cognitive academic language proficiency (CALP) (Cummins, 1996).

KEY WORDS

Japanese supplementary school, bilingual education, Japanese heritage learners, mathematics, cognitive academic language proficiency (CALP)

Introduction

Japanese supplementary schools are found outside of Japan and were initially conceived for students of Japanese linguistic and cultural backgrounds. In 2014, 202 Japanese supplementary schools were registered throughout the world and about 17 000 students were studying in these supplementary schools (Ministry of Education, Culture, Sports, Science and Technology, Japan [MEXT], 2015). Japanese supplementary schools operate mainly on Saturdays because students attend local day schools. The primary aim of education at Japanese supplementary schools is to provide Japanese education for children who will return to Japan, so that they can easily readapt to the Japanese educational system (MEXT, 2015). This accounts for the strong focus on Japanese literacy and numeracy. Nowadays, however, the student body is more varied and includes children both with and without Japanese heritage. In the supplementary schools, the school curriculum is based on the Japanese national curriculum. *Kokugo* (Japanese as a national language) is the primary subject to be taught but other subjects vary depending on each school's decision. Around 80% of the supplementary schools throughout the world provide mathematics classes in addition to Japanese (see Figure 1). The main possible reason for choosing mathematics is that mathematics is taught in all local day schools: the mathematical knowledge acquired in the supplementary schools can be applied to learning mathematics in local schools in Australia and also in Japan. From the standpoint of bilingual education, moreover, teaching Japanese does not simply mean that the language skills will automatically improve, and thus, it is helpful for students to learn Japanese through an academic subject, namely, mathematics.

Bilingual education and content-based approaches

There are various types of bilingual education programs, and the structure of the programs differs greatly according to time allocation, teaching methods, state policy and society's attitude towards

bilingualism (McCarty, 2012). Because there are multiple factors influencing bilingual education, classification varies depending on researchers (Baker, 2011).

A bilingual program model which is relevant to the Japanese supplementary school is closely associated with heritage language education. In this model, children are taught predominantly in their native or heritage language, and the goal is maintenance or enrichment.

Another type is immersion, in which students are taught academic subjects in a second/additional language throughout the school day. The main goal of this program type is to nurture proficient bilinguals. However, scholars such as Garcia (2008) would argue that since supplementary school only occurs one day per week, it would be difficult to categorise its programs as immersion. Instead, the program should be considered content-based instruction (CBI) (Stoller, 2008), a term which is mainly used in the United States, or content and language integrated learning (CLIL) (Coyle 2006, 2007; Coyle, Holmes, & King 2009; Coyle, Hood, & Marsh, 2010; Cross, 2014), common in Europe and on the rise in Australia (see Olega, 2013 for a discussion of similarities and differences between content-based instruction and content and language integrated learning).

According to Brinton, Snow and Wesche (1989, p. vii), CBI is defined as, 'the concurrent study of language and subject matter, with the form and sequence of language presentation dictated by content material'. Similarly, Larson-Freeman and Anderson (2011) state that 'CBI integrates the learning of language with the learning of some other content' (p. 132).

These definitions are mirrored by Cross (2014) in describing CLIL, as 'a pedagogy with a dual focus on developing outcomes in both language (e.g. French) and content (e.g. science) learning, simultaneously' (p. 6).

CLIL is a dual-focused educational approach where an additional language is used for the learning and teaching of content in another

curriculum area and language (Coyle, Hood, & Marsh, 2010, p.1). Its basic principle is similar to CBI. One key difference, however, is that CLIL programs are conducted based on a *4Cs framework*, which requires that all CLIL teaching incorporates a focus on content, communication, cognition and culture (Coyle, 2006, p.9). Moreover, the content students engage with in a CLIL class must be new knowledge (Coyle, Holmes, & King, 2009) while CBI does not exclude students engaging with knowledge acquired in the first language that can be applied to supporting additional language learning. Considering the differences between CBI and CLIL, the current study decided to incorporate the notion of CBI into the heritage bilingual program.

