

# The Effect of WeChat Implementation on Learner Autonomy: A Systematic Review

Xianxin Hui<sup>1</sup>, Zhifang Liu<sup>2</sup>, Lingjie Tang<sup>3</sup>

<sup>1</sup>Chongqing Youth Vocational & Technical College, Chongqing, China

<sup>2</sup>Educational Studies, Universiti Sains Malaysia, Penang, Malaysia

<sup>3</sup>School of Foreign Studies, Xi'an Jiaotong University, Xi'an, China

Email: [huixianxin@cqyu.edu.cn](mailto:huixianxin@cqyu.edu.cn), [liuzhifang@usm.student.usm.my](mailto:liuzhifang@usm.student.usm.my), [tlj-danielcooper@stu.xjtu.edu.cn](mailto:tlj-danielcooper@stu.xjtu.edu.cn)

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## Abstract

Due to the fast development of technology and the gaining popularity of WeChat in China, almost all students are equipped with a smartphone and have a WeChat account. WeChat has become one of the most widely used social media in China. Therefore, reviewing the past publication to uncover the feasibility and impact of implementing WeChat in teaching to enhance learner autonomy would provide an insightful guide for future study. Hence, this article systematically reviewed research articles that explored the effect of WeChat implementation to enhance learner autonomy by especially focusing on the research design, findings, and the impact of using WeChat as a technology-based device in the classroom on learner autonomy. The findings from this review are divided due to the inconsistent research methods and the diversity of participants. Several implications are drawn from this review. In particular, future researchers are encouraged to carry out more rigorous studies with well-established instruments and be more specific regarding how the implementation of WeChat improves learner autonomy.

## Keywords

Autonomous Learning, Learner Autonomy, Mobile Devices, Systematic Review, WeChat

## 1. Introduction

The rapid development in technology equips social networking sites with distinctive and ubiquitous features, which make them reliable technological aids to be utilized in the classroom. Integration of social networking sites in educational

contexts is also raising. A significant amount of research has proved the effectiveness of using social networking sites in language teaching and learning context. The mostly explored social networking sites are Facebook and blogging. Facebook group page has already been proven to be effective to engage students in writing (Dizon, 2016). Similarly, the employment of social networking sites is also proven to be beneficial in cultivating students' self-authorship and autonomy (Chen, 2013). Chen (2013) also claimed that unique learning chances can be created by the use of social networking sites for L2 learners. Furthermore, the interactive feature of social networking enables information to be accessible to L2 learners anytime and anywhere, which also facilitates the transition of authentic information to L2 learners (Peng, 2019). Other various benefits of integrating social networking sites into teaching and learning context have been identified as well (Wang et al., 2021; Dizon, 2016).

### **WeChat Pedagogy and Learner Autonomy**

Learner autonomy (LA) is defined as a learning approach. Learners take more control and responsibility in this process at various levels (Holec, 1981). This notion concurs with the definition proposed by Dickinson, who argued that LA is about the degree of independent learning concerning various stages, such as objective making, determining the learning methods, and evaluating the process (Dickinson, 1997). In this process, learners take more initiative role, while, the teachers become a facilitator. Another insightful definition is provided by David Little (1991). He defined autonomy as "a matter of the learner's psychological relation to the learning process and learning content".

WeChat has been employed widely in language teaching classes. The benefits of WeChat integration in teaching and learning context have also been pointed out by a great number of studies. A study investigating the employment of WeChat to improve students' pronunciation has proven that the application of WeChat in teaching pronunciation has better created a self-directed learning environment and students have been able to study more effectively and more flexibly, which concluded that WeChat is effective in improving students' pronunciation (Wang, 2017). Teachers' perceptions of using WeChat in language classes have also been explored (Bradford, 2021), which indicated that WeChat has been perceived as a useful app since its multifunction, such as sending files, having group discussions, and sending and receiving private messages. A study exploring the use of WeChat in academic writing also shows that WeChat is beneficial to students writing efficiency and critical thinking overall, though, some challenges are also reported (Yan, 2019). In an English-spoken class, it is claimed that both novice and advanced learners were capable to conduct authentic conversations with the help of WeChat (Jin, 2018).

