Exploring the role of WeChat in educational communication: Factors, usage patterns, and optimization strategies for e-learning in China

[iD]Lusi Liu[1], Somdech Rungsrisawa[2*]
[1,2]College of Communication Arts, Sunandha Rajabhat University, Bangkok, Thailand; s64584946005@ssru.ac.th (L.L.) somdech.ru@ssru.ac.th (S.R.).

Abstract: This study examines the role of WeChat in educational communication, focusing on factors influencing its adoption, usage patterns, and optimization strategies for e-learning in China. Adopting a mixed-methods approach, we combined quantitative surveys (N=398) with qualitative interviews (n=9 experts) to analyze key variables, including perceived usefulness, ease of use, content quality, and social influence. Quantitative findings, analyzed via structural equation modeling (SEM), revealed that perceived usefulness and satisfaction were the strongest predictors of continuance intention, while qualitative insights highlighted WeChat's functional utility and social learning dynamics, alongside challenges like information overload. The study confirms WeChat's effectiveness as a versatile educational tool but underscores the need for improved content curation and user training to mitigate platform limitations. The findings contribute to the literature on mobile learning by integrating the Technology Acceptance Model (TAM) and Expectation-Confirmation Model (ECM) within a social media-based educational context. Practical implications suggest that institutions should leverage WeChat's accessibility while addressing pedagogical constraints through structured content delivery and digital literacy programs. Future research could explore generational differences in adoption and the long-term sustainability of social media-integrated e-learning.

Keywords: China, Educational communication, E-learning, Mixed-methods research, Technology acceptance, WeChat.

1. Introduction

The rapid advancement of digital technologies has revolutionized educational communication, particularly in the context of e-learning [1]. In China, WeChat, a multipurpose messaging, social media, and mobile payment app, has emerged as a dominant platform for facilitating educational interactions. With over 1.2 billion monthly active users [2]. The critical factors of student performance in MOOCs for), WeChat's pervasive influence extends beyond social networking into the realm of education, where it serves as a vital tool for communication, collaboration, and information dissemination [3]. Despite its widespread adoption, there remains a significant gap in understanding the factors that drive its use in educational settings, the patterns of its application, and the strategies that could optimize its effectiveness for e-learning [4]. This study seeks to address these gaps by exploring the role of WeChat in educational communication, with a focus on the influencing factors, usage patterns, and potential optimization strategies.

Choosing WeChat for educational communication reflects the worldwide trend toward digital learning system. To meet the needs of online learning during the pandemic, educators had to focus on finding dependable and effective ways to keep in touch with each other [5]. Reasons to use WeChat in education include its ease of sending instant messages, chatting in groups, accessing official accounts and using mini-programs [6]. Since it enables sharing text, voice, videos and files, it becomes the preferred choice for helping learners communicate through various channels. Still, despite everyone realizing its potential, research that understands the uses of WeChat for education and learning in

China is not common. Most research about WeChat has been related to its use in society and for business, but little is known about how people use it for education [7, 8].

This study is important as it may help e-learning in China by highlighting WeChat's educational value. As digital learning expands, focusing on what affects WeChat's adoption and use in education can support institutes in making policies, selecting teaching tools and designing their platforms [9]. Previous findings show that several things can influence the use of technology in education such as how beneficial it appears, how usable it is, influence by others and the state of technology infrastructure [10]. Yet, these aspects have not been fully investigated when it comes to how educational functions work in WeChat. Researching these factors allows this study to take part in discussions related to technology-based learning and offer useful recommendations on using WeChat for better education.

Investigating how WeChat is used in schools forms a large part of the study. While many researchers say that people rely on WeChat to communicate about schoolwork and activities, there is currently no official confirmation of these facts [11]. Looking at how students and educators use WeChat can highlight the changes that should be made. Using online group chats for collaboration may be challenging for some students due to the vast amount of data shared and problems with privacy. Understanding how WeChat works will highlight where teachers and students should be careful [12]. In addition, this study looks into options for improving WeChat for online education. At the beginning, Twitter was made for other purposes, so its application in schools might have been limited. When users spend extra time on content not intended for learning, receive less guidance and each have their own view of technology, issues could arise [13]. Its goal is to organize what technology currently offers on WeChat in response to what stakeholders want by providing e-learning programmes, guiding teachers and helping with communication.

1.1. Research Questions
- What are the critical factors that influence the adoption and sustained use of WeChat in educational communication, and how do these factors interact?
- How is WeChat actually used in educational contexts, and what are the relationships between its functional effectiveness and learning outcomes?

