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A Heuristics Analysis of Flipd and StudyBuddy

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Summary

Our team is developing an app called StudyBuddy, which helps users keep track of their studies and manage their time by providing tools to record study hours, personalized insights, and group study options to boost motivation.

We chose to compare with the Flipd app because we share the same field, which is about improving performance, productivity, and time management, and the features are very similar to our app, so we can easily compare with Flipd.

To guide this comparison effectively, we selected heuristics based on their relevance to our app, including visibility of system status, the match between the system and the real world, user control and freedom, consistency and standards, and recognition rather than recall. They are important because these heuristics provide a clear picture to the users about their actions and do not confuse them. On the other hand, we didn't choose heuristics like error prevention, flexibility and efficiency of use, aesthetics, and minimalist design because they were less important at this stage of our app.

Heuristics are highly relevant in creating user-friendly apps. They help developers understand the user perspective and create the app according to users' needs. For example, when users log their study hours, our app shows a confirmation message so that they know the task is successful. Our app allows users to edit and delete the subject name, so they can fix their mistakes and undo their actions if needed. Overall, our app meets these heuristics, making it simple, clear, and easy to understand.

We learned that while designing the web app, we should always think about users first. We should imagine ourselves as the user and think about how we would feel using the app. If the design makes us happy and doesn’t confuse us, it should be easy to use and feel comfortable.

As future developers, we will follow these heuristics because they taught us that even small details, like a button or a design choice, can make a huge difference. If something is unclear or hard to use, users might dislike the app and share their dissatisfaction with others and reduce the reputation of the company and growth opportunities. So, we should pay attention to every detail and focus on making a better app for the users.

Introduction

We are working on building a study tracking app to help users easily log their study hours, view insights, and join study groups. Right now, we are mostly done with the frontend part, including HTML and layout, and are now focusing on the backend to implement the app's functionality.

We chose to compare our app with the Flipd app because both apps focus on helping users improve their productivity and boost motivation. Our app and Flipd have the same functionality, like logging study hours, studying in groups, and tracking progress, so it is easier for us to compare the two. We can always use the Flipd app as a reference when working with the StudyBuddy app; we can learn how to make our app even better. This comparison will help us make a more user-friendly app.

The order of heuristics is based on the Nielsen Norman Group for user interface design. These guidelines will help to create an app that satisfies users' needs.

Usability Heuristics in Flipd and StudyBuddy

In this section, we will look at how the usability heuristics are used in Flipd and StudyBuddy. We will give examples of both good and bad layouts in each app to show how well they follow the principles and where they could do better. We will also briefly discuss what we learned from each heuristic. Finally, we will conclude with an overall evaluation of how the apps meet these heuristics, suggest ways to improve the user experience, and explain what we learned from this analysis as future developers.

Usability Heuristic #1: Visibility of System Status

Visibility of system status is about communication between the system and the user. The app should provide some hint information for users about what is happening in the app. When users call an action and are waiting for a process to happen, the app should provide some information about what is happening right now, if the process is happening, what specific process is happening, what stage in the process the app is in, and how long it will take. This information can be helpful for users to not feel lost or that the app or process is out of control (Harley, 2018).

With the use of this heuristic, the system feels reliable and trustworthy because it continuously informs the users, so they are not confused or lost while using the system (Harley, 2018).

This heuristic is closely connected to both Flipd and StudyBuddy because it highlights how important it is to give users clear and simple updates about what the app is doing. Both apps show how good communication can make the app easier to use and help users trust it.

In this section, we will look at how Flipd and StudyBuddy show users what's happening in the app. We'll also point out ways they can improve and share what we learned from reviewing them

Flipd

In Flipd, a blue button on the stopwatch page shows the number of people, who are online in real-time, as shown in Figure 1.

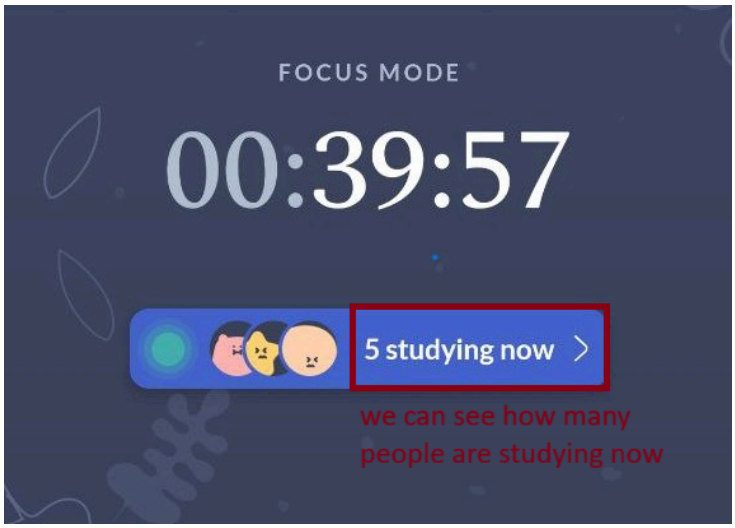

Figure 1 Button shows how many people are currently studying (Flipd, n.d.).

