Implementation and Evaluation of a Curricular Framework for Online Language Courses

Mayu Miyamoto*, Jeff Peterson ** and Atsushi Fukada***
*Nagoya University of Foreign Studies, Japan; ** Brigham Young University, United States; ***Purdue University, United States

*mayumiya@nufs.ac.jp | **jeffpeterson@byu.edu | ***afukada@purdue.edu

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Abstract
Constraints caused by the Covid-19 pandemic led to a spike in courses originally designed for in-class instruction being delivered online. As the pandemic wanes many courses will return to in-class instruction while other programs will look to develop post-pandemic long-term online courses, indicating a clear need for an effective curriculum for online foreign language classes. This article describes the implementation and evaluation of a newly developed curricular framework for online language courses at university level. Primarily, this framework is designed to foster oral proficiency. The technology used to implement the framework was also developed specifically to facilitate speaking practice. We have used the framework at Purdue University to develop a curriculum for Japanese online courses Levels 1–4 (i.e., semesters 1–4). Japanese Level 1 is used in this article to illustrate the features and effectiveness of the framework. The framework has three major components: asynchronous self-learning modules, weekly small-group synchronous sessions, and performance-based assessments. Each component involves a pedagogical innovation, a technological innovation, or both. This study’s main research question was, “Do students in an online course designed using the new framework develop a degree of oral proficiency comparable to that of students in a classroom?” An
oral test administered at the end of the course showed that the online students performed comparably to their classroom counterparts on question and answer and picture description tasks and outperformed them on an elicited imitation task. The results of a questionnaire also indicated participants’ positive perceptions of the technology used and the online course itself. These findings serve as further evidence for the effectiveness of the proposed curricular framework.

Keywords
Computer-assisted language learning; online courses; curricular framework; online learning; oral proficiency; Speak Everywhere

1. Introduction

Many students around the world would like to take foreign language courses but cannot due to scheduling conflicts. Other students would prefer to learn a language primarily on their own and at their own pace. There are undoubtedly people outside of university campuses for whom certain language courses are not available. Online courses may be able to accommodate such people, whether they be high school students, college students, working professionals, or other learners. Previous research also emphasizes that “online language course sections widen the access students have to language education at university” (Schulze & Scholz, 2018, p. 194).

The current generation of courses originally designed for online delivery includes instruction that is mostly or entirely asynchronous. This characteristic gives students flexibility in scheduling and accommodates an independent learning style. Language learning, however, requires interaction with other speakers if speaking is to be taught. The challenge, then, is to foster oral proficiency while keeping synchronous learning to a minimum. Through pedagogical innovations and with advanced technologies, we have created a new curricular framework for online language courses that is designed to foster a degree of oral proficiency comparable to that achieved in classroom courses. The first purpose of this article is to describe this framework in detail. We will use a first-semester Japanese online course (Japanese Level 1) to illustrate the framework. The second purpose of this article is to further demonstrate the effectiveness of this framework. This is done through the evaluation of Japanese Level 1 vis-à-vis a classroom counterpart course. This evaluation includes a survey study and a preliminary efficacy study, in which our main research question was “Do students in an online course designed using the new framework develop a degree of oral proficiency comparable to that of students in a classroom?”

2. Literature review

Previous studies have found that the primary objective of foreign-language learners and instructors at elementary and intermediate levels is developing oral proficiency (Fukada & Wei, 2013; Harlow & Muyskens, 1994; Houston, 2005; Peterson, 2021; Rivera & Matsuzawa, 2007; Tse, 2000). Online courses are typically asynchronous and are designed to have few contact hours, if any. Given the general expectation of asynchronous online courses and the necessity to provide more speaking practice, the difficulty of fostering oral proficiency has prevented many foreign language professionals from designing and implementing online courses.