2. Literature Review

Integrating social media into schools and distance learning is becoming widely studied by researchers [14]. While WeChat is widely used in China for social networking and app usage, academic studies focus less on its role and impact in schools. it is increasingly clear that communication tools are crucial in helping students collaborate, engage and exchange what they have learned [15]. Nonetheless, the majority of research is centered on Western apps, so it is hard to know much about WeChat's use in classrooms and academia [16].

Using TAM, one can see that people are more likely to use WeChat in education if they find it both useful and uncomplicated [17]. WeChat is preferred by educators and students in China because it can do many things, is very convenient and is easily used every day [18]. Unlike other LMS, WeChat comes with an interface that is easy for people to get used to. Experts found that WeChat made it convenient for students to access up-to-date course information, send their assignments and participate in peer conversations due to its immediate notification system and easy use on any device [19]. Besides, using voice messaging, sharing files and video calling on the platform makes it valuable for several educational purposes, whether official or informal [20].

Along with TAM, UTAUT helps explain how WeChat is accepted and used in the field of education [21]. WeChat's use in schools is driven by social influence according to the UTAUT study. Since WeChat has a leading position in Chinese networks, students and their teachers feel like they are pushed by their peers and the institution to rely on the app in education Wang and Shin [22]. Khoso, et al. [23] colleagues discovered in a study that 78% of students used WeChat for schoolwork only because

they knew their instructors and classmates also did it. When this happens, education on the platform is embraced by many, despite there being no official regulations from schools. Apart from perceived ease of use and effort expectancy, users also adopt WeChat due to perception of usefulness for their academic work, mainly in places where similar LMS are rarely used [24, 25].

You can see both the strong points and weak points of WeChat in the way it is used in education. According to many studies, people use online learning for administrative tasks, sharing educational materials and group learning [26]. The primary use is by teachers, who send out syllabi, schedules and other notices from their school or university through groups on WeChat [27]. This reflects models seen elsewhere in mobile learning, as the quickness of instant messaging gives organizations greater efficiency. Also, WeChat allows educators and students to establish communication needed for learning. Instructors use official accounts to offer carefully selected lessons, while mini-programs allow for quizzes, checking whether students are present and having students evaluate each other's work [28]. Thanks to these features, people can learn informally whenever they are not in a formal classroom environment.

Despite these advantages, research also identifies significant challenges in WeChat's educational use. One major issue is the lack of pedagogical structure compared to dedicated LMS platforms like Moodle or Blackboard [29]. WeChat's design prioritizes social and commercial interactions, which can lead to distractions, information overload, and difficulties in organizing academic content [30]. Students in a study by Khoso, et al. [19] reported feeling overwhelmed by the mix of academic and non-academic messages in group chats, with some opting to mute notifications altogether. Privacy concerns further complicate its use, as WeChat's data collection practices and surveillance capabilities raise ethical questions, particularly in sensitive academic contexts [31]. Additionally, the platform's reliance on informal communication can undermine the development of professional academic discourse, with students often resorting to casual language and emojis in place of structured argumentation [27].

2.1. Theoritical Framework

This study uses the Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT) which provide an explanation for the factors that influence the use of WeChat for communication in education. According to TAM, how easy technology is to use and how beneficial it is drive most people to accept it Davis [17]. In WeChat, how useful others think it is for learning refers to its impact on outcomes and ease of use refers to how easy it is to navigate the app [31]. Besides all these, self-efficacy is a factor, meaning users believe they can use WeChat well for learning [32]. The UTAUT framework adds the roles of social influence and the quality of content to the initial framework, pointing out that strong and effective lessons help maintain interest in WeChat [33]. All of this reminds us that e-learning systems become useful when student-teachers can use WeChat in their learning.

