

Evaluating the Impact of Virtual Exchange on a Chinese Language Class in Japan (Moodle 虚拟语言交流活动 在日本大学中文教学中的效果分析)

Qu, Ming
(曲明)

Muroran Institute of Technology
(日本室兰工业大学)
quming0209@gmail.com

Hagley, Eric
Hosei University
(日本法政大学)
iveprojectorg@gmail.com

Abstract: The present study examines the effectiveness of a Dual-Language Virtual Exchange (DLVE) on the development of students' intercultural sensitivity and Chinese language learning. The results revealed Moodle-enabled DLVE enhanced both the students' Chinese language learning motivation and their intercultural sensitivity, and students expressed a preference for the Moodle-enabled DLVE. This study is about the utilization of blended, traditional, and Moodle-enabled methodologies in teaching Chinese language in a Japanese university.

摘要: Moodle 是一个免费的开源课程管理系统。本研究旨在介绍日本一大学在汉语教学中对 Moodle 以及 Moodle 虚拟语言交流活动的应用,并分析了 Moodle 虚拟语言交流活动对学生们的汉语学习以及跨文化理解能力的影响。研究结果表明,大多数同学喜欢 Moodle 虚拟语言交流活动,而这种交流活动也提高了学生的学习动机和对跨文化理解的敏感度,并促进了学习者对中国文化的理解。

Keywords: Chinese language, Moodle, virtual exchange, intercultural sensitivity

关键词: 中文、Moodle、虚拟语言交流、跨文化理解的敏感度

1. Introduction

With increasing mobility of people on a global scale and the globalization of the world economy, the need to understand different cultures and worldviews is more important than ever. This has had a significant impact on education with the importance of intercultural understanding being emphasized in the Standards for Foreign Language Learning (MEXT Japan, 2012). In the field of foreign language teaching in Japan, how to foster students' intercultural skills is now a major focal point. To develop intercultural skills,

most tertiary education institutions have been relying on study abroad programs, but it is not easy to provide all students opportunities to go abroad. Fortunately, the advancement of technology tools and the internet have brought about new opportunities for foreign language learning and teaching. In the Chinese language course introduced in this study, an online Dual-Language Virtual Exchange (DLVE) program was embedded into the course to help students learn both Chinese language and culture through online communication with students in China. This DLVE program used Moodle discussion forums as the platform for that purpose. The present study aims to evaluate the impact of DLVE, particularly focusing on how this virtual exchange activity affects the development of students' intercultural sensitivity and its effects on Chinese language learning. This Chinese program is not a complete "distance-learning class," but more of a blended learning setup. We hope the experience of this class can contribute to future distance-learning classes and other learning environments.

2. Program description

2.1 The current Chinese program

The university where this study was carried out is located in the northern part of Japan. It is a regional university where students major in engineering. Over 600 first-year students are admitted to the university every year, most of whom are male. A second foreign language is a "compulsory elective" for the first-year students; they can choose from Chinese and German. There are around 300 students who choose the Chinese language as their second foreign language (their first foreign language is English). There are seven classes per academic year, with 40–50 students per class. Based on the desired outcomes of the university, the educational goal of the foreign language program is that through foreign language learning students will develop intercultural competence and a capacity for communication in foreign languages. In addition, the overall educational goal of the university is to develop students' independent/autonomous learning. Therefore, the Chinese language program aims to enhance students' language prolificacy and intercultural competence through student-centered independent/autonomous learning. In order to achieve the above objectives, as well as to promote teaching and instruction methods that minimize the adverse effects of growing class sizes and having limited resources, Moodle was used as a platform to make it easier to carry out flipped classes and mutual learning. In a flipped class, students learn new materials online outside the classroom (Moodle helps present the teaching materials prior to the class very easily); class time is then devoted to practice, reinforcement, and application. Online DLVE was embedded into the class as an assignment that students should complete for credit. This DLVE activity was expected to help students learn both Chinese language and culture.

2.2 Objectives of the Chinese language program

The Chinese language component of students' study is carried out over two semesters, with fifteen 90-minute weekly classes per semester. For first-year students, the Chinese language program is taught at the A1 level of the Common European Framework

of Reference for Language (CEFR, Council of Europe 2001). In the personal domain, students are expected to be able to talk about familiar topics using basic and simple expressions. For example, they should be able to introduce themselves, to talk about their hobbies and interests, university life, extracurricular activities, and so on. In the public domain, students are expected to be able to interact in a simple way, ask and answer simple questions about themselves, initiate and respond to simple statements in areas of immediate need, and deal with basic, routine situations in post offices, banks, train stations, and restaurants. For second-year students, the Chinese language program is an elective class. Students who want to continue learning Chinese language select the second-year Chinese class; their Chinese language level is around A1~A2. The present study was conducted with these second-year students.

