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The Effect of Digital Storytelling on Chinese Foreign Learners' Oral Proficiency

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Abstract

Grounded in the Output Hypothesis Theory, this research proposes a pedagogical intervention utilizing digital storytelling (DST) to address the problems of current Chinese oral instruction and examine its effects on the oral proficiency of Chinese foreign learners. A two-month empirical study involving international students from two language classes revealed that, compared to the control group, the experimental group students' oral performance significantly improved and had a significant impact on the fluency, accuracy, and complexity in second language oral production. The findings suggest that DST instruction can effectively improve students' oral proficiency and play a positive role in promoting language acquisition. Furthermore, the results highlight the significant research potential of integrating DST into Chinese oral language instruction.

Keyword: digital storytelling, teaching Chinese as a foreign language, oral instruction, oral proficiency, output hypothesis

1. Introduction

Chinese oral class occupies a pivotal position in international Chinese language education, on par with listening and reading courses as core components. It aims to develop students' oral communicative competence, requiring them not only to understand but also to be willing and able to speak (Zhou, 2017). However, current oral instruction often remains teacher-centered, focusing narrowly on textbook-based teaching with an emphasis on memorizing dialogues and repetitive drills (Sun, 2013), thereby lacking adequate input and output training. Students participate passively in oral practice, causing a separation of learning and using (Kong, 2013; Zhuo, 2022). This separation results in low learning efficiency and suboptimal teaching outcomes. Especially in the context of the rapid development of information technology and increasingly sophisticated digital and intelligent teaching methods, traditional oral instruction has gradually exposed a series of shortcomings. These problems necessitate more effective communicative approaches to help Chinese foreign learners develop their oral proficiency, which implies the need for innovative teaching strategies leveraging new technological resources.

Digital Storytelling (DST) is regarded as a project-based, technology-integrated, and student-centered constructivist instructional strategy (Barrett, 2006; Yang, Chen, & Hung, 2022; Wang & Cui, 2023). It combines traditional narrative instruction with emerging digital technologies, namely, using multimedia tools such as audio, image, text, and music to present stories and construct social meaning (Lambert, 2013). Consequently, DST transcends the boundaries of the classroom, creating meaningful social communicative contexts for learners and enabling meaningful language output. In other words, this instructional strategy aligns with Swain's (1995) Output Hypothesis, which emphasizes the role of output in language- specifically, acquiring new linguistic knowledge through output and promoting language development. Furthermore, researchers have indicated that DST, as a new method of storytelling, aims to develop oral proficiency in foreign language learners (Yang et al., 2022). Under the guidance of DST, numerous relevant instructional experiments have been conducted in foreign language classrooms (K. Liu, Tai, & C. Liu, 2018; Fu, Yang, & Yeh, 2022; Chen, 2024), demonstrating the feasibility and effectiveness of this strategy in enhancing second language learners' oral proficiency. However, research on DST in second language teaching remains relatively scarce in China, with limited discussion on its role in oral instruction. Particularly in the field of Chinese language education, systematic studies on its feasibility and effectiveness in Chinese oral instruction are lacking. Therefore, to address

above-mentioned issues and improve the effectiveness of Chinese oral instruction, this research is grounded in the Output Hypothesis and attempts to apply DST in intermediate Chinese oral classrooms. The purpose is to investigate the impact of digital storytelling on students' oral proficiency in Chinese, aiming to provide valuable insights and references for Chinese oral instruction in the new era.

