

Support inclusive teaching and learning with CALL technologies in the beginning-level Chinese language classroom

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How to cite: Xu, L. (2023). Support inclusive teaching and learning with CALL technologies in the beginning-level language classroom. In *CALL for all Languages - EUROCALL 2023 Short Papers*. 15-18 August 2023, University of Iceland, Reykjavik. <https://doi.org/10.4995/EuroCALL2023.2023.16912>

Abstract

The importance of creating inclusive language learning environments in foreign language classrooms has gained recognition, driven by the diverse learning styles and the needs of learners (Jones, 2013). However, providing effective support to all learners remains a substantial challenge due to the inherent diversity among learners and the prevalence of various learning difficulties. In the context of Chinese as a Second/Foreign Language (CSL/CFL), research and practice have predominantly emphasized instructional methods targeting content-related challenges, often overlooking the development of inclusive language learning environments tailored to the diverse needs of learners (Tao et al., 2021). This study, therefore, investigates the pedagogical approaches and digital technology implementations within a specific course to assess their effectiveness in promoting inclusivity in the classroom. The study also assesses the alignment of these strategies with the unique characteristics and requirements of CSL/CFL teaching and learning. To gather insights, the researcher conducted a comprehensive analysis of course evaluations and administered a post-course survey to gauge student perceptions. The findings indicate that the implemented strategies effectively promoted inclusiveness and facilitated Mandarin learning in the first-year Chinese classroom.

Keywords: *Inclusive foreign language classroom, CSL/CFL, Pedagogy, CALL.*

1. Introduction

The review of research on inclusive education in CSL/CFL sheds light on the lack of explicit pedagogical practices and research aimed at fostering a more inclusive classroom environment to address diverse needs (Tao et al., 2021). Carter (2021) suggests that this dearth of practices can be attributed to the unique aspects of CSL/CFL content, classroom dynamics, and broader educational contexts. Surveys conducted by Carter (2021) regarding inclusive pedagogical practices in CFL classrooms argue that inclusion may manifest differently in the CFL context. Mandarin, being an orthographic language with a tonal system, is widely regarded as challenging for English speaker (Tao et al., 2021). Moreover, with the growing interest in Mandarin learning, learners have become increasingly diverse, presenting additional challenges for CSL/CFL practices. This leads us to the question: How can inclusive education methods be rendered more effective?

Universal Design for Learning (UDL) (CAST, 2018) proposes that inclusivity should encompass affective, recognition, and strategic aspects of learning. It highlights the significance of enhancing learners' motivation, employing multimodal approaches to present knowledge, and fostering engagement with instructors and learning materials (Carter, 2021). Abbott (2013) affirms that digital technologies can aid, support, and empower language learning, making them valuable tools for including all learners in a multilingual future. Carter (2021) further

advocates for the use of digital tools to provide diverse supports that enhance inclusivity and assist practitioners in designing activities to address challenges in CSL/CFL classrooms. Therefore, transitioning to the UDL approach and utilizing technologies to facilitate its implementation are viable paths toward achieving inclusive CSL/CFL instruction and addressing the distinctive teaching and learning obstacles associated with Mandarin.

This study examines inclusive practices and strategies supported by digital tools, with a focus on addressing the following research question: To what extent do learners perceive the effectiveness of utilizing these methods to enhance inclusiveness and facilitate Mandarin learning in the first-year Chinese classroom?

2. Method

This study utilizes an action research approach to assess the effectiveness of pedagogical approaches. Data for the study was collected through an anonymous online questionnaire administered to students at the conclusion of the Spring 2023 semester. The questionnaire was conducted using Google Forms, which facilitated the collection of responses. The questionnaire consisted of 26 questions, all in English to ensure clarity and avoid potential misunderstandings. It included six short-answer questions and 20 multiple-choice questions. The questions were divided into three sections:

1. Participants' Chinese learning experience and learning styles.
2. Participants' experience and attitude towards the strategies employed to build a learning community and enhance proficiency in the four language skills.
3. Participants' perception of the effectiveness of the technology tools used to accommodate various learning styles and assist with Chinese character learning.