2.3 Moodle and the Moodle-enabled International Virtual Exchange Project (IVEProject)

Moodle is a free and open source online learning management system (LMS). It is also the most used LMS in the world. Compared to other online providers that offer a single blog, wiki or open public forums and chats, Moodle combines multiple tools and activities for teaching and learning in one space (Warth-Sontheimer, 2008). It is widely used for blended learning, distance education, flipped classrooms, and other e-learning projects.¹ Students can access course details, class notes, a calendar, and other learning materials anytime and from anywhere. They can submit their classwork and assignments without actually going in person to the university. At our university, Moodle is used to make it easier to carry out flipped classrooms and mutual learning. The main functions of Moodle used for our Chinese language course are:

- Assignment submissions
- Discussion forums between Japanese students and Chinese students
- Video/audio files or links for the students to interact with
- Online quizzes
- Instant messaging for team member communication
- Announcement system which can be updated by the teacher

The Moodle Association of Japan was established by language teachers in 2008. The co-author of this article, Eric Hagley, was one of its founding members. For English language teaching, Moodle has become quite popular in Japan since 2008; however, over the 13 years since then, there have not been any research papers written on Moodle's use in the field of language teaching other than English.

We chose Moodle as the platform for the DLVE as it was already being used in the International Virtual Exchange Project (IVE Project). Eric Hagley is the lead of this project. According to the IVE project homepage, the exchange has students interacting asynchronously, with online communication taking place using the Moodle forums. The project is financially assisted by a Japanese government Kaken grant and also with the support of Hosei University. To date, 23 countries/regions have participated in different

¹ c.f. <https://moodle.com/solutions/higher-education/>

forms of VE, with participants from some 35 institutions throughout Japan. Participants post and reply using student-created text, audio, and video posts. They can also add links and other multimedia to their posts. DLVE is a type of VE where students from two different language backgrounds use their mother-tongue to assist the learner of that language in a mutually beneficial manner. Previously this has been called e-tandem. DLVE is one aspect of the International Virtual Exchange Project (IVE Project).

2.4 Moodle-enabled Virtual Exchange

Virtual exchange (VE) is a broad term for describing educational methods which engage students in online intercultural and/or collaboration projects. These programs are under the guidance of teachers or trained facilitators (O'Dowd & Lewis, 2016). In this research, an online DLVE program was embedded into our Chinese language course, and was expected to help students to learn both Chinese language and culture through communication with students in China. A variety of tools have been used to conduct VE. In recent years, VE projects conducted in the field of teaching EFL in Japan are increasing gradually. But most of them use platforms other than Moodle, and their scale is relatively small. There are a number of reasons for this: less access to suitable platforms, inter-operability issues between institutions, fewer interactions between faculty within and across different institutions, costs, lack of teacher training, and difficulty in assessing such interactions (Hagley & Harashima, 2017).

In this study, Moodle was chosen as the platform for three reasons. First, the VE activity presented in this article is asynchronous. Unlike synchronous activity, students were communicating with each other through writing in a discussion forum. Moodle-enabled VE gives students ample time to reflect with their partners, especially for students who have lower language proficiency. Kramsch (2014) makes the argument that although learners tend to improve their speaking skills through synchronous activities, the surface level of language used in these exchanges tends to preclude in-depth discussion. Therefore, for students who have lower language proficiency such as those in this research, asynchronous type activities are a good match. Ample time for preparing can avoid frustration in communication. It also helps students to engage in more in-depth discussions. Students who are not confident to carry out face-to-face or synchronous type communication could be happier using Moodle to do asynchronous VE activities. Second, students can receive support and advice from the teacher because this DLVE activity was a part of the Moodle-enabled blended learning class. Pedagogical interventions from teachers are needed to make our VE program more effective. Third, compared to other tools, a fairly large number of students can be enrolled in Moodle platforms, and a large scale VE can be conducted. Unlike other English-speaking countries, the number of students enrolled in Chinese language classes is very high in Japan, and there are many large Chinese classes with more than 40 or 50 students. Appropriate tools are needed for these large classes.

The Chinese students who took part in this DLVE activity were from a sister-school with the university where this research was carried out. The majority of those students were computer science majors who also take Japanese language classes. Around 200 second-

and third-year Chinese students and 150 Japanese freshmen students took part in this DLVE activity.

As mentioned in the previous section, textbook and audio files were uploaded to the Moodle course page where students were asked to learn the content of the textbook and prepare for the in-person class. In order to enhance the students' intercultural understanding, they were asked to do a presentation on the cultural topics (words) that appeared in the sentences of the text. They could choose any topics (words) they liked. For example, in one of the lessons, the dialog sentences were outlined in the following way:

你家在哪儿? (Where do you live?)

我家在上海。 (I live in Shanghai)

你有兄弟姐妹吗? (Do you have any brothers/sisters?)

我没有。 (I don't)

我是独生女。 (I am an only child)

In this case, the students could choose “上海 (Shanghai)” or “独生女 (the only child)” as the keyword on which to do a presentation. If a student said they couldn't find a cultural topic, the teacher recommended some to them. When they prepared their presentation, they were asked to prepare it in groups of three. They also were asked to discuss this topic with their VE partners (the Chinese students), and report the results of what their Chinese partners said during their discussion.