Although the number of online foreign language courses is growing, few reports on 100% online elementary-level language courses focus on oral proficiency. The first completely online/distance elementary-level language course was probably an introductory Spanish course offered at Christopher Newport University (Cahill & Catanzaro, 1997). This course offered online materials for self-study as well as distance learning through biweekly phone conversation practice with an instructor and two students. Although the researchers claimed to have shown that the online/distance students achieved the same level of language proficiency as the classroom students, the measurement of proficiency was a
conventional written test. Therefore, it is not clear whether or not the online/distance students achieved the same level of oral proficiency.

Blake et al. (2008) also developed an entirely online Spanish course called Spanish without Walls. It consisted of self-study using CD-ROMs, online materials, and synchronous voice and text chat sessions between an instructor and students. The researchers reported that after two semesters of Spanish without Walls, the online students developed the same level of oral proficiency as their classroom counterparts as determined by their performance on an elicited imitation task (Blake et al., 2008).

Entirely online language courses have also been developed for French and German. These courses have claimed to produce students with a level of oral proficiency comparable to that of students in a classroom (Hampel, 2003; Hampel & Hauck, 2004; Lamy, 2004). When it comes to learning non-European languages, there does not seem to be much reported on the outcomes of existing courses except for a third-semester Japanese online course (Peterson, 2021), a fourth-year online Japanese course (Tateyama, 2015), and Arabic without Walls (Blake & Shiri, 2012). Arabic without Walls had a similar design to Spanish without Walls, but no report was made on the students’ oral proficiency development.

Importantly, Blake (2013, 2015) points out that no effective curriculum for online foreign language courses has been established yet, and that there is an urgent need to develop one. As online courses have generally been conducted asynchronously and there has still been a need to provide more speaking practice, the difficulty of fostering oral proficiency has prevented many foreign language professionals from designing and implementing more online courses over the past number of years. It is in this context that we set out to design a new online curricular framework that would enable us to create completely online courses that aim to foster students’ oral proficiency. Our strategy is to combine copious amounts of asynchronous oral practice with short, synchronous sessions with a small group every week. This article first discusses the framework and its design principles.

3. The online curricular framework

Our curricular framework has been used to design online courses for elementary- to intermediate-level learners. The framework consists of three major components that students complete in this order:

1. Self-learning modules (asynchronous, autonomous learning)
2. Real-time sessions (synchronous, small-group interactive sessions)
3. Performance-based assessments (mostly asynchronous and mostly oral online assessments)

These components provide a foundation for multiple types of interaction, including learner-materials interaction, learner-learner interaction, learner(s)-instructor interaction, and instructor-learner(s) interaction.

3.1. The Self-Learning Module

Students need guidance, speaking goals, and preparation to become more comfortable with real-time sessions (Terhune, 2016). Our framework is structured to prepare students for a real-time session that requires discourse-level output in communicative activities. The self-learning phase is where students use the textbook, workbook, and online materials to learn on their own. One key feature of the modules is an abundance of oral practice on the Speak Everywhere (SE) platform.

A sample self-learning module from Japanese Level 1 is shown below (Figure 1). Progressing from the lexical level to the discourse level is part of the curricular framework.
This is one week’s worth of materials. During development, we ensured that authentic conversation practice follows every drill and exercise so that learners can experience applying their new knowledge to a real-life situation.

Sample oral practice activities on Speak Everywhere (SE) are described in Figure 2. Figure 2 is an example of an open-ended Q&A activity. For this activity, learners are expected to respond orally to questions posed by a person in a pre-recorded video. The purpose of this activity is to provide learners with an opportunity to communicate basic personal information, in this case about their own families, utilising the language elements that they have learned in the lesson.
Figure 2

Sample Oral Practice Activity on SE.

Figure 3 is an example of a monologue task. For this task, learners record a short speech about the topic given on the screen. Monologue tasks provide opportunities for learners to test their language creativity and to self-monitor their current speaking ability.

Figure 3

Sample SE Monologue Task.
An example of role-play is shown in Figure 4. This "talking about weather" scripted role-play is placed toward the end of the self-learning module (i.e., right before the subsequent real-time session). As this example demonstrates, self-learning activities are closely tied to real-time session activities so that the former prepares for and facilitates the latter.

