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Practice and Evaluation of Blended Learning with Cross-Cultural Distance Learning in a Foreign Language Class: Using Mix Methods Data Analysis

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The Information and Communication Technology (ICT) utilization in Chinese as a "second" foreign language has mainly been focused on Learning Management System (LMS), digital material development, and quantitative analysis of learners' grammatical knowledge. There has been little research that has analyzed the effectiveness of cross-cultural distance learning by the mixed methods. In this study, Chinese classes were instructed with blended learning which has three phases such as classroom teaching, Web-Based Training, and Cross-Cultural Distance Learning. This practice was based on an instructional design and a motivational design. This study aimed to explore the outcome of learning and learners' experiences with the mixed methods. A quantitative analysis shows that Japanese students have already had high motivation from the beginning, and that learners who are anxious about communication skills have gained confidence through the interaction practices. As a qualitative analysis result, learners failed to communicate with Chinese students and felt that they lacked vocabulary, but experienced the use of Chinese in authentic contexts through the synchronous face-to-face interaction. They also improved in aggressiveness and motivation for learning Chinese. They fixed words and sentences which were learned in the classroom in the process of talking to different partners. All participants enjoyed the rare chance of interaction between young native speakers, and formed a positive impression of them.

Key Words: Chinese language education, Cross-Cultural Distance Learning (CCDL), blended learning, mixed methods

1 Introduction

Entering the 21st century, with the recent rapid economic development of China, there has been growing youth level interaction between Japan and China. Chinese teaching and learning has expanded not only to higher

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education but also to high school education, as a “second” foreign language. However, the educational policy of Chinese language is mainly provided with teacher-centered approach and knowledge accumulation style. The efficiency strategy, cost cutting and standardized class management created an ironic situation as “foreign language teaching only for foreign language learning in accumulation of credits, rather than practical usage”. Students have lost touch with the realities of language communication. There has been little research that has tried to adapt to the information age and global age.

Chinese class management is often up to the lecturer's discretion, therefore we can try the challenging work of cooperative learning or collaborative learning with ICT. It is meaningful to explore appropriate learning supports which provide a venue for an authentic communication experience, which is rarely gained from pattern practice or a part of knowledge. The tactics are as follows:

(1) Through the utilization of ICT, it is possible to connect Japanese and Chinese young students who have less opportunity to make contact otherwise.
(2) Meet learners’ expectation of Chinese communication experiences which are based on learners’ interests and curiosity.
(3) Leaners independently use Chinese in a context which is meaningful and relevant to their real lives.
(4) Leaners take part in the interaction while developing a clear awareness or renewing their awareness of culture and identity with each other.
(5) Through the face-to-face interaction with ICT, students are able to learn to help each other and naturally discover new things about each other.

The objective of this study is to practice the blended learning (BL) with distance learning between Japan and China. Then, analyze the outcome of learning with the mixed methods data analysis, in order to explore learners’ experiences and their interpretation such as the learning achievement recognition and meaning creation.

2 Previous Studies

The utilization of ICT of Chinese language education and learning has gradually been developed since the late-nineties. According to the result of an overview of papers which were published by academic associations related to Chinese language education or education technology after 2000, the main achievements of research are as follows: the digitalization of educational materials, the development of e-learning content, utilizing of LMS, and using realia resources with mobile learning apps (See Appendix A). Their teaching and learning environment is closed-classroom, and their tasks are practiced

under simulated communication contexts designed by teachers. Also, they have mainly been focused on quantitative analysis of learners' grammatical knowledge. In this study, our main interest is on distance learning, and only six researches about distance learning are found from this research overview.

One of the most well-known distance learning for Chinese language courses have been practiced as "Cross-Cultural Distance Learning (CCDL)" by Waseda University since 1999. "Asia Students' Cross Cultural Distance Learning" (Sunaoka et al., 1999-2014) program is network-based multilingual chatting and video conference by a Chinese teaching team. They have been researching the effects of CCDL and BL methods by quantitative analysis. They also proposed the key to communication success, for example, verbal aspects as quick response with short phrases and non-verbal aspects as responsive reaction, pause and filler. Also, qualitative effects were observed as scaffolding between classmates, reconsidering identification of one's self and improving of cooperative motivation. The recent practice of distance learning in high school was held between Okinawa, Osaka and Gaoxiong (Taiwan) (Shiroma, 2013). Japanese students created advertisement movies with PC applications, SNS, and videophone software. They also conducted interviews with the local Taiwanese. Shiroma reported her own method of class management with BL including settings of learning objectives, tools, tasks, preparations for video chat, and details of the lesson plans. In the evaluation, they concluded that the combination of international exchange activities, cooperative learning and utilizing ICT enhanced learners' motivation. However, the analytical method is not specified and only shows the list of learners' feedback. In addition, they did not mention about criteria and indicators capable of objectively measuring the communicative competence and cooperative ability. As stated above, there have been few discussions about the practice that has analyzed the effectiveness of CCDL on Chinese language classes by the mixed methods.

