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Beyond right and wrong: An innovative approach to teaching Japanese particles using animation

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The appropriate selection of particles is critical in Japanese as it is often the particles, rather than the word order, that determine the function of words in a sentence, and consequently, the meaning of the sentence. However, students often face difficulty in competently handling particles mainly due to their unfamiliarity with the spatial cognition of Japanese. It is difficult to teach this through translation into English. This paper reports on the conceptualisation and development of three prototype online exercises designed as a supplemental tool for teaching particles. The exercises encourage students to ‘feel’ the nuances of each particle by connecting their choice of particles to the visualisation of the sentence using interactive animation. The paper also reports on feedback from users of the prototype that identifies areas of improvement for the final product.

Introduction
For learners of the Japanese language, it is difficult to acquire the basic understanding required for the correct use of particles. While the appropriate selection of particles is critical, students often find the associated complexities difficult to negotiate. This paper reports on the development of a prototype that seeks to determine the feasibility of using animation-based exercises to assist in the teaching/learning of particles in Japanese. The exercises which have been designed to reinforce the teaching/learning of the use of particles by facilitating the visualisation of the context have been integrated into an online Japanese language course. The paper refers to feedback from users to evaluate the acceptability and user-friendliness of the prototype by focusing on two main areas: 1) technical readiness of teachers and students; and 2) the acceptability of the concept of the exercises. This study comprises three stages:

1. Conceptualisation of the project
2. Creation and implementation of a prototype
3. User evaluation of the prototype.

Conceptualisation of the project
Project background
The project was undertaken to provide support for university students in overcoming difficulties associated with handling Japanese particles. The correct use of particles is crucial to the Japanese language as it determines the syntactical context. However, the difficulty students have in acquiring this ability is evident to both students and teachers. Based on our observation of the teaching of Japanese in Australian universities, we contend that tertiary level students’ comprehension of particles remains shallow as they lack the ‘feel’ for, or the implicit awareness of, the appropriate use of particles and the spatial cognition of the context of use.
There are two key assumptions that have guided the development of this project:

- firstly, the significance of the use of particles in Japanese and the recognised difficulty in teaching/learning the appropriate use of particles
- secondly, the significant merits and potential of animation as a teaching tool for use in Japanese language teaching.

Problem identification

The significance of particles in Japanese — The role and significance of particles in Japanese is different from other languages such as English and Chinese. In Japanese, it is often the particles, rather than the word order, that determine the function of words in a sentence, and consequently, the meaning of the sentence. The ‘loose structure of Japanese allows the changing of the word order, as long as a sentence ends with the predicate (i.e. verbs and adjectives) and particles are used correctly’ (Bryce & Khan 2002).

The ‘loose structure’ of Japanese further contributes to the difficulty experienced in teaching/learning particles. The frequent lapses of words, clauses, even sentences in Japanese have been well recognised in textbooks as far back as the early 1900s (for example, Rose-Innes 1916, p. 91). The freedom of omitting obvious words is attributed to the fact that Japanese has developed in an insular, private society (Kumakura 1990; Ōno 1978; Toyama 1976). A Japanese utterance is ‘circumstantial’, relying strongly on each specific context (Kawamoto 1976). This is why information known to both speaker/writer and listener/reader is often left unexpressed in discourse without being criticised as ‘incomplete’. Similarly, particles are often omitted, particularly in conversation, when the connections between words are clearly understood by the participants of the dialogue.

Japanese linguists therefore tend to attach great importance to particles in explaining Japanese sentence structures. Mikami (1960, p. 1) asserts that among the grammatical tools in the Japanese language, the most important one is ‘te ni wo ha’ (particles). There are also textbooks and exercise books dedicated to instructional use of particles, such as Kawashima’s Particles Plus: A Complete Guide to the Usage of Particles in Modern Japanese (1992), and three out of the seven volumes of the Nihongo Bunpō Self Master Series (Noda 1985; Masuoka & Takubo 1987; Numata 1992).

Issues in teaching/learning particles — While the correct use of particles is crucial for the correct use of Japanese, students have difficulty in handling Japanese particles, particularly in choosing the appropriate particles when they try to compose their own sentences. This issue is well recognised, for example, by Nagata (1997), who reports that many students learning Japanese experience difficulty in choosing the appropriate particles required for describing the relative position of objects. Although students are capable of comprehending quite complex texts, when they try to create their own sentences they often make very basic mistakes. Many of the structure-related mistakes in their sentences tend to arise from the inappropriate choice and use of particles.

