Exploring the Acceptance of Mobile-Assisted Peer Feedback in English Speaking among Chinese EFL Students

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Abstract. Grounded in the Technology Acceptance Model (TAM), this quasi-experimental study examined the use of Mobile-Assisted Peer Feedback (MAPF) tools via the Tencent Mini Programme among Chinese university EFL learners to enhance English speaking proficiency. A mixed-methods approach was employed, using descriptive statistics for questionnaire data and thematic analysis with NVivo for interview data. Sixty non-English major students (CEFR levels A2-B1) were selected through purposive sampling and assigned to three groups: one-way, dialogic, and visualised peer feedback. Results showed positive responses across all modes, with visualised feedback rated highest for usefulness, behavioural intention, and speaking improvement. The study highlights the need to consider technological, individual, and sociocultural factors in mobile-assisted feedback for language learning. Future research should explore long-term effects, application in diverse contexts, and further refinement of mobile-assisted feedback modes to enhance learner engagement. This study contributes to the research on MAPF in English speaking and offers practical insights for educational technology development.

Keywords: Chinese EFL learners; English speaking proficiency; mobile-assisted peer feedback; Technology Acceptance Model

1. Introduction

English speaking proficiency is frequently disregarded in traditional teaching models, resulting in students having limited chances for oral practice and prompt feedback in the classroom. This is particularly evident in English classes in Chinese Colleges, where large class sizes, often exceeding 80 students, hinder

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meaningful improvement in speaking skills during regular instruction. Nevertheless, it is essential to offer comprehensive and prompt feedback during the language learning process. Feedback serves as a tool to encourage students' self-monitoring, as stated by Carless et al. (2011). This approach helps students track their learning progress, particularly in enhancing oral skills, effectively improving their performance (Chang & Lin, 2020). Peer feedback, as an important formative assessment, plays a key role in foreign language learning. It not only supplements teacher feedback but also encourages student initiative. This fosters active participation and reveals students' thought processes, helping teachers better understand their current learning status (Topping, 2017). It is widely regarded as a highly effective method for enhancing the oral proficiency of language learners.

In recent years, as mobile technology has become increasingly prevalent in educational environments, many scholars have integrated technology with language learning (Kukulska-Hulme, 2012). The widespread use of mobile platforms, especially in countries like China where mobile devices and applications like WeChat are essential in everyday life, creates opportunities for education. The concept of Mobile-assisted peer feedback (MAPF) has become an important tool in this transformative field, offering new pathways for language practice and skill development. MAPF particularly utilises these platforms to facilitate interaction and feedback among learners, enhancing language learning through active participation, collaborative learning, and contextual application of language skills. Early studies by Xu et al. (2016) have elucidated the role and effectiveness of MAPF in enhancing specific language skills, such as vocabulary acquisition (Klimova, 2021), writing and speaking (Wu & Miller, 2020), and the dynamics of peer feedback (Dong et al., 2022; Smith, 2017). Furthermore, research has ranged from designing applications tailored to peer feedback (Nguoi Chui Lam et al., 2022) to comparative analysis of peer feedback methods (Panadero & Alqassab, 2019).

However, research indicates that while the MAPF approach offers transformative potential in EFL environments, its integration into the language learning ecosystem is not without complexities (Xu & Peng, 2022). Factors such as learners' acceptance of mobile devices, and the operability and usability of these devices, directly impact learning outcomes. The Technology Acceptance Model (TAM) is crucial in understanding this. It consists of three main constructs: perceived ease of use, perceived usefulness, and behavioural intention to use. These constructs influence the extent to which learners embrace such applications. Earlier studies mostly focused on the effectiveness of language learning, failing to delve into learners' acceptance of mobile-assisted peer feedback learning (Dawson et al., 2019; Xu et al., 2016). The problem addressed in this study is the lack of understanding of how learners perceive and accept MAPF tools, which is critical for determining their effectiveness in enhancing language learning, particularly in oral English skills.

Therefore, to address this gap, this study examines the acceptance of MAPF by Chinese EFL learners, where English proficiency plays a crucial role in academic

and career success. This study explores three distinct modes of MAPF: one-way feedback, where learners receive feedback but do not interact; dialogic feedback, which involves two-way peer interactions; and visualized feedback, which integrates graphical representations of feedback to enhance understanding. By comparing these modes, the study aims to provide a comprehensive view of MAPF's potential to improve oral English proficiency. The significance of this research lies in its potential to inform both theory and practice. The findings not only deepen our understanding of learners' attitudes toward MAPF but also provide valuable insights into the design and implementation of mobile-assisted feedback systems in language learning. Understanding the varying effectiveness of different MAPF modes can guide educators in selecting the most suitable approaches, thus improving learner engagement and outcomes in similar educational settings.

2. Literature Review
2.1 Technology Acceptance Model (TAM)
In the context of Mobile-assisted Language Learning (MALL), it is essential to underscore a well-established learner-centred model known as the Technology Acceptance Model, originally proposed by Davis (1989). The purpose of TAM is to clarify how users adopt technology. Prior studies have emphasised the inadequacy of acknowledging the potential benefits and drawbacks of mobile technology in the context of language acquisition. It is crucial to take into account the unique language learning environments, learner characteristics, and attitudes. TAM places a strong emphasis on the role of learners. As depicted in Figure 1, the actual utilisation of a specific technology by users is influenced by various variables. User attitude (A) is shaped by two cognitive beliefs: perceived usefulness (PU) and perceived ease of use (PEOU). PU gauges the extent to which learners benefit from technology usage, thereby impacting their acceptance and practical application of technology. PEOU pertains to learners' perception of technology as user-friendly and effortlessly usable, thus influencing their attitude (A) and subsequent intentions to use, followed by actual usage.
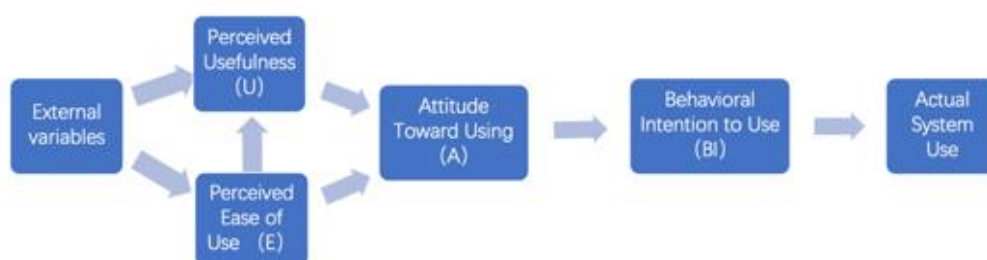