Basic interpersonal communication skills and cognitive academic language proficiency

When we consider bilinguals' language development, it is necessary to consider what proficiency they need to acquire. Linguistically, the concept of proficiency can be divided into two types: basic interpersonal communication skills (BICS) and cognitive academic language proficiency (CALP). Both concepts were developed by Cummins (1979), and they frequently appear in the discussion of bilingual education.

The term *basic interpersonal communication skills* refers to language skills which are necessary in social situations. It is the day-to-day language needed to interact socially with other people. Thus, Cummins also uses the term, 'conversational competence' (Cummins, 2000). Social interactions are usually embedded in a meaningful social context. Basic interpersonal communication skills may be fairly quickly acquired by second language learning (e.g. within two or three years) (Baker, 2011).

In contrast, the term *cognitive academic language proficiency* refers to academically related language competence (Baker, 2011). This competence usually includes linguistic skills required for engaging

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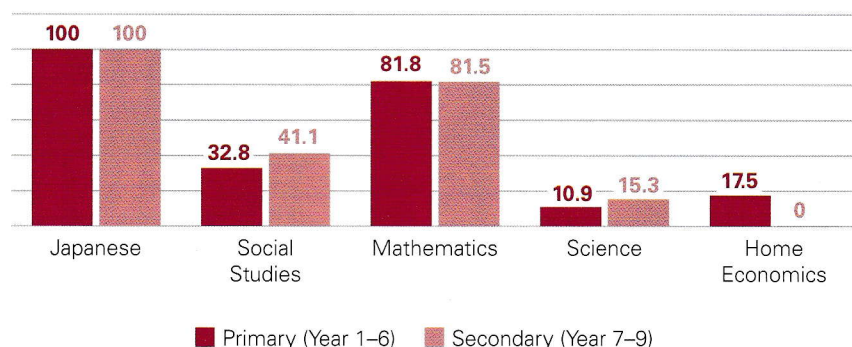


Figure 1 Subjects taught in Japanese supplementary schools throughout the world

with curricular content. Development of this level of language competence is vital for students to succeed in content-based bilingual education. Students need significant time to develop cognitive academic language proficiency: it usually takes from five to seven years in instructed settings (Baker, 2011).

The distinction between basic interpersonal communication skills and cognitive academic language proficiency is useful when language teachers produce objectives related to language proficiency, especially in contexts where an additional language is taught through content-based bilingual education. In the development of heritage students' language skills at the supplementary Saturday school, basic interpersonal communication skills are likely to be more readily achievable. For this reason, cognitive academic language proficiency should be a focus. Teachers need to consider how to develop, and potentially assess, the students' language proficiency in the academic setting.

School profile

The Melbourne International School of Japanese (MISJ) is one of the Japanese supplementary schools, which is located in a largely residential suburb in Melbourne,

about 20km from Melbourne's central business district. The school was established in 1986 and approved as a supplementary school of Japan in 1998 by the Japanese Ministry of Education. In addition, this school is authorised as a community language school by the Victorian state government. MISJ is currently one of the largest Japanese supplementary schools in the world. In 2015, the school had about 50 teaching staff, all of whom were Japanese native speaker teachers, experienced in teaching in schools in Japan and/or Australia. Additionally, the school employs several Japanese native-speaker volunteer assistants.

MISJ has approximately 550 students. About 90% of the students are permanent residents and many students have mixed linguistic and cultural backgrounds (e.g. Japanese and Australian). All the students attend local primary or secondary schools on weekdays and study academic subjects in English. Even at home, many students use English in their daily lives such as when communicating with their family and friends. Given the range of students' Japanese language ability, teachers cannot assume that they can teach the content through the medium of Japanese without considering how to support their Japanese language development and

Table 1 Classes and curriculum

| | Kindergarten | Primary | Secondary | Senior secondary |
|-------------|----------------|----------------|----------------|------------------|
| | 2 years | 6 years | 4 years | 2 years |
| Japanese | 200 hours/year | 120 hours/year | 100 hours/year | 100 hours/year |
| Mathematics | | 80 hours/year | 100 hours/year | 100 hours/year |

specifically their cognitive academic language proficiency. Importantly, students need particular support with enhancing their reading and writing skills in relation to mathematics. The school consists of four departments: kindergarten, primary (Years 1 to 6), secondary (Years 7 to 10), and senior secondary (Years 11 and 12, including the Victorian Certificate of Education [VCE]). In the primary and secondary department from Years 1 to 10, MISJ teaches Japanese and Mathematics based on the Japanese national curriculum (see Table 1).