Our observations suggest that students initially learn particles as part of the basic sentence structure, and are generally able to manage sufficiently well in grammar.
tests by learning set expressions. However, when students learn a greater variety of expressions, and deal with more complex sentence structures, they confront a range of uses of the same particle. Hence, students exhibit a tendency to repeatedly make the same basic mistakes. One of the issues appears to lie in their lack of familiarity with the spatial cognition of Japanese particles. Similar to the issues associated with English prepositions as discussed by Herskovits (1986), the correct use of Japanese particles requires spatial understanding. As Suzuki (1978) points out, it is not easy for students to acquire an awareness of nuances or to develop a ‘feel’ for particles from English explanations and translations.

The significance of particles in the Japanese language may, however, be somewhat underestimated in teaching Japanese as a second language, particularly where the focus is placed on the development of communicative ability. For example, in the NSW syllabus for primary schools, particles have often been omitted from sentences, except where the use of particles is absolutely necessary in order to understand the meaning. Examples of such expressions are: 「しゅくだいする。」; 「がっこう（に）いった。」; 「おねえさん（は）ダンスする。」 (Board of Studies 1997, p. 26). Whereas communication may still be possible without the accurate use of particles, such communication is appropriate in casual situations at best.

Solution development

Use of animation to aid visualisation — The problem we have identified emanates from students’ difficulty in mastering the use of the Japanese particle. It appears that students’ understanding of particles remains shallow, and that the teaching of particles is an area that conventional pedagogy has not covered well. This situation suggests the need for enriching students’ knowledge through reinforcement of their perception of particles by developing their sense of the language through their imagination.

Visualisation is crucial for our perception. As Herskovits notes, ‘much of our reasoning ability relies on visual thinking, on the manipulation of mental image’ (1986, p. 1). In this regard, digital graphics, including animation, can be an effective adjunct to conventional teaching tools, such as textbooks and language dictionaries (Sonwalkar 2001; Mones-Hattal & Mandes 1995). Unlike printed material, digital graphics have the capacity for demonstrational presentation of time, space and movements within them. We contend, therefore, that animation can play a significant role in enhancing students’ sense of the effective use of the language they are learning and in enabling them to develop the ‘feel’ for linguistic contexts that affect the use of particles.

Computer-based animation was therefore employed to develop prototype exercises focusing on the use of particles. The exercises were developed to be used as supplemental exercises for online teaching in a tertiary level Japanese language class. They were not meant to replace any part of conventional teaching and it was believed they should not be time consuming or stressful to learners, so that students do not end up sacrificing other activities or becoming burdened by them. Students should be able to engage in the self-learning online animation exercises at their own pace in the privacy of the multimedia environment.

The technological environment prevalent in educational settings combined with students’ multimedia literacy has made the use of interactive animation in online
units possible and practicable. Smith (1995) notes the tendency of the younger generation to have a greater comprehension for graphic design and less cultural resistance than the older generation. In recent years, students' multimedia literacy and their capacity to handle graphics and animation have improved tremendously to the extent that nowadays IT skills are articulated as a required academic skill, as evident in university study guides.

Special features of the medium — The multimedia literacy of students coincides with an increase in the popularity of manga (Japanese cartoons), a social phenomenon that was once limited to Japan, but is now global in its reach. It seems it is possible to enjoy manga and manga-inspired animations, even without understanding Japanese. Owing to this trend, familiarity with manga illustrations has become a shared culture, and/or common language of the younger generation. Internet-based access to manga has further increased the medium's popularity. The high levels of enrolment in ‘Japan's Contemporary Culture through Manga (JPN123)', an undergraduate unit introduced and presented by the authors at Macquarie University, serves to underscore manga's popularity and universal appeal.

To capitalise on its universal popularity, simple manga-style animation, was considered to be the appropriate visual medium for the exercises. The ‘simple, motioned manga-style cartoons’ are generally highly iconic, with cute, round and simple shapes and normally do not contain political satire (cf. Lin, Nguyen & Pugh 1996; Schodt 1996). They involve high levels of stylisation, simple lines without shading, exaggeration and/or omission of features, 'cuteness' from roundness of figures, and a sense of humour. The main reasons justifying the choice of manga were students' familiarity with the medium and the special features of this style of animation that allow focused attention on the specific learning objectives of each exercise.