This feature gives instant feedback, letting users see how many people are studying in a group at the same time. By clicking the button, they can view profiles of the online users and learn more about them. This design follows this principle by showing information in a way that feels familiar, like seeing who is studying in a classroom. This sense of connection helps users stay motivated because it makes them feel like they are studying with others instead of alone.

StudyBuddy

Our app has a navbar at the bottom of every page, as shown in Figure 2.

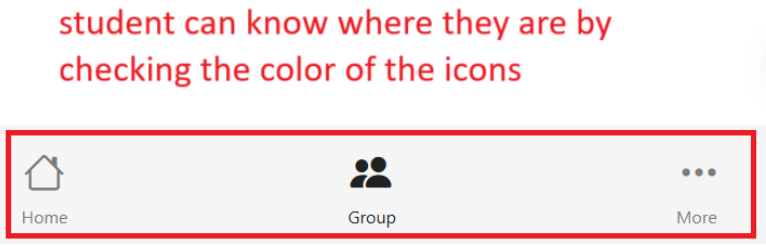

Figure 2 The navbar shows where users are in the app.

The navbar follows this heuristic by helping users see where they are in the app. The Group icon is black, which means the user is on the Groups page. The Home and More icons are gray, showing that the user is not on those pages. When the user clicks the Home button, they go to the Home page, and the Home icon turns black while the others turn gray. The same happens when the user clicks the More button. This design uses clear and consistent visual cues, making it easy for users to know their location in the app.

Both Flipd and StudyBuddy align with the heuristic effectively. With some improvements, however, their usability could be even better.

Flipd has some confusing buttons on the Start working page, as shown in Figure 3.

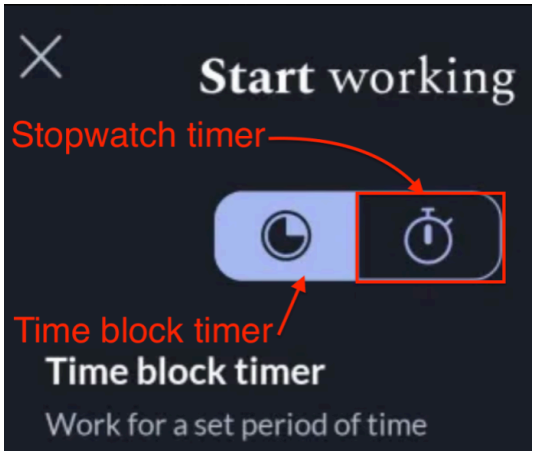

Figure 3 Two buttons on the Start Working page; one is a stopwatch, and the other is a time blocker (Flipd, n.d.).

An improvement needed in the Flipd app is the design of the stopwatch and time blocker buttons. The stopwatch button is just a regular stopwatch, and the time blocker stops the stopwatch from working within a customized time that users choose. However, at first glance, users cannot easily understand what these buttons do just by the icon. They may need to try a few times to figure it out, which could lead to confusion. Adding descriptive labels or short tooltips to these buttons would clarify the purpose of each button. Using familiar and straightforward language would make the interface more intuitive and user-friendly.

StudyBuddy displays the total study time for the day at the top of the homepage, but the information is unclear, as shown in Figure 4.

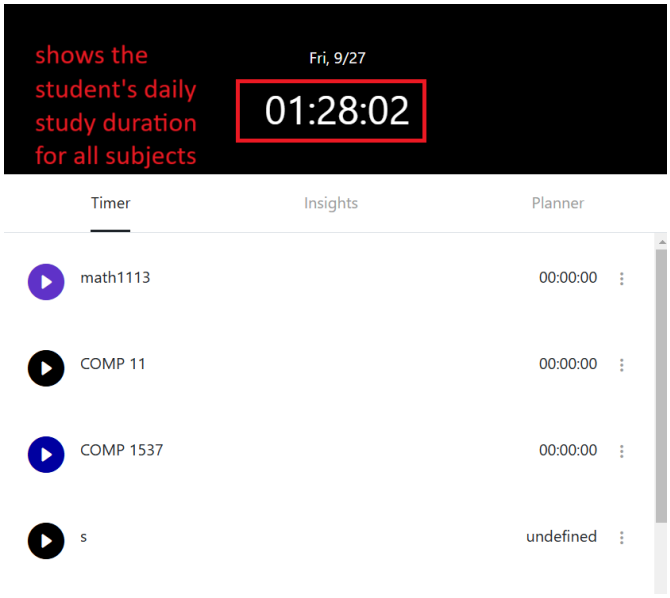

Figure 4 The total time spent studying during the day is displayed at the top of the home page.