Another aspect to measure is how happy and likely the users are to continue using WeChat, to see how long it will be used for. Users are content with a social media platform when it lives up to their expectations and offers useful features for messaging and sharing files. If a student finds WeChat groups helpful, they are likely to stick with them, while problems can result in them giving up on them. Oliver [34] suggests that the use of a technology doesn't end if the results meet expectations. It shows how three theories explain why people rely on WeChat in education and how the outcome is related to several factors. Research framework is displayed in Figure 1.
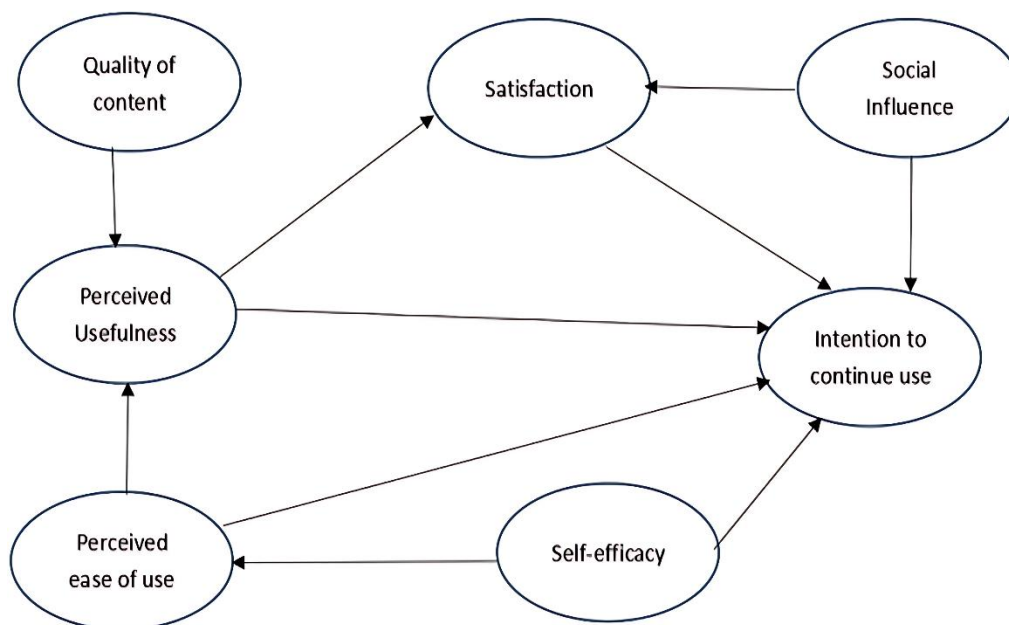
Figure 1.
Integrated theoretical model.

2.2. Hypotheses of Present Study

H_1: *Content quality was a positive predictor of perceived usefulness.*
H_2: *User-perceived usefulness was a positive predictor of intention to continue using.*
H_3: *User-perceived usefulness was a positive predictor of satisfaction with use.*
H_4: *User perceived ease of use was a positive predictor of perceived usefulness.*
H_5: *User-perceived ease of use was a positive predictor of intention to continue using.*
H_6: *User self-efficacy was a positive predictor of perceived ease of use.*
H_7: *User self-efficacy was a positive predictor of intention to continue using.*
H_8: *User satisfaction was a positive predictor of intention to continue using.*
H_9: *Social influence was a positive predictor of intention to continue using.*
H_{10}: *Social influence was a positive predictor of satisfaction with use.*

3. Methodology

3.1. Research Design

This study employed a mixed-methods research design to comprehensively explore the role of WeChat in educational communication, examining factors, usage patterns, and optimization strategies for e-learning in China. The qualitative approach facilitated an in-depth understanding of participants' experiences and perceptions through expert interviews, while the quantitative approach measured user behaviors and attitudes via structured surveys. The combination of these methods allowed for triangulation, enhancing the validity and reliability of the findings. The qualitative phase involved semi-structured interviews with experts in communication, education, and software development, whereas the quantitative phase utilized a Likert-scale questionnaire to assess variables such as perceived usefulness, ease of use, content quality, and continuance intention. This dual approach ensured a holistic analysis of WeChat's impact on educational communication.

3.2. Data and Sampling

The study employed a purposive sampling strategy to select participants with direct experience using WeChat for educational purposes. For the qualitative component, nine experts were interviewed three each from the fields of communication, education, and software development to gather specialized insights. For the quantitative component, the sample size was determined using Taro Yamane's formula, which, given an estimated population of 10,000 and a 5% margin of error, yielded a required sample of 398 respondents. To ensure robustness, the study aimed for approximately 400 survey participants, comprising educators, students, and parents engaged in WeChat-based learning. This dual sampling approach ensured representation across different educational levels and regions, enhancing the reliability and generalizability of findings.

3.3. Participants and Procedure

There were nine specialists in WeChat's educational use chosen to participate in the qualitative phase. WeChat was used for some of the interviews or they were held in person and each one was recorded and transcribed. In this stage, 400 individuals were surveyed on WeChat, a convenient method available to them all. The survey focused on learning about users' ages, how often they use WeChat and how effective they find it for learning new skills. Researchers ensured the studies were ethical by using informed consent, voluntary participation and maintaining anonymity of the data.