Employing WeChat in vocabulary learning has also been explored. However, the findings vary from study to study. A quasi-experimental study investigating the use of WeChat showed that WeChat was effective in improving students'

vocabulary acquisition (Pamintuan et al., 2018). However, studies also proved that WeChat pedagogy failed to facilitate learning. For instance, the study conducted by Li et al. (2021) found that students' performance in vocabulary learning was not improved by using WeChat for a semester.

WeChat has also been proven to be effective in facilitating other aspects of language learning, such as boosting confidence, increasing motivation, and even team building (Yang, 2016; Xu & Peng, 2017). However, a large number of studies also indicate that WeChat failed to foster learning autonomy in a moment posting task (Huang, 2019). Similarly, studies conducted by Tong and Tsung (2018) also revealed some limitations of using WeChat.

Considering the availability of WeChat among Chinese students and its affordances as a device to facilitate teaching, it is very necessary to understand the effectiveness of the implementation of WeChat pedagogy. The past research on the use of WeChat in teaching does not provide a precise guide for educators in the use of WeChat in teaching due to the different findings from past literature.

To address the discrepancies in the findings of past studies and provide a better understanding of the effect of WeChat pedagogy, a systematic review is called, especially the integration of WeChat on the effect of learner autonomy. It is rarely reviewed so far. Hence, to bridge the gap, this systematic review aims to review articles by focusing on the effect of the WeChat implementation in language learning on learner autonomy to uncover the reasons causing the discrepant findings in the past studies to shed light on the further studies.

This systematic review is on the effect of WeChat pedagogy on learner autonomy. In line with the objectives of this review, the following research questions are to be answered.

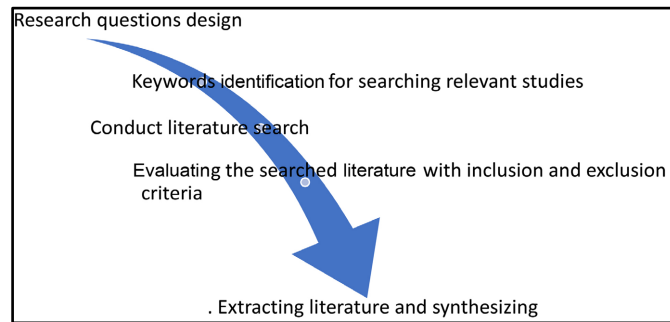
- 1) What are the reasons caused to the discrepant findings of past studies on WeChat mobile technologies and learner autonomy?
- 2) In what ways do the WeChat implementation impact learner autonomy?

## 2. Methodology

This study is a systematic literature review, which summarizes substantive and methodological features of primary studies on a particular topic (Chong & Plonsky, 2021a; Visonà & Plonsky, 2019). A systematic literature review enables the synthesis of a body of research, which can lead to robust and broad conclusions and implications regarding certain research areas (Baumeister, 2012). Due to the difference in each study, the findings from each study cannot be definitive. Therefore, synthesizing and evaluating the findings of a body of research articles are more beneficial than any individual study (Baumeister & Leary, 1997). Thus, by their nature, review articles have a power and value that no single study can match (Cumming, 2014) (Figure 1).

### 2.1. Keyword Identification for Searching Relevant Studies

Being aware of the fact that most studies do not use the term “learner autonomy”



**Figure 1.** A methodical framework for synthesizing qualitative research (Chong & Reinders, 2020).

only, therefore, in this systematic review, twenty terms were included as keywords to search relevant literature. By reviewing the published reviews, the keywords used in this review were also identified as keywords in other reviews (e.g., Chong & Reinders, 2022). Another keyword is “WeChat”, since the purpose of this review is to understand more about the effect of WeChat pedagogy on learner autonomy. The inclusion of WeChat results in twenty-one keywords totally, which are listed below.