The development of inclusive teaching methods and survey questions drew upon relevant studies by Jones (2013), Alexander (2008), Jiang (2017), Ji (2017), Lü (2017), Mou (2003), CAST (2018), Shen & Liao (2017), Zhang (2021), Cornelius (2013), Han, Liu, Sun (2023), and Higbee (2009).

Additionally, insights from the course evaluation provided by the college were taken into consideration. These insights covered course materials, workload, and perspectives on teaching methods that promote effective learning and cater to individual needs.

2.1 Instructional Context and Participants

This study focused on the curricular design implemented by the researcher for two semesters, beginning with Chinese language courses, AS110 and AS111, during the academic year of 2022-2023. These courses were offered at a private college in the US. Each course consisted of 15 weeks per semester, with a typical week consisting of three 50-minute lectures and two 50-minute oral practice sessions. The majority of learners in the courses were native English speakers from the US, while some were heritage learners or had prior learning experience before joining the class. Placement tests were administered to determine the appropriate course level for these students. It is worth noting that there were students who submitted an accommodation letter indicating their dyslexia condition. For further demographic data, please refer to Table 1 below.

Table 1. Demographic data

	AS110(Total 22 students)	AS111(Total 14 students)
Language system	English:18; Others (Nepali, Vietnamese):3; Logographic (Japanese): 1	English:12; Others (Nepali, Vietnamese): 2
Heritage learners	4	2
Learned Chinese before	10	7

Table 1. Demographic data

	AS110(Total 22 students)	AS111(Total 14 students)
Dyslexic	2	1

2.2 Data collection

Course evaluations for AS 110 and AS 111 were collected at the conclusion of the Fall 2022 and Spring 2023 semesters, respectively. Out of the 22 students enrolled in AS 110, 15 submitted course evaluations. Similarly, out of the 13 students in AS 111, five submitted course evaluations. Additionally, five students from AS 111 responded to the questionnaire designed by the researcher. While the sample size in this study is small, it is important to note that the participants represent a diverse range of language learning experiences and styles, making them representative of different groups of CFL/CSL learners in US college-level Chinese programs.

3. Results and discussion

3.1 The findings from the course evaluation offered valuable insights

The software Nvivo was used to categorize learners' comments regarding the course materials, tools, and teaching methods used to facilitate learning and promote inclusive education. The positive comments mainly highlighted aspects related to accommodating learners' needs and utilizing a variety of materials and technological tools. This was evident in a representative selection of students' responses. Please see the Table 2 below.

Table 2. Students' responses to the course evaluation

Student	Response
1	"The various learning materials she uses also help students with various learning styles grasp new information and concepts."
2	"I did study a lot outside of class which helped a lot. I used the slide shows, quizlets, and kahoots that the professors made for us."
3	"She used a wide variety of course materials including vocabulary quizzes, workbook assignments, extensive readings, video projects, lesson quizzes, and writing assignments on Miro. All of these materials helped improve my Chinese proficiency and allowed me to practice all aspects of the language."
4	"She incorporated a variety of learning tools and was receptive to student feedback about what worked and what didn't. Specific resource examples include online programs, workbook assignments, and traditional in-class tests and quizzes."

In the course evaluation report from AS111, a student also mentioned that the tutoring sessions with a native speaker for the real-life speaking practice project "were definitely helpful in learning the language, but we did it so often that a lot of students were tired with it from time to time." This project aimed to assist students with different proficiency levels in engaging in language practice, facilitating real-world interactions, and providing various avenues for expression at their own pace. The practice also offered flexible self-assessment opportunities for students to test their abilities. To further explore the benefits and limitations of this project, future interviews should be conducted to gain a better understanding of the methods and frequency of this assignment.

