

# In depth evaluation of WeChat

## 1 Introduction

Nowadays, instant communication applications are becoming more and more popular. There are many commonly used ones such as Whatsapp, Slack, and Discord. WeChat is the one dominating China market. However, WeChat still has many areas that can be improved from UX perspective. This report will evaluate WeChat UX based on Heuristic evaluation and experiment.

## 2 Heuristic evaluation

The heuristic evaluation of this report will be based on Nielsen's heuristic. In this report, I will evaluate some commonly used functions: friends-cycle, message, photo/file share, and video/voice call. Since there are totally 10 rules in Nielsen's heuristic, I will group UX problems by Nielsen's heuristic rules and only talk about rules that have UX problems found from WeChat evaluation.

### 2.1 No real-time feedback

WeChat has a function called friends-cycle which is a place to share daily life with friends. Friends-cycle allows users to upload pictures and videos. However, there is no indicator during uploading to display the current status which makes users unsure whether files are actually uploading because there is no immediate feedback. The only feedback users can get is a failure error but this is not an immediate feedback. WeChat will talk to server after about 5 mins of uploading start to verify if the video/photo upload succeed or not. If the upload failed, users can see an error message.

This is not the only place that WeChat is missing real-time feedback. Actually, most of friends-cycle users are not really care about real-time response (but this doesn't mean we should not have real-time feedback to indicate uploading status). However, no real-time response when sending message can cause serious problems. When users send messages to their friends, there is no immediate feedback indicating the status of this message (such as sending, sent, failed, etc.). Same as above, users can only get failure feedbacks after certain amount of time. Before this certain amount of time approaching, users have no idea if their messages sent or not. This makes users frustrated while waiting.

My suggestion to this issue is to add real-time feedback. According to Nielsen's heuristic rule, users need to know whether the interaction was successful. With a real-time indicator, users can easily know the current state of file uploading or message sending. The new design will let users know the application is working and have confidence with the immediate status.

This problem can be categorized as an interaction style problem caused by poor feedback. The problem violated Nielsen's heuristic rule: Visibility of System Status. This problem's frequency is constantly high and the impact is significant.

### 2.2 Misleading button name

Usually, when we want to make a video call, we will never click on a button called 'voice call' and vice versa. However, in WeChat's interface, there is a top-level menu called 'video call', and second level menu of this has two options: video call and voice call. Top-level menu name is the same as one of second level menu options' names. This design is not user-friendly for first time users. There are two reasons according to this Nielsen's heuristic. First of all, 'voice call' usually indicates a facetime-like call that you should

share your camera. Secondly, all other WeChat top-level menus do not have any second level options, which means once you click on the button, you shot an action. Therefore, the above two reasons will make first time users to be afraid of clicking on this ‘voice call’ button when they really only want a voice call. Those users need to spend extra time searching online or asking friends to confirm the way to make a voice only call. This is not a problem for frequent users but is a potential negative impact on first impression of new users.

My suggestion to this problem is to rename the top-level menu name to ‘video/voice call’. We should keep related functions together so that keeping this top-level menu is a good design. However, the original name is misleading. According to Nielsen’s heuristic rule that we should not force users to have to memorize, renaming the menu option is the best solution because with new name, all users will know they can either use video or voice call by clicking this button and do not need to memorize that voice call is nested in video call menu anymore. This fix can save more time for new users and get rid of potential negative impact.

This problem can be categorized as an interaction element problem caused by misleading. The problem violated Nielsen’s heuristic rule: Match Between the System and the Real World. This problem’s frequency is high among new users but less frequent in experienced users and the impact is significant in terms of first impression.

### 2.3 one-way switch from video to voice

WeChat provides an option that switch from video call to voice call. However, this is a one-way design, which means once you switch to voice, you can not switch back anymore without hung-up the call. This problem can significantly impact users. I use video call a lot and it is really easy to click the switch button by accident because it is big. Every time I clicked the button, I have to use extra time to initialize another video call with my friends.

My recommendation for this problem is to add another switch button at voice call interface, which can allow users to switch back to video call directly. The reason of this suggestion is based on two Nielsen’s heuristic rules. First of all, good UX design should maintain consistency in similar components. Video call and voice call are similar so that they should have similar interface which is the switch button. Secondly, we should allow users to have the flexibility to switch between video and voice. One-way switch design is not flexible enough.

This problem can be categorized as conceptual model problem. The problem violated Nielsen’s heuristic rules: Flexibility and Consistency. The frequency can be relatively depending on how frequently users use video call. Since the video call button is large, the problem is often among heavily video call users.

## 3 Methods used in the above report

This report is using Heuristic evaluation. The guidance of this evaluation is Nielsen’s heuristic rules. During the evaluation process, I went through each single function and applied all Nielsen’s heuristic rules to each feature or interface of this function to verify if the related rules are followed. If any features or interfaces are not following heuristic rules, I would investigate why I think this feature/interface has problem and find solutions according to the rules.

## 4 Controlled experiment

Besides the problems reported above, WeChat has two buttons: ‘share photo’ and ‘share file’. Usually, users think a movie is a file not a photo. So, when users want to share a movie via WeChat, they tend to

use share file button but will get disappointed because actually you should use ‘share photo’ button to share movies. There will be an experiment regarding to this UX issue in the report.

#### 4.1 Experiment design

The goal of this experiment is to determine if allow users to share movies via ‘share file’ button can have better useability. Therefore, the hypothesis of this experiment is “users are more likely to click share file button when they want to share movies/videos”. Therefore, the null hypothesis is “users have equal possibility to click each button”.