Figure 1: Davis' (1989) Technology Acceptance Model

TAM has consistently served as a pivotal framework for comprehending and analysing the adoption of technological tools in language education. Empirically, Chen Hsieh et al. (2017) critically analysed the dynamic aspects embedded in EFL learners' technology acceptance. Building upon this foundation, Morchid (2019) delved into the factors influencing MALL acceptance in Morocco, establishing a technology-enhanced environment. Additionally, Zhang and Pérez-Paredes (2019)

explored the motivations and patterns of usage among Chinese postgraduate EFL learners concerning MALL resources. Shifting the focus to students' perceptions, Wan Azli et al. (2018) investigated how students in private vocational colleges perceive MALL in English as a Second Language (ESL) settings under the framework of TAM. Similarly, Wang and Hsu (2020) conducted a study on business English learners' attitudes towards MALL applications, utilising TAM to comprehend usage intentions and acceptance variables.

In conclusion, these studies validate the effectiveness of the Technology Acceptance Model (TAM) in predicting and explaining learners' acceptance of technology in language learning. When applied to MAPF systems, TAM offers valuable insights into learners' perceptions and usage of these digital tools, which is essential for understanding the factors influencing EFL learners' adoption of MAPF tools for oral English learning. By adapting TAM to this context, researchers can explore the functional attributes and educational implications of MAPF systems, providing a comprehensive view of how these technologies meet learners' needs and expectations in real-world educational scenarios.

2.2 Mobile-Assisted Peer Feedback

In second language (L2) learning, feedback is crucial for improving speaking abilities. Studies show that peer feedback via computers and mobile devices offers valuable opportunities for language production and immediate correction, essential for acquisition. CALL environments enhance peer interaction through multimedia tasks (Bahari, 2021; Xu & Yu, 2018). MAPF leverages mobile devices' portability to provide feedback and practice in various settings (Xu et al., 2016; Xu & Peng, 2022).

Recent studies have examined the effectiveness of different MAPF types: one-way, dialogic, and visualised. One-way MAPF, asynchronous or synchronous, provides clear, direct feedback quickly without needing a response. This approach promotes unbiased feedback but often limits deeper peer engagement, focusing on task completion (Sumtsova et al., 2018). Conversely, Nicol and Breslin (2014) introduced dialogic feedback, emphasizing shared understanding and negotiation between giver and receiver to improve feedback effectiveness and timeliness (Yang & Carless, 2013). Group discussions on social media platforms like Padlet, WeChat, and WhatsApp facilitate dynamic peer exchanges, boosting confidence, motivation, and creating an engaging environment for interaction (Dai & Wu, 2023; Kartal, 2022). Real-time interactions promote higher engagement, critical thinking, and deeper knowledge processing (Ebadijalal & Yousofi, 2023). The immediacy of this feedback enhances learning and scaffolding, though outcomes vary with the quality of guidance.

Visualised MAPF, using platforms like Mural or Tencent Documents, integrates visual tools to enhance feedback. These platforms support real-time collaborative work, where students construct solutions and discuss content visually. Research by Chen Hsieh et al. (2017) shows tools like Argunaut and 3D concept maps aid group knowledge construction. Gu and Cai (2019) found that tools like QQ facilitate visualized discussions, enhancing conversation and learning while reducing cognitive load and anxiety (Yao, 2022). Visualised MAPF significantly

improves understanding, academic performance, and positive attitudes towards learning.

Studies often focus on specific feedback methods without comparing one-way, dialogic, and visualised peer feedback, limiting understanding of their impact on Chinese EFL learners. Research is needed to investigate Chinese EFL learners' perspectives using TAM, considering ease of use, perceived usefulness, and intention to use. Research should determine if attitudinal differences between these modes are statistically significant and clarify their roles in spoken English learning. Therefore, this research aims to fill these gaps by examining Chinese EFL learners' perspectives on MAPF and comparing the statistical differences among one-way, dialogic, and visualised peer feedback. The study proposes the following research questions:

1. What are the perceptions of Chinese EFL learners regarding the acceptance of MAPF in learning oral English based on TAM (ease of use, perceived usefulness, and behavioural intention to use)?
2. Are there any statistically differences among the three MAPF groups?

3. Research Design
3.1 Sample
This mixed-methods study examined MAPF tool adoption among Chinese EFL students at a public institution in Mainland China. Non-English major college English students were recruited via purposive sampling. Participants aged 18–20 with CEFR proficiency levels of A2 to B1 were recruited based on CET-6 completion and past experience with English learning and MALL applications. To standardise English competency, 60 first- and second-year students were selected. Three experimental groups were given different MAPF modes in their English listening and speaking courses. The research examined how MAPF strategies affected student acceptance and involvement. The study shows MAPF's efficacy in authentic educational contexts by comparing outcomes across teaching methodologies. Surveys of students' attitudes and qualitative feedback on the MAPF approach were used to collect data.