2. Literature Review

2.1 Feasibility and Necessity of DST

DST originated in the 1980s in community arts movement in the United States and was initially introduced as short narrative films at the Digital Storytelling Workshop in Berkeley, California. Until the early 1990s, pioneer Dana Atchley combined old photographs with personal narratives using computers to create digital stories, which gained widespread popularity and recognition (Li, 2012; Wu & Chen, 2020). He later founded the Center for Digital Storytelling in San Francisco, and digital storytelling quickly gained popularity, spreading across various fields such as computer science, education, cultural media, and humanities and social science subjects. In recent years, DST has gained increasing attention in the field of education. According to Ohler (2013), DST provides learners with the opportunity to "voice" their thoughts, transforming internal ideas into media-based expressions, thereby creating an environment for language output. Hung (2019) argued that DST instruction not only helps learners achieve communicative goals through storytelling but also develops the four basic language skills of listening, speaking, reading, and writing. Therefore, by creating digital stories, learners can actively engage in the process of knowledge construction, becoming creators of knowledge rather than passive recipients. A research review by Wu and Chen (2020) indicated that DST is widely applied in language and literacy subjects, having a significant positive impact on learners' academic performance while also being valuable in enhancing learning interest and fostering higher-order thinking skills. Furthermore, DST aligns with the current trend of "digital transformation" in the field of education and supports the development of the new "Internet+Education" model (Zhang, 2022; Xu & Ma, 2023). Many researchers have argued that DST combines traditional narrative with information technology, visual literacy, and other integrated competencies for knowledge construction, representing a fusion of traditional narrative art and modern technology (Godwin-Jones, 2012; Ohler, 2013; Robin, 2016; Zhang, 2022; Yue & Cao, 2023). In summary, DST advances the deep integration of multimedia technology with education and pedagogy. Compared to traditional text-based or oral narratives, it holds greater creative potential, thereby transforming traditional learning and teaching methods.

2.2 Application of DST in Second Language Oral Instruction

Since storytelling is essentially a presentation of personal narratives, it requires students to use language in oral, written, and visual forms to convey meaning. Furthermore, DST instruction necessitates that students acquire information technology skills to express language in a digital format (Yang et al., 2022). Thus, DST can be regarded as an integrated and complex practical task suitable for language instruction. Researchers generally agree that DST, as a new technology-driven instructional method, contributes to the development of learners' communication skills, literacy, creativity, and problem-solving abilities, thereby fostering the growth of multiple intelligences (Kim, 2014; K. Liu et al., 2018; Yang et al., 2022; Fu et al., 2022; Zhang & Yu, 2023). Consequently, an increasing number of studies have focused on the role of DST in second or foreign language instruction for non-native speakers, aiming to leverage this teaching method to enhance learners' oral proficiency. Kim (2014) found that the DST method effectively improved students' English pronunciation, vocabulary acquisition, and sentence complexity. Hwang et al. (2016) suggested that DST provides English learners with opportunities for language output, thereby enhancing their oral proficiency and overall English performance. Fu et al. (2022) also demonstrated that DST significantly improves students' oral fluency and fosters language development. Yang et al. (2022) further noted that DST not only enhances students' oral expression skills but also promotes the development of creative thinking. A review of relevant literature reveals that DST provides extensive input and output practice for language learning, playing a critical role in improving English learners' oral proficiency while also stimulating interest in learning and fostering various cognitive skills. Therefore, applying DST to classroom instruction is conducive to improving traditional teaching methods and serves as a feasible pedagogical strategy for enhancing learners' oral proficiency.

In summary, DST provides learners with scaffolding, enabling them to use multimedia tools to develop oral proficiency through the process of storytelling. This method facilitates the construction of meaning and knowledge acquisition within authentic contexts while extending traditional classroom teaching into multimodal and intelligent dimensions. Therefore, DST can be recognized not only as a comprehensive task but also as an effective communicative strategy that enhances learners' oral expression skills and significantly promotes their oral proficiency.

2.3 Application of the Output Hypothesis in DST

From the perspective of language skills, speaking is a component of output, where the process involves speakers actively constructing meaning. As a productive skill, speaking facilitates language acquisition through output. Swain

(1985) emphasized that language production - whether speaking or writing - is an integral part of second language acquisition. DST, grounded in the output hypothesis, encourages students to speak during the storytelling process, thereby promoting meaningful language output (Yang et al., 2022). However, traditional language instruction often overemphasizes input while neglecting the positive role of output in the learning process. Swain (1985) challenged Krashen's (2003) dismissal of the role of output, arguing that language output plays a vital role in developing learners' language proficiency. Second language learners not only require ample comprehensible input but also need to produce comprehensible output. Against this backdrop, Swain (1985) proposed the Output Hypothesis, suggesting that learners drive information exchange during meaning negotiation. Such negotiation requires speakers to use accurate, coherent, and appropriate language to fully convey their intentions, rather than merely aiming for communication or comprehension. In oral language instruction, DST emphasizes language output and examines its impact on learners' language proficiency, aligning closely with the principles of the Output Hypothesis. Swain (1985) further pointed out that students often lacked sufficient opportunities to use the target language in the classroom and faced little pressure from class or society to produce it. As a result, their motivation to utilize linguistic resources was insufficient, limiting their language use to basic understanding and being understood, without fully utilizing their linguistic potential. In this regard, DST leverages digital technologies and narrative skills to provide learners with an immersive linguistic environment, encouraging them to produce the target language through story creation. Driven by communicative needs, learners fulfill their communicative intentions, achieving effective practice that ultimately enhances their fluency and accuracy in the language.