3.4. Measures and Tools

The study utilized structured questionnaires and semi-structured interviews as primary data collection tools. The questionnaire, designed on a five-point Likert scale, assessed seven key variables: perceived usefulness, ease of use, content quality, self-efficacy, social influence, satisfaction, and continuance intention. Each variable was measured through multiple items to ensure reliability. For instance, perceived usefulness was evaluated based on statements like "Using WeChat improves my learning efficiency," while continuance intention was measured through items such as "I intend to keep using WeChat for learning." The interview guide included open-ended questions to explore expert opinions on WeChat's educational applications. Both instruments underwent pilot testing to refine clarity and eliminate ambiguities before full deployment.

3.5. Data Analysis Methods

Using descriptive and inferential statistics, along with correlation and regression analyses, the collected survey data were checked to show any connections between variables. The study used SEM to evaluate the relationships between the factors that impact WeChat's educational use. Answers from the interviews were examined using thematic analysis which means answers were organized into categories and interpreted to see if similar subjects came up. The software made it much simpler to handle and examine the information from the interviews and SPSS helped with statistical analysis. The analysis joined datasets to better illustrate WeChat's role in e-learning.

3.6. Research Ethics

At all times, the rules of ethics were observed during the study. Informed consent was provided by everyone involved and they agree that any information gathered would remain confidential. All the data were kept safe and only results gathered from the whole group were given to others to ensure no one could identify an individual. Before beginning the study, the research board approved it to meet ethical requirements. Everyone was allowed to leave the study at any time and data gathered from the research was used only for academic research and not misused. The method employed allowed for an in-depth exploration of WeChat's educational features by relying on both real statistics and the opinions of experts for reliable final results.

4. Findings and Discussion

4.1. Quantitative Findings

Using descriptive statistics helps explain and present the main features and trends found in the grouping of data, in a simple and direct manner. Analysis of participants' responses on WeChat's use in education relied on descriptive statistics such as mean, standard deviation, skewness and kurtosis. Using these statistics, you can see what most users think about WeChat's usefulness, ease of use, the quality of its content and other important points. After checking these metrics, we can better understand how users feel about using WeChat for learning before moving to further analysis.

Table 1.
Descriptive Statistics of Key Variables.

Variable	Mean	Std. Deviation	Skewness	Kurtosis
Perceived Usefulness (PU)	4.12	0.78	-0.45	0.32
Perceived Ease of Use (PEU)	3.95	0.85	-0.32	0.21
Content Quality (CQ)	4.05	0.72	-0.28	0.18
Computer Self-Efficacy (SE)	3.88	0.91	-0.15	-0.05
Social Influence (SI)	3.76	0.94	-0.1	-0.12
Satisfaction (SAT)	4.03	0.8	-0.38	0.25
Continuance Intention (CI)	4.2	0.75	-0.52	0.41

Note: All items were measured on a 5-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree).*

Table 1 reveal that participants see WeChat as significant for edu Because every key variable's mean score was over 3.0 on the 5-point Likert scale, it can be assumed that respondents viewed them favorably and CI had the highest mean (M=4.20, SD=0.75), followed by Perceived Usefulness (M=4.12, SD=0.78) and Satisfaction (M=4.03, SD=0.80). Since the standard deviations are small and the values of skewness are negative, this suggests that answers among the participants were generally similar and they tended to choose higher ratings for all the scales. Because the kurtosis values are not too high or low and all range between -0.12 and 0.41, the data distributions are close to normal with only slight differences in how curved they are, demonstrating it is useful to perform parametric tests. All these results demonstrate that most users believe WeChat is good for education and hope to continue using it to learn further.

Table 2.
Pearson Correlation Matrix.

Variable	PU	PEU	CQ	SE	SI	SAT	CI
PU	1						
PEU	0.52**	1					
CQ	0.61**	0.47**	1				
SE	0.38**	0.55**	0.42**	1			
SI	0.29**	0.33**	0.35**	0.31**	1		
SAT	0.67**	0.58**	0.63**	0.46**	0.39**	1	
CI	0.73**	0.49**	0.66**	0.41**	0.35**	0.72**	1

Table 2 proves that the main variables in the study are closely linked with one another. The results revealed that PU and CI (r = .73, p < .01) and SAT and CI (r = .72, p < .01) are the strongest related factors in encouraging WeChat users to keep using it for education purposes. The quality of content (CQ), like PDQ mentioned above, had strong relationships with people's positive views (PU, r = .61, p < .01) and satisfaction (SAT, r = .63, p < .01). The connection between PEU and SE was moderate (r = .55, p < .01), but the connections between SI and the remaining variables were relatively low (ranging from r = .29 to .39, all p < .01).