**Figure 4**

Sample SE role-play activity.

After learners submit their audio recordings for all the assigned self-learning tasks, they will receive feedback from the instructor.

### 3.2. Real-time sessions

Computer mediated communication “makes it possible for language students to have meaningful interaction with [others] anywhere there is an Internet connection” (Terhune, 2016, p. 1072). For these reasons, we set up real-time sessions where a student can interact online with the instructor and another student for a weekly, 30-minute session. By setting up a three-person session, we aimed to create a highly interactive session that naturally elicits a lot of discourse-level output. Although 30 minutes per week is limited, these sessions offer a level of individual attention not possible in the classroom. By the time a student attends a real-time session, they are expected to have learnt new words and new structures to such an extent that they can produce individual sentences and multi-sentence utterances accurately and fluently. The primary purpose of the real-time session is to provide opportunities for learners to practice using newly learnt content in a conversational context. Figure 5 is an example of a real-time session activity.
3.3. Performance-based tests

For achievement assessments, we devised online performance-based tests (PBT) administered as take-home tests. This method aligns better with the oral emphasis of typical foreign language courses than a traditional written test does. It also sidesteps the test security issues inherent in the online environment.

3.3.1. Advantages of PBT

Giving and proctoring assessments in online courses is problematic. Considering that some students live in different time zones, it is not practical to set a synchronous test. One solution may be to have students go to physical testing centres with in-person proctors. Weaknesses to this approach include fees, necessary reservations, unavailability of centres, and the fact that a student who takes the test first can tell their classmates what the test questions are.

Our solution to this complex issue is a PBT, which is intended to replace the traditional written test. In a performance-based language test, students perform various language tasks focusing on oral skills. The oral portion of a PBT makes up 90% of the test and typically involves: (a) monologue, (b) reading aloud, (c) read and answer, (d) Q&A, and (e) role-play or guided conversation. The other 10% of each chapter test is a timed dictation where students write down sentences they hear within an allotted time.

3.3.2. Validity

Suppose this question was on a written test:

In German, how do you greet someone you run into in the morning?
Correctly responding with (c) does not guarantee that the student can say the expression spontaneously in this situation. Nor does it even guarantee that they can intelligibly pronounce the phrase. In a PBT, however, it is possible to set up a greeting situation using a textual cue or a video and have the student actually perform the greeting. In this way, when it comes to measuring oral skills, a PBT is more valid than a written test (certainly in terms of content validity and face validity).

3.3.3. Open test tasks

The test tasks are made available at the beginning of each tested textbook chapter and are accessible throughout the chapter. This way, the students can clearly see what they are supposed to be able to do by the end of the chapter and set goals. By making the chapter objectives clear and making the test tasks available for unlimited practice, we encourage students to spend more time on oral practice. This washback effect is an intentional part of a PBT.

3.3.4. Grading criteria

Because the tasks are open, we grade the student based on how accurately, appropriately, and fluently they can perform the tasks with content from the chapter rather than on simple completion of the tasks.

3.3.5. Take-home format

Students take the PBT as a take-home test, allowing them to work in a familiar environment on their own computer. Within their allotted time (typically 24 hours), students can submit as many performances as they wish. The take-home format frees up valuable real-time session time for other activities.

For more details on the curricular framework, etc. please see Fukada (2013) and Peterson (2021).

4. Evaluation of the Curricular Framework

To evaluate the efficacy of the proposed curricular framework, we return to the Japanese courses that were constructed based on the framework, Japanese Levels 1–2. An oral interview test to investigate the effectiveness of the online courses was conducted in both the traditional classroom courses and the online courses. Furthermore, students enrolled in the online courses were asked to participate in an anonymous survey study that collected feedback on the online course. Participation in the study and answers to the survey did not affect participants’ course grades. The survey study and the experimental efficacy study are presented below.

4.1. Survey study

4.1.1. Subjects

The subjects were 10 Japanese Level 1 Online students and 18 Level 2 students. Three Level 1 students’ responses were discarded because they failed to complete the survey fully and accurately.