Swain (1995) further defined four major functions of output: noticing/triggering, hypothesis testing, metalinguistic function, and developing automaticity in language use. The noticing/triggering function refers to the ability of output to draw learners' attention to the target language, enhancing their awareness and prompting them to recognize the gap between what they intend to express and what they are able to express, thereby encouraging second language learners to consciously identify their linguistic issues. The hypothesis testing function refers to the ability of output to provide learners with opportunities to test their hypotheses. In the process of language output, learners express their intentions in various ways and verify their hypotheses based on interaction and feedback, thereby achieving the validation and revision of their linguistic knowledge. The metalinguistic function refers to learners reflecting on their target language knowledge during language output, thereby facilitating the internalization of linguistic knowledge. Developing automaticity in language use represents the practical function of output. Specifically, the more frequently learners produce a language, the greater their fluency in that language becomes. These functions indicate that language output helps learners become aware of problems within their second language system, creating a sense of urgency for learning. This, in turn, triggers the analysis of input information and internal linguistic resources to bridge knowledge gaps and acquire new linguistic knowledge. This process facilitates the internalization and acquisition of the second language, promoting the comprehensive development of second language learners' linguistic abilities.

In conclusion, Swain's Output Hypothesis provides theoretical support for DST, as both emphasize that output is an indispensable component of language learning. The DST instructional method leverages information technology to provide learners with abundant learning resources, enabling them to access a wealth of comprehensible input. This aligns with Swain's (1995) argument that comprehensible output contributes to second language learning in ways that differ from and complement input. Furthermore, this method places greater emphasis on language production. Through multiple iterations of storytelling and creation, learners engage in an output-revision-output cycle. This process not only provides learners with more opportunities for output language but also enables them to repeatedly practice language expression. Such a sustained output process helps students transform linguistic knowledge into practical speaking abilities, thereby accelerating the development of their language skills (Wang & Cui, 2023).