The total study time changes daily, which includes the sum of the study time for all subjects, such as *math1113* or *COMP 11*. However, the number itself doesn't clearly tell users its meaning, which could confuse users—especially new ones—who may not understand what it represents. To align with this heuristic, we could add a clear label or brief explanation near the number, such as *Total Study Time for Today*. This change would make the data easier to understand.

As future developers, we learned that providing key information and feedback is essential for a reliable app. This ensures users understand what is happening in the app or during a process, preventing confusion or frustration.

Next, we will discuss Heuristic #2: Match between the system and the real world.

Usability Heuristic #2: Match between the system and the real world

Match between the system and the real-world usability is about making sure the app and the processes in the app are familiar to the user. It means using the ideas and processes that users have seen before, in the real world or other technologies. The app should use simple language, follow a logical order, and make users feel comfortable by using familiar concepts (Kaley & Joyce, 2018).

This is not only about the words and phrases the app uses but also about how the processes actually work in the app; feedback, notifications, and the design of the app should look familiar to the user. The app should behave the way that the user expects, based on their previous experiences with similar technologies and real life. By applying this heuristic, the app lets users stay confident and not confused while using the app (Kaley & Joyce, 2018).

This heuristic is closely related to both Flipd and StudyBuddy because it focuses on making the app's features easy to recognize and use by mirroring real-world designs and ideas. Both apps

use this heuristic to create a smoother user experience by designing familiar elements that make users feel comfortable and confident.

In this section, we will look at how Flipd and StudyBuddy use this heuristic in their design. We will also point out areas where they could improve and share what we learned from analyzing them.

Flipd

Flipd has a calendar feature, as shown in Figure 5.

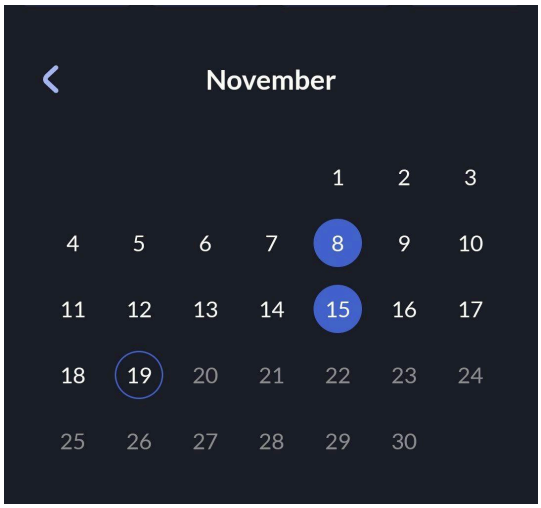

Figure 5 Familiar calendar (Flipd, n.d.)

The calendar follows this usability heuristic. The design looks like a standard calendar that people are familiar with in daily life, such as those found in mobile apps. This calendar mirrors real-world designs, making it easy for users to understand and navigate. For instance, the current date, November 19, is highlighted with a blue circle, just as we would expect in many digital calendars.

StudyBuddy

Our app also has the same calendar feature, like Flipd, as shown in Figure 6.

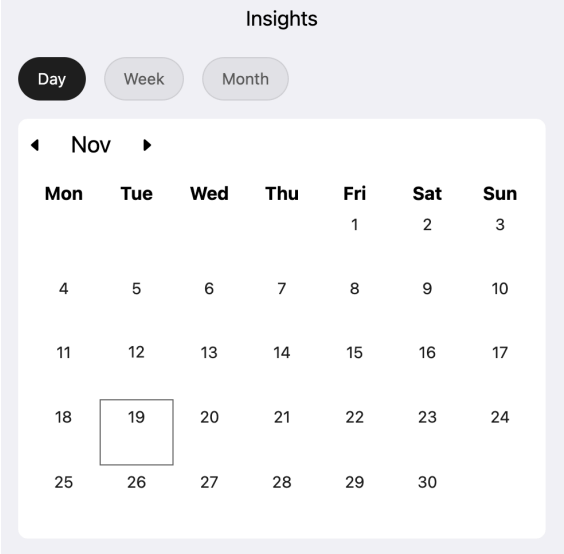

Figure 6 Calendar inspired by real world

The calendar in StudyBuddy follows this heuristic. We implemented the same design of the calendar like Flipd inspired by real-life calendars, making it familiar and easy to use. For example, the current date, November 19, is highlighted with a square, so users can quickly see what day it is.