When students conducted the DLVE with Chinese students, they were encouraged to use whatever Chinese they had learned rather than Japanese. The design of the DLVE followed a task sequence involving three phases: Information exchange; comparing cultural practices; and working on a collaborative product. At first the students were asked to do self-introductions with each other, then Japanese students were asked to discuss cultural matters related to their presentation with their Chinese peers. The students were not divided into groups; they were asked to attend the discussion of any topic they were interested in. Therefore, they had no fixed Chinese partner but just formed groups based on their favorite topics.

Teachers monitored the forums, intervened, or gave feedback to students when necessary. At the end of the exchange, students received academic credit for their work by making presentations about their collaboration with their Chinese partners.

The DLVE lasted 15 weeks, with about 450 topics created by both the Japanese and Chinese students. The topics included history, cuisine, architecture, traditional events, holidays, physical activities, education, travel, hometown, movies, songs, and animation.

3. Literature review and research questions

3.1 Intercultural competence

Monash University's Intercultural Lab (2020) states that "intercultural competence is the ability to function effectively across cultures, to think and act appropriately, and to communicate and work with people from different cultural backgrounds—at home or abroad." Such knowledge and ability are important to have nowadays as most people experience cultural exchange in their employment due to globalization and internationalization. According to the *Nihon Keizai Shimbun* (11th July, 2018), one in 10 young people in their 20s in Tokyo is a foreigner. In Japan, improving intercultural competence is also an urgent need in the field of education. Intercultural competence is not a naturally occurring phenomenon, and we must be intentional about addressing this at our institutions through curricular and co-curricular efforts (Byram, 1997). A great deal of research has taken place to study the learning of intercultural competence and its components. The origins of the concept can be traced to the 1970s (Hymes, 1972; Ruben, 1976; Hammer, Gudykunst, & Wiseman, 1978). Over the past 40 years, a large number of intercultural competence definitions and models have been developed. These authors include Kim (1991), Bennett (1993), Byram (1997), Chen and Starosta (1996; 1998; 1999; 2000) and Wiseman (2002).

According to Chen and Starosta (2000), the relationship between intercultural competence and intercultural sensitivity is as follows: intercultural competence is an umbrella concept which comprises the cognitive, affective, and behavioral ability of interactants in the process of intercultural communication. The cognitive aspect of intercultural competence is represented by the concept of intercultural awareness that refers to the understanding of cultural conventions. The understanding of cultural conventions will affect how we think and behave (Chen & Starosta, 1998). The affective aspect of intercultural competence is presented by the concept of intercultural sensitivity that refers to the subjects' active desire to motivate themselves to understand and accept culture differences (Chen & Starosta, 1998). And the behavioral aspect of intercultural competence is represented by the concept of intercultural adroitness that refers to the ability to get the job done and accomplish communication goals in real intercultural interactions (Chen & Starosta, 1996). This study used a questionnaire survey to study the development of the students' intercultural sensitivity—the affective aspect of intercultural competence. According to Chen and Starosta (2000), "individuals, who develop their intercultural sensitivity toward other cultures, can gain necessary knowledge, attitudes, and skills to communicate successfully in intercultural encounters. Therefore, cultural sensitivity is associated with greater potential for the development of intercultural competence." In other words, a person who is culturally sensitive has the capacity to recognize, acknowledge, and respect cultural differences. Hence, such an individual is considered culturally competent (Chen & Starosta, 1996). The importance of fostering students' intercultural sensitivity has been long emphasized in the field of foreign language education—the ability to overcome ethnocentric worldviews and to deal with cultural differences (Bennett, 1993). Another reason for choosing this intercultural sensitivity questionnaire survey was that it can easily be taken by a large number of students.

3.2 The effectiveness of VE

There is a growing body of research outlining the benefits of VE activities. With regard to the practice of VE (using tools other than Moodle), its effectiveness has been reported extensively in the field of foreign language teaching. For example, VE can promote foreign language pragmatic competence and grammatical competence, foster lexical capacity, and enhance oral communication skills (Abrams, 2003; Belz & Kinginger, 2003; Belz & Vyatkina, 2005; Cunningham, 2016; Kakegawa, 2009; Kim & Brown, 2014; Sykes, 2005). In the field of Chinese language education, a number of DLVE studies, most of which have made use of synchronous tools, have reported on the benefits of English and Chinese being used for VE (Chen, 2017; Zhang, 2016) to foster language development. Wang, Zou, and Xing (2011) used Wikis to improve the language skills of students in their DLVE and reported similar benefits. VE was also reported to contribute to the development of intercultural competence (Belz, 2003; Chun, 2011; Helm, 2009; O'Dowd & Ritter, 2006; Schenker, 2012). However, the vast majority of VE were among classrooms based in North America and Europe. VE has not yet been widely practiced in the field of Chinese language education (Luo & Ynag, 2018). Similarly, there have been a few studies reporting improvements in intercultural understanding due to DLVE between students in Western countries and China (Jin & Erben, 2007; Jiang, Wang, & Tschudi, 2014).

