

Effectiveness of Academic Scheduling among College Students

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Abstract

College students spend a lot of time tracking their work by managing deadlines scattered across multiple platforms. They need a single, reliable tool that handles this organizational overhead automatically, so they can focus their energy on actual coursework. Students currently navigate an average of four to five different platforms which include Canvas, syllabi, personal calendars, and group messaging apps to piece together a complete picture of their responsibilities which is time-consuming and error-prone so students abandon planning tools altogether before they even get started. UniSync addresses this through an integrated academic scheduling platform featuring automated LMS synchronization with Canvas and Gradescope, an AI-powered PDF syllabus parser that extracts deadlines automatically, and collaborative availability heatmaps for group coordination. Using a within-subjects study we compare manual deadline entry to AI-assisted syllabus upload on an identical assignment task. The AI-powered upload was significantly faster than manual entry, representing a 78.7% reduction in task completion time. These results validate that AI-assisted syllabus parsing can meaningfully eliminate the setup burden that prevents students from adopting planning tools in the first place.

Current Context of Use

To understand how students actually manage their schedules, we conducted a Contextual Inquiry with five students where they responded to new assignments, prioritized tasks, scheduled group meetings, and dealt with deadline changes. Sessions ranged from 40 minutes to one hour and were conducted in person. Three key themes emerged from the inquiry:

- ❑ **Information is scattered across too many platforms.** Students regularly bounced between Canvas, email, syllabi, personal calendars, Slack, and Discord just to get a complete picture of what was due. There was no single tool which had everything, so the mental work of connecting them all fell entirely on the student.
- ❑ **Setting up for the semester takes too long.** Every semester, students spent hours manually copying due dates from syllabi into their calendars. This process was tedious, prone to typos, and fragile when professors changed deadlines. Several participants said this overhead was the main reason they gave up on planning tools altogether.
- ❑ **Group scheduling is slow and stressful.** Coordinating a meeting meant sending a When2Meet link, waiting days for everyone to respond, then following up with people who forgot. In general it took an average of over three days to confirm a meeting time.