Both Flipd and StudyBuddy follow the heuristic well. With some improvements, however, their usability could be even better.

Flipd uses unclear wording on the focus lock page, as shown in Figure 7.

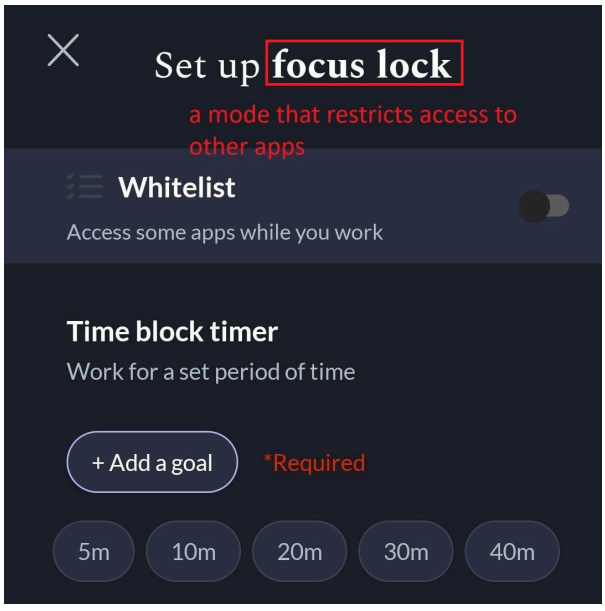

Figure 7 Specific mode in the app that restricts access to other apps (Flipd, n.d.)

One area where Flipd could improve is the expression *focus lock*. This mode in the app limits the user's access to other apps, essentially locking the device to help the user stay focused. However, the term *focus lock* might be confusing for new users or those unfamiliar with the app. Users may need to try the mode a few times to fully understand how it works. We could improve this by using clearer and more descriptive wording, such as *App Lock Mode* or *Focus Mode*, to better match the user's understanding of what the feature does based on real-world terms.

Our app uses *Insights* as a heading on the calendar, as shown in Figure 8, but the term *Insights* is unclear.

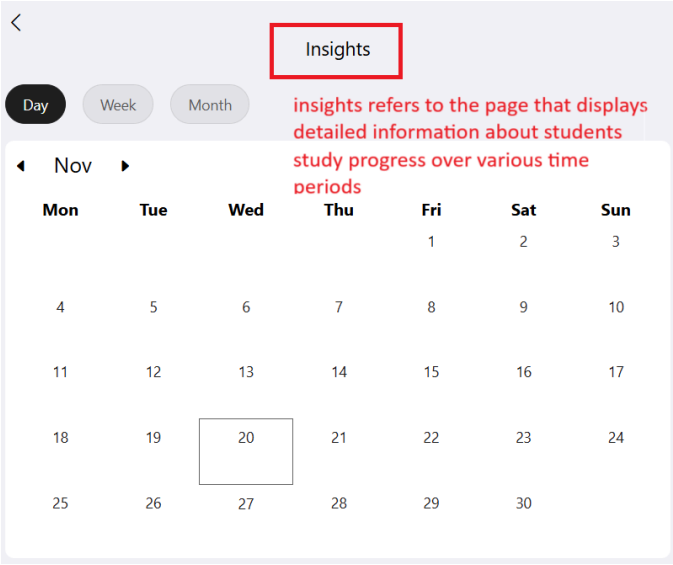

Figure 8 Unclear term, Insights

Through user testing, we discovered that the word "Insights" can be confusing for users when referring to this page. Users mentioned that they did not expect to see statistics about their average study time under this heading. A clearer term, such as "Statistics," might better align with their expectations and improve understanding.

As developers, we learned that to create an app users enjoy, we need to use words, phrases, and language they are familiar with. It's important to match the way they communicate and design the process flow based on what users already know. This ensures users won't feel confused and helps them feel confident while using our app.

Next, we will discuss Heuristic #3: User Control and Freedom.

