

## Article

# Dilemmas and Breakthroughs in Online Chinese Language Teaching during Digital Transformation: An Analysis Based on Activity Theory

Liqiang Xu <sup>1,\*</sup><sup>1</sup> Taiyuan Normal University, Jinzhong, Shanxi, 030619, China

\* Correspondence: Liqiang Xu, Taiyuan Normal University, Jinzhong, Shanxi, 030619, China

**Abstract:** In the wave of educational reform and digital transformation, online teaching is an indispensable teaching form in international Chinese language education. However, the effect of international Chinese language online teaching is not ideal. Teaching is a complex and dynamic activity system. Activity theory provides technical tools to clarify the internal factors of the online Chinese language teaching system and their interrelationships, and to analyze teachers' instructional practices. It also offers a new perspective for conducting teaching research and practice. This study analyzes online Chinese language teaching based on activity theory and finds that current online Chinese language teaching is facing predicaments such as insufficient highlighting of students' subjectivity, single application scenarios of technical tools, solidification of activity task models, and excessive burden on online Chinese language teachers. From the perspective of activity theory, the cause of these predicaments is that the activity system is influenced by the external environment, resulting in contradictions among its internal elements. In view of the existing problems in current online Chinese language teaching, efforts should be made to effectively promote teaching innovation from four aspects: activity community, technical tools, task rules and labor division, optimize online Chinese teaching and improve the quality of international Chinese education.

**Keywords:** activity theory; international Chinese language education; online teaching

## 1. Introduction

The digital transformation of education represents an important measure and an inevitable trend for building a leading country in education and promoting the future development of education. As early as December 2021, relevant departments proposed the development goals of achieving digitization, intelligence, and ubiquity in international Chinese language education by 2025. The digital education transformation serves as an external driving force for promoting the development of international Chinese language education in new era.

Online teaching is one of the significant digital educational forms in international Chinese language education. The development of online teaching has brought about a series of transformations, such as teaching philosophies, teaching management, teaching organization, teaching methodologies, and so on. However, some scholars have pointed out that, the current state of online international Chinese language teaching is far from satisfactory [1,2].

Therefore, it's necessary for us to consider how to enhance the quality of online Chinese language teaching. To date, relatively few studies have delved into the internal activities of online Chinese language teaching to explore the challenges and underlying causes in online Chinese language teaching. Most research focuses solely on the macro-

Published: 27 May 2025



**Copyright:** © 2025 by the authors. Submitted for possible open access publication under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

level design of online Chinese language teaching activities, neglecting research on how to enhance teaching effectiveness through the design of instructional activities.

## 2. Activity Theory

Activity theory is a philosophical framework and descriptive theory that centers on "activity" to study and explain various forms of human activities, providing a systematic framework for understanding the complexity of human activities and their relationship with social contexts [3,4]. According to activity theory, an activity is composed of three core elements: subject, object, and tool, as well as three secondary elements: community, rules, and division of labor. These six elements interrelate, which collectively forms an activity system and jointly constrain the progress of the activity. Teaching is a complex and dynamic system. In the online Chinese language teaching activity system, Chinese language learners collectively participate in certain forms of learning activities which are designed and organized by Chinese language teachers. And these activities have common goals and every student has their own task. Therefore, online Chinese language teaching must have six elements, including subject, object, community, intermediary tools, rules, and division of labor.

Among them, the idea of contradiction is the core of activity theory. According to activity theory, contradiction is the core driving force and foundation of the development of an activity system. Contradictions do not only exist within the elements of an activity (such as the limitations of intermediary tools and conflicts between subjects and objects), but are also influenced by external factors (such as technological innovation and skill development). The activity system needs to adapt to the influence of external factors by adjusting internal elements (such as replacing intermediary tools, reconstructing rules and division of labor), and convert external factors into internal factors to promote the development of the activity system [5]. Therefore, the activity system keeps operating continuously through contradictions among elements. Based on the six elements and contradiction theory of activity theory, this study analyzes the teaching predicaments faced by online Chinese language teaching and accordingly proposes solutions to break the deadlock.