4.1.2. Material

A survey instrument was developed to evaluate students’ perceptions of the online course and curricular framework. It consisted of six items using a 5-point Likert scale (strongly disagree (SD), disagree (D), neutral (N), agree (A), and strongly agree (SA)) and two open-ended questions.
4.1.3. Results

The results for the survey are as follows.

Question 1: “The technology tools required for the course assignments were easy to use.” The tallied responses in Table 1 show that most of the students had no problems using the technology tools.

**Table 1**

*Responses to question 1.*

<table>
<thead>
<tr>
<th></th>
<th>SD</th>
<th>D</th>
<th>N</th>
<th>A</th>
<th>SA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 1</td>
<td>0</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Level 2</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>4</td>
<td>12</td>
</tr>
</tbody>
</table>

*Note: SD (strongly disagree), D (disagree), N (neutral), A (agree), SA (strongly agree).*

Question 2: “The amount of communication and interaction between students and the instructor in the online course was sufficient for effective learning.” The purpose of this question was to evaluate the provision of 30-minute real-time sessions. As seen in Table 2, most students indicated that there was sufficient interaction within the online environment. The result helps validate this portion of the curricular framework.

**Table 2**

*Responses to question 2.*

<table>
<thead>
<tr>
<th></th>
<th>SD</th>
<th>D</th>
<th>N</th>
<th>A</th>
<th>SA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 1</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Level 2</td>
<td>1</td>
<td>0</td>
<td>4</td>
<td>8</td>
<td>5</td>
</tr>
</tbody>
</table>

*Note: SD (strongly disagree), D (disagree), N (neutral), A (agree), SA (strongly agree).*

Question 3: “The design of the online course is as effective as traditional classroom courses.” More than 70% of the students agreed with the statement (Table 3). Eight Level 2 students responded with “strongly agree (SA).” This is evidence for high face validity of the course design and the underlying curricular framework.

**Table 3**

*Responses to question 3.*

<table>
<thead>
<tr>
<th></th>
<th>SD</th>
<th>D</th>
<th>N</th>
<th>A</th>
<th>SA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 1</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Level 2</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>5</td>
<td>8</td>
</tr>
</tbody>
</table>

*Note: SD (strongly disagree), D (disagree), N (neutral), A (agree), SA (strongly agree).*
Question 4: “The online format allowed me to control the overall pace of my learning.” Most of the participants agreed or strongly agreed with this question, showing that the students took advantage of the flexibility of the online courses to control their learning pace (Table 4).

Table 4

Responses to question 4.

<table>
<thead>
<tr>
<th></th>
<th>SD</th>
<th>D</th>
<th>N</th>
<th>A</th>
<th>SA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 1</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Level 2</td>
<td>1</td>
<td>1</td>
<td>5</td>
<td>4</td>
<td>7</td>
</tr>
</tbody>
</table>

Note: SD (strongly disagree), D (disagree), N (neutral), A (agree), SA (strongly agree).

Question 5: “You achieved your learning goals in this course.” Seventy-six percent of the students agreed with the statement (Table 5). The fact that most students believed they were able to meet their personal goals is evidence for the effectiveness of our online Japanese course curriculum.

Table 5

Responses to question 5.

<table>
<thead>
<tr>
<th></th>
<th>SD</th>
<th>D</th>
<th>N</th>
<th>A</th>
<th>SA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 1</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Level 2</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>7</td>
<td>6</td>
</tr>
</tbody>
</table>

Note: SD (strongly disagree), D (disagree), N (neutral), A (agree), SA (strongly agree).

Question 6: “The online course is more aligned with my preferences, needs, lifestyle, and technology choices than the traditional classroom courses.” Similarly, more than 70% of the students responded positively to this statement (Table 6). The result suggests that for busy college students, the online course is more attractive than the traditional face-to-face courses that meet five days a week.

Table 6

Responses to question 6.

