# Wechat-Based Learning Activities to Improve Students' Speaking and Reading Performance in a Chinese Language Course for Foreign Students

**Cheng Cheng**
Assumption University, Thailand
E-mail: peacekid@126.com

**\*\*\*\*\*\*\*\*\*\***

## Abstract

This study investigates the impact of WeChat, a widely used social media platform in China, on enhancing the speaking and reading skills of international students learning Chinese. Recognizing the challenges students face with traditional language learning methods, which may not fully address practical application and motivation issues, this research highlights the potential of technology, specifically WeChat, to facilitate more engaging and effective language learning experiences. Previous studies have shown WeChat's ability to improve engagement, feedback, and learning outcomes in different language contexts. However, the application and effectiveness of WeChat in Chinese language instruction, especially for international students, require further exploration.

The objectives of this research were to investigate the impact of WeChat-based learning activities on the speaking and reading skills of international students in a Chinese language course. Utilizing a mixed-method approach that combines quantitative and qualitative data collection, the study focused on a population of foreign students engaged in Chinese language learning. The research instruments included a quasi-experimental design with pre-test and post-test control groups and semi-structured interviews to gather insights into students' perceptions of WeChat's effectiveness as a language learning tool.

The study demonstrated significant improvements in both speaking and reading skills among the participants who engaged in WeChat-based activities, compared to those who did not. Statistical analysis indicated greater gains in the experimental group, while qualitative data from interviews underscored WeChat's role in facilitating more efficient learning, enhancing teacher-student interactions, and providing a supportive environment for language practice. These findings suggest the potential of integrating social media platforms like WeChat into foreign language education to improve learning outcomes.The research underscores the potential of WeChat as a tool for enhancing language learning, especially in the context of Chinese as a foreign language. It contributes to understanding the role of social media platforms in language education, offering insights into effective implementation and the necessity of addressing associated challenges. The findings have implications for language educators, curriculum developers, and policymakers in the field of foreign language instruction, particularly in leveraging technology to enhance learning outcomes.

**Keywords:** WeChat-based Learning; Chinese Language Instruction; Educational Technology; Speaking and Reading Skills; Language Learning Perceptions

## Introduction

Mastering a new language poses a demanding journey, necessitating consistent practice, feedback, and interaction with those fluent in the language(Dreyer & Nel, 2003). For international students on the path to learning Chinese, honing speaking and reading capabilities forms the crux of their language learning journey. However, conventional methods used in teaching foreign languages may not always adequately cater to the needs of these learners(Ollerhead & Taylor-Leech, 2019). The learners may grapple with the practical application of their language skills in day-to-day situations, leading to decreased motivation and less active involvement in their learning process (Woodrow, 2017).

Technology's role in language learning has come to the fore as a promising solution to overcome these hurdles(Bećirović et al., 2021). Specifically, the integration of social media platforms, like the widely popular WeChat with its user base exceeding a billion active users per month in China, offers an innovative means to boost language learning outside the traditional classroom(Tong et al.,2020; Dai et al., 2018). WeChat enables its users to interact via text, voice, and video messaging, and offers features like group conversations, sharing of multimedia content, and language translation tools(Zhang, 2017).

The potential of WeChat in language learning, especially in the Chinese language context, has been the focus of numerous studies. Hou, Han and Wang (2021), for instance, studied the utilization of WeChat to augment the oral English skills of Chinese students, concluding that WeChat effectively stimulated student engagement and improved language learning results. Similarly, Tang, Qianli et al.(2020) scrutinized the use of WeChat in English writing instruction, finding that it enhanced student engagement, facilitated timely feedback, and uplifted writing quality.

In the realm of Chinese language learning, Marion (2017) revealed that WeChat could deliver personalized and interactive vocabulary learning experiences, thereby improving learning outcomes. Studente et al.(2020) delved into the potential of WeChat in higher education from both students' and educators' viewpoints, observing its ability to bolster student communication and collaboration, thereby enhancing learning outcomes.

