

# Semester Project Report

## WeChat UI/UX Improvements with Figma

COMP3423 Human Computer Interaction, Fall 2024

Group 24

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### Teamwork Declaration

Teamwork Declaration Table			
Name	Student ID	Roles	Key Tasks
Wang Ruijie*	22103808D	UX Designer, Visual Designer	User experience study, UI/UX improvement design Aesthetical refinement, Presentation and report composition
Zhu Jinshun	22101071D	UI Designer, Interaction Designer, Prototyper	Overall layout design Visual elements and interaction effects design and implementation, Figma prototyping production
Liu Yuyang	22100493D	User Researcher, Accessibility Specialist	Test paths design, User feedback analysis, Navigation flow improvement
Zeng Tianyi	22098941D	UI Designer, Interaction Designer	Visual elements and interaction effect (voice message progress bar) design, Presentation video production

\* *Group leader*

## 1 Introduction to WeChat

WeChat is a prevailing multi-purpose messaging, social media, and mobile payment app developed and operated by Tencent. It was first released in January 2011 and has since grown to become one of the world's largest standalone mobile apps by the amount of downloads of more than 10 billion and monthly active users of 1.2 billion. WeChat's popularity can be attributed to its wide range of features that go beyond simple function of traditional instant messaging. It offers text messaging, voice messaging, broadcast messaging, video conferencing, video games, sharing of photographs and videos on *Moments*, and location sharing. Additionally, WeChat provides a platform for businesses to interact with customers through official accounts, mini-programs, and WeChat Pay, which allows users to perform mobile payments and money transfers [5].

WeChat continues to innovate and expand its functionality to exstipulate social networking, e-commerce and public services into a single app, maintaining its status as a leading app in the global market. However, due to the complexity of the encapsulation of the various features, the solidified pursuit of functionality expansion and profitability goals, and the reliance on a single design pattern, WeChat’s presentation of the user interaction has been widely criticized [5] [3].

Users have constantly reported that the interface can be overwhelming and cluttered, making it difficult to navigate and find specific features. The lack of customization options or the artificially constructed obstacles on detailed navigation flows also limits the ability of users to tailor the app to their personal preferences [4]. Additionally, the integration of numerous features into a single app can lead to performance issues, such as slow loading times and increased battery consumption [1]. These factors contribute to a less than optimal user experience, highlighting the need for a more streamlined and user-friendly design approach [2].

## 2 WeChat UI/UX Research

In this section, five representative UI/UX design drawbacks of WeChat are identified and analyzed for the purpose of improvement with Figma prototypes. We will focus on the negative effects of these design drawbacks on realistic user experience and their violation of the principles of human-computer interaction.

### 2.1 Design Drawback 1: Lack of Efficient Voice Message Operation

The support of voice messaging is one of the key innovative features of WeChat when it was first released. WeChat allows users to send voice messages by holding down the microphone button and releasing it when the message is finished or reaches the time limit of 60 seconds.

However, voice messages are often described as unfriendly for the receiver. For instance, the receiver may feel uncomfortable to listen a long voice message to retrieve a short segment of key information, or to listen to a voice message in a noisy environment or in a public place.

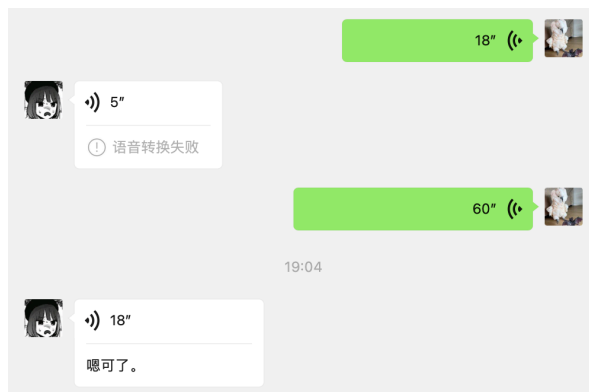


Figure 1: An example of long voice messages in WeChat

To deal with the issue, WeChat provides a feature to convert voice messages to text messages, but the conversion accuracy is not always satisfactory, especially for voice messages with background noise or dialects. The new feature of voice-to-text conversion might slightly improve the spoiled user experience by the latter issue, though the former issue remains unsolved. Figure 1 is an example of the long voice messages in WeChat, where the voice-to-text conversion does not work well, and it shows that the receiver can only listen to the entire voice message to retrieve the key information.