From the above review, we can see that existing literature has been largely dominated by America- and Europe-focused studies. None of these have looked at interactions between non-English learning environments nor non-Western contexts. There are few studies conducted in solely Asian contexts, let alone Moodle-enabled Chinese language teaching and VE between Chinese students and Japanese students. Ryder and Yamagata-Lynch (2014) reported that tensions arose among Chinese American partners, because of beliefs about learning language, preconceptions of the target culture, and lack of intercultural competence. Furthermore, unlike other tools used in the previous studies, the Moodle platform has special characteristics which have been presented in section 2.2. Therefore, there is a need to study VE that takes place in different contexts, which use a different tool. The lack of previous studies on evaluating a Moodle-enabled VE program for Chinese language classes is the motivation for the authors to conduct this research.

3.3 Research questions

This research builds on the understanding that blended learning has become an integral part of language learning (Gruba & Hinkelman, 2012). The basic framework for this study is educational program evaluation. According to Patton (1997), program evaluation is the systematic collection of information about the activities, characteristics, and outcomes of programs to make judgments about the program, improve program effectiveness, and/or inform decisions about future programming. The effectiveness of an educational program can be estimated by to what extent this program achieved its intended educational goals. There are various aspects of the DLVE that should be evaluated. But due to space limitations, this study will only focus on two aspects: to what extent did this DLVE achieve its intended educational goal and the level of satisfaction among participants. Since the educational goal of the Chinese class is to enhance the students'

Chinese language proficiency and intercultural competence in this study, we only focus on the intercultural sensitivity aspect, which is perceived as a foundational element with greater potential for the development of intercultural competence. Thus, there are three research questions in this article:

- (1) Does the DLVE affect students' Chinese language learning? If so, how?
- (2) Does the DLVE affect students' intercultural sensitivity? If so, how?
- (3) How do students feel about the Moodle-enabled DLVE?

4. Research Methods

A mixed methods approach was used, including both quantitative and qualitative data. In the present study, quantitative data was used to measure the students' Chinese language test scores and intercultural sensitivity. Qualitative data was used to answer questions related to whether the Moodle-enabled DLVE had any impact.

4.1 Participants

The participants in this study were Japanese students who learn Chinese as a second foreign language in their second year at a Japanese university. A total of 38 students participated in this study, among whom 32 students were male and 6 students were female. All the students were majoring in engineering. The students' language proficiency in Chinese was roughly around A1~A2.

4.2 Instruments

4.2.1 Term end test

As the students participating in the DLVE had limited Chinese language skills and relied on Japanese for much of their DLVE communication, instead of analyzing the impact of the VE on their detailed Chinese vocabulary and grammar, we only analyzed the average score of their term end test.

This study was based on the data for the class of 2019. In 2018, a traditional face-to-face class (without using VE activity) was conducted. 37 students attended the 2018 class. We used the same teaching approach and had the same educational goals in both these two years. Both groups started in first year with zero Chinese proficiency and received the exact same amount of instruction: the same teacher and same textbook (from lesson 1 to lesson 16) in the first year. Therefore, the two groups had basically the same proficiency at the beginning. The same paper-based final test was given to both in 2018 and 2019. There was no way the students in 2019 could have attained copies of the 2018 exam. In order to reveal the impact on students' test performance, it would have been better to create a control group and do a comparative study between the control group and the experimental group. However, in our university, there is basically only one second-year class every year, so we could not create a control group. We chose to control the above

experimental conditions as much as possible and compare students' performance on tests between the 2018 and the 2019 class. An unpaired t-test was conducted to examine whether there was any difference in the test scores between these two classes.

4.2.2 Intercultural sensitivity questionnaire survey

The quantitative tool to measure intercultural sensitivity selected for this study was developed and validated by Chen and Starosta (2000). The 24-item questionnaire was used to measure aspects of intercultural sensitivity. This tool looks at one overarching construct of intercultural sensitivity and the five constructs that measure it. In the present study, the questionnaire was adapted by the authors in order to consider the effectiveness of DLVE interactions instead of face-to-face interactions. For example, we changed the original statement "I find it very hard to talk in front of people from different cultures" to "I find it very hard to communicate with people from different cultures." For every construct, there are a number of items used to test it. One example item from each of the constructs is shown as follows: (1) Interaction Engagement (seven items, "I am open-minded to people from different cultures"); (2) Respect for Cultural Differences (six items, "I don't like to be with people from different cultures (reverse coded)"); (3) Interaction Confidence (five items, "I find it very hard to communicate with people from different cultures"); (4) Interaction Enjoyment (three items, "I often get discouraged when I am with people from different cultures"), and; (5) Interaction Attentiveness (three items, "I try to obtain as much information as I can when interacting with people from different cultures"). The scale ranged between 1 (totally disagree) and 5 (totally agree). The choices for responding to each statement is a 5-point Likert scale: totally disagree, disagree, not sure, agree, and totally agree. In order to test the construct validity of intercultural competencies, reliability was measured for the results of the pre-program survey using Cronbach's alpha. Cronbach's alpha was 0.71, which is in the acceptable range. The questionnaire survey was conducted both before and after the program. A paired t-test was used to analyze if there were significant changes in the development of intercultural sensibility between the pre- and post-program.