Usability Heuristic #3: User Control and Freedom

User Control and Freedom is all about giving freedom to users whenever they make a mistake or want to fix/change something while using a website or web app. This can be done through undoing actions, going back to the previous page, or using the exit button to close the app. While doing these interactions, the user should not feel stuck in the process and should feel

happy while working with the app, which will increase the overall usability of the app (Rosala & Harley, 2020).

This heuristic is highly relevant because if the new user interacts with the app, they should not be worried about making mistakes. They can easily rectify their mistakes, which ensures more satisfaction for the user and makes them feel more comfortable with the app.

We chose this heuristic because it puts users in charge. They can easily control their interactions with the app by using the back, undo, and exit buttons. It's more of a user-oriented heuristic.

In this section, we particularly choose to compare Flipd and StudyBuddy together because they have similar purposes, and it will be better to show them together as it will provide a more clear and concise analysis rather than putting Flipd and StudyBuddy separately like other sections.

Flipd and StudyBuddy

In Flipd and StudyBuddy, a clear example of user control is the '<' button at the top left corner of the majority of the screens, as seen in Figures 9 and 10.

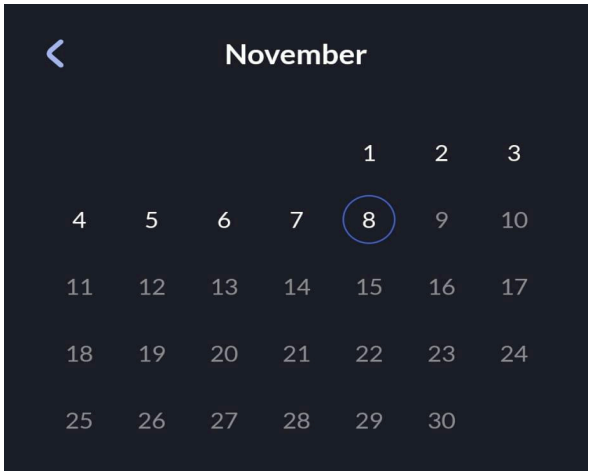

Figure 9 A button to go back to Flipd's homepage (*Flipd*, n.d.)

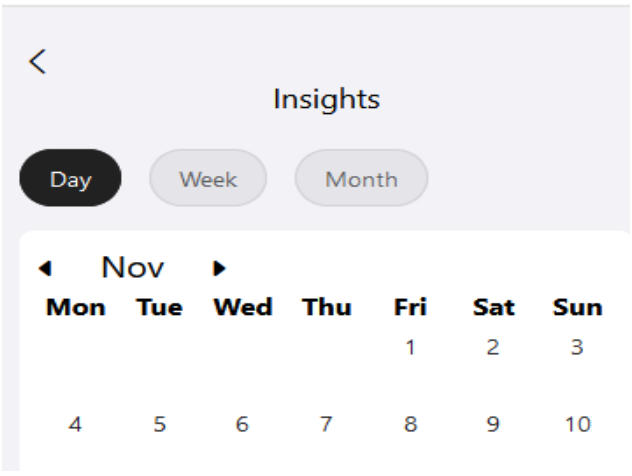

Figure 10 A button to go back to StudyBuddy's home page

This "<" button indicates the way to go back to the home page or exit a screen. Flipd has a back button to return to the main page or homepage, which is clearly marked in the top left corner so that the user can easily navigate between the pages.

In our own app, StudyBuddy, we have the same feature to let users control their actions, as they can easily return or go back to the home page by using the "<" button; users can easily close the current page and continue their session.

While both apps do well with user control, there are some areas for improvement in both the Flipd and StudyBuddy apps.

In Flipd, a clear example of a user experience issue is the promotion of premium features, as shown in Figure 11.

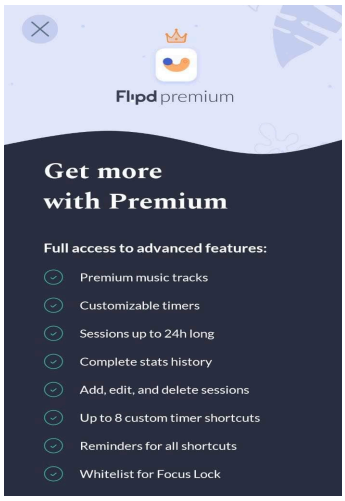

Figure 11 shows the whole screen covered by the premium page (*Flipd*, n.d.)

In Flipd, the premium features are promoted. They take up the entire page, removing control from users. The figure shows a small button that is provided. This premium feature randomly pops up in different locations, which frustrates users. To improve the user experience, users should explore the premium benefits in separate, uninterrupted sections.

In StudyBuddy, a clear example of a user experience issue is that users are not able to edit the subject hours, as shown in Figure 12.