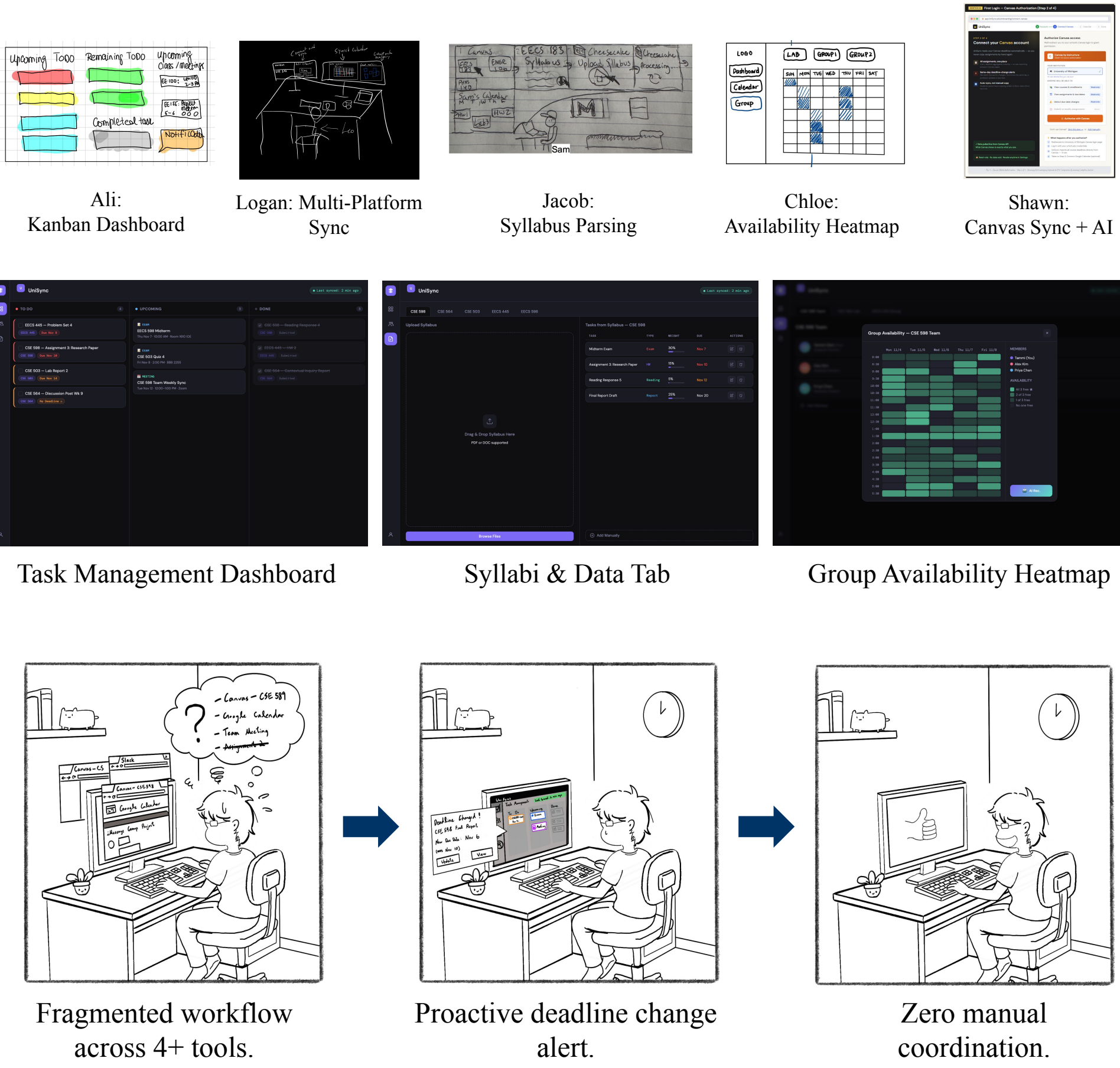
User Requirements

- ❑ **5.1** Students should be able to access all their course assignments and scheduled meetings from a scheduling tool, without consulting more than one source.
- ❑ **5.4** Students should become aware of any instructor-initiated changes to assignment due dates on the same day the change is made.
- ❑ **5.5** The time required for a student to compile a complete list of all course assignments into a scheduling tool should be less than the time required to do so by manually transcribing them from each source.