4.2.3 Students' satisfaction survey

At the end of the term, a post-program survey was used to elicit students satisfaction with and views on the overall Moodle-enabled DLVE program. In order to achieve a more comprehensive and perhaps nuanced understanding of the impact of DLVE, we collected qualitative research data from the students. Three open-ended questions asked for students' perceptions of their Chinese language proficiency and intercultural sensitivity development: (1) Do you think the Moodle-enabled DLVE influenced your Chinese language learning? If so, how? (2) Do you think the Moodle-enabled DLVE influenced the development of your intercultural sensitivity? If so, what facilitated this change? (3) Other. Students were asked to describe their experiences with the Moodle-enabled DLVE and explain the most valuable, interesting, and difficult experience in their learning process.

These qualitative data allowed us to get a comprehensive data capture and to answer questions which may not be susceptible to investigation through simple pre- and post-test

methods. Qualitative content analysis was used to analyze the qualitative data.

5. Results

5.1 Influence on Chinese language learning

Two surveys were conducted to verify how the Moodle-enabled DLVE influenced students' Chinese language learning. One was a comparison of term-end test scores between the 2018 and 2019 cohorts. The other was an open-ended questionnaire survey (the first question of the students' satisfaction survey), which was conducted only at the end of the term. The students were asked to write how the Moodle-enabled DLVE influenced their Chinese language learning. The results of the comparison of the test scores is reported below, and the results of the open-ended questionnaire survey is reported in section 5.3. Table 1 shows the mean and standard deviation for the term-end test scores for 2018 and 2019 cohorts. The mean score for 2019 was higher than 2018. Results of the unpaired t-test indicated that the term end test scores of 2019 were significantly higher than the scores of the 2018 cohort ($t(73) = 4.19, p < .01, r = .44$).

Table 1 Comparison of term end test scores for the 2018 and 2019 cohorts

	2018 (N=37)		2019 (N=38)		t	p
	Mean	SD	Mean	SD		
Term-end test score	74.16	10.15	83.47	9.7	4.19*	.00

Note: * $p < .01$

Needless to say, there are a lot of factors which could have affected students' test scores from these two-academic years, so it may be hard to say that the Moodle-enabled DLVE was the only factor that influenced the scores of the term-end tests. However, given the fact that, at the very least, course content, educational goals, and test content were the same, and all the students started to learn Chinese with zero Chinese proficiency and received the exact same instructional treatment (the same teacher and the same textbook in the first year), it can be argued that DLVE had a positive impact on students' Chinese language learning. A detailed discussion about how it was affected will be given in Section 6 in conjunction with the qualitative study.

5.2 Changes in students' intercultural sensitivity

In order to clarify changes in the students' intercultural sensitivity before and after the program, two questionnaire surveys were conducted: One was an intercultural sensitivity questionnaire survey, which was conducted before and after the program; the other was an open-ended question (the second open-ended question of the student satisfaction survey), which was only conducted after the program. As indicated in Table 2 below, the results of the paired t-tests revealed that the mean values ($n=38$) of both the total intercultural sensitivity score and the five sub categories' scores in the post-survey were higher than those in the pre-survey. The values of standard deviation in the pre-survey were

consistent, however, for the values in the post-survey; the “interaction engagement” and “interaction attentiveness” items showed greater standard deviation values. This means the students' perceptions on the development of these two categories was not consistent and opinions spread over a wider range. Nevertheless, there was still a significant increase in the five sub categories of intercultural sensitivity ($t(190) = 8.02, P < .01, r = 0.5$).

Table 2 Pre- and post- intercultural sensitivity scores

	Mean (Pre-)	SD	Mean (Post)	SD	t
Interaction Engagement	2.32	0.51	2.81	0.75	6.86*
Respect for Differences	2.57	0.5	3	0.62	6.27*
Interaction Confidence	2.58	0.5	2.99	0.64	6.50*
Interaction Enjoyment	2.47	0.5	3.08	0.68	6.49*
Interaction Attentiveness	2.68	0.47	3.19	0.67	7.34*
Total	2.52	0.5	2.99	0.64	8.02*

Note: N=38, *P < .01

5.3 Results from the student satisfaction survey

When the students were asked how the Moodle-enabled DLVE influenced their Chinese language learning and the development of intercultural sensitivity, they gave specific comments. Responses to the open-ended questions were categorized using content analysis. Overall, the comments were mostly positive, with a few neutral opinions. There were almost no negative opinions. Therefore, the comments were roughly divided into four groups: (1) comments showing a positive influence on Chinese language learning; (2) neutral comments on the influence on Chinese language learning; (3) comments showing a positive influence on intercultural sensitivity, and; (4) other. The results were reported with examples of comments from the students. A summary of the comments of the open-ended questions is shown in Table 3.

