Exploring the Impact of a WeChat Group and E-Learning Platform Use on the Academic Performance of Students Majoring in Communication

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Abstract

The study explores the use of a WeChat social media group and a Moodle-based, e-learning platform "iSpace" in relation to the academic performance of students majoring in Communication at a higher education institution in China. The constructivist learning approach and Technology Acceptance Model (TAM) were used as a quantitative investigation model in a survey of 500 postgraduate students. Specifically, the study aims to investigate how students studying in the field of Communication use technological resources to achieve their desired level of academic performance. According to the course intended learning outcomes (CILOs) of Foundations of Communication Study and the programme intended learning outcomes (PILOs) for the graduate students the relevant aspects of students' performance can be categorized as cognitive and affective. There are two kinds of learning tools employed by Communication students in their major courses, a messaging app, and an e-learning platform: a WeChat group and iSpace, a local version of the "Moodle" virtual learning environment. Previous studies of WeChat have generally investigated it as a social media application rather than as an educational resource. The present study complements the survey with qualitative in-depth interviews and focus groups to examine how both WeChat and iSpace impacted students' academic performance. The findings of this study redefine WeChat's role from a simple messaging app to a form of learning support.

Keywords: academic performance, WeChat, "Moodle" e-learning platform, technology acceptance model

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Introduction

During the COVID-19 pandemic of 2020–2023, education was among the offline and brick-and-mortar industries and institutions that were adversely affected. In-class gatherings in schools and universities were prohibited on account of "social distancing" (Shukor et al., 2014). In the initial phase of the epidemic, people actively sought out ways to sustain industries and operations, and the education sector began to rely heavily on "new communication media" such as "live online" technology and online learning platform tools that had been developed in previous years (Salam & Farooq, 2020). Online classes and other interactions swiftly addressed the need for students to resume their schooling, and the global nature of the health crisis had the result of accelerating the general acceptance of distance and hybrid modes of learning, mediated by technology. Over time, however, positive and negative effects of the incorporation of online tools in education became evident, and educators have been prompted to respond to a perceived decline in the quality of instruction, and an instability in the learning progress of students, among various other shortcomings. Educators have thus been prompted to study the new paradigms of technologically mediated course delivery

to ensure the maintenance of educational quality.

In China, there is a particular category of colleges and universities—Sino-foreign joint colleges and universities—which use English as a Medium of Instruction (EMI) and adopt transcultural educational philosophies and traditions of instruction. During the COVID-19 pandemic, these institutions were also forced to adapt their teaching and learning practices to new, technology-driven modes of course delivery. The present study focuses on a Sino-foreign joint university: Beijing Normal University-Hong Kong Baptist University United International College (UIC). UIC is a small liberal arts institution in Zhuhai, Guangdong Province. The study was conducted in 2022 with a group of graduate students taking the "Foundations of Communication Theory" course of the Master of Arts programme in Communication. As the higher education sector emerges from the pandemic phase, into a world in which technology maintains a greater role in course delivery, the object of the study was to determine how students' use of two tools, the WeChat messaging app and the iSpace (Moodle) virtual learning environment (VLE), impacted on their learning. The study used a combination of quantitative and qualitative instruments to investigate students' perceptions and usage

habits, which were correlated to academic performance.

WeChat, which was initially designed as a mobile, social media messaging platform, and launched in 2011, is now, in China, the most popular mobile social application. By the time of this study, it was also widely used to support university teaching. As such, WeChat complemented iSpace, UIC's version of "Moodle" a VLE first launched in 2002 and regularly upgraded. The iSpace platform allowed instructors to post course materials and manage assignments online. Although iSpace also allows for discussion forums and chat functions, this feature of the VLE seems to have long been superseded by social media.

The present study aimed to investigate the relative affordances of WeChat and iSpace among graduate students of Communication. After reviewing previous research in this area, we elicited data from questionnaires and in-depth interviews, and focus group discussions to integrate quantitative with qualitative methods of investigation.

The purpose of our study was to understand the relationship between the emotional inclination of students to use online learning platforms and how this inclination relates to academic performance. In short, we investigated the impact that habitual use of preferred learning platforms had on attaining intended learning outcomes.

After interviewing a sample of students at different achievement levels with set questions, it was found that the repurposing of WeChat as a "learning platform" did not effectively remove its original "social platform" attributes. At the same time, although there is a functional overlap between WeChat and iSpace, the two platforms elicited different responses from students regarding their affordances as learning support.