The advent of technology in the sphere of language acquisition presents a promising solution to hurdles encountered by foreign language students, particularly when polishing their speaking and reading abilities. WeChat, a social media platform commanding vast usage in China, offers a unique avenue for language acquisition beyond the traditional classroom setting. Despite WeChat's potential advantages in language education, the extent of its application in foreign language coursework for international students remains less explored. Nevertheless, throughout prolonged online instruction, it has been discovered that under a teacher's guidance, students should utilize smartphones for learning Chinese, and mobile-centric learning activities ought to be seamlessly integrated into the Chinese curriculum(Chen, 2013). Furthermore, Luo and Yang (2016) underscored the scarcity of empirical studies confirming the effectiveness of WeChat usage in Chinese language instruction.

WeChat, crafted by Tencent, stands as a prominent social media platform and communication application in China, enjoying widespread use (Harwit, E., 2017). It amalgamates numerous functions such as instant messaging, voice and video calls, social networking, and content sharing (Xu, J. et al, 2015). Its user-friendly interface and multifaceted functionalities have endeared WeChat to a diverse user base, both within China and internationally (Wang et al, 2019).In the recent past, the potential of WeChat as a facilitator of education and language learning has been recognized. Investigations have been conducted into

the effectiveness of WeChat-integrated learning activities in enhancing students' linguistic abilities, specifically within the domain of foreign language courses. As a platform, WeChat enables a conducive, interactive environment for language learning, fostering communication and cooperation between students and instructors (Li et al. 2018).

Research has illustrated positive impacts of WeChat-integrated learning activities on students' speaking and reading abilities across various language courses. For instance, Guo and Wang (2018) led a study on WeChat application within an English as a Foreign Language (EFL) course. The findings suggest that WeChat-incorporated activities enhanced students' oral fluency and reading comprehension capabilities.

Consequently, this research is centered on examining the impact of learning activities on WeChat in refining international students' speaking and reading skills in a Chinese language course. Specifically, this study aims to explore the potential of WeChat in fostering a learning community that gives international students the chance to hone their Chinese language skills beyond the classroom and receive valuable feedback from both their peers and instructors.

Moreover, the research aims to pinpoint factors influencing the success of WeChat-centric learning activities, such as the students' language proficiency, their motivation levels, and the frequency and variety of WeChat activities leveraged. The study also seeks to delve into students' perceptions of WeChat's effectiveness as a language learning apparatus.

Specifically, the study aims to address the following research questions:

1. How effective are WeChat-based learning activities in improving foreign students' speaking and reading skills in a Chinese language course?

2. What is the method of integrating WeChat-based learning activities into Chinese language course?

3. What are the students' perceptions of the effectiveness of WeChat as a language learning tool?

The research strategy employed in this study is a mixed methodology, incorporating both quantitative and qualitative data collection and analytical approaches. We adopted a quasi-experimental blueprint, incorporating a pre-test and post-test control group to juxtapose the speaking and reading performances of students who partake in WeChat-based learning activities against those who do not. In addition, interviews were conducted to gather data on students' perceptions concerning the utility and effectiveness of WeChat as a language learning tool.

The target group of this research encompasses international students registered in a Chinese language course at a Chinese university. The participants were chosen via purposive sampling and  comprised roughly 40 international students who have been arbitrarily allocated to either the experimental or control group. Statistical analysis methods were used, such as independant sample t-test to test our hypotheses.

## Research Objectives

1.To examine the effectiveness of WeChat-based learning activities in improving foreign students' speaking and reading skills in a Chinese language course.

2. To develop a method of integrating WeChat-based learning activities into Chinese language course.

3. To explore the students' perceptions of the effectiveness of WeChat as a language learning tool.

## Literature Review

### 1. Research of WeChat for language learning

WeChat, crafted by Tencent, stands as a prominent social media platform and communication application in China, enjoying widespread use (Harwit, E., 2017). It amalgamates numerous functions such as instant messaging, voice and video calls, social networking, and content sharing (Xu, J. et al, 2015). Its user-friendly interface and multifaceted functionalities have endeared WeChat to a diverse user base, both within China and internationally (Wang et al, 2019).

In the recent past, the potential of WeChat as a facilitator of education and language learning has been recognized. Investigations have been conducted into the effectiveness of WeChat-integrated learning activities in enhancing students' linguistic abilities, specifically within the domain of foreign language courses. As a platform, WeChat enables a conducive, interactive environment for language learning, fostering communication and cooperation between students and instructors (Li et al. 2018).