Usually, the receiver must repeat the entire voice message to comprehend several key segments that are scattered throughout the message, and they can not indicate the specific time point of the key segments to the sender for repetition. We believe that this design drawback violates the principle of *user control*, as it restricts the user’s ability to efficiently navigate and access the information they expect. It also downgrade the *efficiency* pf the user interaction over voice messages, as it requires the user to spend more time and effort to retrieve the desired segments. Users’ *Cognitive load* may also increase due to the need to listen to more undesired content and memorize the key segments.

## 2.2 Design Drawback 2: Group Nickname Hiding in Group Member List

To facilitate group chat with large numbers of members, WeChat allows up to 500 members to join a group chat for concurrent communication, and each group chat is equipped with a group member list in the layout of a 2-dimensional box that displays the profile pictures and group nicknames of all. An example of the group member list in WeChat is shown in [Figure 2](#).

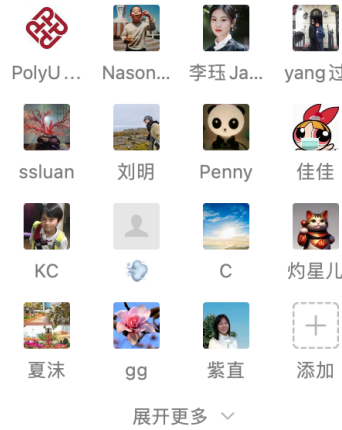


Figure 2: An example of group member list in WeChat

WeChat provides a thumbnail view of the first 19 group members in the group chat and a “view more” page to contain all the group members. But even the “view more” page is a thumbnail view of the group member information since the profile pictures are regarded as the major visual elements to identify the group members. The nicknames that are longer than the width of the profile picture are truncated, and the user nickname is displayed instead of the group nickname if clicking on the profile picture to visit the personal profile page.

The regardless of the full display of the group nicknames can lead to confusion and misunderstanding among the group members, especially when the group members are not familiar with each other or the group is a professional group. We assume that such design defect is not in compliance with the principle of *minimizing cognitive load* and maintain of necessary information for *accessibility*.

## 2.3 Design Drawback 3: Obstacles on Sharing Pure-text Moments

WeChat *Moments* is a PLATFORM that allows users to share their daily life, thoughts, and feelings with their friends by posting text, photos, or videos, which is the one of the most popular features of WeChat. It gradually becomes a major channel for users to showcase their life and communicate with friends in addition to the traditional instant messaging.

To upload a picture or video from the device, it is convenient for users to click on the camera icon in the top right corner to enter the photo album and select the desired media file. Whereas, WeChat seems to intentionally make sharing pure-text moment implicit for users and to encourage users to

share photos or videos instead. Under the current design, users have to long-press the camera icon for a few seconds to enter the text input mode, which damages the *accessibility* of the pure-text moment sharing feature. Meanwhile, the selection of a camera icon for both photo and video uploading and text input may confuse users, where *semantic priming* in icon design is neglected.

Figure 3 shows the moment sharing interface in WeChat, where the option of pure-text moment sharing is hidden when pressing the camera icon.

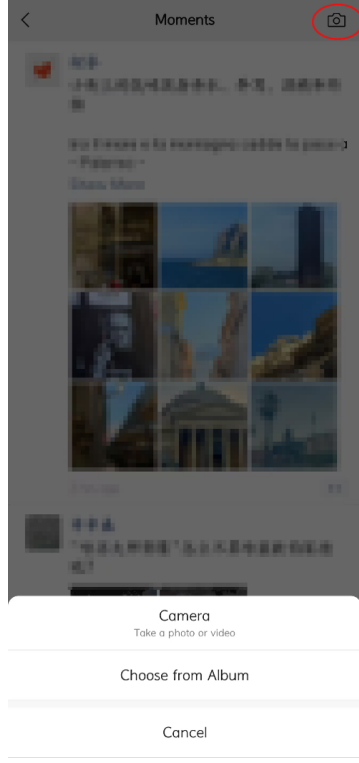


Figure 3: Sharing a moment in WeChat where the option of pure-text moment sharing is hidden

## 2.4 Design Drawback 4: Like and Comment Procedure in *Moments*

To like or comment on a friend’s moment sharing, users have to press the “.” button first, then choose to like or comment the post, as shown in Figure 4. Since like is an operation with much higher frequency, this mandatory selection is unnecessary and inefficient. Such design defect does not comply with the principle of *efficiency* and *priming with frequency* in user interaction, as it forces the user to spend more time and effort to complete the operation, though only one more step is required.