The significant features of a manga-style animation exercise can be described as involving the following (Bryce & Khan 2002):

1. **Visualisation**: the ability to facilitate visualisation of 'context' by effectively depicting objects in a multi-dimensional sphere, and the spatial relationships between objects.
2. **Simplicity**: the promotion of focused attention facilitated by minimising realistic details and using non-cultural settings.
3. **Humour**: the ability to create humour is a significant strength in reinforcing the capacity of online teaching to create an enjoyable, 'non-threatening virtual learning environment' (Schweinhorst 2002).
4. **Interactivity**: exercises elicit students' active involvement, increasing their contextual and syntactical understanding.
5. **Repeatability**: enables students to practise at any time they wish.

**Creation and implementation of a prototype**

**Development of self-learning exercises**

The prototype was developed as part of an online unit, 'Translation and Writing Japanese Workshop I' (JPN261). The reasons for choosing JPN261 are:
1. the unit trains students in fundamental and practical Japanese writing skills wherein the learning of particles is crucial;
2. it is an online unit with a website to which the animation exercises can be uploaded;
3. both authors have taught it for several years.

This unit is offered in the second half of the second year of the course. Students enrolling in the unit are required to have studied Japanese either at high school followed by another six months at university or at university for at least one and half years. Students in this unit have therefore already been introduced to basic Japanese grammatical structures and various forms of expression.

**Adopting appropriate technology**
Following the initial decision to employ animation in the prototype exercises, subsequent decisions were made regarding the content and supporting technology. These decisions were guided by concerns for their appropriateness — mainly the relevance and acceptability of the content and the availability and accessibility of supporting technology for teachers/creators and students/users.

The current technological environment at universities provides sufficient support for the creation and facilitation of animation-based exercises. Readily available user-friendly software enables language teachers, with a little artistic talent, to have control over their initiatives. It is now possible for them to create the whole animation program themselves with minimal support from technical staff. The cost of creating computer-based animation, therefore, no longer remains prohibitive.

Macromedia Flash 5 was identified as being the most appropriate technology for us to create animation within the limited timeframe and budget, as it allows an average PC user to readily draw pictures and animate them. Also, the installation of WebCT at universities and accompanying IT support have made it easy for teachers themselves to upload the content they create to online units and update it, securing their autonomy and ensuring cost effectiveness.

During the development of this project, we perceived a fundamental change in the relationship between the ‘technical’ IT team members and the ‘language specialists’. We moved away from a situation where language teachers rely heavily on technical staff to translate their ideas into multimedia products and to run them, to a situation where language teachers themselves create and run the product, with minimal advice and support from IT staff. This has allowed language teachers and technical personnel to channel their creative synergies into experiments and innovation.

**Concepts and content**
*Three prototype exercises* — We created three special exercises to focus on the use of particles, with the content gradually becoming more complex through successive levels. The first exercise requires students to choose an appropriate particle to complete a sentence. The second exercise deals with more complex sentence structures, such as ones including verbs with two objects (for example, ‘give someone something’). In both the first and second exercises, answers are selected from multiple-choice options. The third exercise asks students to unscramble and rearrange the different parts of a sentence.
Content of the exercises

Exercise 1 — The first exercise consists of 12 sets of questions. Some of the examples are presented in Figure 1.

Figure 1: Extracts from Exercise 1

1) Which particle should be used to fill the bracket:
レストラン（ ）食べる?

レストランで食べる。
レストランが食べる。
レストランを食べる。
レストランに食べる。

2) Which particle should be used to fill the bracket:
飛行機（ ）乗る?

飛行機に乗る。
飛行機が乗る。
飛行機で乗る。
飛行機を乗る。

Exercise 2 — The second exercise consists of 11 sets of questions. Some examples of the questions are presented in Figure 2.

Figure 2: Extracts from Exercise 2

1) レストラン（ ）ステーキ（ ）食べる。

がを
でが
にが
でを

2) さる（ ）木（ ）のぼる。

がを
とに
にが
がに

Exercise 3 — The third exercise consists of 14 sets of questions. Some examples of the questions are presented in Figure 3. When students click on any of the links shown in Figure 3, they see an interactive screen (shown in Figure 4).
Figure 3: Examples of questions from Exercise 3

1. (ケーキ 私がをは)大好きだ。
2. (大好物ケーキ私のはのが)だ。
5. 先生(宿題見せる見るがをに)
7. (母私がをに)しかられる。

Figure 4 depicts the interactive screen that appears after clicking on Question 1 (shown in Figure 3).