Research has illustrated positive impacts of WeChat-integrated learning activities on students' speaking and reading abilities across various language courses. For instance, Guo and Wang (2018) led a study on WeChat application within an English as a Foreign Language (EFL) course. The findings suggest that WeChat-incorporated activities enhanced students' oral fluency and reading comprehension capabilities.WeChat paves the way for individualized and paced learning. Learners can access educational materials, partake in language practice, and garner feedback from instructors and peers utilizing WeChat's features such as voice messages, video calls, and group chats (Liu & Zhang, 2022).

Nevertheless, it is vital to consider certain limitations and challenges associated with WeChat-based learning. For example, concerns related to privacy and distractions stemming from non-academic social activities on WeChat could affect students' concentration and engagement in language learning tasks (Li et al. 2018). Furthermore, the effectiveness of WeChat-incorporated learning activities may differ based on variables such as students' linguistic proficiency, motivation, and familiarity with the platform.

In conclusion, WeChat-integrated learning activities have emerged as a promising avenue to bolster students' linguistic competencies. Its interactive features and convenience render it a valuable resource in language courses. Nonetheless, it is crucial to address the potential limitations and challenges accompanying its use. There is a pressing need for additional research to delineate best practices and strategies for the effective implementation of WeChat-based learning activities.

**2. Perception**

The aspect of perception, in the context of WeChat-based language learning activities, holds substantial importance. This concept delineates the subjective interpretations and understandings that individuals foster regarding their experiences with WeChat as a tool for language learning. Tong and Tsung(2018) points out the realm of students' perceptions includes their attitudes, feelings, and beliefs towards the WeChat-based activities. These perceptions can significantly impact their level of engagement, motivation, and learning outcomes.

By incorporating the variable of perception into your WeChat-based learning activities research, it is possible to investigate its correlation with other variables, such as reading skills, speaking skills, and the effectiveness of WeChat-based activities. This approach will facilitate a comprehensive understanding of the elements influencing language learning outcomes(Chen and Cheung, 2018).Moreover, utilizing insights derived from students' perceptions can help refine the design and implementation of WeChat-based activities, subsequently enhancing student engagement and satisfaction(Chen et al., 2021).

To conclude, the perceptions of students concerning WeChat-based learning activities are crucial elements to consider in research related to Chinese language learning. By analyzing and understanding students' perceptions, educators and researchers can enhance the design of WeChat-based activities, creating more engaging and efficacious language learning experiences.

## Research Methodology

**1. Methodology**

The quantitative facet of the study employed a quasi-experimental design with a control group, encompassing both pre-test and post-test stages. The experiment group were engaged in WeChat-based learning activities, while the control group followed traditional learning methods. Participants' speaking and reading proficiencies were appraised prior to and following the intervention to quantify the degree of proficiency enhancement.

In the qualitative phase of the research, semi-structured interviews were undertaken to glean in-depth insights into participants' perceptions regarding the efficacy of WeChat as a tool for language learning. These interviews facilitated a nuanced exploration of the participants' experiences and viewpoints.

**2. Population and Sample size**

In the present study, the defined population encompasses a group of 40 international students. These students are currently registered in a Chinese as a second language program at a renowned university situated in northeast China. The linguistic proficiency of these students in Chinese is of an intermediate level, roughly equivalent to the HSK4 level. The linguistic diversity within this group is immense, with students whose mother tongues include Russian, Turkish, Belarusian, Korean, among others.This population was chosen due to their elective decision to undertake Chinese as a second language. This decision speaks volumes about their motivation and dedication towards honing their language skills. By concentrating on this specific group, the research intends to elucidate the effectiveness of the prescribed intervention in improving the speaking and reading abilities of international students at an intermediate proficiency level in Chinese.

In the current investigation, a quasi-experimental research design was implemented, utilizing distinct groups to examine the efficacy of the research intervention. Considering the specificities of Chinese pedagogy and the comparatively limited number of international students, a small-class teaching method is in place, with approximately 20 students per class. Therefore, for the purpose of this research, a total of 40 students were chosen as participants. These students were equally divided, with 20 allocated to the control group and the remaining 20 to the treatment group. Further, to garner a more profound understanding of the experiences and perspectives of the students who underwent the research intervention, a sub-selection of 10 students from the treatment group was chosen for personal interviews. This qualitative methodology facilitated a more all-encompassing comprehension of the effect of the research intervention on the students' language learning experiences.