3.2 Syllabus and Content
MAPF activities are conducted in the College English classroom (as shown in Figure 2). The course content is MAPF activities are conducted in College English classrooms, based on the "New Horizon College English: Viewing, Listening, and Speaking" textbook, which follows a standardised syllabus developed by the Department of Education to improve university-level English proficiency. The course includes listening and speaking tasks over 18 weeks each semester, with 8 units covered in two 45-minute sessions per week. Each unit, focused on a specific theme, requires students to give a related presentation as part of their speaking tasks. Peer feedback activities, namely one-way, dialogic and visualised MAPF, begin 15-20 minutes after each presentation, following a specified feedback pattern. Training for peer feedback occurs in the first week with the same trainer concurrently, based on IELTS Speaking scoring rules, and covers complexity, accuracy, and fluency with detailed examples. High-performing students can earn points towards their overall course scores to encourage participation.

45-minute MAPF activity timeline				Post-activity
Before-class	**Topic presentation**	**MAPF activities**	**Teacher comment**	
5 min	8-10 min	20. min	5-10 min	Homework
1. Lecturers explain the speaking tasks in this unit. 2. Arrange students in each group to provide the peer feedback to the topic presenter.	Lecturers present videos of pre-recorded topic presentations submitted by designated groups via a multimedia projector.	1.Students perform peer feedback activities in WeChat Mini program with three different peer feedback modes. Group 1:one-way Group 2: dialogic Group 3: visulised dialogic	1.Students submit peer feedback content anonymously via mobile devices. 2.Lecturer comments and summarises the content of the group presentation.	1.Each presentation group revises and re-record their oral task based on the feedback. 2 . Submit it to the teacher via email.

Figure 2: 45-minute MAPF activity timeline

3.3 Research Instrument
3.3.1 *Three MAPFs*
The three peer feedback modes were conducted on WeChat, a social media app similar to WhatsApp. WeChat's "mini programme" feature allows easy access, low data usage, diverse functions, and easy sharing without needing to download and install, saving phone storage space. This feature supports group work and student collaboration, enabling real-time idea sharing, task collaboration, and peer feedback. WeChat mini programmes facilitate one-way, dialogic, and visualised peer feedback, promoting communication and collaboration among learners.

One-way peer feedback uses the Tencent questionnaire in the WeChat Mini Programme, where learners rate peers' spoken language skills without direct communication. Dialogic feedback employs Tencent files within WeChat, supporting real-time multi-person interaction. This mode fosters dialogue, critical thinking, and collaboration (Er et al., 2021), allowing learners to discuss and reflect on the feedback they receive. Visualised peer feedback uses Tencent mind maps in the Mini Programme, enabling real-time visual collaboration with annotations, symbols, or charts to enhance feedback and discussions. This method is particularly effective for providing targeted feedback on specific aspects of English oral proficiency while promoting collaboration and critical thinking. Figure 3 illustrates the three MAPF methods.
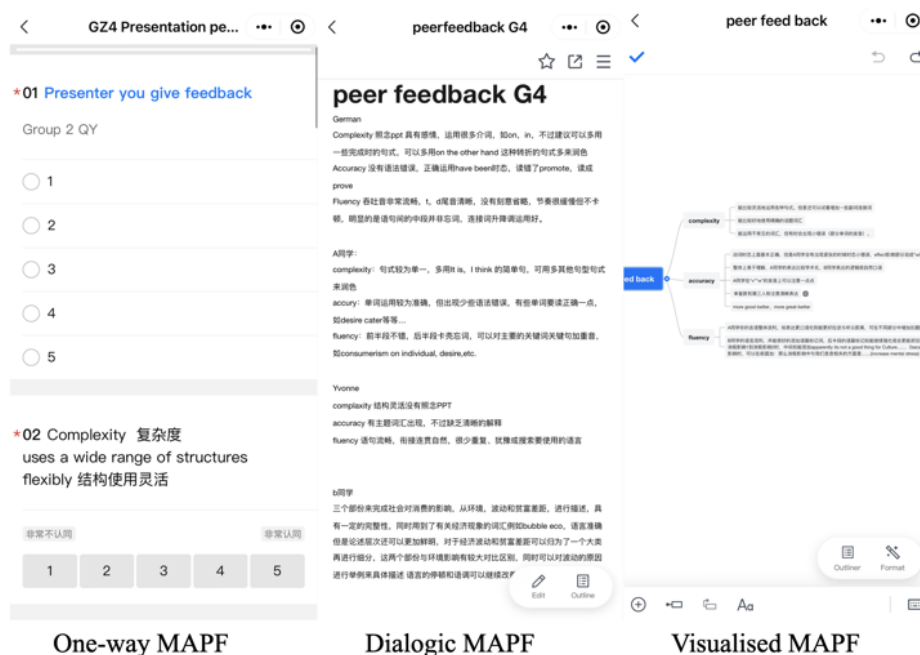
Figure 3: Screenshots of the interface of three MAPFs

3.3.2 *Online questionnaire*
In this research, we utilised an online survey distributed to participants via Tencent's survey platform. The survey was structured based on the TAM by Davis (1989), focusing on the evaluation of mobile technology. Its primary goal is to assess participants' attitudes towards three types of MAPF. Perceived ease of use examines how user-friendly learners find MAPF. Usefulness assesses how effective learners believe MAPF is in improving their English-speaking skills, specifically in terms of complexity, accuracy, and fluency. Behavioural intention reflects the learners' willingness to use MAPF in the future. The survey comprises four demographic inquiries, 12 multiple-choice questions evaluating participant acceptance, and one open-ended query for additional feedback. A five-point Likert scale is employed throughout the survey's main section to gauge varying levels of agreement with each concept.