In this study, we also wished to test the claim that students who effectively, strategically, and actively use "new communication media" as a learning tool are themselves capable of self-directed learning, and their insights into their own practices will inform the future development and application of online learning platforms (cf. Schindler et al., 2017; Schneider & Preckel, 2017). The strategies used by effective learners should also lead students who do not have such a developed awareness of self-directed learning to realize the importance of online support. To put it more simply: "use" leads to "excellence" (Çebi & Güyer, 2020) and "excellence" in turn leads to "use," resulting in a virtuous cycle of perception and dissemination. The present study, therefore, aims to contribute to an understanding of good practices in the use of learning platforms, specifically in Sino-foreign institutions in China, but also

more broadly, wherever English is used as a medium of instruction.

Literature Review

The Shift to Online Course Delivery

It is estimated that during the COVID-19 pandemic, over 1.5 billion students around the world had rely on digital learning tools to achieve study-at-home education (Sim et al., 2021; UNESCO, 2020). As the pandemic subsides, the move from offline to online is likely to persist given the familiarity that has now developed with online tools and the recognition of their potential for learning (Ossiannilsson, 2020). The shift towards education online has implications for information technologies, assessment theories, examination systems, and course evaluation instruments (Su, 2020). A recent study identifies several major challenges in developing an appropriate infrastructure to address issues such as educational inequality, appropriate assessment and supervision, and heavy workloads (Heng & Sol, 2020).

Some scholars have found that despite facing the challenge of adapting to a new mode of study in the post-pandemic era, university students show a moderately high level of acceptance of online learning (Sim et al., 2021). Social isolation, to some extent, has provided students with opportunities to explore learning with the assistance of technology (Qiao et al., 2021). Some researchers distinguish between e-learning, online learning, distance learning, blended learning, and hybrid learning (e.g., Heng & Sol, 2020). According to Siemens et al. (2015), online learning refers to a form of distance education that uses technology as the mediator of a learning process that is wholly facilitated by the internet. This study engages with a discussion of this terminology since it encompasses a range of online learning activities related to distance learning, such as downloading learning materials, attending online courses, exchanging knowledge, and having discussions in class and after class.

Online Learning and Academic Performance

Students living and studying in the 21st century are accompanied by digital devices and digital technology. As such, they ought to be skillful users of online learning tools. Given the ubiquity of digital technology and digital devices in the 21st century, we would expect students today to be adept users of online learning tools (Delen & Liew, 2016). The present study focuses on the relationship between students' facility

with online learning tools and their academic performance, from cognitive and affective perspectives. One approach to evaluating educational quality is to assess students' satisfaction with their online learning (e.g., Faize & Nawaz, 2020). Accordingly, an effective assessment of student's satisfaction with their online studies allows educators to form a better understanding of the teaching quality and the extent to which students digest the course content. Previous research has been conducted to investigate how online learning influenced the satisfaction and academic performance of nursing and medical students during the global COVID-19 outbreak (e.g., Ashraf et al., 2021; Oducado & Estoque, 2021). Yet, little attention has been paid to the correlation between liberal arts students' application of online learning tools and their academic performance. In addition, students might suppose that academic performance can be better attained in physical classes, through construction (participation and contribution) and absorption (sitting still and absorbing) instead of via e-learning (Lee, 2021). Students' perspectives on the interactive mechanism of online learning need to be explored.

To bridge this research gap, the WeChat group was repurposed from its original use as social media app and redefined as a kind of online learning tool. Social media have as their core function the sharing of personal experiences and informal exchange of knowledge among individuals, and this function might be equally beneficial to raising the level of students' academic performance (Ashraf et al., 2021). University teachers, including those in the social sciences, have already recognized the value of social media for in-class and after-class discussions, resolving students' issues, and maintaining student-teacher relationships (e.g., Al-rahmi et al., 2014). Dhir et al. (2018) suggest, however, that compulsory social media use might be the source of "social media fatigue" which in turn can lead to anxiety and depression. Social media fatigue may then give rise to an unfavorable decrease in students' academic performance (Malik et al., 2021). Hence, social media has the potential to be more than a communication tool but a facilitator for promoting learning efficiency, but only if it is appropriately employed in online instruction.

In recent studies, constructivism theory and the Technology Acceptance Model (TAM) have been applied as quantitative methods in analyzing the relationship between online learning and academic performance (Alamri, Al-

maiah, & Al-Rahmi, 2020). The present study follows this approach to explore the use of the WeChat groups and the iSpace e-learning platform in relation to the academic performance of students majoring in communication.