## Research Conceptual Framework

In the quantitative phase of the study, a quasi-experimental design with a pre-test and post-test control group was implemented. The experimental group received WeChat-based language learning activities for 8 weeks, while the control group have not. The participants' speaking and reading skills were assessed before and after the treatment to measure the improvement in their language proficiency.

In the qualitative phase, interviews were conducted to gather in-depth insights into the students' perceptions of the effectiveness of WeChat as a language learning tool.
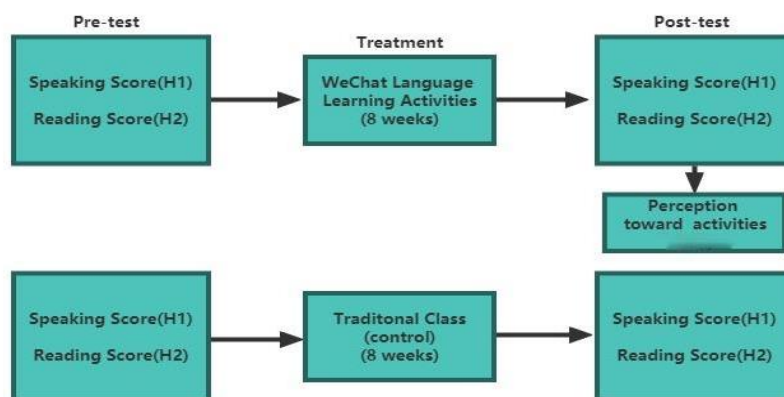


**Figure 1** Research Conceptual Framework

## Research Scope

The central objective of this research is to scrutinize the efficiency of WeChat-based learning activities in bolstering the speaking and reading abilities of international students enrolled in Chinese language courses. The study endeavored to discern the factors that impact the efficacy of such WeChat-focused learning activities and the viewpoints of international students on the utility and effectiveness of WeChat as an instrument for language learning.

In essence, this research seeked to explore the efficiency of WeChat-based learning activities in enhancing the speaking and reading skills of international students in Chinese language courses. The study deployed a combined methodology with a quasi-experimental

design and includes a sample of approximately 40 international students. The hypotheses were tested using statistical analysis techniques, and the study yielded insightful revelations about the factors affecting the efficacy of WeChat-based learning activities and students' perceptions of WeChat as a language learning tool.

## Result

### 1. Quantitative Data Analysis

This study aimd to conduct the tests for 40 participants in two classrooms at a renowned university situated in northeast China. An evaluative performance test were administered to gauge the participants' competencies in reading and speaking Chinese. All students with almost the same Chinese level from 2 classrooms were required to participate in the study, and 10 students from the treatment group completed a semi-structured interview.

**Table 1** Demographic Information

| Category | Content | Frequency | Percentage |
|---|---|---|---|
| Country | Belarus | 1 | 2.50% |
| | Russia | 25 | 62.50% |
| | Kyrgyzstan | 5 | 12.50% |
| | Korea | 1 | 2.50% |
| | Ukraine | 1 | 2.50% |
| | Turkey | 2 | 5.00% |
| | Poland | 3 | 7.50% |
| | Japan | 2 | 5.00% |
| | N | 40 | 100.00% |
| Gender | male | 13 | 32.50% |
| | female | 27 | 67.50% |
| | N | 40 | 100.00% |
| Age | under 20 years old | 4 | 10.00% |
| | equal to 20 years old | 5 | 12.50% |
| | over 20 years old | 31 | 77.50% |
| | N | 40 | 100.00% |

The table presents the descriptive statistics of variables for a study with two groups, control and treatment, assessed before (pre) and after (post) an intervention, across two activities: speaking and reading. Each group consists of 20 participants (N=20). For pre-speaking, the control group has a mean score of 72.6 with a standard deviation (SD) of 4.02, while the treatment group has a slightly higher mean of 73.0 with a lower SD of 3.86. Post-speaking scores show an increase for both groups, with the control group at a mean of 78.0 (SD=3.94) and the treatment group showing a more substantial increase to a mean of 82.9 (SD=4.94). In pre-reading, the control group's mean is 62.9 with a higher SD of 5.35 compared to the treatment group's mean of 63.1 (SD=5.20). Post-reading assessments show an increase

in means for both groups, with the control at 65.3 (SD=5.24) and the treatment at 69.8 (SD=5.17), indicating a larger gain in the treatment group from pre to post-intervention.The table effectively represents a clear pattern of improvement in both reading and speaking categories after some form of intervention, especially within the treatment group.The detail information is showed in Table 2.

