

Schedule/Task Management App for Teens with Cognitive Disabilities: Improving User Research

DELIVERABLES

- Screen flows
- User testing script
- Personas
- Use cases
- Clickable wireframes
- Visual interface design
- Marvel-based prototypes
- Animation/interaction prototypes

PRODUCT

- Mobile app

PRIMARY USERS

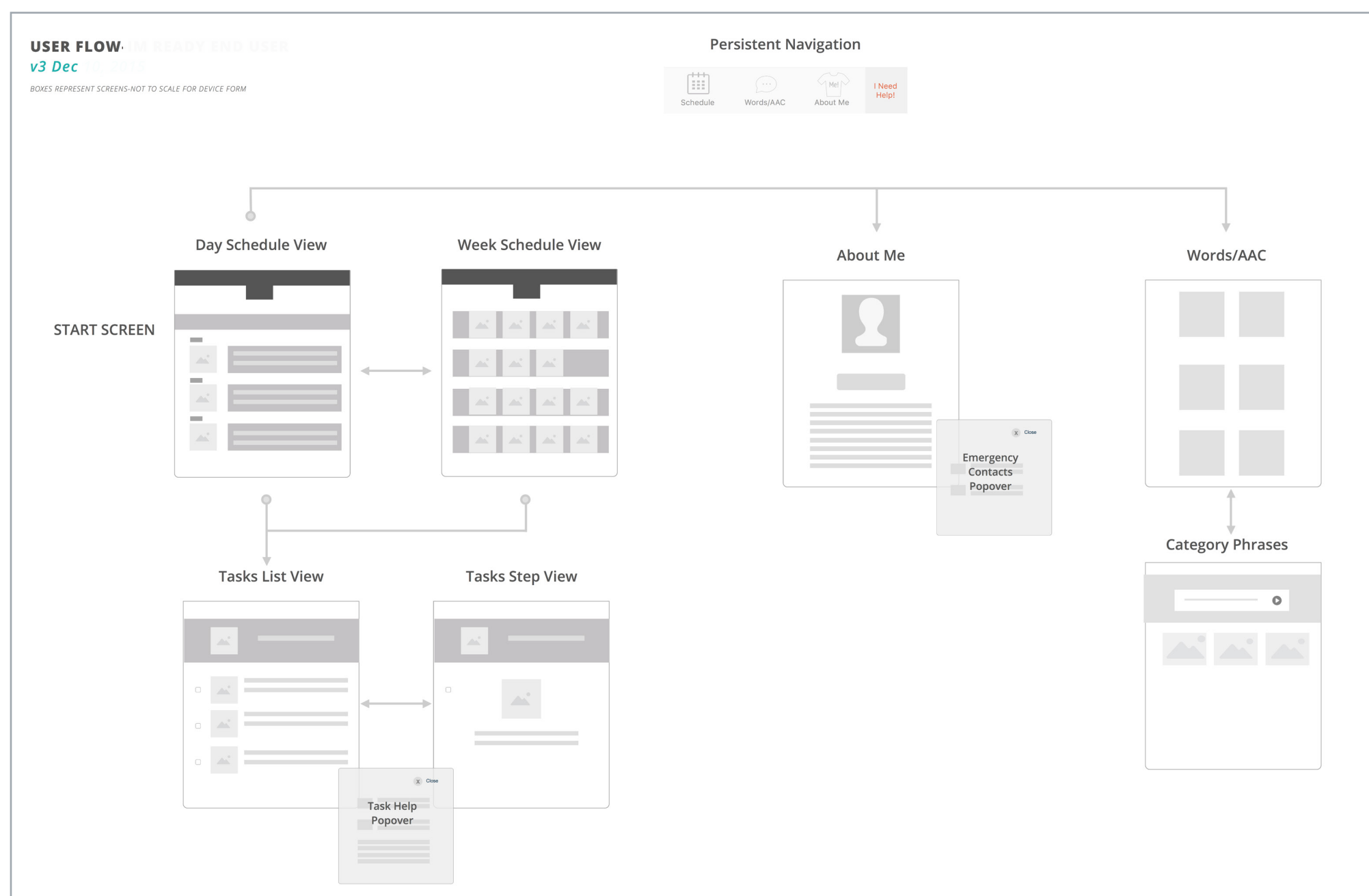
- Teens with autism or other cognitive disabilities

Teens on the autism spectrum or with other cognitive disabilities make up at least 15% of the U.S. school population. While in school many are fortunate to have support systems in place in the form of Individualized Education Plans. But an estimated 35% of young adults with autism are not employed, and those that are often fail to maintain employment for a variety of reasons having to do with such factors as social and workplace skills and time management.