3 Research Methods

3.1 Motivational design

A well-known instructional design (ID) theory pertaining to motivation is the ARCS model (Keller, 1983) which provides a synthesis of motivational concepts and theories and a motivational design process. Keller analyzed motivational needs and corresponding selection of tactics which are based on four dimensions of motivation. They are known as attention (A), relevance (R), confidence (C), and satisfaction (S). Each of these categories contains several subcategories that facilitate more specific diagnosis of motivational challenges (Keller, 2009). The ARCS model was expanded by adding the "volition" element and was advocated as the ARCS-V model (Keller, 2009). Subcategories of volitional element were proposed by Nakajima (2013)

(Table 1). In this study, we adopted ARCS-V elements and subcategories as part of pre- and post-questionnaires, which intended to assess the appropriateness of CCDL process and the BL design for Chinese language classes.

Table 1. ARCS-V Model

Categories	Description	Subcategories
Attention	Motivation to learn is promoted when a learner's curiosity is aroused due to a perceived gap in current knowledge.	A-1: Perceptual Arousal A-2: Inquiry Arousal A-3: Variability
Relevance	Motivation to learn is promoted when the knowledge to be learned is perceived to be meaningfully related to a learner's goals.	R-1: Familiarity R-2: Goal Orientation R-3: Motive Matching
Confidence	Motivation to learn is promoted when learners believe they can succeed in mastering the learning task.	C-1: Learning Requirement C-2: Success Opportunities C-3: Personal Control
Satisfaction	Motivation to learn is promoted when learners anticipate and experience satisfying outcomes to a learning task.	S-1: Natural Consequences S-2: Positive Consequences S-3: Equity
Volition	Motivation to learn is promoted and maintained when learners employ volitional (self-regulatory) strategies to protect their intentions.	V-1: Implementation Intention V-2: Appropriate Self-control V-3: Self-monitoring

3.2 Blended learning with cross-cultural distance learning

As grand design of a whole study, we designed an interactive BL model. Chinese novice learners take part in a first-year practice composed of two phases: (1) face-to-face class, text-based learning focused on vocabulary building and grammatical knowledge, (2) web-based training (WBT), focused on ICT skills training. A second year practice is composed of three phases: (1) face-to-face class, preparation for CCDL with theme-based learning, (2) web-based training (WBT), preparation for CCDL with ICT skills training, (3) cross-cultural distance learning, focused on the interaction between Japanese and Chinese students (Figure 1). This learning process goes on and develops continuously in a cycle. In this paper, we introduce the second year learners' practice.