3.3.3 *Semi-structured interview*
The semi-structured group interviews in this study aimed to explore participants' perceptions of MAPF, with the interview questions cantered around the three key themes of TAM: perceived ease of use, perceived usefulness, and behavioural intention. The content was consistent with the questionnaire. Each interview lasted approximately 30 minutes, and participants were encouraged to express their views in Chinese. Data were collected via WeChat, adhering to strict security and ethical protocols. The study received approval from the academic ethics committee, ensuring participant consent and privacy protection. The data were encrypted, anonymized, and restricted to authorized researchers, with secure storage and regular audits to prevent unauthorized access. This study employed purposive sampling, selecting four students from each group based on their questionnaire scores to ensure representation of different learning performances.

3.4 Data Analysis

In this study, for quantitative data, descriptive and statistical analysis was performed using a calculation of Mean and Standard Deviation to analyse the questionnaire. A Multivariate Analysis of Variance (MANOVA) was employed to examine the differences between groups across the three MAPF modes, testing the impact on perceived ease of use, perceived usefulness, and behavioural intention. The reliability of the questionnaire was tested using Cronbach's Alpha to ensure internal consistency, with a threshold of 0.7. For validity, expert reviews were conducted to ensure the content accurately represented the constructs being measured.

For the analysis of qualitative data from semi-structured interviews, thematic analysis was used as the initial data analysis technique before processing the semi-structured interview data with NVivo software. To ensure accurate interpretation, open coding methods (Rivas, 2012) were applied to initially label the data, allowing themes related to MAPF usage experiences to be extracted. By analysing the participants' responses individually, axial coding was then employed to further classify and organize the codes, resulting in three key themes: perceived ease of use, perceived usefulness, and behavioural intention, based on the Technology Acceptance Model (TAM). To enhance the reliability of the data analysis, a second researcher participated in double coding, ensuring consistency in the coding process and improving the overall reliability of the results.

4. Results

4.1 Perceive Ease of Use

The data of perceive ease of use among three MAPF groups was analysed by SPSS in mean ratings and standard deviations in three aspects, namely, user interface, efficient editing features and appropriate feedback tools. As shown in Table 1, in the domain of user interface perceived ease of use, students in one-way MAPF group rated the user interface highly with an average score of 4.40, SD=0.699 (Table 1), suggesting they found the mini-programme's questionnaire interface to be intuitively designed and user-friendly. Wen stated,

> *"When providing peer feedback through the questionnaire of Tencent's Mini programme, the clear and intuitive layout made it effortless to provide feedback by way of scoring."* (Wen, one-way MAPF)

However, the dialogic and the visualised MAPF group gave slightly lower ratings to the user interface, at 4.20, SD=0.632 (Table 1), indicating that despite receiving positive evaluations, there might be some challenges in interacting with document collaboration or visualisation tools. Zen felt that:

> *"The visualised peer feedback was initially a bit confusing, and it was somewhat difficult to locate certain features. You need to create a mind map with your groupmates which takes time. Perhaps with more usage, it will become more efficient."* (Zen, visualised MAPF)

Regarding efficient editing features (Table 1), both the one-way MAPF and visualised MAPF groups provided high ratings (M=4.40, SD=0.699), demonstrating that the editing features offered by these feedback methods met user needs. Nevertheless, the dialogic MAPF group rated this lower (M=4.10,

SD=0.738), possibly reflecting difficulties encountered during collaborative editing in Word documents. Qiu explained,

> *"Collaborating in Word documents is effective, but it felt a bit cumbersome initially. Like when you create a word document and share with others, you need to choose the option that everyone can edit, or it may be locked for collaborative editing. But I think it might get better when we get familiar with using it."* (Qiu, dialogic MAPF)

When it comes to the suitability of feedback tools (Table 1), although the user interface of visualised peer feedback is more complicated than the other two groups, it gave the highest rating (M=4.60, SD=0.516), signifying the perceived utility of visual tools in the feedback process. Huang commented,

> *"The visual mind maps helped us to see the connections between different pieces of feedback, which was extremely helpful for understanding."* (Huang, visualised MAPF)

This underscores the importance of visual aids in assisting students to comprehend and assimilate feedback as shown in Figure 3.

Table 1: Mean ratings and standard deviations of perceived ease of use by groups

Item	Aspects	One-way MAPF		Dialogic MAPF		Visualised MAPF	
		M	SD	M	SD	M	SD
1	User interface	4.40	0.699	4.20	0.632	4.2	0.632
2	Efficient editing features	4.40	0.699	4.10	0.738	4.40	0.699
3	Appropriate feedback tools	4.00	0.667	4.40	0.699	4.60	0.516

Table 2 shows the MANOVA results for perceived ease of use by MAPF groups on three dependent variables: user interface, efficient editing features, and appropriate feedback tools. Each analysis had 2 degrees of freedom, comparing three MAPF groups. The results indicate no significant differences in user interface and efficient editing features. However, the visualised MAPF group had a higher effect size (Partial Eta Squared=0.147) for suitable feedback tools. Although not statistically significant (Sig.=0.116), this suggests visual feedback tools may impact users' perceived ease of use more than one-way or dialogic feedback.

Table 2: MANOVA result: Between-subjects effects of perceived ease of use by groups

	Dependent variable	Df	F	Sig.	Partial Eta squared
1	User interface	2	.310	.736	.022
2	Efficient editing features	2	.591	.561	.042
3	Appropriate feedback tools	2	2.333	.116	.147

4.2 Perceived Usefulness

In investigating the acceptance of Chinese EFL students towards MAPF in oral English learning, we employed a MANOVA to assess the impact of various MAPF modes on learners' perceptions of improving oral English in three aspects, which are complexity, accuracy, and fluency. Data analysis was shown in Table 3 (means and standard deviations) and Table 4 (MANOVA results). Each analysis maintained a degree of freedom of 2, indicative of comparisons across three distinct MAPF groups.

