Design Critique

Based on the formative feedback we gathered from user testing and the heuristic evaluation, e identified several design improvements that we believe would enhance FocusBrowse's usability for the target audience. The evaluation reveals both high-priority issues that impede user success, and lower-priority refinements that would elevate user experience.

Installation and Onboarding Improvements

The most significant barrier to usability identified across both participants was the installation process (particularly, cloning the GitHub repository). Both users, despite having different technical proficiency levels (User 1 rated themselves 1-2/5, User 2 rated themselves 3/5), struggled with this initial step. It took both users around 6-7 minutes with substantial assistance from the investigator. The user manual's instruction to "clone the repository" assumes technical knowledge that is not universally available among the target user population. This is thus a high-priority issue that directly contradicts the system's usability goal of learnability and creates an immediate barrier to entry.

We strongly recommend implementing a comprehensive onboarding experience that eradicates technical jargon and provides step-by-step visual guidance. In our opinion, the installation document should include:

1- Explicit, numbered steps with screenshots showing exactly where to click on GitHub to download the repository as a ZIP file
2- Alternative installation methods (such as deploying the application on the Chrome Web Store) to bypass repository cloning entirely
3- A video tutorial or animated GIF walkthrough for visual learners.

This aligns with heuristic evaluation findings that rated "Help and Documentation" as only 4/5, with both evaluators noting that "the user manual is not very helpful to someone who is not tech-savvy or has worked with GitHub before" and that "the installation process lacks sufficient step by step guidance."

Serial Port Connection Feedback

Another high-priority issue identified during setup was the lack of clear feedback when connecting the serial port to the LED hardware. Both participants expressed confusion about which serial port to select, with User 2 spending over 4 whole minutes on this task

despite self-identifying as a “moderately technical” person. Neither participant received visible confirmation of successful connection, forcing them into trial-and-error troubleshooting. This was reflected in the heuristic evaluation, rating “Visibility of system status” as only 3-4/5 and noting that “the system provides limited feedback when connecting to the serial port”.

As such, we recommend implementing immediate visual and textual confirmation when a successful serial port connection is established. This should include:

1- A clear on-screen message stating something like “Successfully connected to Arduino on port [Port Name]” with a green checkmark icon
2- The LED lights performing a brief test sequence (like cycling through colors) immediately upon connection to provide tangible confirmation
3- Enhanced error messaging that specifically identifies common connection issues.

Further, the user manual should be updated to explicitly state that users should select the port with “Arduino” or “USB Serial” in the name, addressing the documentation gap that both evaluators identified.

Visual Feedback and Status Indicators

A medium-priority issue that affects user confidence was the inconsistent visibility of the coffee mug status indicator. Both participants reported not seeing this indicator during the first half of their study sessions, forcing them to check the manual and disrupting their workflow. This represents a failure in the “Recognition vs. recall” heuristic, which was rated 4/5 in the evaluation with the note that the indicator “appeared only after specific triggers, reducing discoverability”. The coffee mug’ prepose is to provide ambient awareness of system status, but its delayed or inconsistent appearance undermines this calm technology principle.

We recommend making the coffee mug indicator persistently visible throughout the entire study session, positioned consistently in the browser toolbar where users naturally look for extension status. The indicator should appear immediately when a session begins and remain visible until the session ends. Consider implementing subtle animations or color changes that correspond to session phases. If the coffee mug concept is confusing to users unfamiliar with the “coffee break” metaphor, consider alternative iconography.

LED Brightness and Visual Distraction

A consistent complaint from both participants was the excessive brightness of the LED lights, with Participant 1 describing them as “a bit distracting” and Participant 2 finding them sufficiently bothersome to suggest brightness adjustment in their improvement recommendations. This directly contradicts FocusBrowse’s main goal as a calm technology designed to enhance focus rather than distract fro it. The heuristic evaluation rated “Aesthetic and minimalist design” as a 5/5 overall but noted that “the lightning intensity can be overly bright, becoming visually distracting during use”.

As individual brightness preferences vary from person to person, and with the fact that some users may have medical conditions that make them overtly sensitive to light, we recommend implementing adjustable brightness controls with multiple reset levels. Additionally, consider implementing an “adaptive brightness” feature that automatically dims the lights after the user acknowledges a state change, allowing the LED basically to serve as an alert that then recedes into the background. This would better align with calm technology principles as it keeps users informed without overwhelming their peripheral awareness.

Bug: Focus Sites Warning

A high-priority bug was identified where the “Focus on study sites” warning appears even when no study sites have been added to the focus list. As noted in the heuristic evaluation, this creates a frustrating dead-end where users “either have to add the site you are currently at or remove the extension” to dismiss the warning. This represents a fundamental breakdown in system logic that violates multiple heuristics including “Error prevention” (rated 3/5) and “Help users recover from errors” (rated 3/5).

This bug needs to be fixed such that the warning is only triggered when the user has explicitly added focus sites to their list AND they are currently browsing a site not on that list. When no focus sites are identified, the system should allow all browsing without warnings. Further, the system should provide users with a clear permanent option to dismiss or disable focus site warnings if they chose to use the Pomodoro timer functionality without website restrictions. This gives users greater control and prevents the tool from becoming more of an obstacle than an aid.

Flexibility and Customization

Both the user testing and heuristic evaluation identified the lack of timer customization as a limitation. User 2, who regularly uses Pomodoro techniques, attempted to modify the

fixed 25-minute duration but was unable to do so. The heuristic evaluation rated “Flexibility and efficiency of use” as only a 3-4/5, explicitly noting that “users cannot choose the timer, although Pomodoro is generally considered 25 minutes, I have found myself trying to change the timer”

While we acknowledge that 25-minute intervals represent the traditional Pomodoro technique, individual preferences and task requirements vary significantly. We recommend implementing customizable sessions and break durations accessible through the settings pane. Provide preset options as well as custom duration entry. This would transform FocusBrowse from a rigid, one-size-fits-all tool into a flexible companion that adapts to individual working styles.

Positive Design Elements to Preserve

Both participants praised the interface’s clarity and ease of navigation, with User 1 noting that “the interface is very clear, where everything is and how it works, is understandable”. Tasks involving core functionality (adding/removing focus sites, starting/stopping sessions, recognizing state changes) consistently received 100% recognition rates and high satisfaction scores, hit completion times well within expected benchmarks. The heuristic evaluation rated “Match between system and real world”, “User control and freedom”, and “Consistency and standards” all at 5/5.

These strategies should be preserved and extended in future iterations. The clean and minimalist UI should remain the foundation of the user experience and should serve as models for the enhancements we recommended above. As you implement improvements, you should take particular care to not add unnecessary complexity that would undermine the straightforward usability that users appreciated.