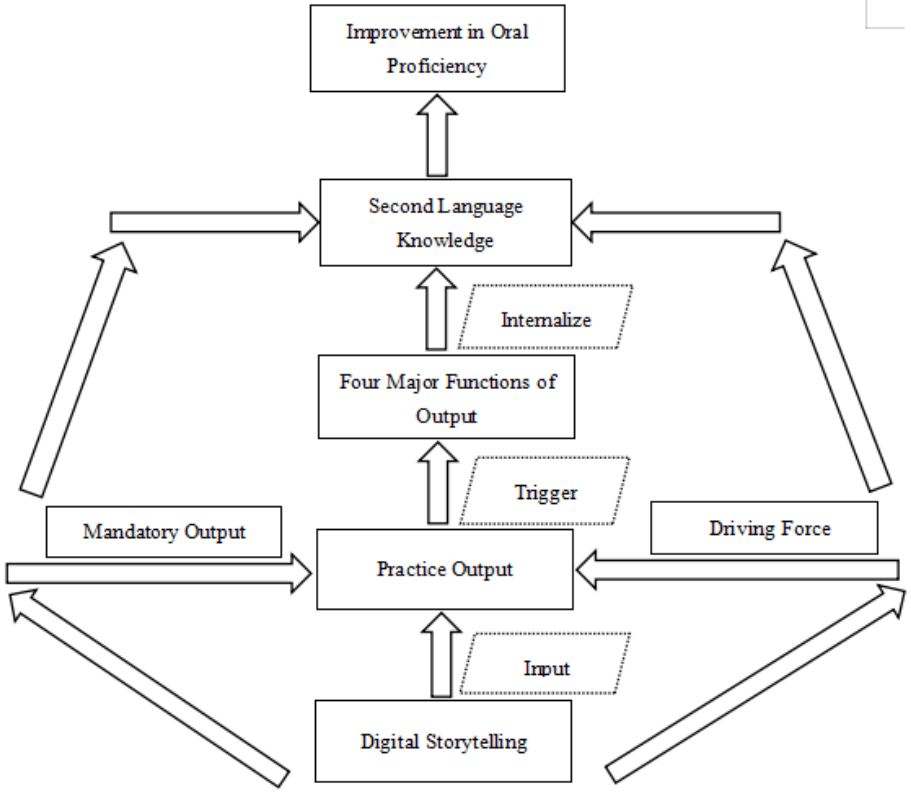

Figure 1. DST Oral Framework Grounded in the Output Hypothesis

However, while previous studies have explored the impact of the DST method on foreign language learning and confirmed its significant role in enhancing learners' oral expression abilities, research on the effects of DST in Chinese language teaching remains scarce, particularly regarding its impact on oral Chinese proficiency. Therefore, to examine the role of DST in Chinese oral teaching, and based on the issue of separation of learning and using in current oral instruction as well as a comprehensive review of literature on the DST method, this study conducted a two-month empirical investigation in an intermediate oral Chinese classroom. The specific research questions include:

(1) Does the DST teaching method improve students' Chinese oral language proficiency?

(2) What are the effects of using DST on Chinese foreign learners' speaking competence in terms of fluency, accuracy, and complexity?

3. Research Method

3.1 Participants

The participants in this teaching experiment were 43 students from Class C1 and Class C2 of an intermediate-level language program at a university in Zhejiang Province. The experimental group consisted of 23 students (13 males and 10 females), while the control group comprised 20 students (14 males and 6 females). The students came from various countries, including Russia, Romania, Canada, Argentina, Yemen, Kyrgyzstan, Kazakhstan, and Peru. All students had passed the HSK-3 exam (Hanyu Shuiping Kaoshi, HSK), indicating an intermediate level of Chinese proficiency.

3.2 Procedure

This DST teaching experiment lasted for two months, with a total of 32 classes. Participants from each group had four Chinese classes each week, following the same teaching schedule and studying the same materials but with different teaching designs. The control group was taught using traditional teaching methods, which included vocabulary explanation, sentence structure practice, text explanation and comprehensive drills. At the end of each unit, students were required to complete oral tasks based on the textbook's exercises. The experimental group adopted the DST teaching method, integrating DST into weekly classroom activities. After completing each unit, students were required to create a 3-5 minute digital story in Chinese. Specifically, during the first 8 classes, the teaching tasks focused on the linguistic objectives of three units, including vocabulary, sentence patterns, and grammar. Students were also introduced to the concept and process of DST. Using a self-created video as an example, the teacher provided training on video

creation and editing techniques. The remaining 24 classes were devoted to digital story creation activities. The design of this stage was adapted from prior research (Ohler, 2013; Robin, 2016; Yang et al., 2022), which were divided into the following six steps: (1) Brainstorming; (2) Discussion and theme selection; (3) Storyboard creation; (4) Writing and revising the script; (5) Practicing output; (6) Story recording.

In brief, students were required to apply the new vocabulary, sentence patterns, and other linguistic knowledge learned in each unit to create oral narratives. However, the content of the stories was not confined to the textbook and encouraged students to exercise their imagination freely. After discussing and determining the story themes, students integrated their created stories with multimedia elements such as text, images, music, and videos. They then repeatedly practiced by reading aloud, recording, or dubbing their stories and listening to their recordings multiple times. This process enabled them to reflect on and address their linguistic issues until they were satisfied with the outcome. The teacher provided guidance and feedback on students' work to help them build scaffolding for their language output. Finally, students presented their completed works and conducted self-assessments and peer reviews of their projects.