**Table 2** Descriptive Information of Samples

|  | Group | N | Mean | SD |
|---|---|---|---|---|
| Pre speaking | Control | 20 | 72.6 | 4.02 |
|  | Treatment | 20 | 73.0 | 3.86 |
| Post speaking | Control | 20 | 78.0 | 3.94 |
|  | Treatment | 20 | 82.9 | 4.94 |
| Pre reading | Control | 20 | 62.9 | 5.35 |
|  | Treatment | 20 | 63.1 | 5.20 |
| Post reading | Control | 20 | 65.3 | 5.24 |
|  | Treatment | 20 | 69.8 | 5.17 |

## 2. Hypotheses Testing
### Hypothesis One
$H_01$: There is no difference between control group and treatment group in speaking score.

$H_a1$: There is difference between control group and treatment group in speaking score.

**Table 3** Means Summary for speaking score between control group and treatment group.

|  | **Mean** | **SD** | **N** |
|---|---|---|---|
| **Control Group** | 5.45 | 1.43 | 20 |
| **Treatment Group** | 9.85 | 1.69 | 20 |

**Table 4** T-test for speaking score between control group and treatment group.

|  |  | **Statitic** | **df** | **p** |
|---|---|---|---|---|
| Improvement of speaking score between control group and treatment group | Student's t | -8.87 | 38.0 | <.001 |

The independent samples t-test was calculated to compare speaking score between control group and treatment group. The t-test was significant, $t(38) = 8.87$, $p < .001$. Thus, the null hypothesis was rejected. The result indicated that the speaking score between control group and treatment group are different.

### Hypothesis Two
$H_02$: There is no difference between control group and treatment group in reading score.
$H_a2$: There is difference between control group and treatment group in reading score.

**Table 5** Means Summary for reading score between control group and treatment group.

|  | Mean | SD | N |
|---|---|---|---|
| **Control Group** | 2.40 | 0.503 | 20 |
| **Treatment Group** | 6.70 | 1.261 | 20 |

**Table 6** T-test for reading score between control group and treatment group.

|  |  | Statitic | df | p |
|---|---|---|---|---|
| Improvement of reading score between control group and treatment group | Student's t | -14.2 | 38.0 | <.001 |

The independent samples t-test was calculated to compare reading score between control group and treatment group. The t-test was significant, $t$ (38) =14.2, $p$ < .001. Thus, the null hypothesis was rejected. The result indicated that the reading score between control group and treatment group are different.

The table 7 showed the summary of results of the hypotheses testing in the study.

**Table 7** Summary of Hypothesis testing and results

| Hypotheses | Statement | Result after Analysis |
|---|---|---|
| $H_01$ | There is no difference between control group and treatment group in speaking score. | Rejected |
| $H_02$ | There is no difference between control group and treatment group in reading score. | Rejected |

### 3. Qualitative Data Analysis

The four semi-structured interview questions were formulated to interview the 10 students from the treatment group for finding the insights into the participants' experiences, perceptions, and attitudes in relation to the WeChat-based learning activities.These interviews were conducted online, leveraging video conferencing tools for real-time interaction and recording. Content analysis methods were used to analyse the content of the interviews. Krippendorff(1980) posited that content analysis was a methodological tool utilized for drawing consistent and credible conclusions from data within their specific situations.The key themes identified were:

**Convenience and Flexibility:** Students appreciated WeChat for its easy access to course materials and announcements, enhancing their learning motivation and engagement due to its anytime, anywhere approach.

**Enhanced Interactions:** The platform facilitated closer connections with teachers and peers through direct messaging and voice chats, creating a more interactive and responsive learning environment.

**Safe Practice Environment:** WeChat was praised for providing a safe space for speaking practice, allowing for immediate feedback and thus aiding in language skill improvement.

**Cultural and Educational Content:** The content shared on WeChat, including articles and official account posts, was instrumental in deepening students' understanding of Chinese culture and language.