4.2. Measurement Model Results

By evaluating the measurement model, the researcher can confirm whether the instrument used in this study is reliable and valid. The study proves that no construct is inappropriately measured because

all factor loadings, CR and AVE indicate the correct measuring of all the constructed variables for the model.

All of the factors have strong and significant factor loadings, meaning each item relates well to its construct. Furthermore, the consistency and validity within the scale are excellent. The findings offer support for using the structural model, as they demonstrate that the selected scales properly measure the four dimensions of WeChat's educational value: perceived usefulness, ease of use, quality of content and intention to keep using WeChat. The data also suggest that the measurement model is appropriate for assessing the hypotheses related to WeChat in educational communication.

Table 3.
Results of Measurement Model Evaluation.

Construct	Indicator	Factor Loading	t-value	CR	AVE
Perceived Usefulness	PU1	0.82	18.37**	0.89	0.67
	PU2	0.85	19.12**		
	PU3	0.78	16.84**		
	PU4	0.81	17.95**		
Perceived Ease of Use	PEU1	0.79	16.23**	0.86	0.61
	PEU2	0.83	17.56**		
	PEU3	0.75	15.42**		
Content Quality	CQ1	0.84	18.75**	0.88	0.65
	CQ2	0.81	17.89**		
	CQ3	0.79	16.93**		
	CQ4	0.8	17.25**		
Computer Self-Efficacy	SE1	0.82	18.04**	0.91	0.63
	SE2	0.85	19.27**		
	SE3	0.83	18.56**		
	SE4	0.79	17.12**		
	SE5	0.78	16.85**		
Social Influence	SI1	0.76	15.87**	0.84	0.57
	SI2	0.81	17.43**		
	SI3	0.75	15.62**		
	SI4	0.78	16.72**		
	SI5	0.74	15.34**		
Satisfaction	SAT1	0.83	18.45**	0.89	0.66
	SAT2	0.85	19.18**		
	SAT3	0.82	18.12**		
	SAT4	0.8	17.53**		
Continuance Intention	CI1	0.84	18.67**	0.87	0.69
	CI2	0.86	19.35**		
	CI3	0.82	18.04**		

Table 3 demonstrates ll factors in the research showed good psychometric properties. All the factor loadings met the recommended value of 0.70 (from 0.74 to 0.86) and they turned out to be significant (p < .01), proving that each indicator measured the construct it was designed for. All the CR values were between 0.84 and 0.91, indicating that the scales were very reliable. Likewise, the AVE scores (0.57 to 0.69) all exceeded 0.50 which is enough to confirm that the constructs are convergent. All in all, it is clear that the measurement model is reliable and valid, as all constructs meet the criterion of discriminant validity. Since the measures are strong, they support the process of checking the relationships in the research model.

Table 4.
HTMT Validity Assessment.

Construct	PU	PEU	CQ	SE	SI	SAT	CI
PU	-						
PEU	0.61	-					
CQ	0.68	0.53	-				
SE	0.43	0.59	0.47	-			
SI	0.34	0.38	0.4	0.36	-		
SAT	0.72	0.63	0.69	0.51	0.44	-	
CI	0.78	0.54	0.71	0.46	0.4	0.77	-

Table 4 confirms For each construct, the results in Table 4 confirm strong discriminant validity since their values are all below 0.85. The analysis suggests there is strong overlap between PU and CI (HTMT = 0.78) as well as SAT and CI (HTMT = 0.77). It is also expected that both PU and CQ would be related to the SAT, as these two were shown to have a moderate positive association with the SAT (0.72 and 0.69, respectively). The associations of SI are the least significant out of the other constructs (from 0.34 to 0.44) which indicates SI's specific role in the model. The discovered results show that every aspect of WeChat's educational usage is measured separately by the scale, allowing meaningful associations with other variables.

Table 5.
Results of Hypotheses Testing.