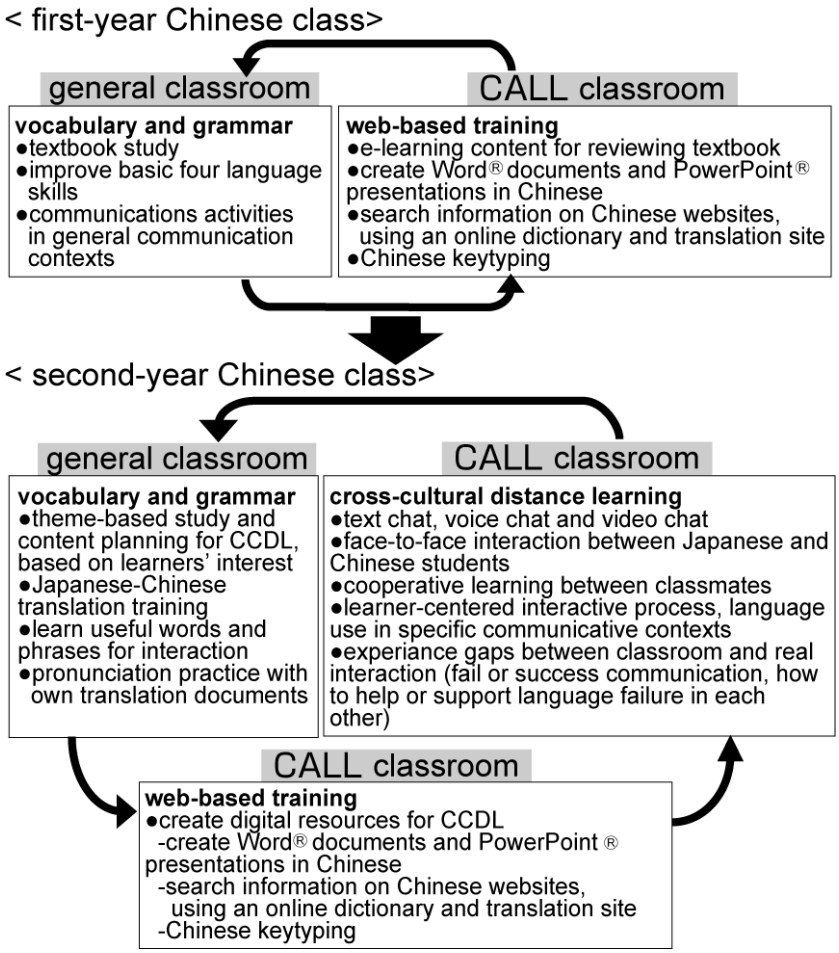

Figure 1. Blended learning model with cross-cultural distance learning

3.3 Mixed methods approach

In this research, one of the mixed method strategies, triangulation, was adopted as an approach for data analysis. The purpose of adopting triangulation is to acquire complementary data from certain points of view for the best understanding of a research question. Triangulation is an approach that aims to contrast the result of quantitative analysis with that of qualitative analysis directly, or to make the result of quantitative analysis proper and expanding. This will provide the mutual complement of a weak point with the strong point that both quantitative and qualitative methods have. For the pluralistic interpretation of learning outcomes, having only an analysis of

quantitative data that evaluates the level of change and the correlativity of a concept is insufficient. In addition, it also needs the analysis of the qualitative data obtained by interpreting the concrete narration from each learner's individual feelings and from the viewpoints of Japanese high school students as a whole. Furthermore, it is effective to unify the results of both the quantitative and qualitative perspectives.

4 Classwork Practice

Starting from April to December 2012 and from April to July 2013, the BL practice with CCDL was conducted (see Table 2).

Table 2. Cross-Cultural Distance Learning Design

Participants	・High-school students in Sapporo (senior students) ・University students in Jilin Province (sophomore to senior students majoring in Japanese language)
Settings	・Video / voice / text chat-style distant synchronous interaction with QQ(IM software of Tencent)
Theme and contents	・Self-introduction ・Introduction of their Japanese high school (reports about school festival / memories of summer vacation) ・Provide answers to questions from Chinese students (what they do after university / popular TV drama series or movies / major news topics in Japan / school life and daily life in China / holiday entertainment / tourism in Hokkaido, school event etc.)
Preparation and interaction style	Learners make electronic-data materials (Japanese documents, Chinese-translated documents, and pictures) for distance exchange while having group-work in normal classes. Following that, students give a presentation as an introduction while having distant exchange in real time by video chatting and conducting a free conversation in a question and answer style.
Time for interaction and place	・Japanese students: After school / In instructor's room ・Chinese students: After school / In students residence
Communication environment	・Japanese students: Instructor's privately-owned computer (Windows®) / Mobile data connection on wi-fi + cellular models（EMOBILE Pocket WiFi LTE） ・Chinese students: Student-owned computer (Windows®) / using the wired broadband network on campus

Japanese participants were public high-school senior students in Hokkaido, who took the course for Chinese as a second foreign language twice a week

(n=9). The students had opportunity to prepare for the practice during class time in both an ordinary classroom and a computer-assisted classroom, and they had the distance exchange with students in China after school once or twice a month (see Figure 2). Chinese participants were university students (sophomore to senior) in Jilin Province and Hubei Province, who were all majoring in Japanese. As premises for Chinese knowledge and skills, Japanese students had the "first-year Chinese class (See Figure 1)." In that class, they acquired a Chinese key typing skills (pinyin) and methods for utilizing online dictionaries or translation sites. Chinese students had already finished the course in Japanese as a second foreign language in high school, and after that, they went on to major in the Japanese language at university. They had already acquired the Japanese key typing skills and the skills for utilizing their electronic dictionary or online translation sites.