**Diverse and Relevant Topics:** The variety of topics on the WeChat platform, ranging from practical daily life subjects to cultural discussions, was seen as crucial in applying language skills to real-life contexts and keeping the learning process engaging.

**Improvement in Language Skills:** Students reported significant enhancements in reading and oral communication skills, attributing this to regular practice and interactive nature of WeChat, which also offered a rich repository of teaching resources beyond traditional textbooks.

In summary, the quantitative analysis in this study revealed significant improvements in both speaking and reading scores post-treatment, with the treatment group exhibiting more substantial gains compared to the control group, as evidenced by the t-test results (p<.001). The qualitative analysis further supported these findings, highlighting WeChat's role in providing a flexible, interactive, and supportive learning environment. This multi-faceted approach not only improved language competencies but also enhanced students' cultural understanding and engagement, illustrating the effectiveness of WeChat as a complementary educational tool in language learning contexts.

## Discussion

### Answers to the Research Questions
RQ1: Effectiveness in Skill Improvement

WeChat has been effective in enhancing speaking and reading skills through interactive tools (Xu, J. et al, 2015), real-time communication, immediate feedback, and peer interaction (Li et al., 2018). These features contribute to fluency development and a more engaging learning process.

RQ2: Integration Methods

Integration strategies include enhancing communication and interaction through dedicated WeChat groups, enriching learning resources (Da & Wang, 2014), and providing continuous feedback and cultural integration (Liu & Zhang, 2022). These methods ensure structured, effective learning and cultural immersion.

RQ3: Students' Perceptions

Students perceive WeChat positively, noting enhanced motivation (Tong & Tsung, 2018), convenient access to resources, effective feedback, and promotion of language practice and cultural understanding (Luo & Yang, 2016). These aspects collectively make WeChat a comprehensive tool for language and cultural learning.

In summary, WeChat-based learning activities effectively improve foreign students' language skills in a Chinese course, integrating communication, resources, and cultural aspects into the learning process and being well-received by students.

## Implications for Practice

In our research on WeChat-based learning activities, notable ancillary findings emerged, shedding light on the broader aspects of teaching and learning processes. We observed that while most students positively adapted to using WeChat as a learning platform, some encountered challenges in technology adaptation, primarily in acclimatizing to the new platform. Furthermore, WeChat's flexibility significantly bolstered students' abilities in independent learning, evident in their proactive information sourcing, sharing, and engaging in discussions. These insights reveal that WeChat's utility in educational contexts transcends mere language learning, impacting areas like technology adaptation, self-driven learning, social engagement, and cross-cultural comprehension.

## Conclusion

The study on the use of WeChat in a Chinese language course for foreign students highlights its effectiveness in boosting student engagement, motivation, and language skills development. Key findings include substantial improvements in reading and speaking skills, as evidenced by quantitative data. Qualitatively, students reported positive experiences with WeChat, citing its convenience, interactive nature, and assistance in cultural integration. The study also showcased WeChat's effective integration into language learning, offering a flexible and accessible platform for practice. These results underscore the significant role of technology in language education, particularly for international students learning Chinese, and provide valuable insights for future research and practical applications in using social media and digital platforms in language education.

## Suggestions

To enhance the robustness and applicability of the findings, future research efforts should be delineated as follows:

**Temporal Expansion:** Extend the study duration to a semester or an entire academic year to comprehensively evaluate the long-term effectiveness and sustainability of WeChat in language learning contexts.

**Diversity in Study Population:** Include a broader demographic encompassing varied academic disciplines, age brackets, and nationalities to bolster the generalizability of the study's outcomes.

**Methodological Diversity:** Investigate the impact of WeChat across different educational settings and levels of language proficiency (beginner through advanced), and assess its effectiveness within diverse teaching modalities, including online, in-person, and hybrid formats.

**Technological Integration:** Explore synergies between WeChat and other educational technologies, such as digital course platforms and interactive language applications, to potentially amplify learning efficiency and student engagement.

These recommendations aim to bridge the gap between the current research limitations and the quest for a more holistic understanding of social media's role in educational paradigms.

# References

Albrecht, S. (2021). Current research on the linguistic features of Chinese English. *World Englishes*.