Table 3: Mean ratings and standard deviations of Learners' perceived effectiveness of MAPFs in oral English improvement

Item	Speaking proficiency	One-way MAPF		Dialogic MAPF		Visualised MAPF	
		M	SD	M	SD	M	SD
1	Complexity	3.80	.632	4.00	.667	4.20	.789
2	Accuracy	3.80	.632	4.40	.699	4.60	.699
3	Fluency	3.30	.675	3.60	.699	4.00	.816

Table 4: MANOVA results: between-subjects effects of perceived usefulness by MAPF group

	Dependent variable	Df	F	Sig.	Partial Eta squared
1	Complexity	2	.818	.452	.057
2	Accuracy	2	3.774	.036	.218
3	Fluency	2	2.297	.120	.145

Concerning complexity, the mean score was highest in the visualised MAPF group (M = 4.20, SD = .789), followed by the dialogic group (M = 4.00, SD = .667), and the lowest score in the one-way MAPF group (M = 3.80, SD = .632). Although the variance between MAPF modes did not achieve statistical significance (F (2, _) = .818, p = .452), a partial Eta squared value of .057 indicated a small effect size. This suggests that the perception of complexity experienced minimal differentiation across different MAPF modes, implying that the choice of MAPF mode has a limited influence on this aspect of the learner's experience. For instance, Su noted,

> "*The scores in one-way feedback let me know clearly which areas of my oral English need improvement, but regardless of the feedback method, the complexity of speaking, such as grammatical and prosodic complexity, seems to be something I need to grasp and improve on my own.*" (Su, one-way MAPF)

Students from the dialogic MAPF group also remarked,

> "*Complexity still depends on personal practice. For my language proficiency, it can be difficult to improve immediately with a few peer feedback. However, giving and receiving feedback with peers clarified*

what spoken complexity means, which might help direct my future oral language learning." (Yang, dialogic MAPF)

In terms of accuracy, the results were significantly distinct. The visualised MAPF group also had the highest score (M = 4.60, SD = .699), followed by the dialogic group (M = 4.40, SD = .699), and the one-way MAPF group had the lowest score (M = 3.80, SD = .632).The differences between MAPF modes were pronounced (F(2, _) = 3.774, p = .036), with a partial Eta squared value of .218, suggesting a moderate to large effect size. This reveals that various MAPF modes significantly influenced learners' perceptions of accuracy, with some modes potentially more conducive to enhancing oral precision. A participant from the dialogic MAPF group shared,

> *"As a feedback giver, real-time editing and feedback through a Word document helped me understand speaking accuracy, including pronunciation, word choice, and grammar. As a recipient, receiving clear error feedback from classmates allowed for prompt corrections, significantly improving my language accuracy."* (Feng, dialogic MAPF)

Findings on fluency were intermediate, exhibiting a moderate effect size (partial Eta squared = .145) but not reaching the significant statistical threshold (F (2, _) = 2.297, p = .120). Nonetheless, the magnitude of the partial Eta squared intimates that, despite the lack of statistical significance, there may be meaningful variations in how different MAPF modes contribute to enhancing learner fluency. Students from all three groups pointed out that fluency largely requires individual practice, and while feedback methods can highlight areas for improvement, they do not produce immediate results. However, a student using visualised MAPF reflected,

> *"Being a feedback giver with visual mind maps allowed me to express my thoughts more fluently as it helped me organise my language and thoughts. I also appreciated receiving mind map feedback from peers because it presented the content clearly and logically, especially as the mind map feedback could lead to improvements in my logical fluency."*
> (He, visualised MAPF)

Overall, accuracy was most influenced by different MAPF modes, while fluency and complexity exhibited smaller degrees of perceptual variation. These insights could inform the development and selection process of mobile-assisted peer feedback tools. Future MAPF tool designs should prioritise features that enhance spoken accuracy while also considering their potential impact on fluency.

4.3 Behavioural Intention to Use
To assess the impact of these different feedback types (one-way, dialogic, and visualised) on students' future intentions to use, we applied a one-way ANOVA and descriptive statistics to process the data (shown in Table 5 and Table 6).

Table 5: ANOVA for assessing group differences in intention to use

	Sum of squares	Df	Mean square	F	Sig.
Between groups	1.267	2	.633	1.462	.250
Within groups	11.700	27	.433		

Table 6: Mean ratings and standard deviations of the three MAPF groups in intention to use

Item	Mean	Standard deviation
One-way	4.40	.699
Dialogic	4.10	.738
Visualised	4.60	.516
Total	30	.669

Descriptive statistics from Table 5 show that the visualised feedback group had the highest mean intention to use in the future (M = 4.60, SD = 0.516), followed by the one-way feedback group (M = 4.40, SD = 0.699), with the dialogic group having the lowest mean (M = 4.10, SD = 0.738). All groups scored above 4.0, indicating a generally positive attitude towards MAPF. The larger standard deviation in the dialogic group suggests more diverse opinions on usage intention.

ANOVA results show no significant differences in usage intention between groups (Sum of Squares = 1.267, $F(2, 27) = 1.462$, p = .250). The within-group sum of squares is 11.700 with a Df of 27, indicating variations are likely due to random differences rather than systematic effects. While students may have preferences for certain feedback types, these do not significantly impact their overall intention to use MAPF tools, possibly due to the high perceived usefulness and acceptance of MAPF tools across feedback types. Further research will explore potential factors like individual learning styles or feedback quality.