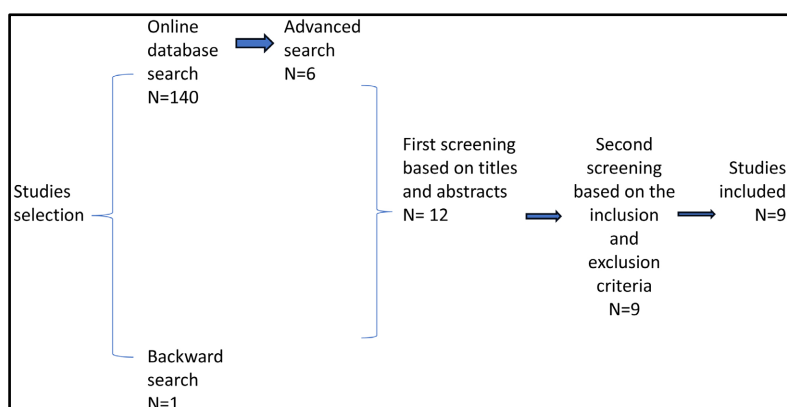
WeChat/adult learning/autonomous learning/extramural learning/good language Learner/independent learning/informal learning/language advising/language counseling/learner autonomy/learning beyond the classroom/learning how to learn/learning in the wild/learning to learn/nonformal language learning/out-of-class learning/self-access learning/self-directed (language) learning/self-motivation/self-regulated learning/strategy instruction

## 2.2. Searching the Literature

The literature-searching processes were carried out with two procedures. First of all, each keyword combined with WeChat was searched through an open database, such as Google Scholar, Research Gate, and an online database subscribed by the researcher’s university. The searched library online database includes SAGE Journals, Science Direct, Scopus, and Springer Link. The Web of Science, ProQuest, and ERIC were also searched. Advanced searches with keywords WeChat AND autonomy, WeChat AND learning autonomy, WeChat AND self-directed were also conducted in Scopus. To ensure a systemic search for the relevant studies, this review employs a backward as well. The second search was based on the references of included articles, aiming to holistically obtain all relevant articles. The two searches collected 42 articles in total. The literature-searching process illustrates in **Figure 2**.

## 2.3. Inclusion and Exclusion of Literature

With the aims of this systematic review in mind, empirical studies are the first inclusion criteria. Both quantitative and qualitative are considered to be qualified to be included, as well as mixed-method studies. The second standard is that articles should implement WeChat as the technology to assist students in studying.



**Figure 2.** The process of selecting relevant studies.

This review aims to provide a holistic review of the effect of using WeChat on learners' autonomy, therefore, the studies are included as long as they explore the effectiveness of the use of WeChat on the influence of learners' autonomy in any subject. There are nine articles selected to be reviewed by following the inclusion criteria. **Table 1** shows the inclusion criteria of this review.

#### Articles included in this review

Titles	Author/Authors	Year of publication
Enhancing international students' engagement via social media—a case study of WeChat and Chinese students at a UK university	P. Cowley; S. Sun; M. Smith	2017
Developing college students' English autonomous learning through WeChat public platform	Huijun Fu; Huijian Wang	2020
Autonomy strengthens the predictive power of involvement load hypothesis on students' productive vocabulary performance	Guoyuhui Huang	2022
Student engagement and authentic language use on WeChat for learning Chinese as a foreign language	Peiru Tong; Zhaohui Yin; Linda Tsung	2022
WeChat-based Interactive Translation Mobile Teaching Model	Fachang Wang; Qingling Wang; Cuifang Du	2021
Writing on WeChat moments: Impact on writing performance and Learner Autonomy	Weiwei Wang; Lianjiang Jiang	2021
Challenges in a Mobile English Telecollaborative Project: Towards a conceptual model	Junjie Gavin Wu; Mark Feng Teng; Lindsay Miller	2022
A Study on WeChat-based collaborative learning in College English Writing	Liping Yan	2019
Engaging EFL Learners through WeChat: A Mobile Phone-Based EFL Learning Project in China	Wuyungaowa	2015

**Table 1.** Literature inclusion criteria.

Criteria	Description
Time period	Publications related to the review topic, which are available in the open database since 2000 onward
Language	English
Type of Research	Primary study
Sections of research	Studies should include all necessary parts such as literature review, data collection, method, participants, findings, and discussion.