## 2.5 Design Drawback 5: Step-by-step Return

In *Moments*, users can click on the nicknames of friends who have shared or commented on a moment to visit their personal profile pages iteratively. Such a process can be endless. Apart from *Moments*, WeChat almost deploys a browser inside the app to access the mini-programs or contents posted by public accounts.

While previously before the features and contents of WeChat gets more and more complicated, the depth of the navigation flow can be quite low in a mobile app, and WeChat only provides a simple “back” button to return to the previous page. However, it is more possible that the depth of such iteration can be quite high as a great number of contents are added as the pages. Spending

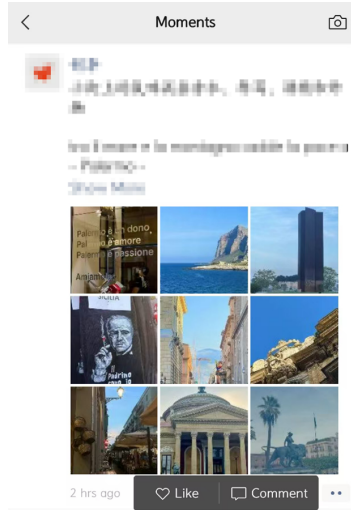


Figure 4: The like and comment options in *Moments*

several seconds pressing the “back” button to return to the home page can be quite annoying and time-consuming, with the *efficiency* of the user interaction being compromised.

### 3 Improvements with Figma Prototypes

Our implementation of the improvements and the prototype is available at <https://www.figma.com/design/Frm1Or3Eb0XZ1UNXyVghyi/COMP3423-Group-24-Project?node-id=0-1&t=he7Kpxtw15cD7KCB-1>. We appreciate your view of our design. Our improvements and their implementation on Figma are detailed in the following sections.

#### 3.1 Improvement 1: Voice Message Progress Bar

To deal with the inconvenience of long voice messages, a progress bar is attached to each voice message for the receiver to navigate the content and locate a particular segment, as shown in [Figure 5](#).

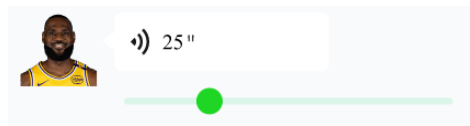


Figure 5: The voice message progress bar

Users can drag the progress bar to move forward or backward, and once release it, the voice message will play from the corresponding time point. The progress bar is displayed in the form of a horizontal line with a circle that indicates the current progress, and the circle can be dragged to adjust the progress. In that way, the receiver can easily locate the approximate time point of the key segments and listen to the desired content without the need to listen to the entire voice message.

The function of variants of Figma are adapted to implement the sliding of the circle and the corresponding time point adjustment. We defined the position of the circle at each stage of voice playing and set the states of the whole progress bar and the circle to be variants. The smooth sliding is achieved by smart animation.

### 3.2 Improvement 2: Group Nickname Display

The thumbnail of the group members is maintained as shown in Figure 6, while in Figure 7, the group nickname is displayed in full length when the user clicks to “view more” to see all the group members. We gave up the box-style layout by adapting a list from the top to the bottom to display, where more space are provided for each group member’s information. Though users are required to scroll down or up for their vieww, it is much less annoying than the truncation of necessary information.

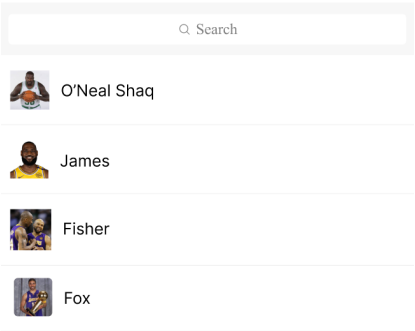


Figure 6: The maintained thumbnail view

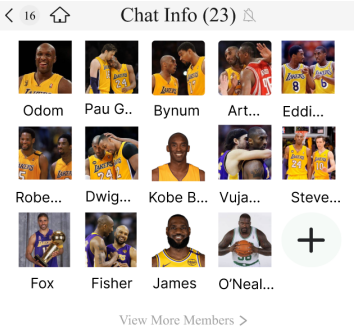


Figure 7: The improved list-style display

### 3.3 Improvement 3: Pure-text Moment Sharing

For better semantic priming in icon design, the camera icon is replaced by a more general “+” icon to represent that the sharing of moments is not limited to photos or videos, as shown in Figure 8.