Alamin, A. A., Shaoqing, G., & Le, Z. (2015). The Development of Educational Technology Policies (1996-2012): Lessons from China and the USA. *International Education Studies*, 8 (6), 142-150.

Bećirović, S., Brdarević-Čeljo, A., & Delić, H. (2021). The use of digital technology in foreign language learning. *SN social sciences*, 1, 1-21.

Chen, D. (2013). What can a smartphone offer to learners of Chinese? *Journal of Technology and Chinese Language Teaching*, 4 (2), 86-95. Retrievable from http://www.tclt.us /journal/2013v4n2/chendongdong.pdf

Chen, Z. T., & Cheung, M. (2018). Privacy perception and protection on Chinese social media: A case study of WeChat. *Ethics and information technology*, 20 (4), 279-289.

Chen, X., Ma, J., Wei, J., & Yang, S. (2021). The role of perceived integration in WeChat usages for seeking information and sharing comments: A social capital perspective. *Information & Management,* 58 (1), 103280.

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 13 (3), 319-340.

Dai, G., Liu, Y., & Cui, S. (2018). A Study on the Mobile Learning of English and American Literature Based on WeChat Public Account. *English Language Teaching*, 11 (6), 47-66.

Da, J., & Wang, L. (2014). Using WeChat for Chinese language teaching and learning. TCLT8 Workshop, June 2014, Tufts University.

Dreyer, C., &Nel, C. (2003). Teaching reading strategies and reading comprehension within a technology-enhanced learning environment. *System*, 31(3), 349-365.

Gürleyik, S., & Akdemir, E. (2018). Guiding Curriculum Development: Student Perceptions for the Second Language Learning in Technology-Enhanced Learning Environments. *Journal of Education and Training Studies,* 6 (4), 131. https://doi.org/10.11114/jets. v6i4.2994

Gong, W., & Hong, H. (2019). Using Corpus-based Analysis of Neologisms on China's New Media for Teaching Chinese as a Second or Foreign Language. *Computational and Corpus Approaches to Chinese Language Learning*, 173-194.

Guo, M., & Wang, M. (2018). Integrating WeChat-based mobile-assisted language learning into college English teaching. *EAI Endorsed Transactions on E-Learning*, 5 (17), e6-e6.

Hao, Y. C. (2012). Second language acquisition of Mandarin Chinese tones by tonal and non-tonal language speakers. *Journal of phonetics*, 40 (2), 269-279.

Huang, X. (2019). WeChat-based teaching for an immersion cultural exchange program – a case study in CFL. *Smart Learning Environments*, 6 (1), 1-21.

Huang, X.(2019) WeChat-based teaching for an immersion cultural exchange program–a case study in CFL. *Smart Learn. Environ.* 6, 7 (2019). https://doi.org/10.1186/s40561-019-0087-0

Hong, J.C., Wang, M.Y., Ting, T.Y., Tai, K.H., & Lee, C.C. (2013). The Innovativeness and Self-Efficacy Predict the Acceptance of Using iPad 2 as A Green Behavior by The Government's Top Administrators. *The Turkish Online Journal of Educational Technology*.12 (2), 313-320.

Hou, R., Han, S., Wang, K. et al. To WeChat or to more chat during learning? The relationship between WeChat and learning from the perspective of university students. *Education Information Technology* 26, 1813–1832 (2021). https://doi.org/10.1007/s10639-020-10338-6

Harwit, E. (2017). WeChat: Social and political development of China's dominant messaging app. *Chinese Journal of Communication*, 10 (3), 312-327.

Krippendorf, K. (1980). *Content analysis: An introduction to its methodology.* Sage: Newbury Park, CA.

Luo,C.Yang, Using WeChat in teaching L2 Chinese: An exploratory study. J. *Technology Chinese Language Teaching.* 7 (2), 82–96 (2016) http://www.tclt.us/journal/2016v7n2/luoyang.pdf. Accessed 20 Aug 2018

L.Jin, Digital affordances on WeChat: Learning Chinese as a second language. *Computing Assistance Language Learning.* 31 (1–2), 27–52 (2017). https://doi.org/10.1080/09588221.2017.1376687

Lappin‐Fortin, K., & Rye, B. J. (2014). The use of pre‐/post test and self‐assessment tools in a French pronunciation course. *Foreign Language Annals*, 47 (2), 300-320.