Figure 12 Only two options, editing and deleting the subjects

In StudyBuddy, there is an option to edit and delete the subjects, but there is no option to edit the study hours. If the user accidentally clicks the play button to log study hours, it will implement a stopwatch to log study hours, but they cannot change it later. This might make users feel frustrated that they cannot fix mistakes. So, we have a lot of room for improvement in our app.

As future developers, we should learn to focus more on the user perspective while making web apps. Focusing on providing clearer instructions and giving users more control over their actions can help build a more user-friendly app and increase user engagement while working with our web app.

Next, we will discuss Heuristic #4: Consistency and Standards.

Usability Heuristic #4: Consistency and Standards

Consistency and standards keep a design predictable and familiar so users can easily understand the interface. By using consistent styles and following common industry standards, users can navigate without confusion. This makes using the product feel easier and lets users focus on what they want to do rather than figuring out how to use the product (Krause & Moran, 2021).

This heuristic is related to both Flipd and StudyBuddy because it helps make each app look cohesive and easy to understand. By keeping consistency and following common standards, both apps allow users to focus on the content rather than learning how to use the app.

This heuristic has components for internal, external, and both. Internal consistency means keeping everything in the app uniform, so users don't get confused. External consistency means following industry standards, so users can easily understand their apps based on their experience with other apps. When a design is consistent within the app and also matches common standards, it shows both types of consistency (Krause & Moran, 2021). In this section, we will focus on internal and external components separately to provide a more detailed analysis of how each type of consistency is applied in Flipd and StudyBuddy.

Flipd

Externally, Flipd uses a common navigation bar that is located at the bottom, as shown in Figure 13.

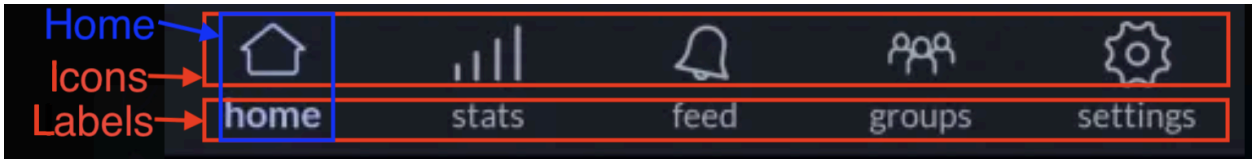

Figure 13 Common navigation bar and home icon convention (*Flipd*, n.d.)

Placing the navigation bar at the bottom of the screen is a common standard in mobile app design. This conventional placement makes it easier for users to navigate because it matches what they are used to from other apps. The navigation bar uses big icons with short labels in smaller text underneath, which can be seen in many other mobile apps. This familiar design helps users quickly recognize and understand what each button does, which reduces the need to learn something new. The navigation bar also has a 'Home' icon, which is a standard practice. By including a 'Home' icon in the navigation bar, it gives users a clear and familiar way to get back to the main screen, which makes the app simpler and easier to use.

StudyBuddy

Our app is internally consistent because all cancel buttons are on the left, and all action buttons are on the right within modals, as shown in Figure 14.

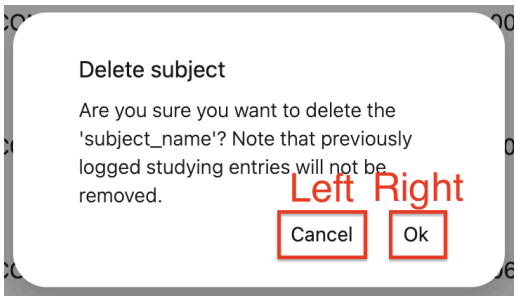

Figure 14 Cancel buttons on the left and action buttons on the right

To provide context, a modal is a pop-up window that requires users to interact with it before returning to the main app. In this case, the modal asks users to confirm whether they want to delete a subject.

This consistent layout helps users instinctively tap the left button to cancel or the right button to confirm. By keeping the buttons in the same place throughout the app, users don't have to pause and think about which button to press whenever a modal pops up. As a result, they can focus on completing their tasks or interacting with the content without unnecessary distractions. This intuitive design makes the app easy to navigate, which helps users act confidently while meeting their expectations.

Both Flipd and StudyBuddy follow consistency and standards well, but a few small changes could make them even easier to use.

Internally, Flipd has some inconsistent text styles across the interface, as shown in Figure 15.

Figure 15 Text styles in Flipd are inconsistent (*Flipd*, n.d.)