## 3. The Major Dilemmas in Online Chinese Language Teaching

### 3.1. Interaction Dilemma: Insufficient Emphasis on Students' Subjectivity

The subject of an activity is the executor of the activity. Learners are the only subject of teaching activities. In the process of online Chinese language teaching, Chinese language teachers always adhere to the teaching concept of "learner-centered" and try their best to achieve effective teaching through concise explanations and extensive practice. However, the technology-enabled online teaching environment strips away the basis of "multimodal" perception in language learning. Non-verbal feedback between teachers and students (such as expressions and body language) disappears. And Chinese language teachers cannot interact and communicate with students face-to-face as they do in traditional classrooms. This limitation of immediate interaction makes learners' sense of "social presence" insufficient and then weakens learners' sense of belonging and participation motivation.

Meanwhile, the technical intermediary tools failed to effectively support the interaction between the subjects and the community. And the task rules have not fully adapted to the characteristics of online Chinese language teaching. The time learners spend participating in classroom interactions is still much lower than that of teachers. Learners are in the role of "bystanders", and they complete their tasks through the passive way of being called on by the Chinese language teacher to answer questions. This form of participation leads to relatively limited gains for students in terms of Chinese language knowledge, language communication skills, and emotions. So, the subjectivity of learners has not been fully demonstrated.

### *3.2. Technological Dilemma: Limited Application Scenarios of Technological Tools*

According to activity theory, human activities cannot be carried out without intermediary tools. The successful implementation of online Chinese language teaching activities needs the support of certain technical tools. The emergence and evolution of tools give rise to tool-use knowledge. This demands that Chinese language teachers possess corresponding digital teaching competencies and knowledge. In the current online Chinese language instruction, teaching platform has become a single information transmission tool. For instance, Chinese language teachers utilize multimedia courseware to represent subject content knowledge such as new words, grammar points and texts. Evaluate students' learning performance by using the points ranking function in the teaching platform, and design language practice activities with various pictures. This monolithic utilization of technological tools not only wastes their multifaceted capabilities but also restricts the scope for innovative online Chinese language teaching practices.

At the same time, the functional limitations of technological mediating tools constrain online teaching effectiveness. Many online platforms offer only basic text or video chat functions, and lack multimodal interaction tools. Therefore, compared with traditional educational informatization, online Chinese language teaching essentially does not change the traditional teaching mode, and it is just that the medium of dissemination has changed. Furthermore, the complex operation interface of the technical intermediary tools also brings an increase in cognitive load to teachers and students, weakening the effect of language acquisition. Some Chinese language teachers observe that the increase in the use of technical tools in online teaching may increase students' cognitive burdens, prompting excessive reflection on activity content and even result in silence or confusion.

### *3.3. Pedagogical Dilemma: Rigid Activity and Task Models*

Rules are a kind of restraint and agreement in the process of teaching activities. Chinese language teachers usually assign various activity tasks to motivate student engagement in teaching activities. However, the improvement of teaching skills demand brought by the change of external teaching environment failed to adapt well with the internal system of teaching activities. The vast majority of Chinese language teachers are deeply influenced by the traditional classroom teaching thinking and teaching mode. They still adopt the teaching methods and models of offline classrooms, which is manifested not only in the design of activity tasks but also, more profoundly, reflects a lag in teaching ideologies and methodologies among Chinese language teachers.

In fact, Chinese language teachers have realized that online teaching is different from offline classrooms. However, due to the limitations of their own digital literacy, they have not yet developed and designed innovative online Chinese language teaching models. The activity tasks are often limited to several fixed rule patterns. For instance, in vocabulary instruction, teachers mainly focus on explaining new words through question-and-answer sessions, and ask students to recognize and read new words by means of point reading and rotation reading. In grammar explanations, Chinese teachers often practice grammar by using the methods of describing pictures and targeted question-and-answer exercises. In the explanation of the text, Chinese teachers often carry out exercises by retelling the text. These solidified activity task modes "moved" the offline classroom to the online environment, and did not truly realize the deep integration of Chinese language teaching and online environment.