Goal

Build a mobile app for teens to see their schedule, get help for completing tasks, and communicate to peers, supervisors, teachers, and other supporters. Ultimately, the client's goal is for use of this app to lead to better job retention.* (The contract also involved building a web app for supporters, not included in this case study).

**Due to an NDA, the case study doesn't include app screens.*

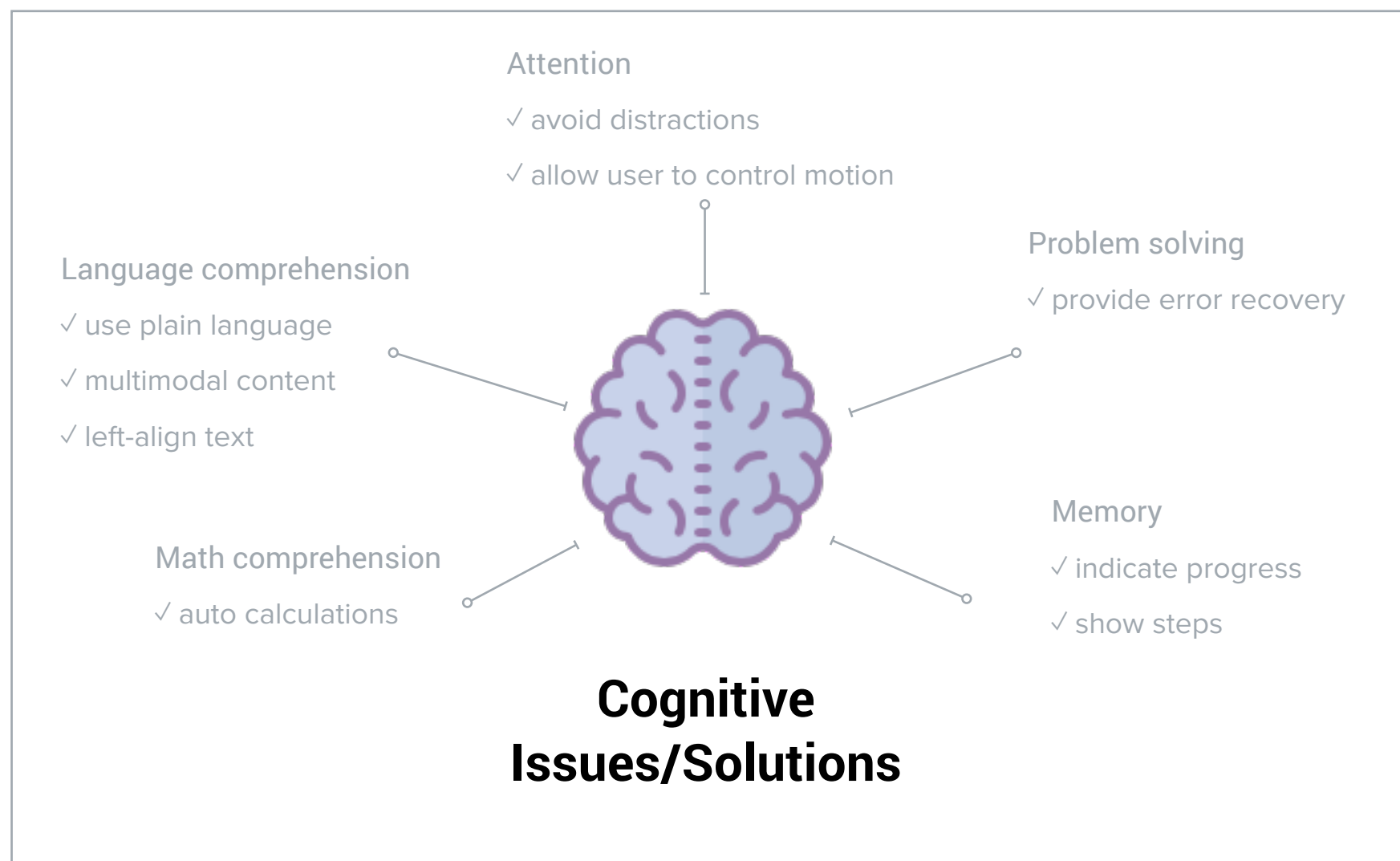


The information architecture of the mobile app went through several iterations as technical and user requirements changed.

Challenge

People with cognitive delays or disabilities can be overwhelmed by too much information and cluttered interfaces. In addition, there can be a range of communication and time management capabilities even among those with autism.

Any app needed to account for this range of functioning by providing the user with options for the display of information.



Discovery work cued me into issues I needed to be aware of in designing the UI and UX for this app.


Constraints

Because the work was done under a contract with an external client, a university-based edtech center, I didn't have access to teens to carry out user research and build personas, and could run only one informal usability test with an early prototype. That test provided insight, nonetheless:

- my approach to showing a calendar was confusing;
- the teens wanted a profile screen to share with their friends that showed their interests.

High School Student with Autism Spectrum Disorder

Victor Cortez*
* Not a real name



Victor is a high-school junior with Asperger's who excels at math and loves photography. He participates in an after-school photography club, where he enjoys working in the darkroom. He spends most of his school day in regular classes.

As part of his high-school program, Victor takes part in a volunteer job as an usher at a nearby community theater.

He is passionate about helping others understand what it means to have an autism spectrum disorder, and despite being an introvert, organized an open mic night at his school's on-campus coffeehouse to raise awareness about autism.

Even though Victor is considered HFA (high-functioning autistic), visual schedules help him by relieving anxiety, promoting independence, and heading off confrontations with parents (because "the schedule says," rather than his mother or father). They also help prepare him for situations that are stressful for him, such as a noisy lunchroom. Transitions, new routines, and changes in routine are stressful for him, so anything that assists him in learning new tasks is valuable.