### 3. Findings

#### 3.1. Participants

**Diagram 1** depicts the participants from the examined studies. It shows that most participants are EFL university students and non-English major university students, which takes up 66.6%. It indicates that university students are the major participants in the examined studies.

#### 3.2. Class Contents

Class contents refer to the teaching objective in the examined studies. The class contents from the reviewed articles are shown in **Diagram 2**. It shows that most studies focused on their autonomy in general from different contexts. A few studies explored EFL writing autonomy.

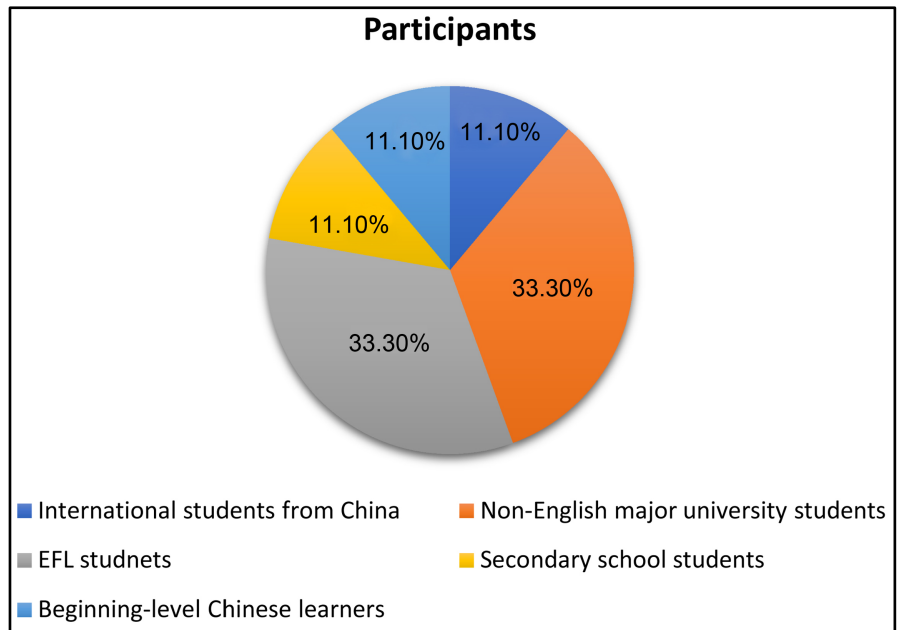
#### 3.3. Levels and Forms of Education

**Table 2** illustrates the educational levels and forms which the examined studies explored. In the examined studies, there is only one study (11.1%) focusing on the effect of WeChat implementation on learner autonomy at the secondary level. The other 8 studies (88.8%) all explored WeChat pedagogy implementation at the tertiary level. In addition, all examined studies were conducted in formal education contexts, such as secondary schools, colleges, and universities. All of the above-mentioned findings indicate that the innovative implementation of WeChat in EFL classes to enhance learner autonomy is mainly explored by tertiary-level lectures in a formal teaching context.

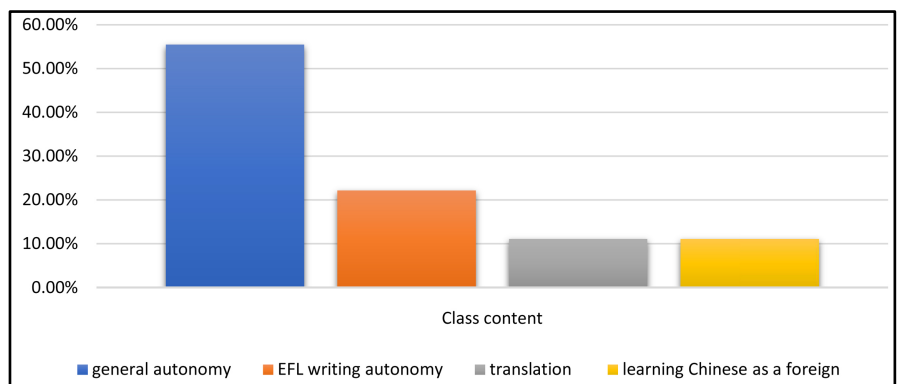
#### 3.4. Research Method and Instruments

Two types of research methods are mainly employed by the examined studies. According to **Table 3**, six studies examined in this review employed a mixed method to explore the effect of WeChat pedagogy on learner autonomy, which takes up 66.6%. The second most used research method is experimental design, which was employed by two studies (22.2%).

