

# Construction of a Role-Play Style Japanese Learning Support System that Allows Teachers to Edit Dialogue Situations

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**Abstract:** In this study, we propose a Japanese language learning support system that enables role-playing dialogue experiences. The system allows the teacher to specify dialogue situations and learning methods in detail. We have built a prototype system. We presented the system and the method of registering contents to the system, to Japanese language teachers teaching Japanese at universities, and conducted a survey.

**Keywords:** Japanese learning support system, role-playing, learning contents registration, cooperative learner agent

## 1. Introduction

According to the "Overview of Japanese-Language Education in Japan," (Japanese Language Division, Agency for Cultural Affairs, 2021), the number of learners of Japanese has basically been increasing every year, although the number of learners has been decreasing in recent years due to the recent world situation. The increase in the number of Japanese language teachers has not kept pace with the increase in the number of learners, so learners must learn Japanese on their own. Conversely, role-play dialogues are considered effective in the early stages of language learning and have been adopted as a teaching method in classes (Ministry of Education, Culture, Sports, Science and Technology of Japan, 2022). However, learning through role-play dialogues requires feedback from both the dialogue partner and the teacher, which is difficult for self-study. There are existing role-play language learning support services that allow self-study; however, they have drawbacks such as only being able to use preset situations (Takeda, M. & Chiba, A., 2019), or being able to set up situations freely however, at a high cost (Sano, et al, 2011), and few systems exist that allow teachers to set up situations at a low cost. To solve these problems, we have built a Japanese language learning support system that follows a general learning flow. In our system, teachers can set the details of how learners learn with the content they have prepared.

## 2. Position of this Study

The JF Standard for Japanese Language Education is a standard proposed by the Japan Foundation based on the international standard CEFR (Common European Framework of Reference for Languages). The Japan Foundation's long-term training programs for overseas Japanese-language teachers have adopted teaching methods based on the JF Standards for Japanese-Language Education since 2015. The JF Standards for Japanese-Language Education uses the term "Can do" to express the ability to perform tasks, "What can you do in Japanese and how well can you do it?" Shinohara et al. (Shinohara, A., & Tsukishima, F., 2015) report on JMOOC (Japan Massive Open Online Courses), an e-book type e-Learning material developed by the Japan Foundation Japanese-Language Institute.

Role-playing interactive learning is a well-known interactive learning method in which the learner simulates a situation by playing a role assigned to him or her according to a situation set by the

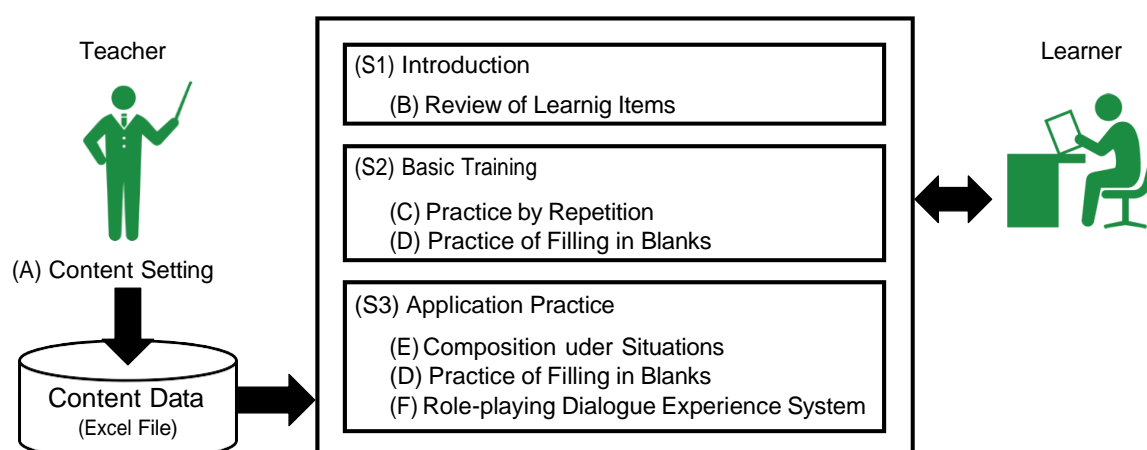
teacher (Iman, N., J. & Angraini, N, 2022; Zalavra, E. & Makri, K., 2022). It is a form of learning often employed in actual educational settings, and there are many learning warfare services based on role-play type interactive experiences and learning support systems. In this study, we construct a learning support system that enables role-play type interactive experiences.