3.3 Instrument

The oral test was assessed based on the three dimensions of second language output - Complexity, Accuracy, and Fluency (CAF), adapted from Chen (2015). Each dimension was evaluated as follows: (1) Accuracy, which refers to pronunciation precision. Specifically, pronunciation accuracy was scored based on tonal (声调) accuracy, initial consonant (声母) accuracy, and simple or compound vowel (韵母) accuracy. (2) Complexity, which examines the sophistication and diversity of language output, including lexical diversity and lexical difficulty. (3) Fluency, which pertains to the smoothness of speech. It was measured based on the number and duration of silent pauses during speech, as well as the frequency and duration of filled pauses such as "um" (嗯) and "ah" (啊).

3.4 Data Analysis

Two data sources were used in this study: pre- and post-tests and post-intervention interviews. Prior to the experiment, a pre-test was administered to both groups to evaluate their initial proficiency in Chinese oral expression. After the teaching experiment, a post-test was conducted for both groups. The test format was similar to the pre-test, with all test items adapted from the textbook. The examination topics, content, difficulty level, and duration were kept consistent between the two groups. The test consisted of four parts: word reading, sentence reading, picture description, and topic presentation, with a total of 24 items. Three raters independently evaluated the students' Chinese speaking performance in terms of three dimensions of fluency, accuracy and complexity. Scores were assigned on a five-point scale, where 1 indicated "very poor", 2 "poor", 3 "average", 4 "good", and 5 "excellent", with a total score of 15 points across the three dimensions. The Intraclass Correlation Coefficient (ICC) for the pre-test ranged from 0.908 to 0.802, and for the post-test, it ranged from 0.798 to 0.864, indicating high consistency among the raters and suggesting that their ratings were reliable (Fleiss & Cohen, 1973). Additionally, the researchers conducted descriptive and differential statistical analyses using SPSS. After the experiment concluded, semi-structured interviews were conducted with 12 students from the experimental group, each lasting approximately 20 minutes. For interview text data analysis, content analysis was applied to categorize, decode, and analyze the patterns of the generated data, extracting meaning for further analysis and discussion (Patton, 2015).

4. Result

The following section analyzes the effect of DST instruction on the overall proficiency of Chinese oral language and the three dimensions of oral output, accompanied by a discussion based on the experimental results.

4.1 The Effects of DST on Chinese Oral Proficiency

We conducted an independent samples t-test to compare the differences in pre-test scores between the experimental group and the control group (Table 1). The results indicated that the overall oral proficiency of the experimental group was slightly higher than that of the control group, but the difference was not statistically significant ($t = -0.613$, $p = 0.547$), which ensured the homogeneity of the participants. This suggested that before the implementation of different instructional methods, there was no significant difference in oral proficiency between the groups.

Table 1. Group comparison results for oral pre-test

Dimensions	Experiment Group (N=23)		Control Group (N=20)		t (df)	p
	M	SD	M	SD		
Fluency	3.49	1.02	3.40	0.68	-0.250	0.805
Accuracy	3.64	0.52	3.47	0.42	-0.866	0.396
Complexity	3.67	0.53	3.53	0.48	-0.630	0.535
Total scores	10.80	1.65	10.40	1.37	-0.613	0.547

* $p<0.05$ ** $p<0.01$

After a two-month teaching experiment, the overall post-test scores of the experimental group showed significant improvement (Table 2), with a statistically significant difference in post-test scores between the two groups ($t = -3.581$, $p < 0.01$). This finding demonstrated, to some extent, that the experimental group achieved significant improvement in oral performance after DST instruction. Compared with traditional teaching methods, DST exhibited distinct advantages in Chinese oral instruction, effectively enhancing learners' oral expression skills. This result aligned with the Output Hypothesis (Swain, 1985; Swain, 1995), which posits that the experimental group had more opportunities for output expression, and such output facilitated the improvement of their oral proficiency. Through DST instruction, students engaged in extensive practice during the story creation process. This practice forced them to speak, providing a mandatory language output opportunity. Such output compelled students to notice issues in their expression, motivating them to speak more accurately and fluently, thereby continuously enhancing their language proficiency. Additionally, mandatory output activated students' internal linguistic resources, fostering the development of their linguistic knowledge system and ultimately contributing to the improvement of their oral proficiency.