Table 3 Summary of the open-ended questions

	Number of students(N=38)	Percentage
Positive comments on the effects on Chinese learning	12	42%
Neutral comments on the influence on Chinese learning	22	57%
Positive comments on the effects of understanding other (Chinese) cultures.	37	97%
Other	2	5%

For the results of the open-ended question “how did the Moodle-enabled DLVE influence your Chinese language learning,” 42% of the students wrote positive comments; 57% of students wrote neutral comments. Most of the positive comments were that students like the Moodle-enabled DLVE, and they thought Moodle was convenient for language learning. In terms of the impact of DLVE on Chinese language learning, apart from the answers we expected, the students did not say that the DLVE activity improved their Chinese language proficiency directly. On the contrary, they said “because I used Japanese almost exclusively during the discussion, it may not have a direct impact on my Chinese language proficiency.” For the language used in the DLVE, a lot of students mentioned their difficulties with Chinese language usage. Some students even became very pessimistic, saying “The Chinese students’ Japanese is really very good, I must say I cannot write the same level of Chinese messages as they wrote in Japanese”; “I have studied Chinese for more than one year, so I felt very sad that I couldn’t say(write) Chinese. At first, I tried my best to use Chinese with my Chinese partner, but the discussion became complicated little by little, and in the end, we had to use Japanese to communicate with each other, so I had no choice but to use Japanese again.” However, along with the above pessimistic statements, there were also statements that showed a positive influence on Chinese language learning. Some students said: “the online virtual exchange activity made me feel that I wanted to learn more Chinese”; “I really hope I can discuss these topics with the Chinese students in Chinese someday”; “Seeing the Chinese students working so hard to learn Japanese made me want to do the same.” It seems that the experience of language exchange enhanced the students’ motivation to do more and do better in Chinese language learning. Some students even said: “We have been exchanging messages by writing so far, but it would be nice if we could meet the Chinese students and exchange opinions face-to-face in the future.”

Regarding how the Moodle-enabled Chinese language teaching influenced the development of intercultural sensitivity, in contrast with the influences on Chinese language learning, the students were clear in expressing their positive opinions. Overall, students reacted very favorably to the DLVE activity using Moodle. Thirty seven (or 97%) students wrote positive comments on its effectiveness for the development of their intercultural sensitivity. Most students agreed that using online DLVE was an effective way to develop their intercultural competence.

“I used the virtual exchange activity for preparing my presentation, I think it was good for me because I rarely had a chance to talk with non-Japanese people so far. In addition, I was able to understand various things about Chinese culture by asking questions, and I was able to get real information that is not written in books or the Internet.”

“I thought it was important to understand and accept the common sense of China, the common sense that we take for granted in Japan now may be completely insane in a foreign country. In this way, if you pay attention to the differences between other cultures and your own, you will be able to understand different cultures in a positive way.”

“Before coming into communicate (sic) with the Chinese students, I had heard that the Chinese are anti-Japanese. I was scared. In fact, when I came into communicate (sic) with them, I found them to be nice people.”

Some students commented that: “The language exchange with Chinese people was great, but I was also surprised to see there were so many different opinions expressed during the discussion with my Japanese classmates, and I was able to confirm that so many different cultures existed even among the same Japanese students.” One of these students even argued that: “I found that Japanese culture is not the same for everyone. I started to think about what Japanese culture is, I can understand my own culture better now.”

Two students wrote comments on “other.” These two students perceived that Moodle-enabled DLVE had improved their digital competence. One student said she was not good at operating computers at first, and she felt it was very troublesome at the very beginning. However, she started to use Google Docs when she prepared a presentation with her Japanese team members. They learned to jointly create texts in their teams. She also learned how to upload files to the Moodle discussion forum and commented: “I have never used these things before I attended this Moodle-enabled DLVE.”

6. Discussion

The aim of this research is to determine the effectiveness of learning Chinese language and culture through Moodle-enabled VE. A mixed methods approach was adopted, using quantitative data to measure the impact on students' Chinese language learning and intercultural sensitivity, and qualitative data to answer questions related to why Moodle-enabled DLVE had such impacts. The results revealed that DLVE projects improved students' attitudes toward understanding, appreciating Chinese culture and language, and increased their desire to continue learning Chinese. Furthermore, students became more aware of their own culture and had opportunities to see it from an external perspective.

Our quantitative data show that the average test score of students in the class with Moodle DLVE was significantly higher than those in the class without Moodle DLVE. If we only considered this result, it would seem that the achievements of the class without Moodle DLVE were surpassed by students in the class with Moodle-enabled DLVE. However, from the qualitative data we found that students gave comments to the effect that the DLVE activity enhanced their motivation to learn more and improve their Chinese, which could be a potential factor that led to better test scores. The current research is a pilot study and did not examine the cause and effect relationship between test scores and factors that contribute to test score improvements. In this current study, we could not create a control group to do a comparison with the experiment group because we only had one second-year class in our university. As computer mediated VE language learning will continue to play an important role in Chinese language teaching and learning, there is a need for further investigation on its effectiveness. In future studies, a control group plus performance tests (speaking/writing test) should be carried out. Both the test scores and the characteristics of the speech/writing should be analyzed.