According to the TAM model and theories which we mentioned, we propose the following two theoretical models and assumptions (see Figure 1 and Figure 2):
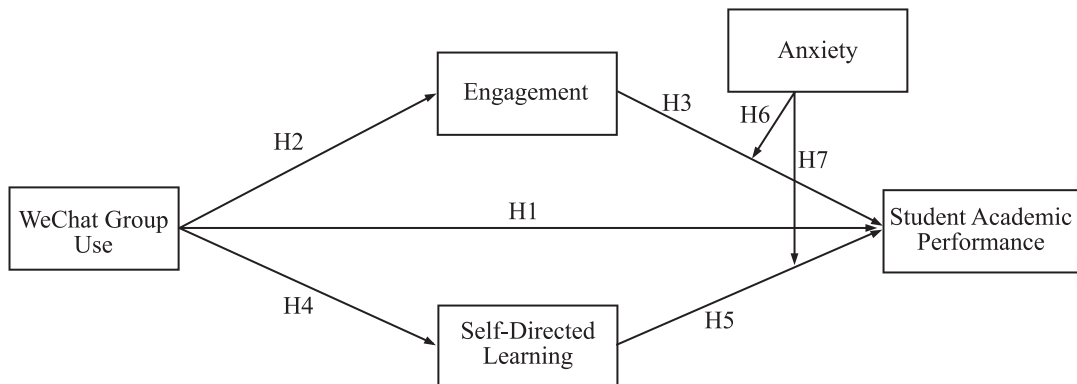
Figure 1

A Theoretical Model of the Mediating and the Moderating Effect of iSpace Use on Student Academic Performance
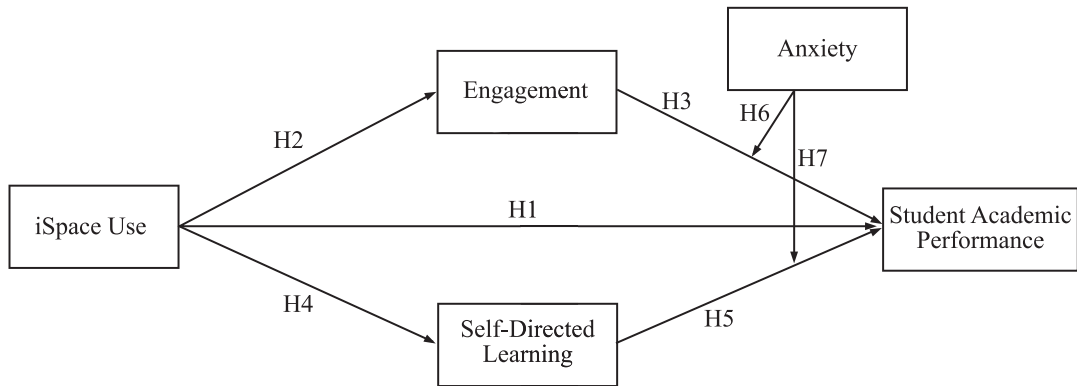
Figure 2

A Theoretical Model of the Mediating and the Moderating Effect of WeChat Group Use on Student Academic Performance

Method

Survey Data

Data was collected from "Wenjuan Xing"—a professional online survey platform to conduct data quickly, which is used by universities and companies in China. This is a survey of UIC master's students conducted between March 22 and June 22, 2022. A total of 235 questionnaires were distributed, and 228 valid questionnaires were recalled from master's students of communication at UIC who completed the survey. These questionnaires contain three category questions that could be divided into the frequency of WeChat use and iSpace use, perceived academic performance, and emotional feelings such as enjoyment, anxiety, and self-directed learning, aiming to figure out the influence between instrument motivation and academic performance. Students were asked to fill in the questionnaire link through the course WeChat group and the announcement section of iSpace. This study was approved by UIC.

Measurement

There are six variables that could be measurements that we put in our questionnaires.

1. Platform use. The frequency of using the WeChat group and iSpace would be considered. To gauge platform use, we used a 7-point Likert scale so that students could report their self-perceived usage. Respondents were asked to report their frequencies of using the platform each week (1 = *never*, 7 = *very frequent*). For platform use, we choose to study iSpace and WeChat as e-learning platforms and social media platforms. UIC rebranded the Moodle VLE as iSpace, a localized e-learning platform that enables instructors to upload course-related documents, manage students, assign quizzes, give grades, and so on. It also has private messaging and email functions to facilitate shorter or longer forms of communication between instructors and students. The average frequency of iSpace usage was (α = .65, M = 5.16, SD = 1.51) every week for each student. WeChat is a broadly used social media platform in China. WeChat provides many services including private instant messaging, or "Moments" etc. WeChat has been the object of a number of studies of Chinese society (e.g. Gan & Wang, 2015; Zhang et al., 2017). In the present study, the class WeChat group was an object of study; attention was paid to group notices, file uploads, etc. The average frequency of iSpace usage was (α = .65, M = 5.49, SD = 1.48) for each student per week.