Figure 4: Examples of an interactive screen from Exercise 3

Students can use the triangles/arrows to select the appropriate words to create a sentence. When a sequence is decided upon, they can press 'Answer' to view the results. Many answers are possible and students are encouraged to try to make as many sentences as they can.

Activating animation clips

All of the three exercises take the form of self-testing. Each possible answer is linked to an animation and upon selection/completion of each answer, students can see the visualisation of their sentences. The sentences that are grammatically incorrect trigger an animation of a bomb explosion (see Figure 5d).

To provide an insight into the users’ experience, a description of the design of a question from the second exercise follows.
Figures 5a, 5b, 5c and 5d are stills taken out of different animation clips that are attached to the following question (from the second exercise):

Fill in each parenthesis with an appropriate particle:

さる（ ）木（ ）登る。

Saru (monkey) ___ ki (tree) ___ noboru (climb).

Four possible answers are provided to complete this question, with one grammatically incorrect sentence. The most logical answer would be *Saru ga ki ni noboru* (Monkey climbs the tree) (Figure 5a). Using two particles in a different order, however, would mean ‘Tree climbs the monkey’ (Figure 5c). This sentence is possible because the particles, not the word order, determine the meaning of the sentence. This is a typical example of a grammatically correct yet contextually inappropriate sentence — or a ‘silly’ situation. Figure 5b shows another possibility, which means ‘I climb the tree with the monkey’. While in English a sentence is not complete without a subject, in the case of Japanese, it is common to omit the subject assuming it to be ‘I’. The meaning conveyed by this sentence (and emphasised in its animated visualisation) may or may not be considered silly by the students. Instead of the lecturer excluding such sentences from consideration, we let students be the judge. Scripts attached to the animations with particles highlighted in red help students to associate what they see with the grammatical usage of particles. Through these exercises, students are exposed to a number of similar situations.

To deal with some expressions that need special attention such as the concept of ‘give and receive’, we try to cover as many possibilities as we can. For ‘give and receive’, Japanese has three verbs, depending on who is speaking from whose point of view, instead of two verbs as in English. Particles again play a vital role here. Figures 6a, 6b, 6c, 6d, 6e and 6f are the choices provided as possible answers to the use of one of the verbs, *ageru* (give). By using three particles in different orders, six situations are possible, none of which is grammatically incorrect.
No right or wrong

The prototype online exercises aim to cultivate students’ problem-solving ability and confidence, rather than providing the solutions or ‘right’ answers to learn or memorise. Our approach de-emphasises the ‘right’ and ‘wrong’ distinction to allow students to discover how particles behave and change the meaning of a sentence. A major innovation offered by these exercises in achieving this end is the use of animation to provide the visualisation of students’ responses, whether their responses are contextually correct or incorrect.

The use of graphics is fairly common in educational programs, however, their role is often limited to explaining a setting or specific instruction. In other words, they either replace written text or supplement textual explanation. Even where interactive animation is used, it is commonly employed to ensure that students respond to the teachers’ preconceived ‘correct’ visualisation of a situation. The approach of such an exercise is, therefore, limited to promoting what is ‘appropriate’ as determined by the instructor. As Brandl (1995) states, ‘[i]n CALL (computer-assisted language learning) the vast majority of drill-and-practice-type software that deals with grammatical features consists of multiple-choice and fill-in the blank activities. Usually the feedback does not go beyond “Right” and “Wrong” or “Try gain!”’ (p. 194). In contrast, our exercises invite students to try out the various possible uses of particles in a sentence, and experience the resultant changes to the meaning. Students are instructed to choose their answers whilst imagining the visualisation in their mind. The animation attached to their selection then allows them to check their expected visualisation against the corresponding animation that represents a visualisation of the actual meaning of their choice of particles.

While conventional teaching tends to ‘explain’ the use of particles, our supplemental exercises aim to encourage the students to ‘feel’ the concept of each particle. This difference in approach can be explained in terms of Krashen’s distinction between ‘acquisition’ and ‘learning’ (Krashen 1987). Krashen maintains that ‘learning’
is a conscious process while ‘acquisition’ is subconscious. Bialystok (1979) refers to subconsciously acquired knowledge as ‘implicit knowledge’ and consciously learned knowledge as ‘explicit knowledge’ (cited in Sakamoto & Koyama 1997, p. 14). Sakamoto and Koyama stress that language training does not only serve to expand consciously acquired explicit knowledge but also subconsciously acquired implicit knowledge. They concur with Bialystok that teachers need to have the understanding and awareness to differentiate between tasks that contribute to enhancing explicit knowledge and those that enhance implicit knowledge. Using a similar distinction, we could describe our animation exercises as catering to students’ need to acquire ‘implicit knowledge’ to supplement the ‘explicit knowledge’ learned through explanations that can be obtained through conventional teaching/learning methods.