Case study

As noted above, students' Japanese skills vary greatly and, as a result, some of them do not understand mathematical concepts when taught in Japanese and find it difficult to fully participate in their mathematics classes. In order to address this issue, one primary teacher and one secondary teacher incorporated several CLIL teaching strategies to support students' language acquisition. This occurred in Semester 1, 2016.

Practices in primary

An initial pilot program was conducted in a Year 3 class. This class had 21 students studying at local primary schools. Most of the students have studied in Australia since kindergarten, except a small minority of students who lived in Japan until Year 2. Through observation and formative assessment in the Japanese and Mathematics classes, the teacher identified that almost half of the students had difficulties in understanding Japanese. Their difficulties concerning learning Japanese included memorising kanji (Chinese-origin written characters), reading Japanese textbooks, and expressing their opinions in Japanese. As a result, students found it difficult to comprehend mathematical concepts when expressed in Japanese and had considerable difficulty solving worded mathematical problems.

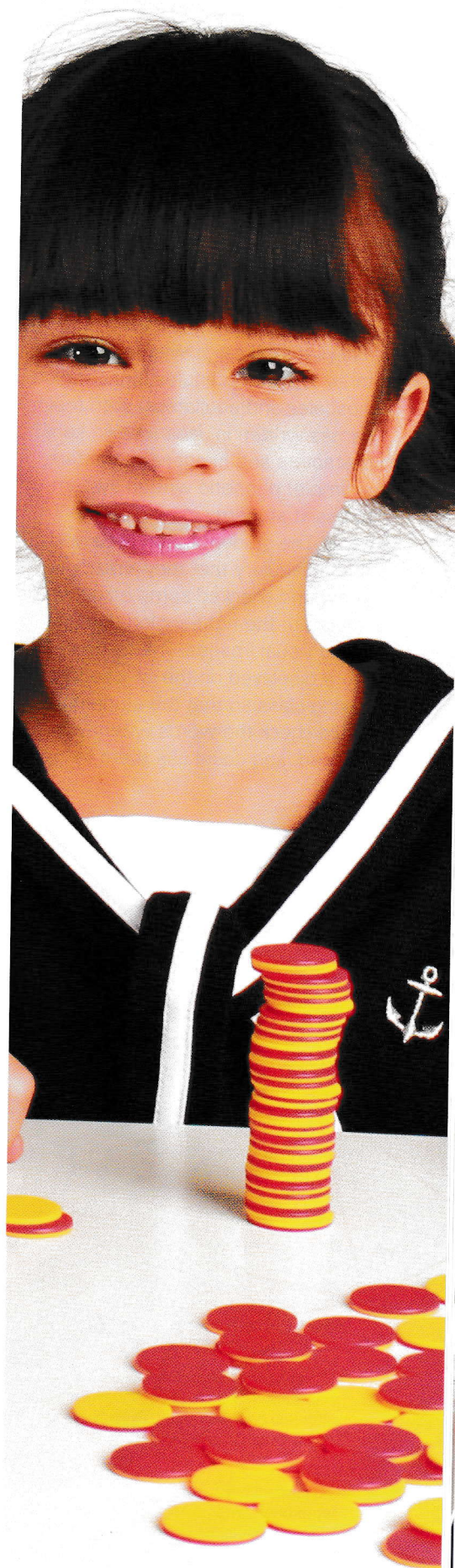
In the mathematics classes, the teacher applied a number of teaching strategies. First, the teacher used video clips which are provided for

Japanese domestic students on NHK [Japan Broadcasting Corporation] educational TV. The video clips are also published on the website *NHK for School* (<http://www.nhk.or.jp/school/>). *NHK for School* provides a number of educational TV programs for various subjects including *kokugo* (national language, namely Japanese), mathematics, social studies and science for all grades. The mathematics programs include fun stories which are designed to assist students to understand mathematical concepts.