2. Engagement. The measurement of engagement was based on students' engagement in the course format and feelings during using iSpace and WeChat. The questions could be divided into four parts: (1) the process of using, such as the expressed concerns about students' academic work; (2) the content of using, students discuss assignments via WeChat group or iSpace; (3) the teaching format of using, like exchanging information; and (4) the final feelings of using. For instance, "I think using iSpace makes the course more fun," "In summary, I think WeChat group makes the course more enjoyable," etc. Respondents were asked to gauge the degree of engagement they felt when using iSpace or WeChat (1 = *strongly disagree,* 7 = *strongly agree*), agree or disagree they used WeChat group and iSpace to do the above things. The average of the four answers was used as the measure of engagement. engagement of iSpace use (α = .91, M = 4.50, SD = 1.28), engagement of WeChat use (α = .90, M = 5.55, SD = 1.07).

3. Self-directed learning. Overall self-directed learning was measured by separated asking participants if they agreed that their learning was more autonomous when using iSpace or WeChat (1 = *strongly disagree*, 7 = *strongly agree*). To measure the different results how to influence academic performance, for example, a student who thought WeChat was useful but disliked iSpace or vice versa. Self-directed learning consists of two indexes, the extent to which students review course materials (like PowerPoint) and the extent to which students do the extensive reading (such as recommended books and academic articles) after class. The average of the two answers was used as a measure of self-directed learning for each student (α = .64, M = 5.22, SD = 1.12).

4. Anxiety. Anxiety as an emotional variable is one of the negative emotions that students often develop. Previous studies have cleared that anxiety affects students' academic performance (Chapell et al., 2005), and our aim in choosing anxiety here is to further explore whether using different learning platforms could produce anxiety and how academic performance is affected by anxiety. Considering that, we chose three indicators to calculate the anxiety range "I easily feel anxiety," "when using WeChat group or iSpace, it always too much course information unread," and "when using WeChat group or iSpace, I always afraid of missing out course information." A 7-point scale was used to measure how anxious students might be when they experience the situations mentioned above and the mean of the sum of the three indicators were obtained as the anxiety (α = .64, M = 5.22, SD = 1.12).

5. Students' academic performance. The performance was measured on the same 7-point scale. Respondents were asked to answer questions about classroom performance and the grade point average (GPA) of the course. The classroom performance could be divided into cognitive and affective. In terms of cognitive, the four questions include the extent to which students can fully understand the course content, the extent to which students can hand the connection between the communication theories, the extent to which students can have deep discussions from the kinds of literature they read, and after the course studies the extent of which students can write the literature review. In terms of affective, mainly contains three questions about the extent to which students evolve and communicate skills after studying the courses. The mean of the sum of all the above values constitutes the students' Academic Performance (α = .63, M = 5.43, SD = .84).

6. Control variables. We collected control variables for gender and age that might influence the results. Because different ages and gender maybe cause different learning abilities. For example, many people's ability to understand and focus on learning increases with age. On the other hand, differences in memory processing and logic between the sexes lead to different learning abilities. We decided to choose them as the control variable to exclude the influence on results and to make our research results more scientific. The conducted data from our students show that about 71.9 percent of the respondents were female. Respondents ranged in age from 21 to 50 (M = 25), which means our results presented are likely to be characterized and representative of the respondents' responses within this gender and age range.

Interview Report

To analyze the impact of online teaching tools on traditional social media tools in the education sector, as well as their impact on academic performance, and finally with the intention of presenting generalizations and guidance on the development of related disciplines and teaching format. The number of interviewees (N) is 12 persons, from the 25 groups of 300 individuals with varying letter grades—A, B and C (A means that the student received an excellent grade, B means that the student received a good grade, C means that the student received a passing grade, abbreviated as A, B, and C later). The focus group set three groups of four people, each group including one"A", one"B", and one "C". Individual interviews were set up to conduct further individual interviews with the above 12 interviewees.

The background investigation of stu-

dents' accomplishment levels uncovered that students' use of iSpace necessitated more self-motivation and autonomy, and the more they tend to use iSpace, the better their performance will be. In the interviews, students with A and B grades indicated that they were more proactive in accessing iSpace for classroom information and learning materials, while students with C grades relied heavily on social platforms to exchange information, while Cs' information were delayed and sourced from A and B.

Conversely, the less the use of iSpace, the lower the indicated interest and intention to learn and the worse the academic performance of the student. The use of iSpace has a certain internal teaching tool character platform in the language of the students that "promotes an immersive learning atmosphere," thus fulfilling its function as a learning platform. Through our interviews, we know that top students enjoy using iSpace the most because it is an independent intranet. You have independent access to the content you need to complete academic tasks, with no additional social or recreational activities to interfere with learning. They also said that using a dedicated learning platform creates positive psychological cues, which also reinforces the purpose of learning.

Students have varying degrees of anxiety and discomfort about the use of WeChat, which is also positively correlated with the distribution of grades, i.e., the better the grades, the lower the anxiety, but the overall difference is not significant and is a common emotional phenomenon. More than half of the students who participated in the interview clearly said that WeChat is widely popularized, leading to a flood of information, and there is no limit, people who have added WeChat will send messages anytime and anywhere, and a large part of the messages cannot be ended in a short time, which greatly affects the progress of work and study. At the same time, some A students said that the message content of the WeChat group used to spread study information lags the iSpace, and the group contains a lot of daily chats, which also leads to missing messages.