Removing the embarrassment
It is significant to note that in designing our exercises, the ‘silly’ situations are capitalised on rather than avoided. In real life, the embarrassment caused by getting into ‘silly’ situations, or even the fear of such perceived embarrassment, can create serious inhibitions in students. In our exercises, ‘silly’ situations are allowed to happen, albeit in a safe, private and artificial environment. Instead of being embarrassed, students can see the humour in the situation, and appreciate the change in meaning caused by the use of the particle in a particular way. This ‘shock’ treatment, softened by humour, has a significant impact on students when they use the particles incorrectly. This application of animation serves a similar purpose to that described by Schweinhorst (2002) where the high-tech visual reality provides a stress-free environment for language learning and the low-tech visual reality is capable of transporting students to a non-threatening visual learning environment.

As Takamizawa (1987) explains, the transformation of short-term memory into long-term/permanent memory in the process of language learning can be achieved by repetition and/or a strong first impact. In order to achieve this transformation, words or concepts should be experienced repeatedly by students or introduced with a significant impact. In our animation-based exercises we can deliver a strong impact through ‘silly’ situations and also allow students to experience the exercises repeatedly in their own time and at their own pace.

Feedback from the prototype
When the prototype exercises had all been developed, we sought various users’ comments on the product. The purpose of this user evaluation was to gauge both the user-friendliness and appropriateness of the prototype as a supplemental tool for language teaching. The feedback/user evaluation of the prototype does not aim to measure the effectiveness of the exercises as a teaching tool against educational objectives. Such an evaluation of effectiveness of the tool will have to wait until after the final version of the product is completed. Rather, the aim of obtaining feedback from users was to acquire a preliminary assessment of the technical and cultural readiness of potential users of the final product, and their degree of acceptance of the type of exercise being prototyped. It is hoped that insights into users’ views obtained at this stage will enable us to improve the final product.

Seven university students and eight language teachers volunteered to comment. The language teachers included two university lecturers, three high school teachers and
three primary school teachers. We extended the user-evaluation to include teachers from primary and high schools to explore the possibility of using the exercises for younger Japanese language learners. We believe that as a supplemental learning tool designed to reinforce learners' understanding of particles, the possibility of using the exercises as a stand-alone learning tool also warrants further examination.

All students who volunteered to comment were enrolled in the second or third year of the Japanese language course at Macquarie, including two students enrolled in the online course to which the prototype is attached. Each student in the group was provided access to the exercises set up online on the web and asked to attempt the three online exercises. Comments were received from students via email.

Teachers were separately provided with portable versions of the prototype on floppy disks accompanied by basic instructions and a brief explanation of the aim/purpose of the prototype exercises and the concept behind the exercise design. They were asked to try out the exercises and communicate to us any comments either over the phone or by email.

Both students and teachers could access the exercises any time from any location convenient to them and had flexibility in the number of times or the duration of time they engaged with the exercises. While they were encouraged to make any comments they might like to make, neither students nor teachers were asked to answer any specific questions. They were also not instructed to observe, notice or focus on any specific aspect of the exercises. It was left totally up to the users themselves to decide what aspect(s) they did or did not wish to comment on.

Our intention was to obtain feedback that was useful, providing us with clear guidelines regarding the modifications required for improvement of the final product, without being prejudiced by our assumptions.

**User evaluation of the prototype**

In general, almost all users found the exercises to be fun, lively, and/or enjoyable. Students were enthusiastic in their comments saying they found the animations interesting and fun. Teachers' comments were comparatively more reserved. However, there is a general consensus among teachers that visual images, especially computer-generated animations, help to motivate the younger generation to learn. Some teachers also noted that their exposure to the exercises inspired them to be more innovative in their teaching.

While the topics of comments ranged across a wide spectrum of concerns, they may be categorised broadly into the following two groups:

1) comments related to technical issues
2) comments related to content and conceptual matters.