November 8 is capitalized, while TOTAL TIME: 0M is in uppercase. In the navigation bar at the bottom, labels like home, stats, and feed are all in lowercase. The difference in text styles can confuse users because it visually distracts them and makes them wonder if the different styles have specific meanings. Making all text capitalized would improve cohesion and help users focus on their tasks more easily.

In terms of external consistency, our StudyBuddy app uses a less common calendar layout for weekly insights, as shown in Figure 16.

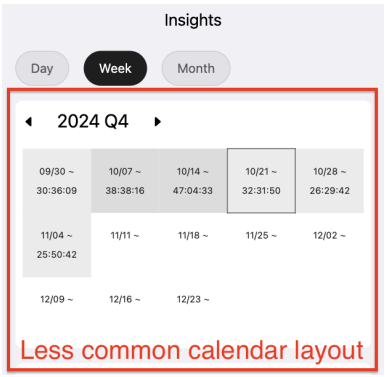

Figure 16 Less-familiar calendar layout

It shows weekly ranges with total hours for each week, instead of displaying days in a traditional calendar grid. This layout could confuse new users who may not understand the layout right away. To meet industry standards, we could research more common layouts for displaying weekly data and update the design.

From studying this heuristic, we realized how much consistency impacts how easily people can use an app. We used to think that creating something unique and completely different would make our designs stand out and impress users. However, we now understand that following familiar patterns and maintaining consistency are more effective. As a future developer, we will prioritize consistency in our designs by using familiar layouts.

Next, we will discuss Heuristic #6: Recognition Rather than Recall.

Usability Heuristic #6: Recognition Rather than Recall

Recognition rather than recall is creating interfaces where users can recognize information rather than remember it. This approach focuses on minimizing the user's memory load through visible actions and options. By giving users extra context, they can interact with the interface effortlessly without solely relying on their memory (Budiu, 2024).

This heuristic is related to both Flipd and StudyBuddy because it emphasizes the importance of designing interfaces that reduce the cognitive load on users by making key information readily accessible and intuitive to interpret. Both applications implement this principle by prioritizing visible and clear information over requiring users to recall specific details from memory.

In this section, we will look at how Flipd and StudyBuddy use recognition to show study data. We will then discuss ways to improve both apps. Finally, we will share what we learned from this analysis.

Flipd

Flipd displays recent study sessions with detailed information, such as the date, start and end times, and duration, as shown in Figure 17.

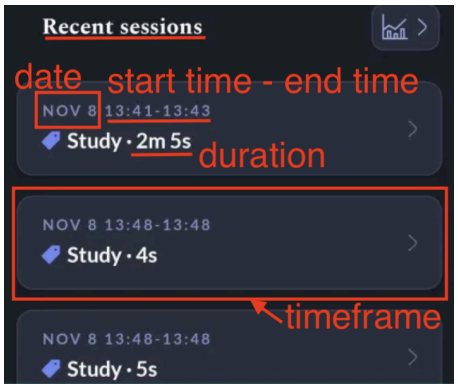

Figure 17 Personalized recent study sessions (*Flipd*, n.d.)

Users can see the recent time frame, which tells how much they studied and how focused they were during each session without relying on memory. By providing personalized recent study sessions, users can easily access and track their study times via recognition. The app also helps users manage their time better by letting them review historical data and identify trends in their study habits.

StudyBuddy

StudyBuddy has a daily calendar feature to provide the total hours users study each day over a month at a glance, as shown in Figure 18.

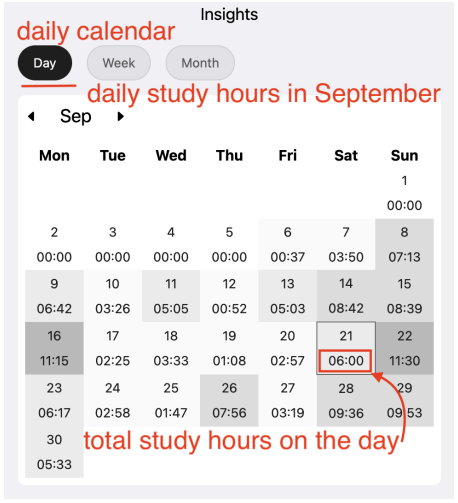

Figure 18 The daily calendar shows daily study hours.

The daily calendar helps users recognize their past study patterns without needing to recall them from memory. The varying shades of gray correspond to study hours, which provides an additional visual cue. This color coding makes it easier for users to see which days of the week

they tend to study more or less without actively recalling specific numbers. For example, we can notice this user typically studies more on weekends. This follows the idea of recognition, which uses clear visual clues to help users effortlessly spot information.