At the same time, the use of WeChat in learning is more of an "incidental" or "passive" behavior, and has a negative correlation with academic performance, i.e., the more they rely on WeChat to complete the learning content, the lower the learning effect and performance. We can assume that the use of WeChat cannot by itself enable students to achieve consciousness and autonomy. All the students who said "I get the latest course information and study materials through WeChat groups" had a C grade, not only because the information they relied on was trans-

ferred from iSpace by the A and the C spends more time on social media, but also because the interviews showed that the C did not take the initiative to get into the study state, but chose to sit back and enjoy themselves or procrastinate, which also led to their poor grades.

Put another way, the students who use different learning platforms as tools themselves have vastly different attitudes toward learning, and this is tied to the attributes offered by the learning platform itself (academically focused, or more social)—a more singular tool will attract good students. Seventy percent of the students interviewed expressed feedback on the attributes of WeChat, such as "complexity" and "variety," but rarely focused on the impact of "academic performance," and they considered that WeChat could at most play a complementary and social role in the learning process. They believe that WeChat can at best serve as assistant effects and social networking tool and cannot replace iSpace's function in learning. On the contrary, in the academic domain, WeChat's role in the study of help is mainly reflected in the exchange of documents, and information notifications, and these features in the student's view, iSpace can provide a more stable and credible service. But the fact that no more than about 30% of students

get an A grade means that iSpace, which is a more significant aid to learning, is not a common tool for students in their academic habits, this perspective can also be obtained in the content of the interviews. On the contrary, due to its popularity as a social tool, students are more willing to get "second-hand" learning resources on WeChat, and some of the content is even missed or misleading due to the large amount of information on WeChat.

Students say that the functionality of WeChat or iSpace in terms of "helping to learn" is stable, and the underlying logic for helping to learn is positive: as mentioned above—iSpace presents the course material in a more organized, permanent, and accessible way than a WeChat thread, and "using a dedicated learning platform creates positive psychological cues."

As students broadly specified that both platforms provide the same functional role in learning: file transfer, information distribution, relevant notifications, etc. The interviews likewise demonstrated that in terms of the features offered, students' use of both WeChat and iSpace was positively correlated with their grades, i.e., if they were able to make full use of the two platforms for academic purposes, they would have excellent grades.

If students can make full use of the learning features of both platforms, their

academic performance will be good; if they can effectively avoid the shortcomings of WeChat—mixed information, too fast flow, or better use WeChat to compensate for the shortcomings of iSpace— lack of communication, limited communication channels, then these students' academic performance will be excellent.

Results

SPSS Statistics software was used for data analysis. Regression Model 4 and Model 14 in Process were used to test the hypothesis. Model 4 was used for testing the iSpace use, and Model 14 is for WeChat group use.

In Model 4, the gender and age and WeChat group use as the control variables were input first, and then the independent variable was iSpace use, the dependent variable was student academic performance, and the mediator variables were engagement and self-directed learning.

In Model 14, gender, age, and iSpace using as the control variables, WeChat group use was the independent variable, the student's academic performance was the dependent variable, engagement was the mediator, and the moderator was anxiety.

In Model 4, study Hypothesis 1, one initial hypothesis of this study was that frequent iSpace use would be positively associated with high student academic performance. After controlling for WeChat group use, gender, and age variables, multiple linear regression was made for iSpace use and student academic performance. The results are shown in Table 1.

Table 1

Direct and Indirect Effects Within the Endogenous Model for iSpace Use

	iSpace use	Engagement	Self-directed learning
Engagement	0.45*** (0.05)		
Self-directed learning	0.24*** (0.05)		
Student academic performance			
Direct effect	-0.01 (0.03)	0.15*** (0.04)	0.37*** (0.04)
Indirect effect	0.16*** (0.03)		
Total effect	0.15*** (0.03)	0.15*** (0.04)	0.37*** (0.04)

Note. $N = 228$. All entries are standardized estimates, after controlling for gender, age, and WeChat group use. Standard error is in parentheses.
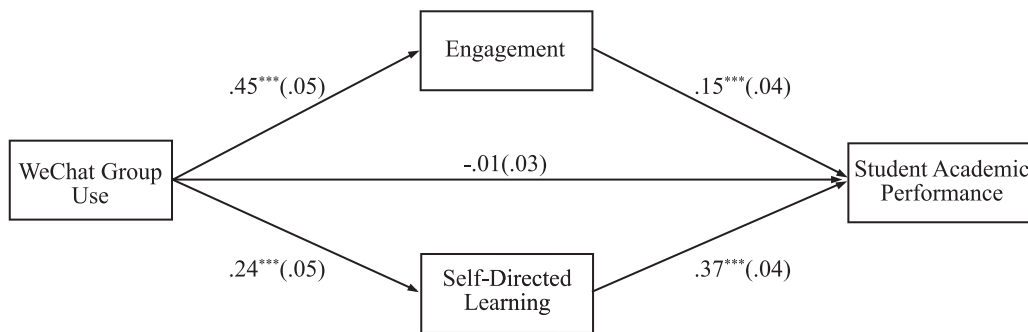***$p < .001$.