Liu, L. B., Conner, J. M., & Li, Q. (2021). Cultivating teacher professionalism in Chinese and US settings: contexts, standards, and personhood. *Education Inquiry*, 1-18.

Li, F., Fan, S., Wang, Y., & Lu, J. (2021). Chinese university students' experience of WeChat-based English-language vocabulary learning. *Education Sciences,* 11 (9), 554.

Liu, D., & Zhang, H. (2022). Improving students' higher order thinking skills and achievement using WeChat based flipped classroom in higher education. *Education and Information Technologies*, 27 (5), 7281-7302.

Montgomery, C. (2010). *Understanding the international student experience*. Bloomsbury Publishing.

Marion Sadoux. (2017). Harnessing the power of informal learning: using WeChat, the semi-synchronous group chat, to enhance spoken fluency in Chinese learners. *Euro Call*, University of Southampton, 265-270

Ollerhead, S., & Taylor-Leech, K. (2019). Promoting multilingual approaches in teaching and learning. *Learning Portal*. Retrieved on May, 7, 2021.

Packard, J. L. (2000). *The morphology of Chinese: A linguistic and cognitive approach.* Cambridge University Press.

Qi, G. Y., & Wang, Y. (2018). Investigating the building of a WeChat-based community of practice for language teachers' professional development. *Innovation in language learning and teaching,* 12 (1), 72-88.

Romine, X. (2005). Using games in the classroom to enhance motivation, participation, and retention: A pre-test and post-test evaluation. *Culminating Experience Action Research Projects*, Volume 5, Spring 2004, 286.

Studente, S. , Ellis, S. , Garivaldis, S. (2020). 'Exploring the Potential of Chatbots in Higher Education: A Preliminary Study'. World Academy of Science, Engineering and Technology, Open Science Index 165, *International Journal of Educational and Pedagogical Sciences*, 14 (9), 768 - 771.

Stickler, U., & Shi, L. (2013). Supporting Chinese Speaking Skills Online. System: *An International Journal of Educational Technology and Applied Linguistics*, 41 (1), 50-69.

Sigala, M. (2020). Tourism and COVID-19: Impacts and implications for advancing and resetting industry and research. *Journal of business research,* 117, 312-321.

Sumo, D. S., & Bah, M. L. (2021). Chinese Language Education in the Era of Artificial Intelligence; Innovation Development, Pedagogy; the Smart Classroom. *Open Science Framework*.https://doi.org/10.31219/osf.io/axr27

Tong, P., An, I. S., & Zhou, Y. (2020). Holistic and dynamic: teacher-researcher reflections on operating mobile-assisted learning tasks supported by WeChat for Chinese as a foreign language. *Instructional Science*, 48, 729-763.

Tang, Q., Zhou, Y., Huang, X., Huang, S., Qian, L., Li, Y., & Liao, X. (2020). Research on the Application of WeChat Supported PBL in English Teaching of Basic Chemistry for Higher Medical Education for International Medical Students. *Creative Education*, 11, 1690-1696.

Tong, P., & Tsung, L. (2018). L2 Chinese students'perceptions of using WeChat for Chinese learning: A case study. *Global Chinese*, 4 (2), 361-381.

Wang, G., Zhang, W., & Zeng, R. (2019). WeChat use intensity and social support: The moderating effect of motivators for WeChat use. *Computers in Human Behavior,* 91, 244-251.

Woodrow, L. (2017). Motivation in language learning. *Essential competencies for English-medium university teaching*, 235-248.

Xie, T. (2014). Can WeChat to teach Chinese. Presentation at the CLTA-SC tech workshop, October 2014.

Xu, J., Kang, Q., Song, Z., & Clarke, C. P. (2015). Applications of mobile social media: WeChat among academic libraries in China. *The Journal of Academic Librarianship*, 41 (1), 21-30.

Zhao, H., & Huang, J. (2010). China's policy of Chinese as a foreign language and the use of overseas Confucius Institutes. *Educational Research for Policy and Practice*, 9 (2), 127–142. doi:10.1007/s10671-009-9078-1

Zhang, D.Y. (2017). *The possibilities and challenges of a new language learning approach*: exploring language learning via social media beyond the traditional classroom -Taking an "English classroom" on WeChat as an example. 20th NAFLE Annual Conference.