Regarding the development of intercultural sensitivity, from the results of the quantitative analysis, we can see that both the total intercultural sensitivity score and the five sub-categories' scores in the post-survey were significantly higher than those of the pre-survey. This result revealed that over the 15 weeks of the Moodle-enabled DLVE, the students enhanced their intercultural sensitivity significantly. This result confirms most of the previous DLVE studies in which English and other languages were used. The university is located in the countryside and for many of the students, this DLVE offered a first-time opportunity for the students to communicate with target language speakers. Therefore, the achievements of DLVE may have been more pronounced. For the results of qualitative analysis, most students said they were satisfied with the DLVE with the Chinese students. This experience expanded their cultural perspective and enhanced their intercultural sensitivity to other cultures.

During the process of the DLVE activities, students discovered information about both China and their own country-Japan. Hagley (2020) states that through a VE both groups of students showed gains in the knowledge of their own culture. Understanding one's own culture is a first important step for students to become open to and understand other cultures. Unlike the previous study (Ryder & Yamagata-Lynch, 2014), there were no reports of strained relationships with Chinese students, which may be due to the fact that they are both Asian and the cultures are more similar to each other, or because of the ease of use of the platform being used.

Last but not least, students perceived that Moodle-enabled DLVE had improved their digital competencies since Moodle provides a safe environment to experience challenges with regard to technology use.

7. Conclusion

While feedback from students alone may not be the best way to conclude if a program or teaching method is successful, knowing the students' perceptions can help instructors to consider how to improve their program. The reported positive perceptions with the improvement in Chinese learning motivation and development of intercultural sensitivity shown here suggest that the use of DLVE in Chinese language learning is beneficial. Chinese is increasingly being taught in countries where English is not the medium of instruction. Therefore, studies such as this one, where Chinese and Japanese are used, are an important addition to studies in which English and Chinese were the languages used in research. This study also adds to the body of research being developed on the use of LMS in language education.

As cultural knowledge should be experienced to be truly appreciated (Byram, 1997), DLVE, as discussed in this paper, can assist teachers in ensuring students experience real interactions with students from other cultures. This research shows that foreign language learners are eager to have chances to experience another culture in a real communicative context. Therefore, teachers need to bring real examples of the target

culture and language into the classrooms. Moodle-enabled DLVE activities can provide such opportunities to them.

It is hoped that the results of this study will be useful to institutions trying to integrate technology into their educational programs. Technology-assisted teaching methods can help not only minimize the adverse effects of growing class sizes and limited resources, but also deal with any unexpected situations — as was the case with the Covid-19 pandemic that broke out in 2020.

It is also hoped that this article can help Chinese language educators to add knowledge about how to build students' intercultural sensitivity by incorporating online VE activities. Unlike study abroad programs, Moodle-enabled VE is low cost and easy to conduct. Although it may not provide the same experience as in-person study abroad programs, it is more accessible for those students who don't have the chance to physically go abroad. For those who are interested in participating in such a project, the IVE Project platform may be appropriate.

References

- Abrams, Z. (2003). The effects of synchronous and asynchronous CMC on oral performance. *Modern Language Journal*, 87(2), 157–167.
- Belz, J.A. (2003). Linguistic perspectives on the development of intercultural communicative competence in telecollaboration. *Language Learning & Technology*, 7, 68–117.
- Belz, J.A., & Kinginger, C. (2003). Discourse options and the development of pragmatic competence by classroom learners of German: The case of address forms. *Language Learning*, 53(4), 591–647.
- Belz, J.A., & Vyatkina, N. (2005). Learner corpus analysis and the development of L2 pragmatic competence in networked intercultural language study: The case of German modal particles. *The Canadian Modern Language Review*, 62(1), 17–48.
- Byram, M. (1997). *Teaching and assessing intercultural communicative competence*. Multilingual Matters.
- Bennett, J. M. (1993). Cultural marginality: Identity issues in intercultural training. In R. M. Paige (Ed.), *Education for the intercultural experience* (pp. 109–135). Intercultural Press.
- Chen, D. (2017). Can language exchange help beginners develop Chinese proficiency? *Journal of Chinese Teaching and Research in the U.S.*, 1-11. <http://clta-gny.org/journal/journal17.pdf> [陈东东 (2017). 语言交换有助于提高学生的中文水平吗? *美国中文教学与研究*, 1-11. <http://clta-gny.org/journal/journal17.pdf>].
- Chen, G.M., & Starosta, W. J. (1996). Intercultural communication competence: A synthesis. *Communication Yearbook*, 19, 353-383.
- Chen, G.M., & Starosta, W. J. (1998). A review of the concept of intercultural sensitivity. *Human Communication*, 1, 1-16.