According to the result of Figure 3, the non-significant role of frequency of iSpace use and student academic performance suggests that the mediating variables play a fully mediating role here, with engagement and self-directed learning mediating this process more significantly than we would expect.

Figure 3

Predicting Students' Academic Performance When Using iSpace

***$p < .001$.

Our second hypothesis was that iSpace use was positively associated with engagement. As shown in Table 1 and Figure 3, iSpace use was positively correlated with ($b = .45$, $p < .001$). Therefore, Hypothesis 2 is valid. Our third hypothesis was that the level of engagement was related to the student's academic performance. As shown in Table 1 and Figure 3, engagement was positively correlated with student academic performance ($b = .15$, $p < .001$). Therefore, Hypothesis 3 is valid. Hypothesis 4 speculated that iSpace use would be positively correlated with self-direct learning, and results showed a positive correlation ($b = .24$, $p < .001$). Hypothesis 5 speculated that self-direct learning would be positively associated with student academic performance, and the result confirms our assumption ($b = .37$, $p < .001$). Hypotheses 6 and 7 speculated that anxiety would be negatively correlated with the levels of engagement and student academic performance and the degree of self-directed learning. But the result showed there is no moderating in anxiety, which means the anxiety would not influence the process of engagement and self-directed learning for students' academic performance.

In Model 14, the H2, H3, and H6 were shown to be valid. Multiple linear regression was made for WeChat group use and student academic performance. The results in Figure 4 show a fully mediating role.

Table 2

Direct and Indirect Effects Within the Endogenous Model for WeChat Group Use (N = 228)

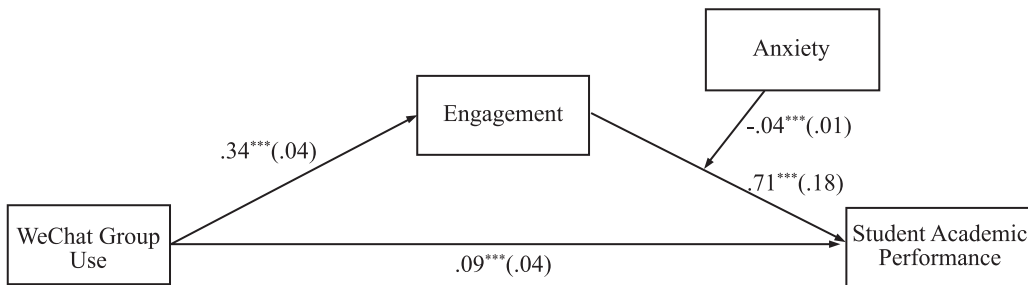|	WeChat group use	Engagement	Anxiety
Engagement	0.34*** (0.04)		
Anxiety			
Student academic performance			
Direct effect	0.09*** (0.04)	0.71*** (0.18)	-0.04*** (0.01)
Indirect effect	-0.04*** (0.01)		
Total effect	0.05*** (0.05)	0.71*** (0.18)	-0.04*** (0.01)

Note. N = 228. All entries are standardized estimates, after controlling for gender, age, and WeChat group use, Standard error is in parentheses.
*** *p* < .001.

The frequency of WeChat group use had a positive effect on engagement (*b* = .34, *p* < .001), and engagement had a positive correlation with student academic performance (*b* = .71, *p* < .001).

Figure 4

Predicting Students' Academic Performance When Using WeChat Group


*** *p* < .001.

Anxiety as the moderator was negatively correlated with levels of engagement and student academic performance (*b* = -.04, *p* < .001). The other hypotheses were not confirmed as valid.

To sum up, frequent iSpace usage and WeChat group usage are both associated with higher student academic performance, and they are both associated with higher degrees of engagement. However, anxiety is only a moderator when students use WeChat instead of iSpace. The interaction of the moderator is shown in Figure 5. Furthermore, self-directed learning did not mediate the process between WeChat use and academic performance.