In the field of learning, cooperative learning, in which learners work together by cooperating with learners of similar abilities to accomplish a task, is often employed (Alamdari, F., E. & Ghani, F., 2021). In the aforementioned role-playing dialogue experience, multiple learners play different roles so that all the learners can simulate the situation together. However, as mentioned above, since there are not enough Japanese language teachers available, self-study is necessary. There are learning support systems that enable self-taught cooperative learning by substituting agents for cooperative learners, who are the partners of cooperative learning. In this study, we construct a learning support system that enables self-taught cooperative learning.

Many of the various language learning support services and learning support systems that exist in the world allow learners to freely select and learn from well-developed content. However, from a teacher's viewpoint, there are few systems that allow teachers to maintain the contents of learning support systems or to specify learning methods in detail. In this study, we construct a learning support system that allows learners to systematically use the basic learning of "Introduction," "Basic Practice," and "Application Practice," which are specified in the standard method of learning in language learning proposed by The Japan Foundation (2007). "Application Practice" includes a dialogue experience with the role-playing strategy.

### 3. Construction of a Japanese Language Learning Support System that Enables Role-play Style Dialogue Experiences

In order to master a certain learning item, it is effective to proceed in the order of S1, S2, and S3 in Figure 1. We also define the learning methods (from (A) to (F) in Figure 1. Learning method (F) can be divided into the following three categories: (F1) Initial Setup for Role-playing Dialogue Experience (included in S3), (F2) Learners Experience Situational Dialogue with CLA (included in S3), and, (F3) Feedback (included in S3). Figure 1 illustrates the relationship between the teacher, learner, and system in the learning method proposed here. We built a prototype of this system in Python. We also prepared three sample lessons.



*Figure 1.* Japanese Learning Support System using Proposed Learning Methods.

### 4. Questionnaire Results for Japanese Language Teachers

To confirm the usefulness of the Japanese language learning support system developed in this study, we conducted a survey of six Japanese language teachers who teach or have taught Japanese at universities. The survey was conducted from December 20, 2021 to January 10, 2022. Considering the social situation, the questionnaire was administered remotely. We filmed the use of the system. Subjects

viewed a video recording of one of the authors using the system. After viewing the video, we asked the subjects to answer a questionnaire. The questionnaire items were the usefulness of the system in its entirety and each of the functions from (F1) to (F3) for beginners of Japanese. Subjects answered each item on a 5-point scale (1 to 5 points). For the overall system rating, "Overall, do you think this system is useful for the students in the classes you teach?" we received an average score of 2.83. This result suggests that the current system needs improvement. The following comments were received from the participants. "It is difficult to understand the situation because there is no visual presentation at all." "I don't think it is suitable for in-class use, but it could be used for individual self-study." "I think it could be used as self-study material for intermediate level students of B1 and above." Next, we asked the subjects to answer the question "Do you think it would be useful for the students you teach?" for the role-played interaction portion only. The results were 3.67 for (F1), 3.17 for (F2), and 4.00 for (F3). The average score for the role-play type dialogue experience was above 3. Owing to social conditions, we were unable to have international students actually use the system this time. We would like to improve the system based on the opinions obtained from the teachers, have the improved system actually used by international students, and evaluate whether the system motivates them to learn or not.

## 5. Conclusion

In this study, we propose a Japanese language learning support system that allows teachers to freely practice situations and dialogue methods. In addition to basic learning such as repetitive exercises and fill-in-the-blank questions, the system enables applied learning through role-play type dialogue experiences. We actually built a prototype system. We asked Japanese language teachers to watch the system in action and provide us their opinions. The subjective evaluation of the usefulness of the system was not positive, however, we received feedback on how to improve the system. We are planning to improve the system based on the feedback we received, and to conduct an evaluation experiment with foreign students who were not able to participate in the experiment.

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