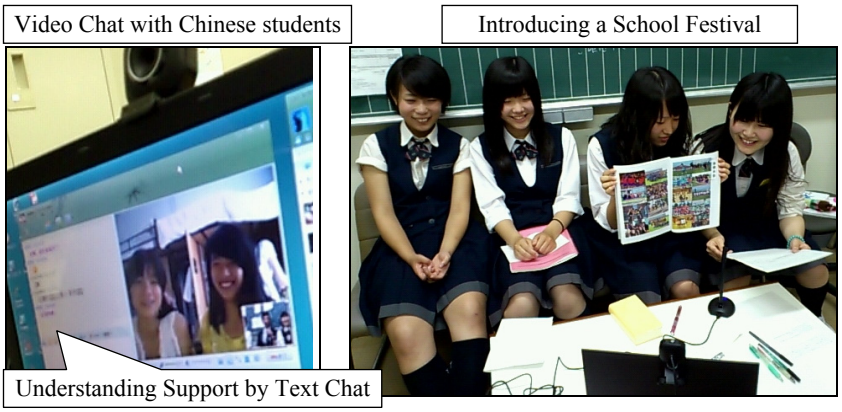

Figure 2. Face-to-face online interaction between Japan and China

5 Data Analysis

5.1 Quantitative data analysis

Quantitative analysis was carried out with the data collected by online questionnaires in a Moodle system. The data was collected in a pre- and post-survey-style, and pre-survey data was collected before the practice of BL. As it is shown on the Appendix B and C, questionnaires contain the questions about Chinese Learning with ICT (7 items) and ARCS-V model (15 items). Each question was marked from 1 to 5 as scales, which is also seen as the scores from 1 to 5 points. Table 3 shows the means of each survey, a standard deviation, and Cronbach's coefficient alpha.

Table 3. Mean (Standard Deviation) and Cronbach's Coefficient Alpha of Pre- and Post-type Questionnaires

	Pre-survey questionnaire		Post-survey questionnaire	
	Mean (SD)	α	Mean (SD)	α
Chinese learning with ICT	4.7 (3.54)	.79	4.2 (2.60)	.68
ARCS-V model	4.59 (3.95)	.77	4.7 (3.48)	.81

In the questionnaire of Chinese Learning with ICT, the mean scores decreased from pre-survey to post-survey to a degree of -0.5. To check the statistical significance of its decrease, Wilcoxon signed-rank test was carried out between the results of pre- and post-surveys. In this case, because the number of subjects was too small to expect the normality, Wilcoxon signed-rank test as non-parametric statistics was used. As a result, no significant difference was found between both surveys (p=.054). On the other hand, in the questionnaire of ARCS-V model, the mean scores increased from pre-survey to post-survey to a degree of +0.11. Wilcoxon signed-rank test was carried out, and no significant difference was found between pre- and post-surveys (p=.365).

In the items of the questionnaire for Chinese learning with ICT utilization, only item No.4 (Can you undertake information gathering by using your Chinese skills?) showed an increase in score from pre- survey to post-surveys (+0.33). As a result of statistical analysis (Wilcoxon signed-rank test), there was a significant difference between the scores of pre- and post-surveys (p=.046, p<.05). The mean score of pre-survey for item No.4 was the lowest compared to other items. This fact means that the learners in this class were not really sure about gathering information by using their own Chinese skills, and they also have some sort of anxiety about it and no confidence to do it. However, the significant increase of the score indicates that the practice of BL worked effectively for learners to change their negative feelings about information gathering using Chinese skills. Although the means of other items showed progress in score (except item No.3 and No.7), there was no significant difference between pre- and post-surveys.