- Chen, G.M., & Starosta, W. J. (1999). A review of the concept of intercultural awareness. *Human Communication, 2*, 27-54.
- Chen, G. M., & Starosta, W. J. (2000). The development and validation of the intercultural communication sensitivity scale. *Human Communication, 3*, 1-15.
- Chun, D.M. (2011). Developing intercultural communicative competence through online exchanges. *CALICO Journal, 28*(2), 392–419.
- Council of Europe (2001). *Common European framework of reference for languages: Learning, teaching, assessment*. Council of Europe.
- Cunningham, D. J. (2016). Request modification in synchronous computer-mediated communication: The role of focused instruction. *The Modern Language Journal, 100*(2), 484–507.
- Gruba, P., & Hinkelman, J. (2012). *Blended technologies in second language classrooms*. Palgrave Macmillan.
- Hagley, E., & Harashima, H. (2017). Raising intercultural understanding and skills of EFL students through virtual exchange on Moodle. *Proceedings of the Moodle Moot Japan Annual Conference, 5*, 28-33.
- Hagley, E. (2020). Effects of virtual exchange in the EFL classroom on students' cultural and intercultural sensitivity. *Computer-Assisted Language Learning Electronic Journal, 21*(3), 74-87.
- Hammer, M. R., Gudykunst, W. B., & Wiseman, R. L. (1978). Dimensions of intercultural effectiveness: An exploratory study. *International Journal of Intercultural Relations, 2*(4), 382–393.
- Helm, F. (2009). Language and culture in an online context: What can learner diaries tell us about intercultural competence? *Language and Intercultural Communication, 9*(2), 1–14.
- Hymes, D. (1972). On communicative competence. In J.B. Pride, & J. Holmes (Eds.), *Socio linguistics* (pp.169–193). Penguin.
- Jiang, S., Wang, H., & Tschudi, S. (2014). Intercultural learning on the Web: Reflections on practice. In D. M. Chun (Ed.), *Culture-inspired intercultural exchanges: Focus on Asian and Pacific languages* (pp. 121–137). University of Hawaii, National Foreign Language Resource Center.
- Jin, L., & Erben, T. (2007). Intercultural learning via instant messenger interaction. *CALICO Journal, 24*(2), 291–311.
- Kakegawa, T. (2009). Development of the use of Japanese sentence final particles through email correspondence. In N. Taguchi (Ed.), *Pragmatic competence* (pp. 301–334). Mouton de Gruyter.
- Kim, Y. Y. (1991). Intercultural communication competence: A systems-theoretic view. In S. Ting-Toomey & F. Korzeny (Eds.), *Cross-cultural interpersonal communication* (pp. 259-275). Sage.
- Kim, E., & Brown, L. (2014). Negotiating pragmatic competence in computer mediated communication: The case of Korean address terms. *CALICO Journal, 31*(3), 264–284.
- Kramsch, C. (2014). Teaching foreign languages in an era of globalization. *The Modern Language Journal, 98*(1), 296–311.
- Luo, H., & Yang, C. (2018). Twenty years of tele-collaborative practice: implications for teaching Chinese as a foreign language. *Computer Assisted Language Learning*,

- 31(5–6), 546–571.
- MEXT (Japanese ministry of education, culture, sports, science and technology) (2012). Project for Promotion of Global Human Resource Development. <https://www.mext.go.jp/en/policy/education/highered/title02/detail02/sdetail02/1373895.htm>
- Monash University's Intercultural Lab (2020). What is intercultural competence and why is it important? https://www.monash.edu/arts/monash-intercultural-lab/about-the-monash-intercultural-lab/what-is-intercultural-competence#_ftn1
- Nihon Keizai Shimbun [Japan Economic News] (11 July, 2018). Retrieved from <https://www.nikkei.com/article/DGXMZO32872510R10C18A7EA2000/>
- O'Dowd, R., & Ritter, M. (2006). Understanding and working with “failed communication” in telecollaborative exchanges. *CALICO Journal*, 23(3), 623–642.
- O'Dowd, R., & Lewis, T. (2016). *Online intercultural exchange: Policy, pedagogy, practice*. Routledge.
- Patton, M.Q. (1997). *Utilization-focused evaluation*. Sage.
- Ruben, D. (1976). Assessing communication competency for intercultural adaptation. *Group & Organization Management*, 1(3), 334–354.
- Ryder, L., & Yamagata-Lynch, L. (2014). Understanding tensions: Activity systems analysis of transpacific collaboration. *CALICO Journal*, 31(2), 201–220.
- Schenker, T. (2012). *The effects of an email exchange on language skills and intercultural competence* [Unpublished doctoral dissertation]. Michigan State University.
- Sykes, J. (2005). Synchronous CMC and pragmatic development: Effects of oral and written chat. *CALICO Journal*, 22(3), 399–431.
- Wang, D., Zou, B., & Xing, M. (2011). Interactive learning between Chinese students learning English and English students learning Chinese on the platform of Wiki. *International Journal of Computer-assisted Language Learning and Teaching*, 1(3), 70–85.
- Warth-Sontheimer, C. (2008). Using Moodle for language teaching. A guide to Moodle activities for the language classroom. https://www.academia.edu/620127/Using_Moodle_for_Language_Teaching_A_Guide_to_Moodle_Activities_for_the_Language_Classroom
- Wiseman, R. L. (2002). Intercultural communication competence. In W. B. Gudykunst & B. Mody (Eds.), *Handbook of international and intercultural communication* (pp. 207–224). Sage.
- Zhang, S. (2016). Learning through a CMC-based tandem project with native speakers: A descriptive study of beginning CFL learners. *Journal of Technology and Chinese Language Teaching*, 7(2), 58–81.