Moreover, the interview results revealed that most students believed their oral proficiency had improved. The students' most notable experience was the necessity of constantly speaking, through which they perceived their own progress. This observation aligns with Swain's (1985) assertion that output facilitates language learning. Some of the students' responses were as follows:

> I used to not know what to say, so I spoke very little. But now I have many ideas, so I speak more and express myself better. (S2)
>
> This course is very interesting. There are many resources online, and I can learn more words and sentences, which enriches my knowledge. Additionally, I can choose related background images, character pictures, and various videos and music to help me create stories. I have to keep speaking, following the story structure step by step. It helps me speak fluently, and I feel that storytelling has become easier. (S10)

The interview revealed that DST instruction was highly effective in enhancing students' oral proficiency. Moreover, students demonstrated a clear awareness of output, as they consistently produced the target language while creating stories, thereby improving their oral skills.

Table 2. Group comparison results for oral post-test

Dimensions	Experiment Group（N=23）		Control Group（N=20）		t (df)	p
	M	SD	M	SD		
Fluency	4.11	0.59	3.33	0.53	-3.127	0.006**
Accuracy	4.17	0.39	3.70	0.42	-2.605	0.017*
Complexity	3.95	0.47	3.33	0.37	-3.225	0.004**
Total scores	12.22	1.27	10.37	1.02	-3.581	0.002**

* $p<0.05$ ** $p<0.01$

4.2 The Effect on Fluency, Accuracy and Complexity in Chinese Oral Output

To examine the specific impact of DST on oral output, this study focused on three key dimensions: fluency, accuracy, and complexity (Chen, 2015). The changes in oral performance between the pre-test and post-test for the two groups were compared to gain a deeper understanding of the development of students' oral skills.

As shown in Table 1 and Table 2, there were no significant differences in the pre-test scores between the experimental group and the control group across the three dimensions of fluency, accuracy, and complexity ($p > 0.05$). However, in

the post-test, the experimental group significantly outperformed the control group in all three dimensions (fluency: $t = -3.127$, $p < 0.01$; accuracy: $t = -2.605$, $p < 0.05$; complexity: $t = -3.225$, $p < 0.01$). This indicates that DST instruction had a significant positive effect on all three dimensions of Chinese oral output and contributed positively to students' oral development. Here are some excerpts from the students to support this:

> When recording the storytelling, I had to read it out loud and listen to my recording many times to check for mistakes and make corrections. Also, I had to read it many times, which was a bit tiring, but it helped me speak better and more fluently. (S1)
>
> When telling stories online, I could listen to my recording many times to identify issues, such as my tone or pauses. This made me feel I could speak more accurately. (S3)
>
> While completing this task, I could find a lot of resources online and use this method to tell different stories. I had more to say and expressed myself more richly. (S7)

It could be observed that the creation of digital stories involved recording or dubbing. During this process, students read aloud and listened repeatedly to their recordings, reflecting on issues such as pronunciation and intonation, making timely corrections. Through repeated practice, their oral expression became more accurate and fluent. This aligns with the four functions of the Output Hypothesis, which suggest that output draws learners' attention to the target language, prompting reflection and validation of their hypotheses about language knowledge. This process facilitates the automation of expression and continuously enhances the accuracy of language production (Swain, 1995). Furthermore, the process of creating stories involved scripting and narrating, requiring students to fully utilize their linguistic resources. This contributed to enhancing the diversity and richness of oral expression, thereby facilitating meaningful language output. This aligns with the views of Hwang et al. (2016) and Yang et al. (2022), who argued that DST effectively develops students' productive skills in oral expression. Output tasks activate the relevant knowledge stored in students' minds, supporting second language learning. In other words, output provides students with opportunities to practice oral language and retrieve stored linguistic knowledge from their minds. A student stated:

> In this class, I always need to review the words and sentences I've learned, and I can also learn some new expressions. Then I use them to tell a story, which can be a bit challenging, but it's very interesting. I can also break my story into smaller parts, which makes it easier to tell and more detailed. I feel my speaking skills have improved. (S9)

In contrast, for the control group under the traditional teaching method, while students demonstrated improvement in accuracy after short-term learning, the other two dimensions showed a tendency to decline. This might be attributed to the focus of traditional teaching on repetitive drills, which provided students with opportunities to practice speaking and thus helped to some extent in improving pronunciation accuracy. However, the teaching content was confined to the textbook, lacking sufficient input and opportunities for more extensive output training. As a result, students might find it dull and engage in speaking training passively, leading to poor knowledge absorption. Therefore, their fluency and complexity failed to improve and might even show a declining trend.