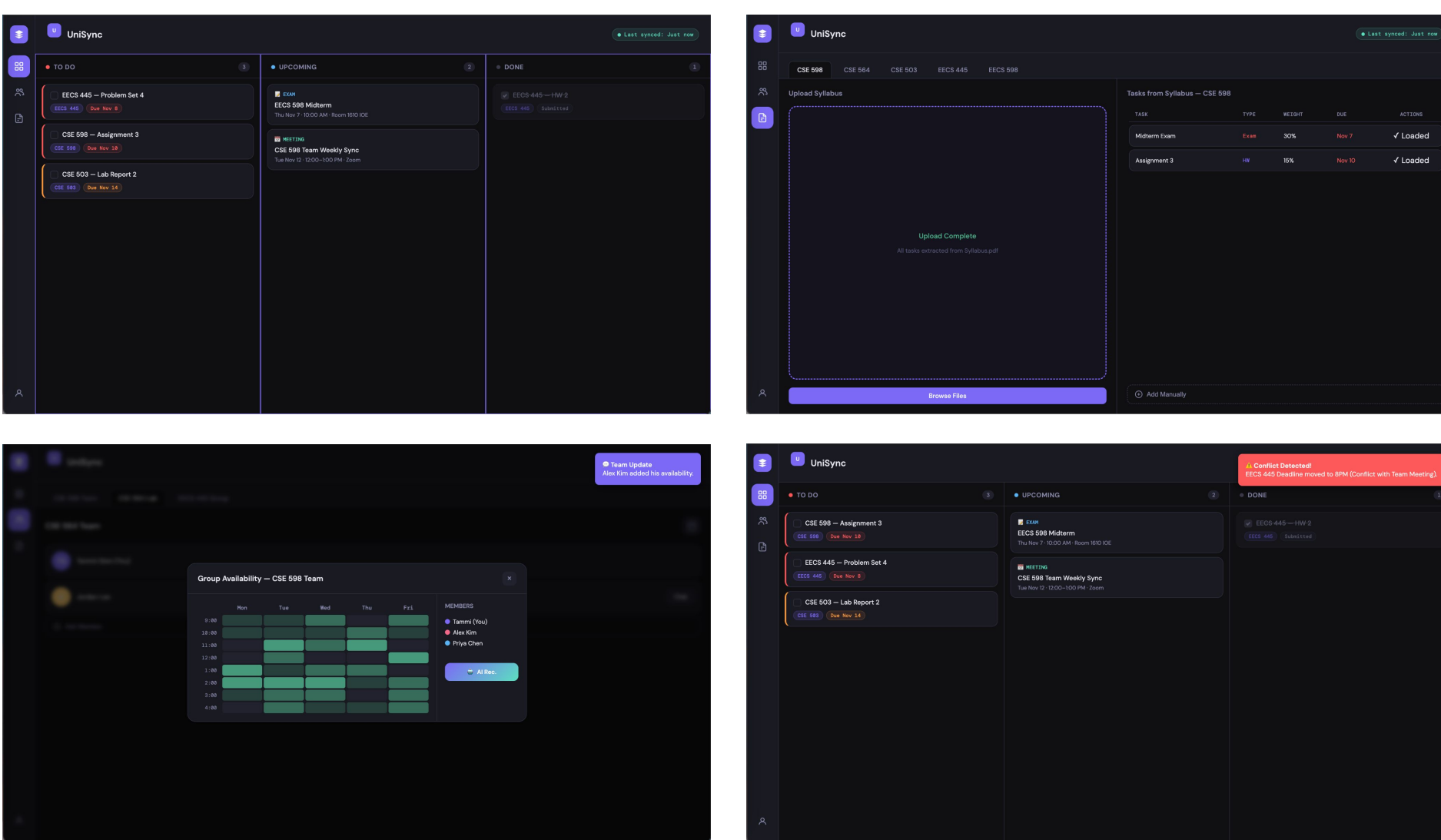
Personas

Tammi Glen
Tammi is a graduate or upper-level undergraduate student managing 4–5 demanding courses along with research or GSI responsibilities. She currently relies on Canvas, Google Calendar, When2Meet, Slack, Discord, and email, but this workflow is fragmented and requires constant manual checking. Her biggest pain points are copying due dates by hand, switching between too many platforms, worrying about missed deadline changes, and struggling to coordinate group meetings. She wants one centralized tool that reduces tool switching, automates logistics, and gives reliable notifications and visible confirmation of completed tasks.