Second, the teacher created a series of visual presentations using PowerPoint slides to illustrate mathematical concepts and related story problems. Slides provide less information than textbooks, and allow content to be presented in more digestible chunks. The teacher rephrased the Japanese part of the story problems to aid comprehension and presented these rewordings in the slides. When speaking, the teacher also adopted a strategy which involved explaining mathematical concepts in Japanese using keywords and simplified explanations with more accessible lexis in Japanese. In the case of continued incomprehension, the teacher would use English minimally in order to activate the student's prior knowledge acquired in mathematics classes in English at local schools.

Practices in secondary

Most of the 10 students in the Year 9 class had completed their schooling to date in Australian primary and secondary schools. The teacher observed that the students tended to only use English in oral communication, particularly when having difficulty understanding the mathematics textbook in class. A crucial reason for this difficulty is that the Japanese language in the mathematics textbook at the secondary level includes complex technical language. It is challenging for many MISJ students to acquire not only the correct terminology but contemporaneously to comprehend mathematical logic in Japanese. The latter seems to be closely associated with the challenges of developing cognitive academic language



proficiency. Due to this linguistic stumbling block, students require extra support to grasp mathematical concepts in Japanese.

In order to help the students understand mathematical concepts more easily in Japanese, the teacher attempted to use vocabulary cards in Japanese when she introduced new vocabulary (mathematical terms) to anticipate vocabulary needs and prepare students for new learning. For instance, when studying geometry, the teacher had prepared cards with images of three types of triangles (right-angled, isosceles and equilateral) with their names written in Japanese (in kanji characters and hiragana characters, a simpler phonetic written system, to assist students in reading the kanji). The students then reviewed the vocabulary that they already knew and checked some other words related to the right-angled triangle using visual images. The cards were displayed on the whiteboard during class so that the students could check the words whenever needed, and could use them to help

them identify the triangles in the geometry tasks.

Discussion and conclusion

Instead of explaining mathematical concepts in Japanese using the mathematics textbooks, both teachers utilised several strategies which incorporated a second language teaching orientation to the teaching of mathematics. The video clips the primary school teacher used supported the students who lack sufficient Japanese skill to comprehend written mathematical concepts, because the stories are fun for children and help make the learning enjoyable. The video clips helped increase the students' motivation in learning mathematics, and students often asked to watch the video clips in their mathematics class. The PowerPoint slides also simplified and 'chunked up' the learning, allowing the students to understand what they needed to learn in the mathematics class more easily. As the textbook is written for students in Japan, it is important to simplify words and

explanations in the textbook for students who have limited Japanese proficiency. The primary teacher recognised the importance of visual aids in general, in helping students understand mathematical concepts more effectively, not to mention the increased enjoyment. Furthermore, when teachers were mindful of the terms and phrases used when explaining mathematical concepts this worked very well. Using repetition and simplified explanations enabled the students to focus on what the teacher was wanting to emphasise in his teaching.

The secondary teacher recognised that the vocabulary cards helped students to not only comprehend mathematical concepts in Japanese but also to develop their Japanese vocabulary. For example, students often checked the vocabulary cards when they were reading the textbook to help them understand the content and they also checked the cards to assist them when writing kanji in their notebooks. Similar to the experiences of the primary teacher, the secondary mathematics teacher also found



visual aids were helpful in supporting students to understand the content of the textbooks and to solve the mathematical problems. These teaching strategies were developed based upon 'sheltered subject-matter teaching' (Krashen, 1984), which enables students to learn real subject matter, using a wide range of scaffolding strategies which provide meaningful input in the content area to students. More importantly, all visual aids they used in the teaching were scaffolding for the students to understand content in mathematics.