In conclusion, the results of this study indicate that DST instruction facilitates language learning by enabling learners to produce meaningful language output, thereby promoting rapid development in speaking skills. It is evident that DST advocates for output-oriented digital story creation and presentation as a means to train learners' language expression abilities. As Swain (1985) proposed in the Output Hypothesis, second language output drives learners to process language more actively and deeply, thereby fostering second language acquisition and improving the accuracy of language production. In language teaching, numerous instructional experiments have focused on the impact of DST on learners' second language output skills, including writing (Hung, 2019; Zhang & Yu, 2023) and speaking (Yang et al., 2022; Chen, 2024). Their findings consistently have confirmed the effectiveness of DST instruction. However, it is noteworthy that this study specifically targeted students' Chinese oral development, and its findings aligned with those of Kim (2014), K. Liu et al. (2018), Fu et al. (2022), and Yang et al. (2022), who demonstrated through experimental research that DST effectively enhanced students' English-speaking skills. This study, in turn, revealed that applying DST in Chinese oral classrooms is also effective. In short, DST provides students with a meaningful language environment and more opportunities for output, enabling them to continuously practice, test, and revise their language use during oral expression. Additionally, students can leverage digital tools to produce discourse, engaging in frequent oral practice that promotes integrated output and enhances their oral communication skills.

5. Conclusion

This study explored the impact of the DST teaching method on students' oral proficiency in Chinese language instruction. After two months of empirical research, the results revealed significant differences in oral performance between the experimental group and the control group. The students in the experimental group demonstrated

significantly higher levels of fluency, accuracy, and complexity in oral output compared to those in the control group. Therefore, the findings suggest that oral instruction based on DST can effectively enhance students' Chinese oral expression skills and promote the improvement of their second language output proficiency.

This two-month empirical study integrated the DST method into second language (L2) classrooms, providing students with a platform for oral practice. Through multimedia technology, students expressed their ideas and narrated stories during story creation. This not only enriched their language input and practice opportunities but also enabled them to engage in targeted communication within the narrative context. This process created meaningful social communicative contexts that facilitated the development of their speaking abilities. In other words, both students' receptive and productive skills were fully exercised. Furthermore, based on the Output Hypothesis, learners became aware of gaps and issues in their language output, which prompted them to revise and acquire new knowledge. In this study, students became aware of the gaps between their actual language output and the meaning they intended to express during language practice. They then reflected on these gaps during storytelling activities, continuously revising their linguistic knowledge. Finally, through the presentation of their stories, they achieved meaningful oral output and developed new language competencies. At the same time, this method effectively integrated traditional paragraph-based storytelling training with digital technologies. It can be concluded that this teaching method, underpinned by the Output Hypothesis, promotes language development through oral output. Moreover, it aligns well with students' actual communicative needs, addressing the separation of learning and using in current Chinese oral teaching. This holds significant referential and promotional value for the field of international Chinese language teaching.

Admittedly, this study represented a preliminary attempt, and the teaching experiment had certain limitations. Due to the limited number of students in the language class, the sample size of this study was relatively small, and participants were confined to intermediate-level Chinese learners, which may limit the generalizability of the findings. Furthermore, constrained by objective conditions, the teaching experiment lasted only two months, which prevented a comprehensive examination of the long-term effects of DST on students' oral proficiency development. Future research could address these limitations by increasing the sample size, broadening the range of participants to include different Chinese proficiency levels, and extending the duration of the teaching experiment to further explore the feasibility and effectiveness of DST in Chinese oral language teaching.

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Authors contributions

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Competing interests

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Informed consent

Obtained.

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The Publication Ethics Committee of the Redfame Publishing.

The journal's policies adhere to the Core Practices established by the Committee on Publication Ethics (COPE).

Provenance and peer review

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Data availability statement

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

Data sharing statement

No additional data are available.

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