<table>
<thead>
<tr>
<th></th>
<th>SD</th>
<th>D</th>
<th>N</th>
<th>A</th>
<th>SA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 1</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Level 2</td>
<td>1</td>
<td>1</td>
<td>4</td>
<td>6</td>
<td>6</td>
</tr>
</tbody>
</table>

Note: SD (strongly disagree), D (disagree), N (neutral), A (agree), SA (strongly agree).

Next, we will report on two open-ended items. In response to the question, “What was the main reason for taking this online course?” 13 out of 25 students mentioned scheduling issues (e.g., “I could not enrol in the face-to-face course because of a schedule conflict,” “The face-to-face course was already full,” “The online course is more flexible”).
To the next question, "What were good/bad points about this online course?" roughly half of the students responded positively to the self-learning tasks on SE. Some comments included, "I can always go back to where I had difficulty learning," “Self-learning is time consuming, but it leads to a better understanding of the contents,” and “I can control my learning pace.” These comments suggest that students are satisfied with the tasks in the self-learning modules, and that students think self-learning was effective. On the other hand, some students mentioned "not being able to ask questions right away” and wanting “more interaction with classmates and instructor.” These comments probably came from students who had been in traditional classroom courses where they saw classmates and the instructor every day. Orientation materials explaining the differences between the two formats would be useful to these students. Also, some students indicated a desire for more real-time sessions (e.g., “I want to have two real-time sessions a week”). Judging from the fact that online students’ proficiency scores are just as good as the classroom students’ (see the next section), it does not seem to be the case that having only one real-time session negatively affected online students’ learning.

4.2. A Preliminary efficacy study

This section reports on a preliminary efficacy study that compares the oral proficiency of online course students with that of students enrolled in an equivalent classroom course.

4.2.1. Subjects

The subjects were 12 Japanese Level 1 Online students and seven students in Japanese Level 1 taught in the classroom. The seven classroom students were volunteers. Students’ ages and their final grades out of 4.0 for Japanese Level 1 are summarised in Table 7.

<table>
<thead>
<tr>
<th></th>
<th>Mean age</th>
<th>Mean grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classroom</td>
<td>20.00</td>
<td>3.66</td>
</tr>
<tr>
<td>Online</td>
<td>21.41</td>
<td>3.75</td>
</tr>
</tbody>
</table>

To confirm that the two groups were evenly matched, the students' final grades (A+, A, A-, B+, etc.) were converted into numerical values and averaged. Since there was no statistically significant difference between the two means, the two groups were considered homogeneous. Because the classroom course and the online course slightly differ in how instructors determine the final grades, this comparison is a rough estimate. This study lacks a pre-test because all participants started the Level 1 course without previous knowledge of the language. A pre-test was therefore not practical. The participants had a variety of majors (agriculture, business, engineering, liberal arts, etc.) across the two groups, so a concentration of one particular major was not observed.

The online course and the classroom course shared the same textbook materials and course objectives. This was intentional. Students who took one level of the course online one semester could take the next level in the classroom the following semester, and vice versa. The classroom course met five times a week for 50-minute sessions and was taught using the communicative approach, implementing an oral proficiency-oriented curriculum. It administered one oral interview test at the end of the semester and several chapter tests in written format, as is typical of classroom courses.

4.2.2. Material

To assess all subjects’ oral proficiency, an oral test consisting of the following three sections was administered: Q&A, Elicited Imitation Task (EIT), and a picture description. The Q&A section started with basic questions like, "What’s your name?” and "What’s your
major?” and progressed to questions that required discourse responses, such as, “What is your hometown like?” and “What kind of things are there in your room?” The EIT had the test taker listen to a sentence, pause for a few seconds, and then try to orally reproduce it as accurately as possible. EIT has been shown to measure general oral proficiency (Wu & Ortega, 2013; Yan et al., 2016). The picture description task gave the test taker a picture to look at with details like a house, a car, mountains, a river, and trees. Then the test taker was expected to describe the image, starting with this sentence: *Ie ga mannaka-ni arimasu* [There is a house in the centre].