### *3.4. Managerial Dilemma: Overburdening of Online Chinese Language Teachers*

Division of labor refers to the allocation of tasks among members of a community. In online Chinese language teaching, although Chinese language teachers and learners are in a community, the division of labor between teachers and students is different. The contradiction between technological intermediary tools and the division of labor has led to

an excessive burden on Chinese language teachers. For example, Chinese language teachers need to guide learners to concentrate and complete the course study; assist learners in resolving issues during communicative activities; conduct process evaluation during the teaching process; collect various teaching resources to enrich the course content; design teaching activities with online operability; and so on. These responsibilities undoubtedly greatly increase the workload of Chinese language teachers in lesson preparation and teaching.

Moreover, during the implementation of online teaching activities, interaction and monitoring have always been two major challenges that Chinese language teachers need to face in classroom management. In the online teaching environment, the real-time interaction between teachers and students is limited. Chinese language teachers cannot intuitively monitor learners' learning status and learning behaviors through non-verbal signals such as eye contact and gestures as in traditional classroom teaching. Furthermore, in group activities, it is even more difficult for Chinese language teachers to monitor the interaction of each group. Chinese language teachers frequently employ strategies such as directed questioning, point-based rankings, and online messaging to stimulate student engagement and monitor their learning progress. These measures undoubtedly increase the workload of Chinese language teachers.

#### **4. Strategies for Breaking Through the Dilemmas in Online Chinese Language Teaching**

According to activity theory, the development of activity systems needs to adapt to changes in the external environment and promote the progress of activities by adjusting internal elements. In response to the challenges confronting online Chinese language teaching in digital transformation, this study proposes strategies to overcome these pedagogical dilemmas from four dimensions, grounded in activity theory.

##### *4.1. Community Level: Constructing a Learning Activity Community to Enhance Students' Agency*

The digital transformation of international Chinese language education aims primarily at personalization and learner autonomy [6,7]. Activity theory advocates the use of intermediary tools to help learners perceive and understand the learning content, enabling them to construct and acquire knowledge through active task engagement, and at the same time achieving the integration of the learner subject and the community. In online Chinese language teaching, learners often come from different countries and cultural backgrounds, exhibiting significant individual differences in motivations and learning styles. Therefore, Chinese language teachers need to consider how to utilize the characteristics of Chinese language learners to promote their better learning and effectively integrate Chinese language learners from different cultural backgrounds as active agents within the learning process.

The successful completion of activity tasks needs to be achieved through interactive communication and cooperative learning among communities. This is particularly pronounced in Chinese language instruction, which is inherently dialogic in nature. In the learning community, community members provide necessary learning resources and assistance to the subjects, strengthen students' participation in learning activities, continuously enhance students' subjectivity, and promote the effective internalization of individual knowledge.

Furthermore, the development level of technological tools restricts the operational conditions of activities and influences the division of labor. At present, the advent of generative artificial intelligence (Gen AI) has brought profound changes to international Chinese language education. Take ChatGPT as an example, GPT-4 has multimodal and personalized interaction functions — including image input and high interactivity. It can act

as a "digital mentor" and play an important role in knowledge explanation, language input, communication and immediate feedback, which is conducive to further optimizing the learner-centered teaching mode [8,9]. Therefore, integrating advanced GenAI technologies such as ChatGPT and DeepSeek into the community can significantly enhance learners' Chinese learning abilities and improve their learning subjectivity [10].

#### *4.2. Mediating Level: Diversifying Technological Tools to Create Immersive Teaching Scenarios*

The key link in the digital transformation of international Chinese language education is to promote the full and deep integration of digital technology and international Chinese language education [6]. The use of intermediary tools is conducive to innovative teaching practices and improving teaching efficiency. In current online Chinese language teaching, the vast majority of Chinese language teachers use teaching tools such as pictures, audio, video and real objects. Some Chinese language teachers have already used the Tang International Education Cloud Platform to record flipped classroom learning materials, which are uploaded for students to study independently. Some other Chinese language teachers design language games by using interactive platforms with intelligent and gamified features such as Padlet and Kahoot.