Sketches and Storyboards



Low-fidelity Prototypes



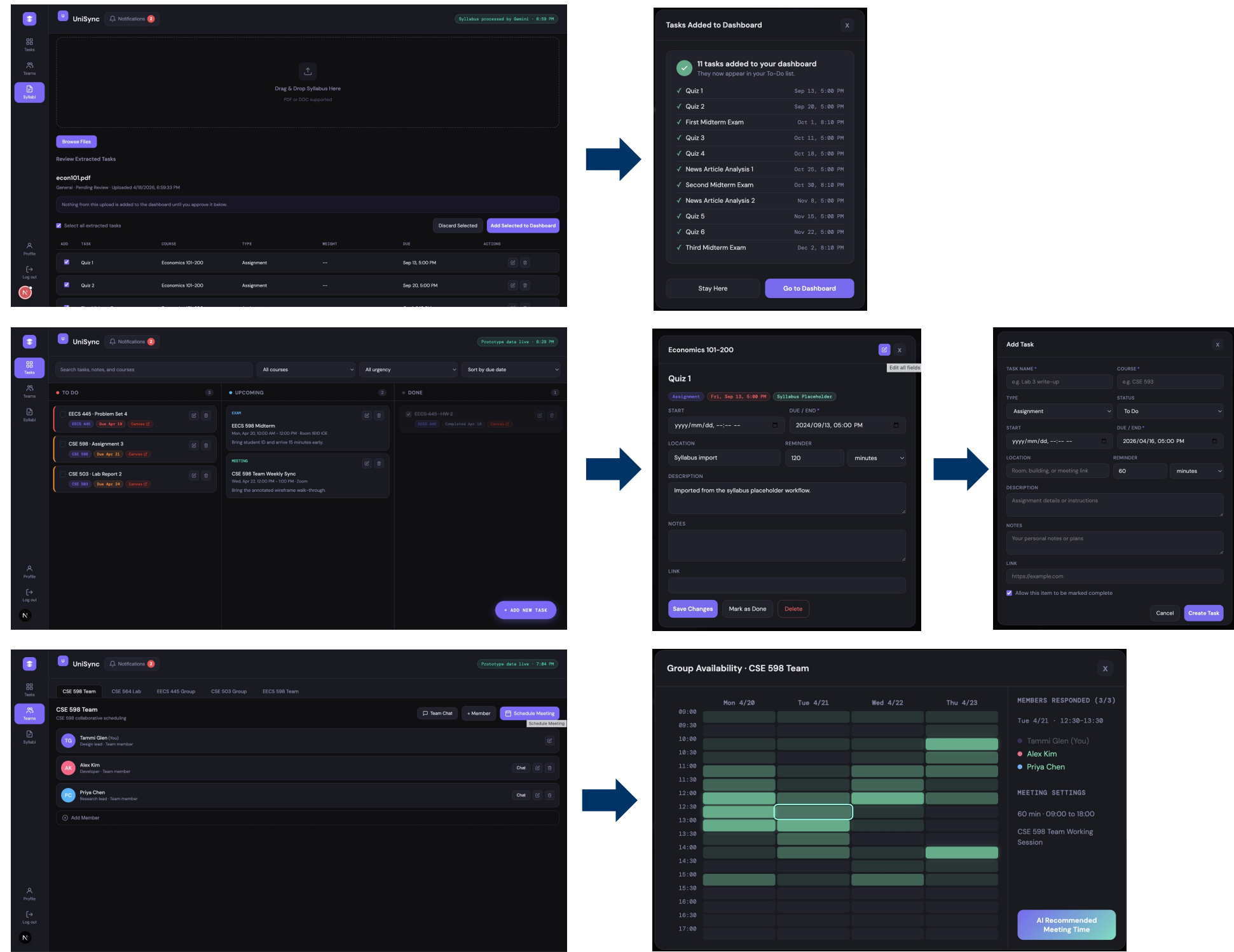
The low-fidelity prototype incorporates interface from the sketches and WoZ implementation by pressing hidden keys from a second keyboard.
Top left: Initial data load (press L) and live sync button (press S).
Top right: Syllabus upload and parsing (press U). Bottom left: Group availability with team notification (press N). Bottom right: Automated prioritization (press P) and conflict alert (press C).

Usability Evaluation

Simplified user testing and heuristic evaluation were conducted with 5 college students and 5 usability experts. Users were asked to add sync their assignments, upload documents, and schedule a meeting.
Key Findings:

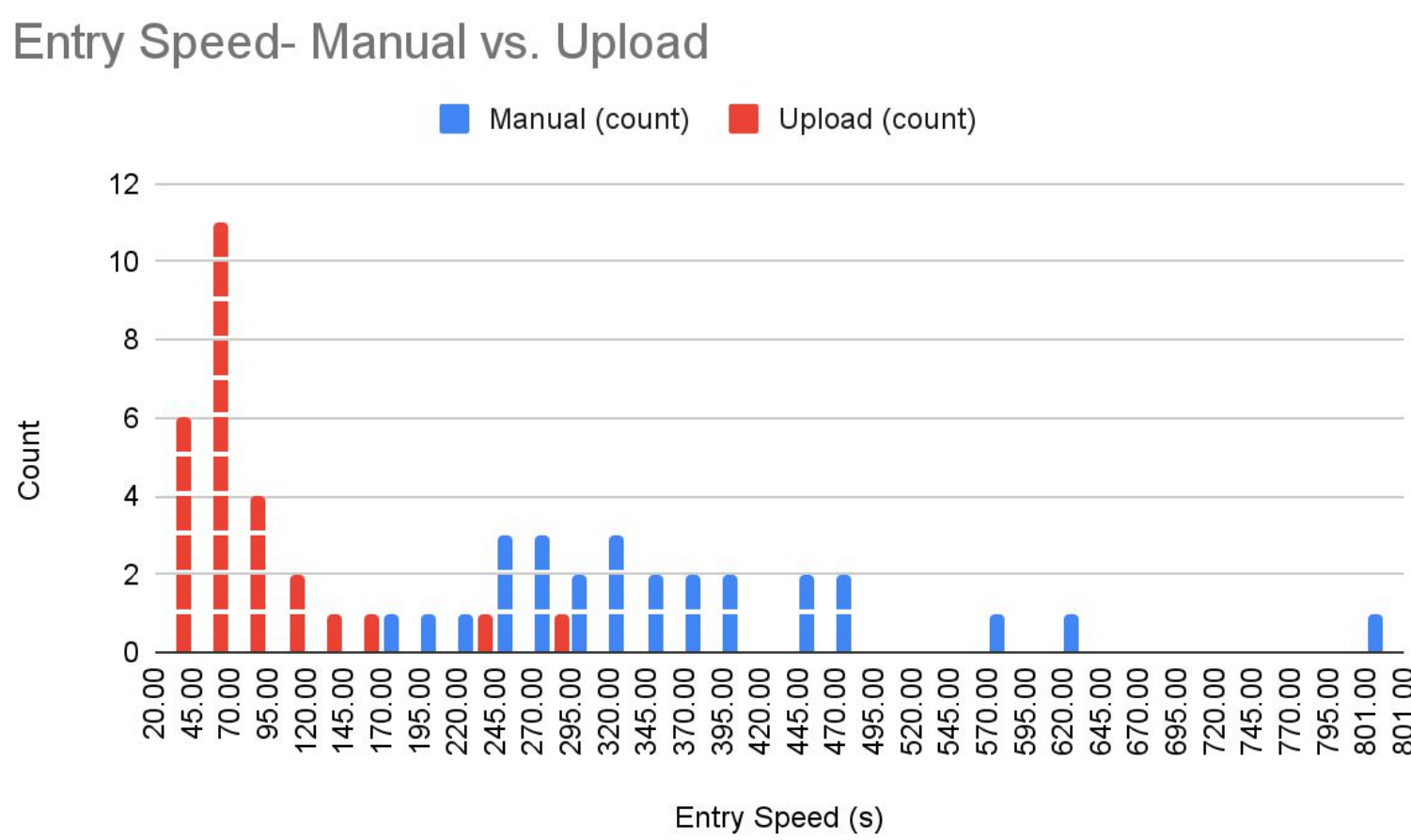
- ❑ The prototype struggled with the ability to **find the sync feature**, making it difficult to fulfill the requirement of making all assignments visible on the main dashboard (**Req. 5.1**)
- ❑ Without a clear sync status users cannot know if they are up to date or if they need to take action (**Req. 5.4**)
- ❑ Heuristic evaluation showed the most critical areas requiring immediate attention are the **lack of help documentation (H10)**, **limited user control and freedom (H3)**, and **insufficient system status feedback (H1)**.

High-fidelity Prototype



Quantitative User Evaluation

27 college students were timed manually entering and uploading the same syllabus into the *UniSync* tool.



- ❑ With $p < 0.05$ and an effect size 2.58 syllabus upload was faster than manual entry (**Req. 5.5**)
- ❑ Upload mean **79±22.6s** vs Manual Entry mean **371±52.6s**

Takeaways and Future Work

Takeaways: We investigated whether AI-assisted syllabus upload could reduce the burden of academic scheduling by making setup faster than manual entry. Our results suggest automation works best when it is fast, transparent, and easy to verify.

- ❑ Students currently manage deadlines across fragmented tools such as Canvas, syllabi, calendars, and group messaging platforms.
- ❑ Students wanted automation, but they also wanted review and control because trust in AI-generated information remained a concern.
- ❑ UniSync therefore emphasized **transparent assistance** with reviewable uploads and manual override options.
- ❑ In our study with 27 participants, AI-assisted upload averaged **79.22 seconds** versus **371.22 seconds** for manual entry, a **78.7% reduction** in time.

Future Work: Test more syllabus formats, measure extraction errors, recruit a broader participant sample, and evaluate additional user requirements beyond UR 5.5.

References

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- [2] Xiang 'Anthony' Chen, Tovi Grossman, and George Fitzmaurice. 2014. Learnable and Predictable Usability of Canvas-Based Learning Management Systems. *CHI '14*, 1–10.
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- [4] Jakob Nielsen. 1994. Enhancing the Explanatory Power of Usability Heuristics. *CHI '94*, 152–158.