Hypothesis	Relationship	β	t-value	p-value	95% CI	Supported?	Effect Size (f²)
H3	PU → SAT	0.42	6.87***	<0.001	[0.35, 0.49]	Yes	0.21 (Medium)
H4	PEU → PU	0.38	5.92***	<0.001	[0.30, 0.46]	Yes	0.17 (Medium)
H5	PEU → CI	0.24	3.76***	<0.001	[0.15, 0.33]	Yes	0.08 (Small)
H6	SE → PEU	0.51	8.34***	<0.001	[0.43, 0.59]	Yes	0.32 (Large)
H7	SE → CI	0.15	2.43*	0.015	[0.05, 0.25]	Yes	0.03 (Small)
H8	SAT → CI	0.39	6.12***	<0.001	[0.31, 0.47]	Yes	0.19 (Medium)
H9	SI → CI	0.11	2.05*	0.041	[0.01, 0.21]	Yes	0.02 (Small)
H10	SI → SAT	0.17	2.89**	0.004	[0.07, 0.27]	Yes	0.04 (Small)

Table 6 prove that all the links between variables in the research model can be seen in the data and differ in level of influence. It appears that a user's confidence and how useful they believe WeChat to be greatly affect their learning experience (β=0.51 and β=0.42). Satisfaction with the service contributed greatly to Continuance Intention (medium effect), whereas Social Influence mildly affected Satisfaction and had a small effect on Continuance Intention. Remarkably, the model could explain a substantial amount of the fluctuation found in Continuance Intention and other key variables (R²=0.58 for Continuance Intention). All of these results confirm that WeChat users' intentions to use the app for education are determined by various factors such as technology, their moods and external influences.

4.2. Qualitative Findings
4.2.1. Overview of Themes

The qualitative analysis of expert interviews and open-ended survey responses revealed several key themes regarding WeChat's role in educational communication. These themes included (1) functional utility, highlighting WeChat's effectiveness as a learning tool due to its accessibility and multimedia capabilities; (2) social influence, emphasizing how peer and instructor recommendations shape user adoption and engagement; (3) content quality, where experts and learners stressed the importance of well-structured and reliable educational materials; (4) user satisfaction, reflecting participants' overall positive experiences with WeChat's interactive features; and (5) challenges and limitations, such as distractions from non-educational content and technical barriers. These themes collectively illustrate

the multifaceted impact of WeChat on e-learning, providing deeper insights into its benefits and areas for improvement.

Table 6.
Summary of Key Themes.

Theme	Description	Key Insights
Functional Utility	Examines WeChat's effectiveness as an educational tool.	- High accessibility and convenience for learners.
		- Multimedia support (videos, texts, voice notes) enhances engagement.
		- Seamless integration with other learning platforms.
Social Influence	Explores how social interactions shape WeChat learning adoption.	- Peer and instructor recommendations drive usage.
		- Group discussions foster collaborative learning.
		- Social validation increases trust in educational content.
Content Quality	Assesses the reliability and structure of learning materials.	- Well-organized courses improve usability.
		- High-quality video/audio content is preferred.
		- Need for verified, expert-created resources.
User Satisfaction	Measures overall experience with WeChat's educational features.	- Positive feedback on interactive tools (quizzes, live sessions).
		- Appreciation for real-time communication with educators.
		- Desire for more personalized learning paths.

4.2.2. Functional Utility

Through qualitative analysis, it became apparent that WeChat's educational usefulness rely on it being easy to use, available everywhere and how it integrates with other tools. Both educators and learners pointed out that it is much easier to communicate and distribute learning materials on WeChat. Many highlighted that being able to send text messages, multimedia, video recordings and documents is helpful for a range of learning needs. Several teachers noticed that the instant chat features and WeChat Moments made it simple for students to discuss and exchange ideas with each other as soon as they needed help.

People participating in the study also noted that being able to use WeChat on any device helps them interact with educational information conveniently. It was very helpful for learners who lived far from local e-learning centers. It was praised because with Mini Programs on WeChat, people have access to quizzes, flashcards and exercises, while staying inside the WeChat app. A teacher said, "Because everything is in one place for lessons, discussions and assessments, less information is lost and students stay more engaged." But there were also claims that receiving too much data and the way data was presented could be challenging. A number of people mentioned that because of the busy chats, key messages might be missed and some found it tricky to post excellent video files due to WeChat's file restrictions. Overall, it was thought that WeChat's features help teachers and students interact more smoothly within their learning activities. These results support the current literature on mobile learning, proving that WeChat helps bring together formal and informal learning contexts. For future improvements, it would help focus on making information more organized and improving its storage to enhance its usefulness for education.