Meanwhile, the development of digital technology helps to create diversified language teaching scenarios. Some Chinese language teachers have created scenarios such as "shopping" and "commentary competitions" through animated videos, enabling learners to acquire language knowledge in situational communication. However, the creation of teaching scenarios has not yet reflected the characteristics of intelligence and immersion. The deep integration of artificial intelligence (AI) with language education will inevitably reshape the ecological landscape and instructional models of language learning, which is conducive to expanding the scenarios of Chinese language teaching. Cheng and Pan pointed out that through VR technology, Chinese language teachers can simulate a variety of linguistic application scenarios — such as daily conversations, public speaking, business negotiations, and thematic debates — to conduct contextualized learning activities and expand teaching scenarios [11].

#### *4.3. Rule Level: Improving Teachers' Digital Literacy to Optimize Online Instructional Design*

The improvement of digital literacy among international Chinese language teachers plays an essential role in advancing the digital transformation of international Chinese language education. It runs through and influences all aspects of educational activities, including teaching, management, evaluation and other processes. Therefore, during the period of digital transformation, Chinese language teachers should possess the ability of information-based teaching and the ability to utilize online resources. Also, teachers should serve language teaching with a more scientific and complete knowledge structure, achieve in-depth integration of digital technology and Chinese language subject knowledge, and make digital technology serve all aspects of language teaching. However, it is a pity that the relevant departments have not yet issued policies on the digital literacy of international Chinese language teachers.

The improvement of digital literacy of Chinese language teachers plays a positive role in optimizing the design of online Chinese language teaching. According to activity theory, the object is the basis for teachers to conduct instructional design and is even more the core that stimulates the participation motivation of the activity subjects. Therefore, Chinese language teachers need to fully consider the uniqueness of the Chinese language in knowledge representation and adopt diverse representation methods, in order to enhance the appeal of Chinese knowledge and improve students' understanding. In terms of topic selection, it should be close to the actual life of learners. In terms of tasks design, it should be ensured that the activity tasks are in line with the cognitive level of learners.

#### 4.4. Division of Labor Level: Promoting Teacher Specialization to Facilitate the Growth of Instructional Teams

As societal labor divisions become increasingly refined, the professionalization of disciplines and specialization of occupations have become an inevitable trend in the development of social modernization, and the field of international Chinese language education is no exception. However, Chinese language teachers undertake multiple tasks in online teaching. The role positioning of "all-round talents" has brought a heavy burden to Chinese language teachers. The energy and ability of each individual Chinese language teacher are limited. The contradiction between the multiplicity of roles and the limited individual capabilities of Chinese language teachers leads to the inability of teachers to comprehensively handle online teaching. Therefore, it is particularly urgent to promote the specialized development of the international Chinese language teacher profession. Whether from the historical origin of professional specialization or the complexity of teaching development, it is required that the Chinese language teacher profession develop in the direction of specialization, so as to provide high-quality and personalized services for learners. This is also a new demand brought about by the changes in the human resource structure of international Chinese language education. Some universities have adopted the "dual-teacher" teaching model, where one Chinese language teacher is responsible for explaining knowledge and the other for teaching management.

At the same time, we also need to pay attention to the collaborative services of the teaching team. We should not only give full play to the professional advantages of each teacher, but also promote the smooth implementation of online Chinese language teaching through communication and cooperation within the team. Therefore, promoting the professional specialization of Chinese language teachers and building a collaborative service team are important ways to optimize online Chinese language teaching and achieve the modernization of international Chinese language education.

## 5. Conclusions

In the process of digital transformation and development, online Chinese language teaching not only encounters new opportunities empowered by technology, but also faces the multifaceted challenges. However, these challenges harbor seeds of innovation. Activity theory provides a comprehensive and in-depth perspective for online Chinese language teaching with its detailed division of each element of the activity system. It can help us better analyze teaching activities and think about many complex situations in instructional design with holistic thinking and relational thinking. Therefore, it is worth exploring to optimize the design of online Chinese language teaching based on the framework of activity theory.