Figure 5

Interaction Between WeChat Group Use and Anxiety on Student Academic Performance
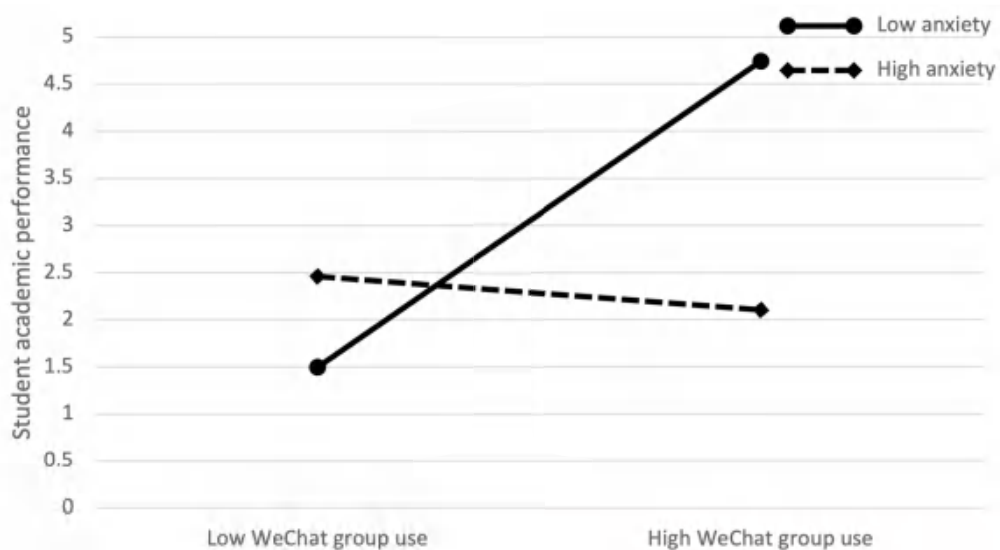
From the interview summaries, the focus of the student's attention was on the "usage feedback" of WeChat and iSpace.Feedback on the use of WeChat was more oriented towards the versatility of the social software and a large amount of information, more oriented towards its complexity as a social software (Byun et al., 2009). While the discussion on iSpace is more focused on the features of the tool as a supplementary learning platform.

At the same time, they expressed their expectation for the unification and harmonization of the functions of the two types of platforms (social software and learning platform) represented by WeChat and iSpace. Students' perception was that they did not want WeChat

to mix too much with work and learning content and that it was better to keep it within the boundaries of social, entertainment, and life, while iSpace was recognized for its fixed functionality and reasonable use. As the two platforms have different definitions (social software and learning platform), the focus of attention is different, so the students expressed their expectations for the future development trend of "integration of functions" and "fixing the scope of use" of these products.

Combining full-text and student feedback with a survey of the current app market, we find that the current potential for domestic application or platform development of this type is not bad. Too many of the existing types of applications on the market focus on social attributes that we believe are detrimental to student academic performance. A more ideal way is for universities to cooperate with the market to develop independent platforms that are suitable for their learning environment and teaching rhythm, which are designed from the starting point of the application and achieve a "fixed scope of use." On the premise of ensuring the integrity of learning support functions, we optimize the communication and cooperation network within the school, integrate appropriate social

attributes, and provide more convenient and smooth learning support functions to achieve "integration of function."

From another perspective, online learning software already in use or social software widely used for learning can be adapted to provide a one-click learning mode and reduce the interference of redundant information. We can also cooperate with existing internal campus platforms to create a convenient channel like the "WeChat applet" to improve the mutual conversion rate and work together to create a good learning environment and a sense of platform usage.

Discussion

The analysis of the questionnaire data indicates a significant positive correlation between the academic performance of students and the use of online learning platforms, leading to the preliminary conclusion that the impact of using WeChat and iSpace to engage in learning is, overall, positive. This is a direct response to our hypothesis, which demonstrates that the use of online learning platforms will be associated with an improvement in academic performance.

The in-depth interviews and supplementary data support the survey data and extend the insights into student

perceptions of the affordances of the online tools. Between the two learning platforms, students' experience of using WeChat for learning is worse than iSpace, because the social media properties of WeChat can have a negative effect on learning. Therefore, we believe that online learning platforms should be designed with more attention to the setting of learning support functions and properly discard other functions. At least have the option to adjust its "no-disturb mode" when used as a learning aid, or, iSpace could be better integrated with WeChat and launch a WeChat applet version, giving teachers more, more optimized options. The results of the study suggest that more consistent and frequent use of online learning platforms has a significant positive impact on student academic performance. This finding supports previous studies such as (Emeka & Nyeche, 2016) (Kumar & Manjunath, 2013), which confirmed the advantages of using current social media apps and learning platforms as students. The results of the analysis confirmed the positive effect of satisfaction on students academic performance, which is consistent with previous studies (Goyal et al., 2011; Samaha & Hawi, 2016). This effect can be explained by the fact that the type of tools and the type of websites used by

students play a significant role in influencing their academic performance. For example, a typical example is whether students actively participate in and read the class materials and extracurricular reading materials shared by their teachers on the platform. More interestingly, we even observed how much students paid attention to the materials uploaded by their teachers and whether they were the first to log on to the platform to view this content, two phenomena that were also correlated with academic performance. This study is based on a particular social context and is aimed at a supposedly more self-motivated group of postgraduate students, but we were surprised to find that students' academic performance is still linked to "whether the learning platform itself is enjoyable for students", which makes us realize that among domestic university students who generally "lying flat", academic performance should be more significantly related to enjoyable because contemporary university students are more focused on whether it is satisfying for them.