In the items of the questionnaire for ARCS-V model, only item S-1 (Do you think learning Chinese by having actual interactions through a PC and the Internet provide the learning experience that utilizes your own pre-learned knowledge or skills?) showed any increase in the score from pre-survey to post-survey (+0.44). As a result of statistical analysis (Wilcoxon signed-rank test), there was a significant difference between the scores of pre- and post-survey (p=.046, p<.05). For the item S-1, the mean score was relatively high in the time of pre-survey (4.56). From this fact, it can be assumed that the leaners already had some sort of confidence in their knowledge or skills to some extent, however, they appeared to have some

feelings such as, “I won’t know if I can do the interaction unless I try” at the same time. On the other hand, in the post-survey, all learners scored 5 to the item S-1. It means that the students insured their confidence on utilizing their own knowledge and skills through the distant exchange learning. For other items, there was only one item that got perfect scores on both pre- and post-surveys. It can be noted that, although there were not significant differences, ten items showed upward tendencies.

Looking at the complete results of the questionnaires, because there were many high-scored results in the time of pre-survey, analysis of ceiling effect was carried out. Standards of judgment with regard to this analysis were, “Whether the sum of mean and standard deviation exceeded the perfect score (5) or not” for each item. As a result, there were 2 items that showed a ceiling effect (item 3 and 5) in the pre-survey of ICT utilization. In the ARCS-V questionnaires, 11 items showed the ceiling effect. Focusing on the result of pre-survey for ARCS-V, the reliability was generally well based on the α factor (α=.77). This fact means that the results of ceiling effect analysis in this analysis were in high-consistency. From this result, it can be assumed that the learners already had a positive feeling about Chinese learning, and moreover, they were high-motivated learners in ARCS-V elements at the time of the pre-survey. This fact probably means that the high motivation for learning which the student had already had was maintained.

Meanwhile, as for the method of learning-outcome analysis, using only a quantitative method would not be enough. The reason is that if the subjects were few and showed high-motivation in a pre-survey, the difference between pre- and post-survey would not be significant. From this perspective, mixed method is the better way to analyze learning outcomes.

5.2 Qualitative data analysis

In this BL model, CCDL phase is a comprehensive practice, in other words, the most important phase of learning practice, assessment and evaluation. With the aim of knowing learners’ feelings and experiences through BL with CCDL, in this paper, we analyzed the answer for “Online Exchange Activities” questions. Four types of questionnaires are included, such as “Difficulty”, “Meaning and value”, “Helpfulness” and “Uniqueness”.

The qualitative analysis was carried out in four-step process (See Figure 3): (1) Questionnaires, (2) Text mining, (3) Open coding, and (4) Categorization.

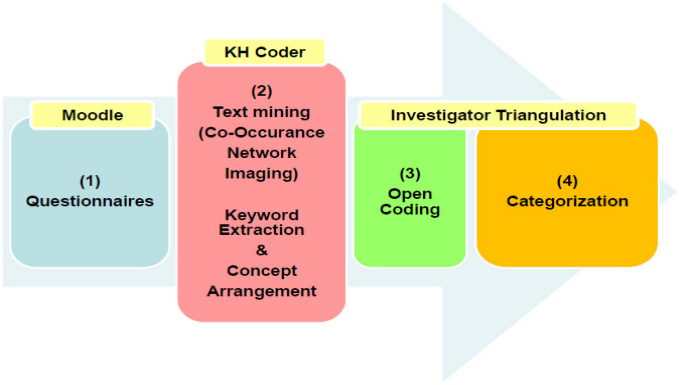

Figure 3. Overall process of qualitative data analysis

(1) Questionnaires:
Course assessment questionnaire (See Table 4) was constructed by Moodle to obtain feedback in the course review process. Each question was marked from 1 to 5 as scales (See Figure 4), and learners wrote the reason of each answer as open-ended questions.

Table 4. Questionnaire about "Online Exchange Activities"

Question Types	Question
Difficulty	Were the online exchange activities between Chinese students difficult?
Meaning and value	Were the online exchange activities between Chinese students informative?
Helpfulness	Were the online exchange activities between Chinese students helpful for Chinese language learning?
Uniqueness	Could the online exchange activities between Chinese students contribute special or unique achievement that they could not gain from grammatical study in the general class or web-based drills in the CALL class?