Mixed-method seems to be the most plausible method to be employed to explore the effect of WeChat implementation pedagogy on learner autonomy since



**Diagram 1.** Participants from the examined studies.



**Diagram 2.** Class contents in the examined studies.

**Table 2.** Educational levels and forms.

Educational Level	Overall	Percentages	Educational Form	Overall	Percentages
Tertiary Level	8	88.8%	Formal	9	100%
Primary/Secondary Level	1	11.1%	Informal	0	0%

**Table 3.** Research methods utilized in the examined studies.

Research-method	Overall	Percentages
Mixed-method	6	66.6%
Quantitative study	1	11.1%
Experimental-study	2	22.2%

it enables researchers to analyze both quantitative and qualitative data, which could further verify the findings of each part. However, most examined mixed-method studies in this review mainly concern descriptive statistics in the quantitative section. The statistics are mainly used to indicate various percentages differences among the options of questionnaires. Regarding the learner autonomy data collected through interviews, surveys, self-reported evaluations, and teacher observation is dominantly analyzed via thematic analysis (e.g., Wu, Fengteng, & Lindsay, 2022; Yan, 2019; Wuyungaowa, 2015). On the contrary, the two experimental studies analyzed differences between the control group and the experimental group after intervention by using referential statistics (e.g., Huang, 2022; Wang & Jiang, 2021).

As above mentioned, the qualitative data in the examined studies are collected via questionnaires, surveys, self-reported evaluation, and teaching observation. From **Table 4**, it is also obvious to conclude that most examined studies in this review did not utilize well-established instruments. According to **Table 4**, the majority of the reviewed articles (8 articles) relied on self-developed instruments, resulting in 88.8% of reviewed articles collecting qualitative data with self-developed instruments. Furthermore, the validation of the self-developed is also missing in most studies. Only four articles among nine examined articles specially mentioned the validation of the instruments with inferential statistics (e.g., Cowley, Sun, & Smith, 2017; Wu, Fengteng, & Lindsay, 2022; Wang & Jiang, 2021; Tong, Yin, & Tsung, 2022). The self-developed questionnaires, especially the ones without any validation procurers might lessen the rigorousness of the studies. Additionally, the finding of these studies might also tend to be questioned due to the less rigorous study design. Therefore, further studies exploring the effect of WeChat implementation in EFL on learner autonomy are suggested to employ well-established questionnaires and the validation of the adapted or adopted

**Table 4.** Instruments used in the examined studies.

Instruments		Frequency	Percentages	Total
Questionnaires	Adopted/Adopted	1	11.1%	9
	Self-developed	2	22.2%	
Survey	Adapted	0	0%	
	Self-developed	1	11.1%	
Interview	Adapted	0	0%	
	Self-developed	2	22.2%	
Pre-test and post-test questionnaires	Adapted/adopted	0	0%	
	Self-developed	2	22.2%	
Self-reported evaluation	Adapted/adopted	0	0%	
	Self-developed	1	11.1%	
Validation/ Triangulation		4	44.4%	



questionnaires is also required to ensure the quality of studies.

Triangulation of the qualitative data is another issue found in examined articles. Based on **Table 4**, four articles triangulated the qualitative data with three sources. For instance, a study conducted by Wuyungaowa in 2015 triangulated the qualitative data by analyzing data from teacher observation, informal interviews, and questionnaires. Another study triangulated the qualitative data collected from the open-ended questions in a survey, then the results of the open-ended questions are triangulated by quantitative analysis (Tong, Yin, & Tsung, 2022). Similarly, one of the examined studies triangulated the qualitative analysis from interviews with their 8-week chat transcripts of participants' performance in that study (Wu, Fengteng, & Lindsay, 2022).