It is reassuring to note that the school we studied has a stand-alone learning platform, iSpace and that the steady, singular pedagogical support it provides is already mitigating the negative academic impact of other platforms. According

to the observation, most of the other universities in China still use email and social software to transfer information, submit assignments, and exchange documents, but rarely have a stable and fully functional set of VLEs, although the Moodle VLE predates social media, and such VLEs should have been standard in higher educational institutions.

In summary, we can, to a certain extent, believe that the design, development, and promotion of learning platforms or related application software is a desirable way to improve the independent learning of college students and improve the overall quality of education. At the same time, the framework and functional design of such platforms should focus more on whether the teaching needs of schools can be comprehensively covered, the emotional feedback of students in using them, and the simplicity of the interface, rather than the social attributes and appearance that are emphasized by various types of software in the market. However, the sample size of the data selected for this study is limited and the possible covariance of the subjects cannot be avoided. In future research, we will consider additionally increasing the sample size and extending the study to additional schools using the learning platform.

We have demonstrated the separate but intertwined nature of the learning and social aspects of online tools. Both need to be considered when designing and selecting platforms and instructors need to understand both the learning affordances and the social affordances, and the relationship between them. Teachers can choose the platform flexibly according to the course content and teaching mode, as well as the school's original system, or select relevant auxiliary functions of the existing platform in a targeted manner. Product developers, on the other hand, should fully understand the positioning of their own products, purposefully make the bias of functions, and at the right time can add mobile setting functions to improve the balance and demand.

Conclusion

To understand how different frequencies of use of a range of platforms affect students' academic performance. By monitoring the frequency of iSpace use and WeChat group use among graduate students majoring in Communication, this study established that much iSpace use and WeChat group use for learning tools are indeed positively correlated with academic performance, including GPA and class performance. There is a mediating between the amount of enjoyment and

self-directed learning on the students' academic performance. The focus group results show the students who used WeChat mainly focused on its social function like "Moments" and chatting with others, they rely on active alerts message, and only click and read the course information when they received a new course message, they will not use WeChat groups only for searching the examination materials which instructor sent. Compared with the WeChat group, iSpace provides a single but straightforward platform to help students focus on their studies and access information about the course.

However, the anxiety as a moderator only influences the process of the WeChat group use. The feature which is the instantaneous nature of WeChat group messages deepens the impact of anxiety, students worry about missing important information such as the course notice and course-related files. On the one hand, the WeChat group has a time limitation for saving files. On the other hand, too many chatting messages make it hard to find important notices. This suggests that, although the WeChat group was used very conveniently for online teaching, it still could not be the primary study tool for students. Moreover, the WeChat group also did not influence self-directed learning on academic performance, so the students will not use the WeChat group as a self-learning tool after class. Future research into the WeChat group should clarify how primary function and related constructs influence students' interaction and engagement. According to the focus group's results, interviewees indicated that they preferred to separate study and social life, and this preference affected their habits of using social media and e-learning platforms. In other words, WeChat has largely been considered a tool for realizing social interaction and communication while iSpace is positioned precisely as an instrument of assisting learning. Although this is hard to achieve fully now, part of a student's social life is likely due to learning, such as group or teamwork. This could be seen as a trend for understanding students' learning and social patterns in their ideal state. They like to separate the boundaries between study and life to organize their time better to maximize their focus on study or life. Therefore, the learning-assisting function of iSpace earns major recognition from students. But sometimes, iSpace could be used to study social when students want a weak class tie. So, there is a meaningful question of whether students with strong social ties in a course perform better, which could be explored in the future and further study.

Furthermore, while this research measured the frequency of iSpace and WeChat group use in terms of time spent on the platform, future research may be conducted in terms of comparing the difference in patterns of usage among WeChat and iSpace. For instance, whether the frequency of using iSpace and WeChat is similar? Which platform is more frequently used by students during the study? It is worth exploring a new mode that combines iSpace and WeChat use. For example, WeChat is used as the communicative platform for students and teachers, and iSpace should contain all critical notices and course-related files. This requires students to be familiar with iSpace and reduces their dependency on WeChat. Therefore, a potential future solution is to teach freshmen how to use iSpace to help them get used to studying with UIC's learning platform and further take academic advantage of being aided by the online learning platform.

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