During the interviews, students frequently mentioned three main themes: pre-class operational guidance, adaptability to class size, and anonymous instant evaluation. About 40% of students (N=24) in the dialogic and visualised feedback groups noted the need for better pre-class tool usage guidance. Wang reflected,
> *"It wasn't until the third time that I became proficient with the MAPF activity. Initially, we had to explore a bit to find out how to share with peers. Perhaps for future classes, the teacher could lead us through the operations in advance."* (Wang, visualised group)

Some students pointed out the issue of adaptability to class size. Sun suggested,
> *"This peer feedback method is innovative but might only be suitable for small classes. In larger classes with almost 80 students, it could be difficult to manage, and some group members might slack off."* (Sun, dialogic MAPF)

Last, over 50% of participants mentioned the benefits of anonymous instant evaluation.is about anonymous instant evaluation. Weng said,

> *"In previous English classes, group presentations only received general teacher feedback, lacking specific guidance. Anonymous peer feedback in the Tencent mini programme has been beneficial. It deepened my understanding of improving oral skills and allowed me to give suggestions without hesitation. Instant peer feedback enabled immediate adjustments to address my weaknesses."* (Weng, dialogic MAPF)

These findings offer insights into MAPF's application in oral language learning. While visualised feedback scored slightly higher, the high intention to use all feedback types suggests educators can flexibly choose feedback methods based on teaching contexts and student needs. Future research should explore other factors affecting student receptiveness, such as learning styles, technology proficiency, and classroom dynamics.

5. Discussion and Conclusion

This study, based on the Technology Acceptance Model (TAM), examined how Chinese EFL students used three types of MAPF modes—one-way, dialogic, and visual feedback—through Tencent's mini-program for improving their English-speaking skills. The results showed that Chinese EFL learners generally had a positive attitude toward all three feedback modes, with visual MAPF standing out in terms of perceived usefulness and intention to use. This finding aligns with previous literature highlighting the effectiveness of visual tools in enhancing understanding and memory (Vedechkina and Borgonovi, 2021). As Yao (2023) pointed out, providing stronger technical support can personalize peer feedback. Tailored feedback or feedback presented in a more engaging format can stimulate more meaningful dialogue (Jonsson, 2012; Yang & Carless, 2013). Overall, this suggests that visual tools offer potential advantages in delivering peer feedback and improving students' speaking skills.

From the perspective of TAM, in terms of ease of use, the one-way MAPF mode was well-suited for learners with weaker technical skills due to its simplicity and intuitive interface. However, its lack of interactivity limits the depth of feedback. In contrast, the dialogic MAPF enhanced peer interaction and improved collaboration but posed technical challenges for learners less familiar with technology. While statistical significance was not reached, the larger effect size indicates that visual MAPF may have a moderate to strong influence on perceived ease of use. This suggests that although the visual tool (visual MAPF) initially felt more complex, as learners became more familiar with it, its ability to enhance feedback comprehension and facilitate information integration became more apparent.

In terms of perceived of usefulness, the three MAPF modes exhibited differences in addressing complexity, accuracy, and fluency. The study found that while learners' perception of complexity across the different modes was relatively consistent, visual feedback proved more effective in helping students improve their speaking accuracy. This is consistent with previous research, which shows that visual tools aid learners in better understanding feedback and applying it in

practice (Yao, 2023). However, regarding fluency, while feedback tools provided specific recommendations, most students felt that fluency improvement largely depended on personal practice and long-term effort. As echoed in previous studies (Wu & Miller, 2020), feedback helps learners focus on specific issues rather than delivering instant results. Overall, MAPF tools had the most significant impact on accuracy, while improvements in complexity and fluency were more tied to learners' self-regulation.

Moreover, although students showed strong interest in continuing to use MAPF tools, there were no significant differences in behavioural intention across the three feedback modes. This contrasts with previous studies, which indicated that specific feedback types significantly affect user acceptance (Smith et al., 2001). However, other research (Baker & Baker, 2022; Gong & Yan, 2023) suggests that all three MAPF modes effectively promote language learning and meet learners' benchmarks for acceptance and usefulness. This implies that despite differences in feedback formats, their overall impact on learning is similar, and consistent design ensures a similar user experience. If the tools are intuitive and provide meaningful feedback, students tend to perceive them as equally valuable. Therefore, educators should focus on aligning feedback methods with learning goals and adapting them to individual learning styles. This supports Clark & Mayer's (2016) view that the effectiveness of educational technology depends on how it is used, rather than the technology itself. For widespread adoption, technological innovations should be seen as improvements without causing discomfort (Rogers, 2003).

Based on the survey data and student feedback, it's evident that learners' acceptance of mobile learning tools is influenced not only by the tools themselves but also by personal experiences, educational backgrounds, and attitudes towards new technologies. The data showed that while all three MAPF modes were generally well-received, the effectiveness of dialogic feedback varied greatly due to individual differences. It lacks the straightforwardness of one-way feedback and the visual clarity of visual feedback. As Wu and Miller (2020) noted, individual differences play a crucial role in learning outcomes. Some learners, lacking confidence in their peer evaluation skills, were less enthusiastic about participating, further emphasizing that the successful application of feedback tools requires accounting for individual differences and psychological factors to optimize their effectiveness across diverse learners.

In addition, the acceptance of MAPF tools is influenced by technical limitations and class size. This aligns with findings by Hoi and Mu (2021) and Shadiev et al. (2023), who emphasized that providing appropriate guidance and support in large classroom settings is crucial to preventing student disengagement. Therefore, when integrating new technologies into education, students' diverse backgrounds and preparedness must be taken into account. Future research should explore these individual differences to develop more effective implementation strategies.