The independent variable is what you can share via ‘share file’. Currently, users can only see files other than photos and any types of videos when click ‘share file’ button. Therefore, we need to have another WeChat that can see photos/videos from ‘share file’. WeChat is not an open-source project so that we don’t have the ability to modify the real WeChat. However, there are many mock UI projects that we can found from GitHub. Those mock UIs are only an implementation on UI part which means there is no real backend nor server to do actual sending files. This is acceptable for this experiment because:

1. The dependent variables are: time spent on when users need to transfer videos, and error rate (how many times that users need to click on buttons to find the right one to share movies);
2. We only need to notice the users in mock UI when they click on ‘share file’ button saying ‘you got the right place’;
3. We do not need to do a real file sending.

I selected this mock from GitHub [1]. To make this mock suitable for this experiment, I did two changes to the code:

1. Bypassed login functions since we don’t need to do any experiment related to login;
2. Modified ‘share file’ of mock to allow users seeing ‘you got the right place’ message.

Besides the dependent variables descripted above, I will do an interview with each participant. This interview will have simple three questions: “I did not have any problems figuring out how to send a video”, “The button design makes me feel confidence when click on it”, and “You feel about the UX design”. The first two questions have a agree scale (strongly agree, agree, neutral, disagree, strongly disagree), and the last one will be an open-ended question.

Since experienced users have known that they should use ‘share photo’ button to send movies, the participants should be new to WeChat or existing users who never used those two buttons before. Those two types of users have no idea about the sharing functions so that they will try to finish. There are totally 10 participants who are my friends and family members. They are all at the ages of 25-35 so that I can make sure age is not a factor in this experiment. I divided them into two group equally. Group A will use normal WeChat and group B will use the mock. Since the mock has version conflict with some participants’ real phones, I asked both groups to use simulator which is the same shown in figure 1. In each simulator, I added a movie at the top of file list so that user can see it at the first glance.

This experiment’s success criterion is “at least 70% of users are likely to click share file button”.

Table 1: the result of dependent variables. Values are in total.

Group name	Error rate	Spent time
A	8 tries	40 sec
B	5 tries	26 sec

Table 2: the result of interview. The first cell of each option is group A, second cell is group B.

Question #	strongly agree		agree		neutral		disagree		strongly disagree	
1	0	1	0	4	1	0	4	0	0	0
2	0	0	0	4	1	1	4	0	0	0

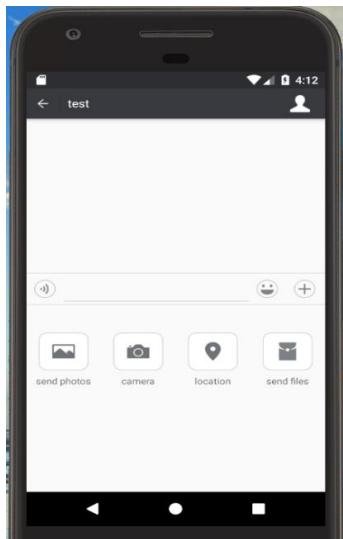


Figure 1: screenshot of mock UI

## 4.2 Experiment result and analysis

Each group will only need to do one goal during the experiment: to find a video/movie and send it to your friend. The final result of dependent variables can be seen from table 1.

From the table 1, we can see that the 5 participants in group A used 8 tries to find the right button, which means 3 of them made an error. However, no participant in group B made an error which leads to a 5 tries in total. This indicates that users are more likely to click ‘share file’ when transfer videos/movies. In terms of total time spent, since one user usually need about 5 sec to notice that he/she in the right place or not after clicked on a button, time spent on group A is almost twice as group B.

From the above objective results, we can see that this original WeChat design has negative impact. More than 70% of participants from both groups selected ‘share file’ as their first option. This can prove that our null hypothesis is false because 30% can not be defined as ‘equal’. In addition, the spent time gives us interesting information: re-try is time-consuming. In this experiment, we are using simulator and we only have single file in phone storage. In real world, no one’s phone will only have one photo/video/movie. So, they need more time to search to realize that they are in the wrong place, which I can imagine that the time spent in real world for new users can be much higher than the result. WeChat has more than 100M+ downloads just in Google Play. So, this poor UX design can cause huge negative impact on new users.

Table 2 displays the result of interview. We can see that no one in group A think this is a good design nor feel confidence when clicking versus no negative feedback from group B. This is another evidence that the original design needs to change. There are some interesting feedbacks from question 3<sup>rd</sup>:

1. Participant from group A: After read the requirement of this experiment, I clicked on ‘share file’ button without any hesitation. However, I noticed that there is nothing but empty folder. So, I went back and spent 5 sec to think which should be the right one. Then I decided to try ‘share photo’ because all other buttons are 0 likely.
2. Participant from group A: Actually, I never used these two functions before but I know WeChat has many weird designs. So, I spent few seconds to decide which one is correct, ‘share photo’ or ‘share file’. Finally, I picked ‘share photo’ just because I think WeChat has weird design as well in this function.
3. Participant from group B: I like this new design because my first selection is ‘share file’. Photo has its own definition and a video obviously not in the scope of that definition.

#### 4.3 Conclusion of the experiment

Based on the result above, both objective and subjective results indicate that current design is not good. We should show videos in ‘share file’ button. However, still some users clicked on ‘share photo’ at the first try. According to Nielsen’s heuristic rule, we should give users flexibility. So, my suggestion to the fix is: allow users to select all types of files from ‘share file’ button and keep the current design of ‘share photo’.

### 5. Conclusion

This evaluation includes two parts: heuristic evaluation and experiment. In the heuristic evaluation, I did evaluations on some important features of WeChat based on Nielsen’s heuristic rules and made suggestions that how to fix them. In the experiment, I proved that not most of the users will select ‘share photo’ to share videos as their first choice.

### Reference

[1] <https://github.com/GitLqr/LQRWeChat>