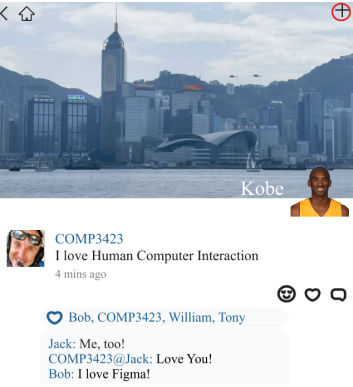


Figure 8: The semantic primed “+” icon for create a new moment

Other than that, the edition page of the moment content is also redesigned. Users are able to focus on the pure text edition, and are offered with a more flexible way to decide whether to add photos or videos to the moment, as shown in Figure 9. By clicking on the “+” block, they can upload photos or videos from the device, but the system will not remind them to do so.

### 3.4 Improvement 4: Like and Comment Procedure

After our redesign, to like or comment on a friend’s moment sharing is easier and more efficient. The “.” button is removed, and the like and comment options are directly displayed under the moment content, as shown in Figure 10. Meanwhile, users can directly know if the sharing has been liked, as the like button will be highlighted as a red heart.

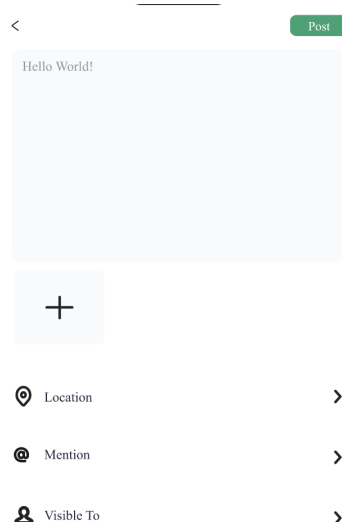


Figure 9: The redesigned moment content edition page

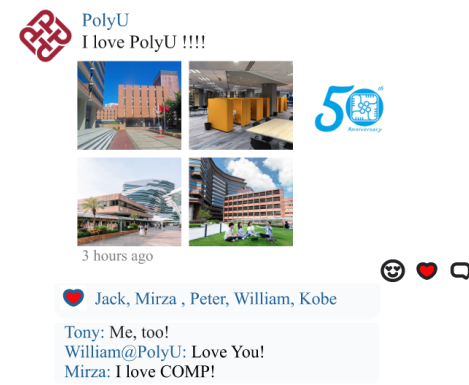


Figure 10: The removal of the “.” button

### 3.5 Improvement 5: One-click Return

A “home” button is added in each page of our prototype next to the “back” button, as shown in Figure 11, which allows users to return to the home page of chatting instead of pressing the “back” button repeatedly as many times as the depth of the navigation flow.

## 4 User Tests

Our tests are conducted on *maze.co* with 4 independent participants’ attendance. The participants are asked to complete five tasks, which are relevant to each of the five improvements respectively, and then provide feedback on the redesigned features.

This section contains the detailed description of the test paths designed for user tests and analysis regarding the results of the tests in both quantitative and qualitative perspectives, including the sources from user feedbacks, number of mistakes in interaction, time to finish a specific test, the reels recorded, and the heat maps of their operation. We will also propose possible weaknesses and further improvements of our redesign along with the analysis.



Figure 11: The addition of the “home” button in each page

## 4.1 Test Paths Design

Five different test paths were designed for each improvement. The tasks are as follows:

- Test 1 is designed for the voice message progress bar improvement. The test participants are required to first go back to the home page and enter the group chat “HCI”, and then adjust the progress bar under the voice message to control the time point of the message to 5, 15 and 20 seconds respectively.
- Test 2 is for the new feature of array-style full display of group nicknames of all group members. The participants are required to enter the group chat “HCI” and click on the “view more” button, and then scroll from the top to the bottom to browse the group nickname of the 20th group member.
- Test 3 is for the pure-text moment sharing improvement. The participants are required to enter the moment edition page from the home page to stimulate the whole process of sharing a pure-text moment without sending.
- Test 4 is for the like and comment option improvement. The participants are required to enter the *Moments* page from the home page and like the first moment shared.
- Test 5 is for the one-click return improvement. The participants are asked to first enter the moment page of the friend “Shaq” and then return to the home page by clicking the “home” button once.