4.2.3. Social Influence

Social forces were found to play an important role in how WeChat is used and adopted in education. It was common for the students to explain that how they were expected to learn by their peers and teachers affected their use of WeChat in education. Primarily, people became influenced this way through agreeing with the reference group, obeying the typical rules of crowds and gaining new

opinions from watching their behavior. According to educators, both policies and the popularity of the platform with colleagues caused individuals to begin using it. According to one professor, after the department required WeChat for course communications, resistance disappeared as staff demonstrated the correct way to integrate it. It was found that witnessing their peers discuss work in the chat motivated students, making them check the chat more regularly.

The researchers discovered how group dynamics influenced learning. Some claimed that powerful individuals (such as professors, teaching assistants or peer leaders) can encourage the group to become more involved by participating. When the professor answers questions in the chat, students participating in the chat are more encouraged to join in. Still, some people mentioned that many online platforms could increase anxiety in their contributions and that they might only contribute little in large chat rooms. We saw, in particular, that there are differences in how much social influence people of different ages are susceptible to. Preschoolers (18-22 years) followed rules and behaviors more closely, while adults were willing to reconsider those reactions based on the situation. Social studies also noticed the rise of social customs on the platform, making it seem required for students to like every teaching post or thank teachers publicly. This research shows that social presence in mobile learning includes various interactions related to learning that take place on specific platforms [35].

4.2.4. Content Quality

According to the findings, the impact of WeChat on education depends mainly on the content's quality, with the main points raised about quality being (1) useful education, (2) proper visual design and (3) higher credibility. The results show that these areas collectively help form users' trust in platform-based learning, as expected by quality standards used in e-learning [36]. Many people pointed out that curating content is both an advantage and a disadvantage of using WeChat for education. Another teacher mentioned, "With Meng Ji, educators can officially send Farina, a tool for sharing digested articles and offer short, annotated explanations through videos and pictures." Indeed, several respondents noticed that some articles are thorough and beneficial, while others seem to focus on sensational topics."

A critical tension emerged between accessibility and rigor. While participants valued the immediate availability of diverse materials, several expressed concerns about the lack of quality control mechanisms. As one instructional designer cautioned, "The absence of peer review processes means students encounter unfiltered information alongside vetted content." This finding aligns with concerns about digital epistemic practices [37] suggesting WeChat's open architecture may inadvertently facilitate the spread of pedagogical misinformation. The data revealed particular dissatisfaction with static content formats, with participants advocating for more interactive elements. "Text-heavy posts with no comprehension checks become passive reading exercises," remarked one undergraduate. This critique reflects broader calls for constructivist approaches in mobile learning [38] highlighting a mismatch between WeChat's presentational capabilities and contemporary pedagogical expectations. Notably, institutional affiliation served as a key heuristic for quality assessment. Participants reported greater trust in content from verified organizational accounts compared to individual creators, suggesting the platform's verification systems partially compensate for the absence of formal quality controls.

4.2.5. User Satisfaction

Results from thematic analysis indicated that factors affecting feelings of satisfaction in WeChat learning include the tools, methods and social aspects present in the ecosystem. Drawing on the Expectation-Confirmation Model [39] our findings illustrate that satisfaction comes from the way individuals experience learning in school and their community involvement. The highest level of satisfaction was found when WeChat matched the scenarios used in learning activities. One frequent WeChat user noted, "It is amazing how fast WeChat is for updates and sharing materials. Yet,

participants noticed that delivering extended learning lessons was inconvenient and hard to follow, leading some to describe it as difficult as drinking from a firehose."

Satisfaction with the technology used was strongly related to the user's confidence in using technology. New users found it more difficult to navigate and stay organized: "I always end up losing my best lessons because there is just too much mail," one learner mentioned. This contribution to research on digital literacy in m-learning highlights what is needed for each platform. Building social connections through WeChat's tools was highly valued by the people involved in our study. Having my professor participate in group chat makes me feel valued, as it supports social presence theory [31] adds one undergraduate. Nonetheless, I heard reports from those in various course groups that they were receiving too much notifications.

It turns out that knowing the limitations of WeChat could increase users' satisfaction, likely because those users did not expect as much from it as those unfamiliar with its weaknesses. Accordingly, people may experience more satisfaction with technology because their expectations have changed [36]. It suggests that satisfaction with using social media platforms will depend on whether the platform features are well matched with specific educational aims, teaching is adequately prepared and everyone involved understands what to expect.