3.2 The results from the questionnaire provided practical ideas

The questionnaire was distributed to the participants of the AS111 course in mid-May 2023, and a total of five (38%) responses were collected. Among the five students, two had prior learning experiences before joining the class, and one spoke Mandarin or a dialect at home. The survey results pertaining to pedagogical practices for

building a learning community, enhancing real-world interactions, and accommodating diverse learning styles and needs are presented below in Table 3. The results were rated on a five point Likert scale, ranging from "Strongly Disagree" to "Strongly Agree."

Table 3. Students' responses to the survey

Survey question	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
The methods used in classroom teaching helped to build a learning community that is collective, reciprocal, supportive, cumulative, and purposeful.	4		1		
The tutoring session helps to meet your learning needs.	3	2			
The tech tools used in and out of class provide multiple ways to engage in learning.	2	3			
The course provides multiple means of assessing knowledge, which help you develop the four language skills.	1	4			
The different types of projects increase your motivation to learn and cater to your personal learning needs and styles.	1	4			

As evident from the aforementioned responses, the outcomes were affirmative concerning the strategies employed to enhance inclusivity and support Mandarin learning in the first-year Chinese classroom. In summary, inclusive CFL pedagogical practices encompass several key facets.

Firstly, the curriculum design should focus on making the learning process relevant, engaging, and rewarding, as emphasized by Carter (2021), and providing support for personalized learning. This approach helps to motivate learners and keep them on track. The feedback from some course participants further highlights the effectiveness of this approach:

1. "At the end of this course, I was able to carry conversations about daily life with a native Chinese speaker."
2. "I felt like I was retaining a lot of information while completing course work."
3. "I have found myself able to understand snippets of Chinese conversation I hear in day-to-day life, and I especially am proud of my ability to read and write in characters."

These responses indicate that the curriculum design, which focused on relevance, engagement, and personalization, has positively impacted the learners' language proficiency and skills. The ability to engage in conversations, retain information effectively, and comprehend real-life Chinese interactions demonstrates the success of the inclusive pedagogical approach. Furthermore, the learners' pride in their achievements in reading and writing Chinese characters highlights the effectiveness of the curriculum in addressing the challenging aspect of CFL learning.

Secondly, materials should be presented in multiple modes to cater to different learning styles. For instance, providing audio for vocabulary quizzes helps support vocabulary learning. Chinese character learning, known for its difficulty and time-consuming nature, benefits from the inclusive approach facilitated by technological tools. These tools provide inclusive methods for character recognition, retention, and production. Students found tasks that combined handwriting and typing to be efficient in alleviating anxiety during character learning, thus creating an inclusive language learning environment.

Thirdly, inclusive learning should provide multiple channels for expression and offer choices in certain aspects of learning. For example, students can choose their topics and ways of presenting their projects. In terms of assessment, incorporating self-assessment and informal assessment practices enhances learning. One such

practice is in-class quick writing through typing, where students answer questions or share personal experiences related to the topics learned. This practice, commonly known as 'exit ticket', helps instructors gauge students' understanding of the materials (Dixson & Worrel, 2016; Cornelius, 2013; Carter, 2021).

4. Conclusions

This paper reflects on the pedagogical practices of inclusive education at the beginning level of the CFL classroom, using course evaluations and a specific questionnaire as the survey instrument. The findings suggest that, at least for this small sample, the methods were effective in fostering an inclusive classroom. However, the instructor still faces various challenges in making individual accommodations and designing differentiated instruction, particularly in the acquisition of Chinese characters at the beginning level and for students with learning disabilities. Additionally, while incorporating technological tools to support learning proved effective, the instructor should be mindful of limiting the number of assignments and the variety of platforms used as there is a possibility of overwhelming learners, as indicated in a response to the questionnaire. Lastly, further research is needed on providing inclusive learning materials specifically tailored to the beginning level.

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