We are confident that the testing scenarios above are sufficient to evaluate the effectiveness of our redesigns and to collect user performance and feedbacks on the redesigned features.

## 4.2 Quantitative User Performance Analysis

The success rate of accomplishing the tasks for each participant is 100% with no drop-off. Other metrics of user performance are summarized in Table 2.



Table 2: User Performance Metrics

User Performance for Each Test		
Test	Average Duration	Misclick Rate
Test 1	42.6 seconds	25.3%
Test 2	26.6 seconds	8.8%
Test 3	40.4 seconds	6.4%
Test 4	12.4 seconds	9.5%
Test 5	36.3 seconds	7.5%

According to the data collected, the success rate and average duration of each test are satisfactory, indicating that the redesigned features are generally accessible. We found that the participants spent more time observing the new layouts and features on our prototypes, which may explain the longer average duration of the tests compared to the original WeChat interface. The variation of the average duration among the tests may be due to the complexity of the tasks and the familiarity of the participants with the features.

Nevertheless, the misclick rate is relatively high in Test 1, and according to the heat map shown in Figure 12, the mistakes are mainly made when the participants try to drag the progress bar to adjust the time point. Combined with the qualitative feedbacks, we can conclude that the redesign of the progress bar for voice messages is not entirely user-friendly, as its length is roughly comparable to that of a message bubble, but the height of the visual element (the circle) is much smaller than that of a message bubble. Manipulating on a scale smaller than a message bubble in a mobile application is often considered to pose a fat finger problem.



Figure 12: The heat map of Test 1

Hence, we proposed a possible further improvement to our redesign to enlarge the visual elements for user interaction, that is, to increase the ratio between the height of the circle and the length of the bar: When user long-press the progress bar, it could be enlarged to an half of the screen to facilitate the user to adjust the time point more accurately. Users can also roughly adjust the progress by simple dragging on the original progress bar, while the circle will be displayed in a larger size.

### 4.3 Qualitative User Feedbacks Analysis

The participants left positive comments on the most of the redesigned features, while the issues are mainly about the following aspects:

- It is sometimes hard to use the progress bar for precise adjustment of the time point in voice messages, as mentioned in the qualitative analysis.
- The home button for one-click return is too close to the more frequently used back button, which may lead to accidental click mistakes.
- The like and comment options are also close to each other horizontally.

We have given the possible weakness and further improvement for the first issue in the qualitative analysis. The second and third issues can be considered as the problem of lowering rate of accidental clicks by increasing the distance between the small buttons. We proposed to move the home button to the top right corner of the screen, and to move the like and button to the right side beneath a moment sharing to decrease the possibility of accidental clicks by increasing the spatial difference.

## 5 Project Presentation

The presentation slide is also uploaded with this report. Our presentation video is available at [https://connectpolyu-my.sharepoint.com/:v:/g/personal/22103808d\\_connect\\_polyu\\_hk/EeRTUx8Is1xFoXyzshL5vfYBBxoMOI2IIs3HI-W8LYmjQg?nav=eyJyZWZlcnJhbEluZm8iOnsicmVmZXJyYWxBcHAiOiJPbmVEcm12ZUZvckJ1c2luZXNzIiwicmVmZXJyYWxBcHBQbGF0Zm9ybSI6IldlYiIsInJlZmVycmF5TW9kZSI6InZpZXciLCJyZWZlcnJhbFZpZXciOiJNeUZpbGVzTGlua0NvcHkifX0&e=iBnngJ](https://connectpolyu-my.sharepoint.com/:v:/g/personal/22103808d_connect_polyu_hk/EeRTUx8Is1xFoXyzshL5vfYBBxoMOI2IIs3HI-W8LYmjQg?nav=eyJyZWZlcnJhbEluZm8iOnsicmVmZXJyYWxBcHAiOiJPbmVEcm12ZUZvckJ1c2luZXNzIiwicmVmZXJyYWxBcHBQbGF0Zm9ybSI6IldlYiIsInJlZmVycmF5TW9kZSI6InZpZXciLCJyZWZlcnJhbFZpZXciOiJNeUZpbGVzTGlua0NvcHkifX0&e=iBnngJ).

## 6 Conclusion

In this project, we have identified and analyzed five representative design drawbacks of WeChat and proposed improvements on Figma prototypes. We also documented the user tests conducted and evaluated possible weaknesses of our redesign from the user perspective. Principles of human-computer interaction are considered in the design process to ensure the improvements are user-friendly and efficient.

## References

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