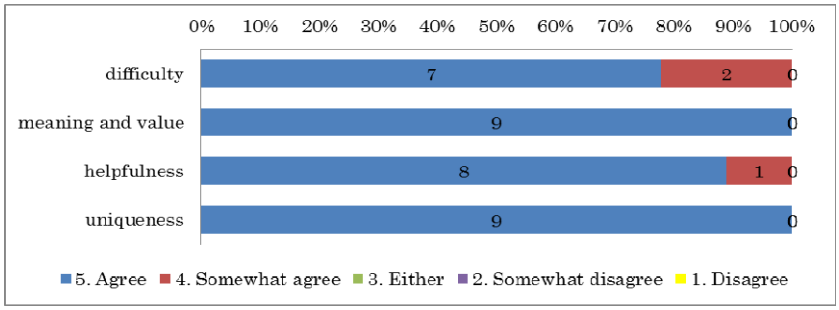

Figure 4. Answers to "Online Exchange Activities" questions (n=9)

(2) Text mining:
Each individual answer was conducted text mining and drew a co-occurrence network image (See Figure 5) using KHCoder with the aim of marshaling data, extracting important keywords, and arranging common concepts. The bigger the circle is, the more frequently the word was mentioned. The thicker the line is, the more relative these words are.

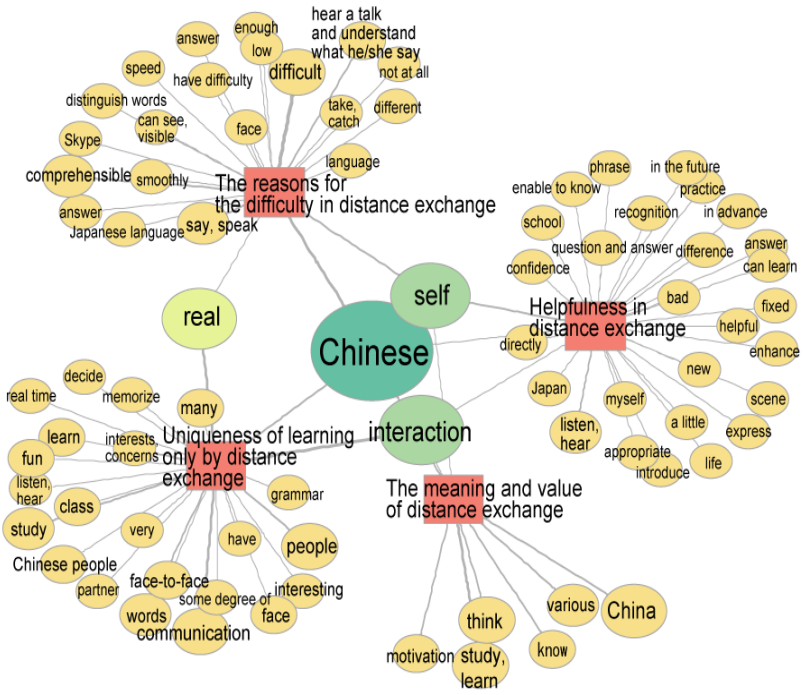

Figure 5. Co-occurrence networks of the learning achievement

(3) Open coding:
Learners' feedback was interpreted through the open coding (See Table 5). The meaning of open coding is to code or label words and phrases found in texts.

Table 5. Open Coding

Question Types	Open Coding
Difficulty	・Poor Chinese listening skills
	・Lack of experience with interaction
	・Difficulty in pronunciation
	・Difficulty in considering an answer

Meaning and value	・Listening to Chinese pronounced by native speakers ・Seize valuable opportunities for an exchange with native speakers ・Realizing the human kindness in Chinese student ・Improvement in willingness to attempt communication ・Improvement in learning motivation ・Understanding Chinese culture better ・Feel an affinity to Chinese people ・Language communication with Chinese people in a real relationship ・Noticing the interests that Chinese students have in Japan ・Learning not only the fixed phrases that appear in Chinese textbook but practical colloquial Chinese
Helpfulness	・Preparation of practical contents for exchange ・Acquisition of knowledge significant in the process of preparation ・Relevance of a textbook-based class and an exchange ・Be able to communicate by using their own Chinese skills ・Learning in a textbook-based class is strengthened with exchange ・Chinese language strongly linked to myself ・Learn something while exchanging ・Feeling the difference from Japan ・Hearing a Chinese students' opinion directly ・Training in questioning and answering ・Listening and speaking in an authentic situation of communication ・Reconfirmation of their lack of ability in pronunciation, listening and communication
Uniqueness	・Knowing the interests of Chinese students ・Listening to a native speaker's colloquial Chinese ・Interesting, kind and serious character of Chinese students ・Enjoyable to do and a pleasurable experience ・Face-to-face exchange with Chinese students ・Be able to utilize in real communication not only for a private study ・The various phrases usable in exchange other than fixed contents studied in class

(4) Categorization:
Creating categories by grouping codes or labels given to words and phrases (See Table 6). In this process, investigator triangulation strategy was carried out intended to reduce subjective aspect of investigators (excluding arbitrariness).

