Time on task

During the prototype test of time on task. Our platform is mainly aimed at the group of college students. We invited 5 college students to participate in our user test. There are also testers who have already understood the relevant knowledge base of human-computer interaction. Five prototype-related tasks were assigned to prototype test participants and the time it took them to complete each task was recorded. After the results are obtained, the time data is analyzed, and the final average task duration is compared with the originally expected duration. If the average duration exceeds expectations, an in-depth analysis of the project's language description or user interface design is required. At the same time, consider whether the time required for the participants to complete the task is significantly different from other participants whether there are differences in physical and mental conditions or habits. Through this test method, users' needs for various functions, especially social functions, of the prototype of the distance education platform designed by us are improved. Analyze the data, document the shortcomings of the prototype, iterate on the next prototype, improve the prototype, and enhance the social experience of users on our platform.

Based on our existing prototypes, we designed the following tasks with respect to the main functions. Ask the participant to complete the second attempt within a certain period of time after completing the first attempt, with the memory of the first completion. Perform the same task:

Log in to the home page to view the progress of a task.

Select a file about the content of the DECO class among all the folder and file contents.

Study pages to select different subjects, view study modules, and share content in groups.

Select a friend in the friend list to enter the communication page.

We recorded the time it took five participants to complete each task in two attempts, as shown below.

	Task 1	Task 2	Task 3	Task 4
Participant A	5	23	5	10
Participant B	9	27	4	15
Participant C	8	20	8	13
Participant D	13	17	10	9
Participant E	6	26	9	18
Average time	8.2	22.6	7.2	13

Table 1 The results of the first try (Unit: second)

	Task 1	Task 2	Task 3	Task 4
Participant A	6	5	8	9

Participant B	5	8	5	10
Participant C	8	13	7	11
Participant D	6	7	9	8.5
Participant E	9	8	8.5	11
Average time	6.8	8.2	7.5	9.9

Table 2 The results of the second try (Unit: second)

The charts drawn based on the results obtained are as follows:

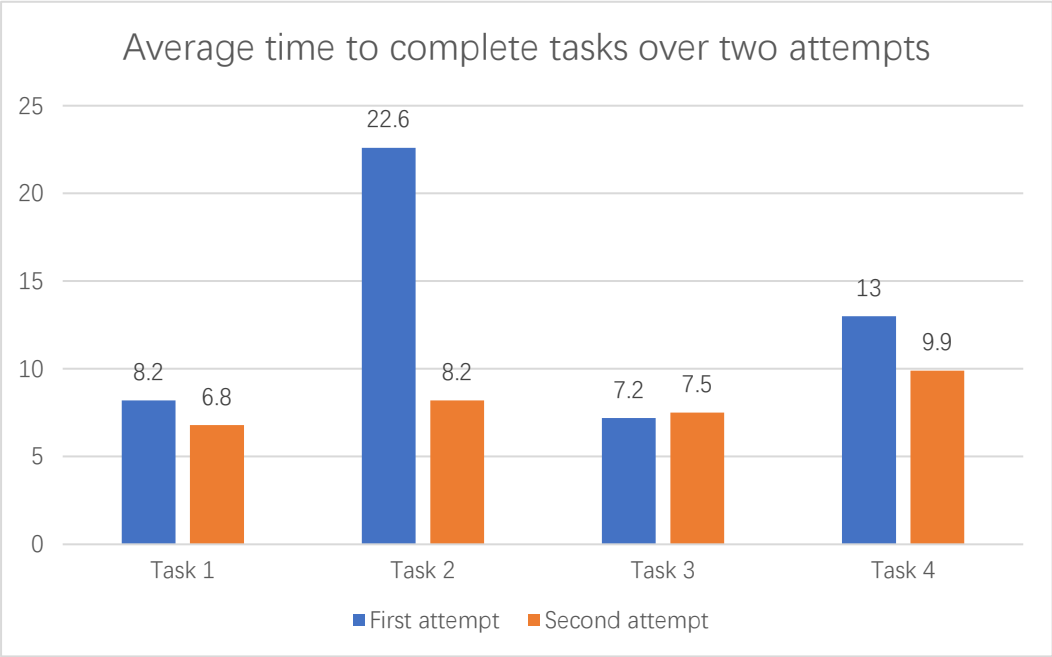

Figure 1 The average time to complete tasks over two attempts

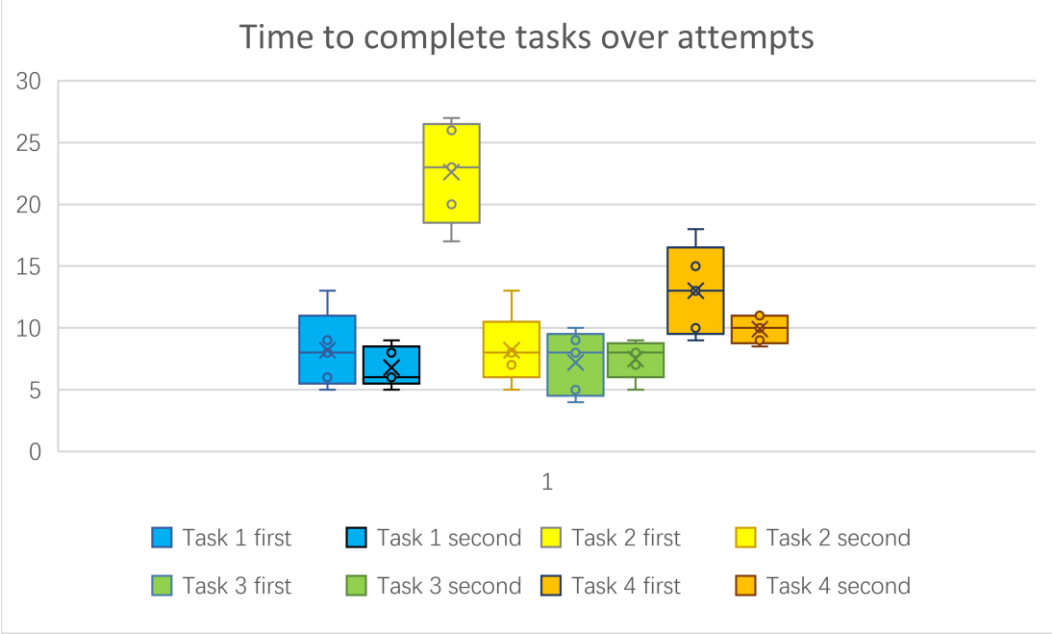

Figure 2 The time to complete tasks over attempts

Based on the graph above, we found that the average time testers spent completing the second task the second time was significantly less than the time they spent doing the same task the first time. According to the test content of the second task to find relevant documents, it is reasonable to speculate that the document information given to the tester by the prototype is insufficient. As a result, the tester needs to spend more time trying to find the relevant files in the first complete case. Therefore, we need to color mark or text mark our files in the next prototype iteration to give users more information prompts, so that users can find the files they want in time. The average time spent by the testers on other tasks did not differ significantly. The increase in average duration may also be due to participants' curiosity. Some participants study icons or content on some pages that generate interest or confusion while completing tasks. Of course, most participants still prefer to complete tasks quickly. Therefore, most of the task completion time is shortened.

Think aloud

Think aloud is a user testing method that allows researchers to record participants' thought processes and mental activity while or after completing assigned tasks associated with the prototype. After we analyze the language recorded by these users, the tester's words will be converted into professional words by us, which will help us understand the confusion encountered by users in the process of using the system, and find out the deficiencies we consider when designing the system and our Design parts that can be optimized. After the test method of think aloud, we can expand our thinking limitations when designing the system, help us understand where users will encounter confusion when using unfamiliar functions, and whether the page elements or metaphors we design can give users such Unfamiliar functions are used in enough prompts, and whether the response of the system after operation meets the user's expectations. We chose to invite five testers to do a think aloud evaluation of the prototype. Allow sufficient time for participants to complete each task.

Log in to the home page to view the progress of a task.
Select a file about the content of the DECO class among all the folder and file contents.
Study pages to select different subjects, view study modules, and share content in groups.
Select a friend in the friend list to enter the communication page.

The main pronouns we recorded for participants in each task are as follows.

For task 1:
Is this task progress automatically logged? I still need to add it myself. If there is no progress bar, it is very inconvenient to click in to view it. (Add a progress

bar or a clearer task progress label to each task bar)
The meaning of these icons on the side of the taskbar is not clear, especially the original design of the third icon is quite different from the meaning that the tester thinks. (Improve icons, indicate the meaning of each icon)

For task 2:
There are so many files that are not marked, it is difficult to find the desired file. (Add a simple text description or color annotation)
This part of the board is not large, and it is a folder and a document that feels that the distribution needs to be improved. The whole picture can't find the point. (Modify the overall file distribution, optimize visual effects)

For task 3:
There are two modules on the left and right. Can the menu bar on the left be retractable? It can be like the one on bb. It feels more convenient, and the space for the learning section will be larger. (Increase the menu bar telescopic function)
What is shared by the group and what is just me
Visible, not clear. Couldn't find out where the share function was very quickly. (Add icon for sharing function)

For task 4:
The sorting of the friend list is very friendly, and it seems that there is no function to add notes. Is there only text chat function? (Add functionality, voice, video...)
During the group chat, if there are teachers or the like, it would be better to have some prompts or labels, and it is also convenient to find the key content. (Teacher content key reminder)

To sum up, we can find some problems in this application and come up with some ways to improve:
The login page is simple and clear, and it can be considered in the future to allow users to set the background by themselves, just like setting an avatar.
The title and status of the reminder email. Add folder name, brief content, or add color marking function.
For each task, add a progress bar or a percentage type of prompt information that can be displayed directly on the task bar. Added text prompts for icons on the right side of the taskbar and improved icon shapes.
In the subject menu of the learning page, the expansion and contraction function, the function bar, and the icon of the sharing function have been added.
The chat page adds the meeting function, and adds the annotation function for important information. Increase the user settings page, allowing users to have more personalized functions.