Although the teachers involved felt that this style of teaching made content more accessible, some students continue to have difficulty understanding the mathematical concepts. This indicates that continued efforts are needed to implement teaching strategies that further support development of students' cognitive academic language proficiency. It seems necessary to consider a clear strategy which helps students develop not only their Japanese language and

conceptual understandings of mathematics but also their cognitive academic language proficiency in Japanese classes.

As supplementary materials that students use for their homework are those which Japanese students use in Japan, it would be difficult for the MISJ students to review what they learned after school using these resources. In this regard, it would be helpful to consider adapting or developing alternative supplementary materials which are suitable for MISJ students.

Finally, given the positive impact observed when implementing CBI strategies in the mathematics classes in these case studies, it is worth considering expansion of this approach across the school. It would be essential to provide all staff at MISJ with appropriate professional learning opportunities to ensure a shared understanding of CBI and the strategies which can be employed to effectively support students' content and language learning.

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References

- Baker, C. 2011. *Foundations of bilingual education and bilingualism*. 5th edn. Clevedon, UK: Multilingual Matters.
- Brinton, D.M., Snow, M.A., & Wesche, M.B. 1989. *Content-based second language instruction*. New York: Newbury House Publishers.
- Coyle, D. 2007. Content and language integrated learning: Towards a connected research agenda for CLIL pedagogies. *The International Journal of Bilingual Education and Bilingualism*, 10, 5, 543–562.
- Coyle, D. 2006. *Developing CLIL: Towards a theory of practice*. Monograph 6. Barcelona, Spain: APAC Barcelona.
- Coyle, D., Holmes, B., & King, L. 2009. *Towards an integrated curriculum – CLIL national statement and guidelines*. London: The Languages Company.
- Coyle, D., Hood, P., & Marsh, D. 2010. *CLIL*. Cambridge: Cambridge University Press.
- Cross, R. 2014. Defining content and language integrated learning for languages education in Australia. *Babel*, 49, 2, 4–15.
- Cummins, J. 1979. Linguistic interdependence and the educational development of bilingual children. *Review of Educational Research*, 49, 222–251.
- Cummins, J. 1996. *Negotiating identities: Education for empowerment in a diverse society*. 2nd edn. Ontario, CA: California Association for Bilingual Education.
- Cummins, J. 2000. Putting language proficiency in its place: responding to critiques of the conversational/academic language distinction. In J. Cenoz & U. Jessner (Eds), *English in Europe. The acquisition of a third language*, 54–83. Clevedon: Multilingual Matters.
- Garcia, O. 2008. *Bilingual education in the 21st century: A global perspective*. West Sussex: Wiley-Blackwell.
- Krashen, S.D. 1984. Immersion: Why it works and what it has taught us. *Language and Society*, 12, Winter 1984, 61–64.
- Larson-Freeman, D. & Anderson, M. 2011. *Techniques and principles in language teaching*. 3rd edn. Oxford: Oxford University Press.
- McCarty, S. 2012. Understanding bilingual education 2: Analyzing types of bilingual education. *Child Research Net*. Retrieved 24 May 2017 from http://www.childresearch.net/papers/language/2012_02.html
- MEXT [Ministry of Education, Culture, Sports, Science and Technology, Japan]. 2006. Hoshuukoo no kyooiku katsudoo. [Education in supplementary schools]. Retrieved 24 May 2017 from http://www.mext.go.jp/a_menu/shotou/clarinet/004/001/003.htm
- MEXT [Ministry of Education, Culture, Sports, Science and Technology, Japan]. 2015. *Zaigai kyooiku shisetsu no gaiyoo*. [Characteristics of overseas schools]. Retrieved 24 May 2017 from http://www.mext.go.jp/a_menu/shotou/clarinet/002/002.htm
- Olega, T. 2013. Content-based instruction, CLIL, and immersion in teaching ESP at tertiary schools in non-English-speaking countries. *Journal of ELT and Applied Linguistics*, 1, 1, 1–11.
- Stoller, F. L. 2008. Content-based instruction. In N. Van Deusen-Scholl & N. H. Hornberger (Eds), *Encyclopedia of language and education*, vol 4: second and foreign language education, 51–70. Springer.