In sum, this study examined Chinese EFL students' acceptance of Tencent's Mini Programme for MAPF, reinforcing the TAM's applicability in language learning technologies. The core components—ease of use and perceived usefulness— strongly predict learners' acceptance and intended usage. High acceptance rates across different MAPF modes suggest well-designed feedback tools are beneficial regardless of type. However, the effectiveness of specific feedback types, like visualised feedback, highlights opportunities for optimization based on learner needs. Further research should explore how learner attributes, such as learning styles and previous technology use, affect MAPF tool acceptance. The results generalise to Chinese EFL learners and similar language learning environments.

6. Limitations and Suggestions

While this study provides practical guidance for educators and policymakers on using mobile-assisted feedback to enhance English speaking, it has limitations. The small sample of 60 students from a single university may introduce bias. Future studies should expand the sample and conduct research across multiple locations to ensure broader applicability. Additionally, long-term effects of MAPF should be explored, and future research could include a delay post-test to track its impact over time. Despite these limitations, the findings offer valuable insights into the acceptance of MAPF tools and form a strong foundation for future research. Broader studies should include diverse sociocultural contexts and gather data from various educational stakeholders, such as teachers, administrators, and policymakers, to ensure comprehensive results. Further research should continue exploring factors influencing student acceptance and rigorously test these tools in different educational environments for effective integration into practice.

7. References

Bahari, A. (2021). Computer-mediated feedback for L2 learners: Challenges versus affordances. *Journal of Computer Assisted Learning, 37*(1), 24–38. https://doi.org/10.1111/jcal.12481

Baker, M. J., & Baker, W. H. (2022). Qualitative oral-presentation feedback: Comparisons from business professionals, instructors, and student peers. *Business and Professional Communication Quarterly, 86*(1), 5–32. https://doi.org/10.1177/23294906221120015

Carless, D., Salter, D., Yang, M., & Lam, J. (2011). Developing sustainable feedback practices. *Studies in Higher Education, 36*(4), 395–407. https://doi.org/10.1080/03075071003642449

Chang, C., & Lin, H.-C. K. (2020). Effects of a mobile-based peer-assessment approach on enhancing language-learners' oral proficiency. *Innovations in Education and Teaching International, 57*(6), 668–679. https://doi.org/10.1080/14703297.2019.1612264

Chen Hsieh, J. S., Huang, Y.-M., & Wu, W.-C. V. (2017). Technological acceptance of LINE in flipped EFL oral training. *Computers in Human Behavior, 70*, 178–190. https://doi.org/10.1016/j.chb.2016.12.066

Chen, J., Wang, M., Dede, C., & Grotzer, T. A. (2017). Design of a Three-Dimensional Cognitive Mapping Approach to Support Inquiry Learning. Journal of Educational Technology & Society, 20(4), 191–204. http://www.jstor.org/stable/26229217

Clark, R. C., & Mayer, R. E. (2016). e-Learning and the science of instruction: Proven guidelines for consumers and designers of multimedia learning. Wiley. https://doi.org/10.1002/9781119239086.fmatter

Dai, Y., & Wu, Z. (2023). Mobile-assisted pronunciation learning with feedback from peers and/or automatic speech recognition: A mixed-methods study. *Computer Assisted Language Learning, 36*(5–6), 861–884. https://doi.org/10.1080/09588221.2021.1952272

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly, 13*(3), 319–340. https://doi.org/10.2307/249008

Dawson, P., Henderson, M., Mahoney, P., Phillips, M., Ryan, T., Boud, D., & Molloy, E. (2019). What makes for effective feedback: Staff and student perspectives. *Assessment & Evaluation in Higher Education, 44*(1), 25–36. https://doi.org/10.1080/02602938.2018.1467877

Dong, L., Jamal Mohammed, S., Ahmed Abdel-Al Ibrahim, K., & Rezai, A. (2022). Fostering EFL learners' motivation, anxiety, and self-efficacy through computer-assisted language learning- and mobile-assisted language learning-based instructions. *Frontiers in Psychology, 13*, Article 899557. https://doi.org/10.3389/fpsyg.2022.899557

Ebadijalal, M., & Yousofi, N. (2023). The impact of mobile-assisted peer feedback on EFL learners' speaking performance and anxiety: Does language make a difference? *The Language Learning Journal, 51*(1), 112–130. https://doi.org/10.1080/09571736.2021.1957990

Er, E., Dimitriadis, Y., & Gašević, D. (2021). A collaborative learning approach to dialogic peer feedback: A theoretical framework. *Assessment & Evaluation in Higher Education, 46*(4), 586–600. https://doi.org/10.1080/02602938.2020.1786497

Gong, H., & Yan, D. (2023). The impact of Danmaku-based and synchronous peer feedback on L2 oral performance: A mixed-method investigation. *PLOS ONE, 18*(4), e0284843. https://doi.org/10.1371/journal.pone.0284843

Gu, X., & Cai, H. (2019). How a semantic diagram tool influences transaction costs during collaborative problem solving. *Journal of Computer Assisted Learning, 35*(1), 23–33. https://doi.org/10.1111/jcal.12307

Hoi, V. N., & Mu, G. M. (2021). Perceived teacher support and students' acceptance of mobile-assisted language learning: Evidence from Vietnamese higher education context. *British Journal of Educational Technology, 52*(2), 879–898. https://doi.org/10.1111/bjet.13044

Jonsson, A. (2012). Facilitating productive use of feedback in higher education. *Active Learning in Higher Education, 14*(1), 63–76. https://doi.org/10.1177/1469787412467125