4.2.3. Procedure

The oral test was given at the end of the semester. Three independent raters rated the Q&A and picture description sections, and the EIT was graded objectively by counting the number of moras² correctly reproduced.

4.2.4. Results

The study results are shown in Table 8.

Table 8

<table>
<thead>
<tr>
<th></th>
<th>Q&amp;A</th>
<th>EIT</th>
<th>Picture description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classroom (N=7)</td>
<td>114.71 (5.65)</td>
<td>87.86 (16.54)</td>
<td>34.19 (2.25)</td>
</tr>
<tr>
<td>Online (N=12)</td>
<td>118.33 (2.29)</td>
<td>118.50 (22.48)</td>
<td>34.92 (3.34)</td>
</tr>
<tr>
<td>Difference</td>
<td>3.62</td>
<td>30.64*</td>
<td>0.73</td>
</tr>
</tbody>
</table>

* *p < 0.05

No significant differences were found between students’ Q&A and picture description scores, but on EIT, the online students significantly outperformed the classroom students (Mann-Whitney U Test: z=2.49, p=0.01, r=0.57). Although the dataset is small, this result serves as preliminary evidence that the new online course's curricular framework, on which the Japanese online course was developed, can foster a degree of oral proficiency in online students comparable to that of the students in a traditional classroom.

5. Conclusion

This article proposed and discussed a general curricular framework for online language courses and presented the details of a Japanese online course that was designed using the framework. To further evaluate the efficacy of the online course, a participant survey and an oral test were conducted. The survey found that the online participants responded positively to self-learning with an abundance of asynchronous oral practice and small-group, real-time sessions. Another finding was that the participants thought that the online course was just as effective as a classroom course and that the participants’ learning goals for the course were met. Overall, it appears that the participants were generally satisfied with the online course. In terms of oral proficiency development, a preliminary study was conducted in which the online students were compared with classroom students. The results showed that the online students performed comparably with the classroom students on the Q&A and picture description tasks, while the former outperformed the latter on the EIT.

From these findings, we conclude that the online course that we designed and implemented achieved the goal of performance comparable to the classroom counterpart
course. We therefore advocate this curricular framework as a viable option for online language courses that primarily seek to foster oral proficiency.

As a limitation of the comparison study, we note that the comparison between the online and classroom courses was not as rigorous as we wanted it to be. One important factor to watch out for in this kind of study is potential self-selection bias. Because online courses consist mostly of asynchronous self-study with limited direct access to the instructor, students who sign up tend to be self-motivated, disciplined, independent learners. These traits probably compensate for the disadvantages of the online environment. This self-selection variable is extremely difficult to control.

Another limitation is the small sample size (N=19) and the lack of a pre-test. However, in a separate comparison study using the same curricular framework, Peterson (2021) implemented a pre-test and found similar results with a large sample size (N=77) of a different population. The results of his study further bolster those of the current study.

Finally, we want to discuss the pedagogical implications. From our experience of teaching the newly developed online courses, we are confident that students can learn language elements such as vocabulary and grammar without having an instructor present them in a classroom format. What does this mean for our classroom teaching? Perhaps, part of the self-learning modules could be incorporated into the curriculum for face-to-face classroom courses as out-of-class practice. Considering that drill activities tend to be inefficient and ineffective as group activities (Fukada, 2013), out-of-class, asynchronous oral activities with a focus on form may prove quite useful for freeing up classroom time to further focus on discourse-level communicative interactions.

Notes

1 http://speak-everywhere.com. Speak Everywhere was developed by Atsushi Fukada (Purdue University). See also Fukada (2013).

2 A Japanese timing unit roughly equivalent to a syllable.

Ethical statement

We have followed our Institutional Review Board’s (IRB) ethics recommendations in all respects. All participants were volunteers who signed an informed consent form. All materials have been stored securely and have only been used for research purposes. One of the authors (Fukada) is the developer of Speak Everywhere. Since it is commercially available, he stands to gain financially from its promotion.

References