### 3.5. The Findings of WeChat Pedagogy

An outstanding feature of WeChat enables it to be facilitative in learner autonomy. The Moment function feature, which is a separate space where users could share moments, displays posts from users. The moments can be very interactive. Other users could leave their comments beneath each post. The study has shown that such a function enhances students' autonomous learning. For instance, students were encouraged to post their essays on their moments. Then, other students will comment on their posts. By doing so, the study claimed that students became more autonomous since they will receive peer feedback and likes from others. Another factor boosting learner autonomy is that the peer comments can be anticipated anytime and anywhere. Under such circumstances, learners have been given enough space to interact with each other (Wang & Jiang, 2021). Studies also indicated that the use of WeChat can improve students' autonomy since it reduces the learners' communication barrier between students and lectures (Cowley, Sun, & Smith, 2017).

However, findings from the examined articles are divided. Some reviewed articles did not prove a positive effect of using WeChat on learner autonomy (e.g., Tong, Yin, & Tsung, 2022; Wuyungaowa, 2015). They both indicated that learners need guidance from appropriately designed learning materials and teaching and more teacher-supported teaching to achieve autonomous learning. Another reason is that learners failed to follow the spontaneous chat, which involved more participants. Students might focus too much on accuracy. Therefore, they missed the group chat (Wu, Fengteng, & Lindsay, 2022).

The discrepant findings from the examined articles are invertible due to the variety of participants, different teaching contents, and varied research methods. All three differences among the reviewed articles contribute to the discrepancies in their findings.

## 4. Discussion

This systematic review focuses on past studies investigating the WeChat pedagogy to improve students' autonomy, which has systematically reviewed the

methodology used in the past literature. Several factors that caused the different findings from past literature have been discussed in this section.

The reasons caused to the discrepant findings of past studies on WeChat mobile technologies and learner autonomy can be attributed to two areas. The first one is the different levels of participants and different contents of classes in the reviewed articles. Since the reviewed articles focused on different levels and different classroom contents, it is inevitable to generate different results regarding the use of WeChat to improve students' autonomy. The study has shown the age-related difference in learner autonomy (Hutto, 2009). Therefore, further studies aiming to scrutinize the effect of WeChat implementation on students' autonomy should control the age factor.

Another factor that might result in the different findings is the unbalanced gender participants. Most examined studies did not balance the number of male and female participants. Some reviewed articles even did not mention the number of male and female participants (e.g., Yan, 2019; Wuyungaowa, 2015; Huang, 2022; Wang & Jiang, 2021). However, the unbalanced gender participants might have an impact on the findings. The study conducted by Hutto in 2009 shows that female participants scored significantly higher than male participants in three age groups. Hence, balanced gender participants should be employed in future studies examining the effect of WeChat on students learning autonomy.

The second area is caused by the instruments utilized in the studies. Most of the examined studies in this review employed self-developed questionnaires or surveys, which have not been tested for reliability and validity in some studies (e.g., Yan, 2019). The lax methodology eventually leads to different results regarding the use of WeChat to improve student autonomy in classes. Therefore, future studies are highly suggested to either adapt or adopt well-established questionnaires or surveys to minimize the impact of less-vigorous questionnaires on the findings.

One interactive feature of WeChat enables students to be more autonomous, which is the WeChat moments. Students can share their work on it anytime, which also enables students to interact with a larger number of audiences. The abundant number of audiences accumulates more comments and likes on the word posted by students in their moments. Therefore, students are more motivated to edit their work with great excitement (Wang & Jiang, 2021). Being able to access larger audiences also propels students to pay more attention to the accuracy of their writing. Students self-reported that they might be very embarrassed if their mistakes are pointed out by their audiences. Therefore, they proof-read before they post their work to share in their moments. Eventually, students are more autonomous. Furthermore, the interaction among audiences in the WeChat moments regarding the work posted by participants also encourages the peer-review, which also boosts students' learning autonomy (Wang & Jiang, 2021).

Due to the limited literature exploring the effect of the WeChat pedagogy im-

plementation on learners' autonomy, this review managed to review only 9 articles. In addition, some existing pieces of literature are also not done rigorously. Therefore, the further review might try to incorporate more literature focusing on other technology-assisted apps, which hopes to shed light on future studies exploring the use of WeChat to improve learner autonomy.

### Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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