**Comments related to technical issues**

A number of comments focused on technical issues. Some issues were of minor nature, such as the time taken for the exercises to load on to a computer and the length or duration of animation images appearing in a particular exercise. The time taken to download exercises is mainly a matter of the capability of the PC being used, although we would like to minimise the size of the program. The complaint about the length of animation is particularly useful as it provided us with the users' perspective. It prompts
us to optimise the length of duration of particular images within the animations so that the desired impact is ensured.

A predominant concern registered in the comments related to the fact that the animations are not accompanied by sound. Most users, including an overwhelming majority of teachers, either enquired as to whether this program had sound, and/or suggested that it would be better with sound. These comments establish the importance and need to have sound incorporated into the animation. We agree that sound could greatly assist in making the exercises more effective, especially because we are trying to encourage students to acquire the ‘feel’ or implicit awareness of the language use. Furthermore, if one were to treat the animation-based exercises as another educational computer game, the incorporation of sound and effects would be a natural expectation. We are convinced that sound must be incorporated for an improved final product. To this end, we will seek to acquire the required know-how and resources.

Comments related to content and conceptual matters
Merit/meaning of the exercises — A university lecturer described the option of watching the animation repeatedly as beneficial in two ways: firstly, it serves as a memory-aid; and secondly, it provides a means of picking up the subtleties in terms of change of meaning of a sentence that can result from different usage of particles.

Most of the enthusiastically positive comments came from students. Some students found the exercises to be highly relevant while others commented that they seemed to be too simple and basic. In general, however, students seemed to appreciate the meaning and purpose of the exercises.

One student commented that the exercises helped her to understand which part and what use of particle makes a sentence ‘wrong’ — thereby allowing her to understand the sentence structure more clearly and easily. Another student said that while the exercise emphasised the fact that Japanese sentence structure can be quite flexible, it also showed how the whole meaning of a sentence could be changed by swapping particles. Another student appreciated the appearance of similar examples in different exercises, which helped to recall the corresponding pictures and sentence structures.

Comments from two teachers queried aspects relating to the ‘right/wrong’ answers. One teacher pointed out that the exercises did not highlight the distinction between ‘right’ and ‘wrong’ answers, therefore students would fail to know what to learn. Another teacher suggested that while the exercises kept students interested initially, they needed to be given some reward for getting the correct answer — such as scoring points or moving on to the next level — to ensure continued motivation.

The concerns of the two teachers stem from our deliberate intention to break away from the conventional approach. As stated earlier in the paper, we believe that conventional approaches such as those relying on fill-in-the-blank exercises may force students to concentrate on finding the ready-made ‘right answer’, without exploring alternative uses of particles. It needs to be stressed that this set of exercises is designed as a supplemental teaching tool meant to be packaged along with other conventional teaching material. The latter could, of course, employ various forms of rewards and/or assessment.

In general, students were appreciative of the fact that the exercises dealt with a problematic aspect in Japanese. It is noteworthy that many students commented that
the exercises were helpful in learning Japanese sentence structures. Teachers did not tend to comment on this aspect. This could suggest that students find the use of particles to be more problematic than teachers appreciate. It may, however, also suggest that teachers, especially schoolteachers, generally attach less importance to teaching particles, in line with the focus of the syllabus. As Gosper et al. (2004, pp. 66–72) observe the over-riding concern for schoolteachers in choosing teaching resource materials is whether or not the material fits into the curriculum:

The most common reason given for choosing a learning object was the object’s relevance to curriculum (...) where a common syllabus is available, teachers asked for learning objects that were linked directly to the curriculum/syllabus. This finding is consistent with those of Littlejohn et al. (2003) where reuse of teaching materials was improved after online resources and activities (learning objects) were directly linked to specific learning outcomes.

**Script**

Some of the comments also raised questions about the script used in the exercises. For example, it was questioned whether the writing should be in Japanese, Roman script or both. The choice of the script involved technical considerations and matters that we were unable to fully resolve in this prototype. This situation resulted mainly because of shortage of time and technical know-how. We will, however, try to use Japanese script in the final product.

There were also comments enquiring about the range of **kanji** used in writing the exercises and, consequently, the range of **kanji** students needed to be familiar with to be able to attempt the exercises. This issue concerns the level of the targeted learner. However, we could assume that the vocabulary used in the exercises is not an issue as it was not raised in any of the feedback we received. If that is the case, the use of **furigana** (phonetic symbols) to supplement the **kanji**, as suggested by one teacher, could be a way of resolving this issue.