Table 6. Categorization

Question Types	Categorization
Difficulty	・the failure of communication ・realized that they lacked linguistic performance abilities, reflect on the errors ・enjoyed a feeling of tension
Meaning and value	・face-to-face interaction with native speakers ・practical use of language ・understood more about Chinese people who are studying Japanese language (humanity, culture and familiarity) ・renewed thinking about one's own home country, Japan ・positive change of attitudes and behavior
Helpfulness	・improved language proficiency ・successful communication ・gained and enhanced confidence ・fixed pattern of speeches which were learned in the classroom
Uniqueness	・felt positive emotion toward Chinese people through the face-to-face interaction ・exposed to authentic Chinese ・enjoyed the cross-cultural exchange experience ・acquired useful words and sentences, extended range of free expression

6 Conclusion

In this study, Chinese classes were instructed in a public high school with BL design, which has three learning phases utilizing the CCDL between Japan and China. In addition, this practice was based on the theories of instructional design which is based on ARCS-V model. This study aimed to explore the outcome of learning and learners' experiences and its interpretation by analyzing the learning achievement of learners with the mixed methods data analysis. As a quantitative analysis result, we found that Japanese participants have already had relatively high motivation from the beginning of first semester, therefore learners' attitude showed only a slight change in the pre- and post- survey questionnaires. In other words, this BL model maintained the high motivation for learning which student had already had. At the same time, significant change shows that learners' anxious about communication skills have gained confidence and conviction through the interaction practices. It means that BL with CCDL met the expectations of learners. As a qualitative analysis result, learners failed to communicate with Chinese students in Chinese and felt that they lacked vocabulary, at the same time, experienced the use of Chinese in authentic contexts of real life through the

synchronous face-to-face interaction. Also, they built a familiarity with Chinese students and raised a new awareness of their home country, Japan. They also improved in aggressiveness and motivation for learning Chinese language. They acquired useful words and phrases intimately related to their daily life through repetitive interactions, experienced effective communication and acquired mental confidence. They fixed words and sentences which were learned in the classroom in the process of talking to different speech partners. All participants enjoyed the rare chance of interaction between Chinese young native speakers and formed a positive impression of them, which was based on their own empirical evidence and experienced judgment. They found pleasure in Chinese language use in the process of authentic communicative contexts.

In order to analyze more details about learning process, BL class, CCDL activities, and interview logs (video recording) should be transcribed into texts with other remaining data. It will be revealed that which words and phrases were learned in the classroom and were used in the interaction practices, and how they felt about their achievements through Chinese learning with BL. This will help us to see a whole perspective of learning experience more vividly. In addition, by doing it, we will be able to accumulate know-how on methods of BL with CCDL in a foreign language class. Consequently, it will be conductive to summarize key points and to make a guide for teachers who would like to start a practice of distance learning in foreign language classes. We hope learners get more chances to experience authentic communication with native speakers of their target languages through ICT.

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Appendix A
ICT Utilization for Chinese Language Education or Education Technology

Academic associations	Language	ICT utilization	Number of papers
Japan Society for Educational Technology (JSET)	Chinese	mobile learning LMS e-learning material CAI	3
	English	mobile learning voice-recognition system translation system compilation database Web Based Training (WBT) blended learning CALL	3
		distance learning	1
	Japanese	movie creation corpus	2
		distance learning	1
	German	mobile learning	1
	Whole	distance learning (story creation)	1
Japanese Society for Information and Systems in Education (JSiSE)	Chinese	blended learning e-learning	3
	English	digital textbook e-learning↑ vocabulary, extensive reading support→ SNS online material for listening training	4
	Korean	mobile learning e-learning	3
	Japanese	e-learning (kana learning, listening training support learning materials for pattern practice→ SNS evaluation system (pronunciation, writing)	6
	Whole	intercultural language learning distance learning	2