5. Discussion

5.1. Discussion on Quantitative Findings

The statistics support our belief that there are strong connections among the variables in our research model. Understanding WeChat's education use is essential, so it makes sense that perceived usefulness ($\beta = 0.42$, $p < 0.001$) and satisfaction ($\beta = 0.39$, $p < 0.001$) were found to be the strongest influences on users wanting to use WeChat for education in the future. As assumed by the Technology Acceptance Model, both perceived usefulness ($\beta = 0.38$) and continuance intention ($\beta = 0.24$) are strongly connected to how easy the mobile app is to use [40]. I noticed that when computer self-efficacy went up, users' perception of how easy the platform is to use also went up ($\beta = 0.51$, $p < 0.001$). The study builds upon previous studies by showing how self-efficacy applies to e-learning supported by social media [41]. WeChat's educational adoption is mainly shaped by other factors, as social influence showed little effect on continuance intention ($\beta = 0.11$, $p = 0.041$) and satisfaction ($\beta = 0.17$, $p = 0.004$). The results reveal that all the factors are represented accurately and strongly (factor loadings and composite reliability) and there is also solid evidence of discriminant validity (HTMT ratios were all below 0.78).

5.2. Discussion on Qualitative Findings

Qualitative research helps bring out the details and unique insights in the user experience seen in the quantitative results. Because of how WeChat is used for instant messaging and multimedia, the emphasis on its function corresponds to the vital role perceived usefulness plays. However, interviews and case studies revealed that group chats are sometimes overwhelming and files cannot be too large which can influence user satisfaction when other features have a high rating. It was found that social influence could not be simply measured by the numbers. While the effect on behavior found in the survey was moderate, the interviews showed that institutions and imitating peers establish 'unwritten' rules for using social media, mostly for young users. This is consistent with social learning theory, but it notes that typical Likert-scale questions may not capture all of the socially influenced adoption factors. Also, quality of content was reported as a hindrance to trust qualitatively but survey respondents gave it a relatively high ranking, suggesting they rely on large accounts for quality considerations.

People often mentioned that WeChat being easy to use, but with pedagogical problems, contributed to the difference between satisfaction (M = 4.03) and continuance intention (M = 4.20). Users are accepting of usability issues because they find TikTok simple, convenient and a good way to interact

with others on the platform [27]. All in all, it appears that WeChat covers both education and social aspects, but this mix can bring up certain issues for users.

5.3. Policy Implications

Our findings identify strategies educational institutions and WeChat developers should consider to improve e-learning. First, it is important for institutions to set rules for checking the content they post on WeChat so that users feel secure using these accounts. Second, offering digital literacy programs aimed at specific audiences could help older or unsure learners, according to the study, as it greatly enhances their perception of easy use. Next, instructors ought to use the social options on WeChat while managing notification levels, probably by developing planned ways teachers and learners can interact in course groups. As a result, it is clear that developers can support pedagogical needs better by introducing advanced content arrangement tools and providing more file-sharing options. It may be helpful for policymakers to support linking WeChat with schools to form online learning courses or programs that have strong academic values. These strategies might improve WeChat as a learning tool and reduce some of its issues related to lead management.

6. Conclusion

By pairing different data collection methods, this study sees that WeChat brings many benefits to communication in education, but its efficiency could be improved by paying attention to the quality of content, the technology involved and individuals' abilities. What we found in our study is that perceived usefulness, satisfaction and self-efficacy are the main factors affecting a person's intention to keep using social media for learning, while most practices are also affected by certain social interactions and pedagogical adjustments. All these points indicate that WeChat is effective when used in combination with other educational tools and helps link school and personal learning. For the best results, institutions should work out strategies related to creating valuable content, improving skills in using digital tools and setting standards for messaging on each platform. More studies could analyze the progress of adopting WeChat in education and examine how it compares to other education platforms.

6.1. Limitations and Future Research

Even though this work helps us understand WeChat's applications for education, there are some weaknesses that should be recognized. Because the research mainly looked at higher education in China, it might be difficult to apply the outcomes in other settings. Because the data is collected at only one time, it is difficult to tell if using drugs over time leads to specific outcomes. Furthermore, the study looked at WeChat on its own, rather than evaluating it next to other learning management systems. Further studies should look at the information above by using longitudinal studies, comparing WeChat with various e-learning tools and reviewing how age and culture impact WeChat's popularity. Looking into the use of AI in personalized learning within WeChat's apps would provide useful information for its further development. Through these directions, teachers would learn how social media affects education in technology-based settings.

Transparency:

The authors confirm that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.

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