Kartal, G. (2022). Evaluating a mobile instant messaging tool for efficient large-class speaking instruction. *Computer Assisted Language Learning, 37*(5–6), 1252–1280. https://doi.org/10.1080/09588221.2022.2074463

Klimova, B. (2021). Evaluating impact of mobile applications on EFL university learners' vocabulary learning: A review study. *Procedia Computer Science, 184*, 859–864. https://doi.org/10.1016/j.procs.2021.03.108

Kukulska-Hulme, A. (2012). Mobile learning and the future of learning. *International HETL Review, 2*, 13–18. https://www.hetl.org/wp-content/uploads/2013/09/HETLReviewVolume2Article2.pdf

Morchid, N. (2019). The determinants of use and acceptance of mobile assisted language learning: The case of EFL students in Morocco. *SSRN Electronic Journal, 5*, 76–97. https://doi.org/10.2139/ssrn.3431747

Nguoi Chui Lam, C., Habil, H., & Min Hui, S. (2022). A mobile application developed for scaffolding ESL learners in providing peer feedback. *Journal of Nusantara Studies, 7*(2), 291–313. https://doi.org/10.24200/jonus.vol7iss2pp291-313

Nicol, D., Thomson, A., & Breslin, C. (2014). Rethinking feedback practices in higher education: A peer review perspective. *Assessment & Evaluation in Higher Education, 39*(1), 102–122. https://doi.org/10.1080/02602938.2013.795518

Panadero, E., & Alqassab, M. (2019). An empirical review of anonymity effects in peer assessment, peer feedback, peer review, peer evaluation and peer grading. *Assessment & Evaluation in Higher Education, 44*(8), 1253–1278. https://doi.org/10.1080/02602938.2019.1600186

Rivas, C. (2012). Coding and analysing qualitative data. *Researching Society and Culture, 3*, 367–392. https://eprints.soton.ac.uk/378176/

Rogers, E. M. (2003). *Diffusion of innovations*. Free Press.

Shadiev, R., Liu, J., & Cheng, P. Y. (2023). The impact of mobile-assisted social language learning activities on speaking skills and self-efficacy development. *IEEE Transactions on Learning Technologies, 16*(5), 664–679. https://doi.org/10.1109/TLT.2023.3243721

Smith, D. A. (2017). Collaborative peer feedback. *International Association for Development of the Information Society*, 183–186. https://files.eric.ed.gov/fulltext/ED579292.pdf

Sumtsova, O., Aikina, T., Bolsunovskaya, L., Phillips, C., Zubkova, O., & Mitchell, P. (2018). Collaborative learning at engineering universities: Benefits and challenges. *International Journal of Emerging Technologies in Learning (iJET), 13*(1), 160–177. https://doi.org/10.3991/ijet.v13i01.7811

Topping, K. J. (2017). Peer assessment: Learning by judging and discussing the work of other learners. *Interdisciplinary Education and Psychology, 1*(1), 7. https://doi.org/10.31532/InterdiscipEducPsychol.1.1.007

Vedechkina, M., & Borgonovi, F. (2021). A Review of Evidence on the Role of Digital Technology in Shaping Attention and Cognitive Control in Children. Frontiers in psychology, 12, 611155. https://doi.org/10.3389/fpsyg.2021.611155

Wan Azli, W. U. A., Shah, P. M., & Mohamad, M. (2018). Perception on the usage of mobile assisted language learning (MALL) in English as a second language (ESL) learning among vocational college students. *Creative Education, 9*(1), 84–98. https://doi.org/10.4236/ce.2018.91008

Wang, Y.-C., & Hsu, L. (2020). Shall we go to the MALL?—Students' perceptions of a business English learning app. *International Journal of Information and Education Technology, 10*(2), 110–116. https://doi.org/10.18178/ijiet.2020.10.2.1348

Wu, J. G., & Miller, L. (2020). Improving English learners' speaking through mobile-assisted peer feedback. *RELC Journal, 51*(1), 168–178. https://doi.org/10.1177/0033688219895335

Xu, Q., & Peng, H. (2022). Exploring learner motivation and mobile-assisted peer feedback in a business English speaking course. *Journal of Computer Assisted Learning, 38*(4), 1033–1045. https://doi.org/10.1111/jcal.12660

Xu, Q., & Yu, S. (2018). An action research on computer-mediated communication (CMC) peer feedback in EFL writing context. *The Asia-Pacific Education Researcher, 27*(3), 207–216. https://doi.org/10.1007/s40299-018-0379-0

Xu, Q., Dong, X., & Jiang, L. (2016). EFL learners' perceptions of mobile-assisted feedback on oral production. *TESOL Quarterly, 51*, 408–417. https://doi.org/10.1002/tesq.335

Yang, M., & Carless, D. (2013). The feedback triangle and the enhancement of dialogic feedback processes. *Teaching in Higher Education, 18*(3), 285–297. https://doi.org/10.1080/13562517.2012.719154

Yao, J., Li, Y., Chen, X., & Yang, Z. (2023). A study on the impact of different real-time interactive visualization interfaces on college students' peer dialogue feedback. Journal of Distance Education, 2023(01), 102-112. https://www.airitilibrary.com/Article/Detail?DocID=P20230518001-N202305180005-00010

Yao, J., Li, Y., Pan, J., & Cheng, M. (2022). Research on the influence of peer dialogue feedback on college students' online deep learning. *Journal of East China Normal University (Educational Sciences), 40*(3), 112–126. https://link.oversea.cnki.net/doi/10.16382/j.cnki.1000-5560.2022.03.010

Zhang, D., & Pérez-Paredes, P. (2019). Chinese postgraduate EFL learners' self-directed use of mobile English learning resources. Computer Assisted Language Learning, 34(8), 1128–1153. https://doi.org/10.1080/09588221.2019.1662455