**Incomplete sentence?**

There was also concern raised by one teacher that some sentences included as possible answers to the exercises are incomplete. The teacher pointed out that sentences such as **Kare ga nomu** (He drinks) and **Kare to nomu** (Drink with him) do not have the necessary object of the verb, ‘drink’. It was suggested that we should put in the object (such as ‘wine’) to make the sentence complete.

This issue relates to the objective we set for the exercises to encourage students to discover which particle marks the object, which particle marks the subject, and so on. It is also related to our perception of Japanese language. We consider that a Japanese sentence may even consist of only one word, for example, **Kuruma** (car) (Saji 1982, p. 168). Japanese is identified as a ‘topic-prominent’ language, unlike ‘subject-prominent’ languages such as English, and the omission of clauses happens commonly in Japanese. ‘Topic does not just control reference within clause boundaries, it controls reference outside clause boundaries as well. That is why once a topic is announced, the subject(s) of subsequent clauses can be omitted’ (Baker 1992, p. 143). Also, in the case of the Japanese language, not only the subject but the object can be omitted, mainly
because particles help to clarify the function of each word. Having stated our case, however, we concede that some scholars may not agree with this perception. In designing the final product, therefore, we would like to re-visit this debate before deciding whether or not to incorporate ‘incomplete’ sentences.

Suggestions
Some comments from students contained noteworthy suggestions for future initiatives. For example, it was pointed out that similar style animation exercises could be developed to help their understanding of other problematic aspects of grammar. Some areas identified as needing reinforcement include the differences between transitive and intransitive verbs and between ‘ために’ (in order to) and ‘ように’ (the purpose of), and particularly the use of honorifics.

Conclusion
Innovation through animation
A major innovation of the exercises is the purpose for which animation is used. Rather than using animation to simply replace explanatory text, we used animation to provide a visualisation of students’ own responses, whether or not the responses were contextually correct. Animation has not been employed to ensure that students respond to teachers’ pre-conceived ‘correct’ visualisation of a situation. By not excluding sentences that are grammatically possible even though they may be contextually inappropriate, we allow students to get a deeper understanding of the function of each particle.

In designing our exercises we have capitalised on the possibility of the ‘silly’ situations rather than avoiding them. The innovation in our approach stems from employing interactive animation as a means of removing inhibitions and encouraging experimentation by the user. Users are able to experience a process of making mistakes — without the accompanying embarrassment of a real-life situation. Animation has been relied upon to allow the use of humour, artificiality of context and shock treatment as techniques to create an interactive environment conducive to uninhibited learning. In this way, instead of using the ‘right/wrong’ approach, these exercises let students observe and discover in an atmosphere where silly situations are to be expected rather than feared.

A supplemental learning tool
Our pilot project using animation-based exercises to focus on the use of particles suggests that they provide an effective supplemental tool to online teaching at university level. The animations enabled students to cultivate the ‘feel’ for or develop implicit knowledge of the use of particles in self-learning mode at their own pace and in privacy. The exercises develop such an understanding by encouraging experimentation so students can sense the possible nuances when particles are used in different positions in the sentence. As the teaching of particles is an area that conventional teaching does not cover well, these exercises can aptly serve as a supplemental teaching tool to conventional teaching.

It would be useful to provide such exercises as supplemental teaching tools to school children as well. However, the vocabulary and kanji used would have to be
carefully chosen to keep within the limits of the knowledge of school students to ensure that they can enjoy the exercises.

There are still issues that need to be resolved, some dealing with technical aspects, others with content. However, we believe that as long as students find the exercises fun and are willingly engaging with them a number of times, they should be able to develop the ‘feel’ for the use of particles and understand the peculiarity of the Japanese sentence structure.

**Future directions**
Creating three prototype exercises was a pilot project exploring the possibility of creating animation-based exercises to study users’ reaction to new types of learning. Building upon the positive outcome of the project, we plan to improve and further develop the prototype into a comprehensive, self-learning package — this time with the incorporation of sound. With a substantial number of exercises, the package will allow students to undertake exercises extensively involving the use of particles in diverse situations to gain a holistic and pragmatic understanding of particle use.

Once the final product has been developed incorporating the findings from this study, we will be in a position to evaluate the effectiveness of the product. We would like to measure and monitor the extent of students’ improvement and their awareness of the function of Japanese particles/sentence structure as well as their levels of confidence.

**References**