Both Flipd and StudyBuddy align with recognition rather than recall well, but a few small changes could make them follow this heuristic more effectively.

Flipd's calendar layout, as shown in Figure 19, could be improved by minimizing the need for interaction to see information.

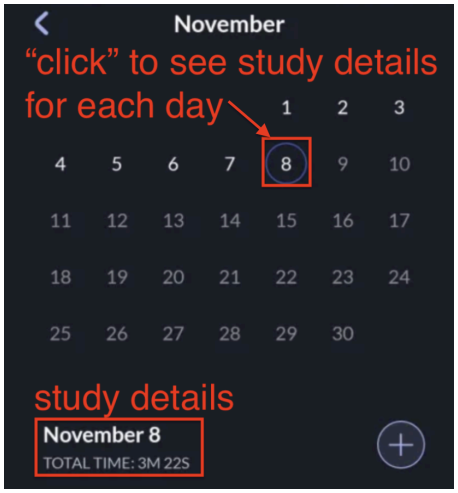

Figure 19 Calendar layout with limited immediate recognition (*Flipd*, n.d.)

This calendar requires the user to click to access detailed study information for each day. This makes it hard to quickly compare study times across multiple days without repeatedly interacting with the interface. This lack of immediate recognition makes it harder to gain insights into study habits. This area can be improved by displaying total study time as small text directly under each date on the calendar.

StudyBuddy has room for improvement in how the subject list is sorted, as shown in Figure 20.

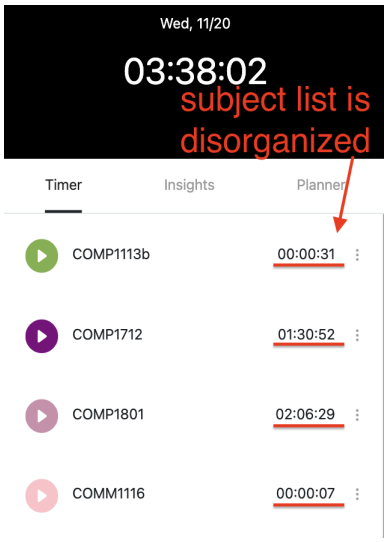

Figure 20 Disorganized Subject List

In this screen, users can select a subject, such as *COMP1801* or *COMM1116*, to log their study time. However, the subject list is not organized in any particular order, which makes it harder to find what they need. Sorting the subject list based on criteria such as the most recent or frequently studied could help users quickly find and start logging their study hours more effectively.

Before reading this article, we had never thought about how our apps could affect users' memory. We were surprised to realize that, without even noticing, we had already been developing features that reduce cognitive load, such as a daily calendar with visual cues. Now that we understand this heuristic, we will first focus on improving our disorganized subject list and consciously apply this heuristic as we continue developing apps.

Conclusion

Overall, we were able to provide one example of how Flipd follows each usability heuristic we selected. However, we also identified areas where improvements could enhance the user experience further.

Flipd provides real-time feedback by showing how many people are studying, which keeps users informed. The calendar also reflects the real world by marking today with a circle, making it easy to understand. However, the app has inconsistent text styles that need fixing. Additionally, the calendar could display study times more directly to help users quickly recognize important information.

For StudyBuddy, similar to Flipd, we found both areas where the app meets the heuristic well and areas needing improvement.

The navigation bar highlights the current page with a filled icon, offering clear feedback. Button placement in modals is also very consistent, which helps users navigate smoothly. However, some features, like the weekly insights calendar, use unfamiliar layouts that could be redesigned to match common standards. Sorting the subject list in a logical order would also make it easier for users to log study hours without relying on memory.

As we continue developing our app, the further action to meet usability heuristics is to prioritize saving real data to the database. Although we've added a stopwatch feature that allows users to log their study hours, the data on the calendar is still fake and doesn't reflect changes from the stopwatch. This inconsistency between the stored data and what users see on the calendar could confuse them. To resolve this, we need to implement a function that updates the calendar with real data.

Based on this analysis, our biggest takeaway is to always think from the user's perspective. As future developers, we are working with various tools and complex interfaces, such as Visual Studio Code, to develop our app. However, we cannot assume that all users have the same background or technical skills as we do. It's easy to think that everyone uses technology in the same way, but that's not true. Our app should be accessible to people of all ages, cultures, and education levels. This made us realize how important it is to consciously follow usability heuristics to support a wide range of users. To ensure our app retains as many diverse users as possible, we must carefully consider their needs and perspectives throughout the development process.

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