Association for e-Learning Language Education (WELL)	Chinese	online dictionary LMS	2
	English	corpus text chat testing system(counting program, TOEIC) CALL ESP e-learning	11
		distance learning↑ text chat→	1
	Korean	online dictionary	1
	Japanese	e-learning↑ lexical collocation learning→ utilization of PowerPoint® presentation graphics program Moodle	3
	German	e-learning CALL	1
	French	multilingual learning e-learning CALL	2
	Whole	software utilizing, game material LMS The iTunes Download® (podcast)	3
The Japan Association of Chinese Language Education (JACLE)	Chinese	e-learning (vocabulary, pronunciation, game material) multimedia content creation mobile learning internet compilation database	6
		distance learning	1

Appendix B
Mean and (Standard Deviation) for Every Particular Item in Questionnaires of Chinese Learning with ICT

	Questions	Mean (SD)	
		Pre	Post
1	Do you want to be a more skilled person who can search some information about China on the internet by using Chinese skills?	4.44 (0.53)	4.56 (0.53)

2	Do you know the method of inputting Chinese on the PC?	4.22 (0.33)	4.78 (0.44)
3	Can you actually input Chinese words using a PC?	4.00 (0.50)	4.00 (0.00)
4	Can you undertake information gathering by using your Chinese skills?	2.67 (1.32)	3.00 (1.22)
5	Do you think that the skills for gathering information using Chinese on the Internet are important?	4.56 (0.53)	4.67 (0.50)
6	Can you actually have interactions by using a PC and the Internet?	3.44 (1.13)	3.67 (0.71)
7	Do you think that the skills for actual interaction using the Internet are important?	5.00 (0.00)	4.89 (0.33)

Appendix C
Mean and (Standard Deviation) for Every Particular Item in Questionnaires of ARCS-V Model

	Questions	Mean (SD)	
		Pre	Post
A-1	Do you think you would like to have interactions with people in Chinese-speaking countries by using on-line communication tools such as video, on-line chat, and BBS in your Chinese class?	5.00 (0.00)	4.89 (0.33)
A-2	Are you interested in the Chinese learning style by having actual interactions through a PC and the Internet?	4.78 (0.44)	4.89 (0.33)
A-3	Do you think the Chinese learning by having actual interactions through a PC and the Internet is a brand new learning style?	4.89 (0.33)	5.00 (0.00)
R-1	Do you think the Chinese learning by having actual interactions through a PC and the Internet are emotionally approachable to you?	5.00 (0.00)	5.00 (0.00)
R-2	Do you feel the Chinese learning by having actual interactions through a PC and the Internet is worthwhile?	4.89 (0.33)	5.00 (0.00)
R-3	Do you think the Chinese learning by having actual interactions through a PC and the Internet provide the tools you need to learn?	5.00 (0.00)	4.89 (0.33)
C-1	Do you think you can try to learn Chinese by having actual interactions through a PC and the Internet on your own?	3.89 (0.60)	4.11 (0.60)
C-2	Do you think the Chinese learning by having actual	4.56	4.78

	interactions through a PC and the Internet provide a degree of learning from your mistakes?	(0.72)	(0.44)
C-3	Do you think the Chinese learning having actual interactions through a PC and the Internet provide the feeling of accomplishment as a result of your efforts?	4.67 (0.71)	5.00 (0.00)
S-1	Do you think learning Chinese by having actual interactions through a PC and the Internet provide the learning experience that utilizes your own pre-learned knowledge or skills?	4.56 (0.53)	5.00 (0.00)
S-2	Do you think learning Chinese by having actual interactions through a PC and the Internet provide a chance to gain the communication ability that you need to have?	4.89 (0.33)	4.78 (0.67)
S-3	Do you think learning Chinese by having actual interactions through a PC and the Internet provide the opportunity that anyone can learn in similar way?	4.22 (0.44)	4.33 (0.71)
V-1	Do you think learning Chinese by having actual interactions through a PC and the Internet provide the opportunity that you can control the content and length of study?	4.11 (0.78)	3.78 (0.67)
V-2	Do you think that the Chinese learning by having actual interactions through a PC and the Internet at anytime increases your desire to study?	4.11 (0.93)	3.89 (0.60)
V-3	Do you think the Chinese learning by having actual interactions through a PC and the Internet provide the appropriate learning contents that you need to learn for language improvement?	4.33 (0.71)	4.56 (0.53)