Looking ahead, the iterative innovation of next-generation information technologies — such as GenAI and the metaverse — are driving the rapid development of the education industry and constantly presenting novel pedagogical paradigms. Especially after the emergence of ChatGPT, intelligent technological tools will play a leading role in the processes of teaching, learning, management and decision-making. These advancements will help online Chinese language teaching develop towards more precise personalized learning, more vivid immersive teaching and more intelligent interactive feedback, and further promote the digital transformation and upgrading of international Chinese language education to a new height.

## References

1. Q. Shi, X. Xu, Y. Zhang, and B. Hu, "Research on Psychological Resilience, Digital Competence, and Self-Efficacy in Online TCFL Teachers," *Behav. Sci. (Basel)*, vol. 15, no. 3, p. 366, Mar. 2025, doi: 10.3390/bs15030366.
2. M. Chen, "Digital affordances and teacher agency in the context of teaching Chinese as a second language during COVID-19," *Syst.*, vol. 105, p. 102710, 2021, doi: 10.1016/j.system.2021.102710.

3. M. B. Postholm, "Methodologies in Cultural–Historical Activity Theory: The example of school-based development," *Educ. Res.*, vol. 57, no. 1, pp. 43–58, 2014, doi: 10.1080/00131881.2014.983723.
4. Z. Dai, J. Xiong, L. Zhao, and X. He, "The effectiveness of ICT-enhanced teaching mode using activity theory on raising class interaction and satisfaction in an engineering course," *Interact. Learn. Environ.*, vol. 32, no. 1, pp. 286–305, 2022, doi: 10.1080/10494820.2022.2086574.
5. X. Cao et al., "Communication-Efficient Distributed Learning: An Overview," *IEEE J. Sel. Areas Commun.*, vol. 41, no. 4, pp. 851–873, Apr. 2023, doi: 10.1109/JSAC.2023.3242710.
6. D. Wu, J. Wang, and Z. Che, "Digital Education: Connotation, Pathway, and Trend," *Front. Digit. Educ.*, vol. 1, pp. 59–68, 2024, doi: 10.1007/s44366-024-0021-z.
7. J. Xiao, "Digital transformation in higher education: critiquing the five-year development plans (2016-2020) of 75 Chinese universities," *Distance Educ.*, vol. 40, no. 4, pp. 515–533, 2019, doi: 10.1080/01587919.2019.1680272.
8. J. Xu and R. Ma, "The technological transformation of international Chinese language education under the ChatGPT wave," *J. Int. Chin. Teach.*, vol. 40, no. 2, pp. 41–52, 2023, doi: 10.3969/j.issn.2095-798X.2023.02.005.
9. X. Li, B. Li, and S.-J. Cho, "Empowering Chinese language learners from low-income families to improve their Chinese writing with ChatGPT's assistance afterschool," *Languages*, vol. 8, no. 4, p. 238, 2023, doi: 10.3390/languages8040238.
10. X. Yuan and Y. H. Wu, "The opportunities, risks, and coping strategies of ChatGPT plus for international Chinese-language education," *J. Yunnan Normal Univ.: Teach. Res. Chin. Foreign Lang. Ed.*, vol. 21, no. 3, pp. 53–62, 2023, doi: 10.3969/j.issn.1672-1306.2023.03.015.
11. W. Chen, Y. Pan, and L. Lei, "Research on the construction and application of international Chinese teachers' professional competence evaluation model based on multimodal data fusion," in *Proc. 2024 13th Int. Conf. Educ. Inf. Technol. (ICEIT)*, Chengdu, China, 2024, pp. 301–306, doi: 10.1109/ICEIT61397.2024.10540808.

**Disclaimer/Publisher's Note:** The statements, opinions and data contained in all publications are solely those of the individual author(s) and contributor(s) and not of SOAP and/or the editor(s). SOAP and/or the editor(s) disclaim responsibility for any injury to people or property resulting from any ideas, methods, instructions or products referred to in the content.