Like many teens with (or without) autism, Victor questions his parents' advice and would benefit from having a trusted non-parental advisor available to talk to.

AGE: 17

READING PROFICIENCY:
Reads at 8th grade level.

DIGITAL PROFICIENCY:
Victor uses an Android device, loves to share his photography on Instagram, and is mastering Photoshop's digital darkroom features.

COMMUNICATION PROFICIENCY:
Communicates easily, but when experiencing sensory overload, may fail to pick up on non-verbal cues of others.

UX NOTES:
ASD people like predictability, and may like the sense of control provided by being able to check off every step of a task.

Certain audio reminders or alerts can be so stimulating to those with ASD that they persevere ("stim") on it, so it is important that Supporters can customize alert sounds.

GOALS FOR USING APP:

- Making sure not to forget important tasks, such as turning in an assignment.
- Being certain to get to class or after-school activities.
- Being able to see how to complete a new and/or complex task.
- Being able to see what needs to be done right now and today.

INTERESTS:

- Loves to watch the *Big Bang Theory*.
- Enjoys board games like Risk.

FRUSTRATIONS & PAIN POINTS:

- It's important that any app would not visually signal to others that Victor is "disabled."
- Needs to know what he needs to do right now, and in the next few hours, because he thrives on predictability and control.
- Can have difficulty communicating his needs in challenging situations.
- Can become agitated with stimulus overload.

Without access to teens in the target user group, I improvised by reading news features profiling teens with autism and cognitive disabilities to create sample user personas.

Process

Given the lack of direct access to the target users, I improvised ways to gain understanding of their needs and challenges:

- I did an online search to find feature stories about the lives of teens with autism and Down Syndrome to help me construct personas.
- I researched existing apps for the key target audience to assess their strengths and weaknesses.
- I read up on best practices for interaction design for users with cognitive disabilities, and the principles of effective micro-interactions and animations. I interviewed the mother of a college student with Down Syndrome about the pros and cons of the tools that she and her son currently use to manage schedules and tasks.

Lessons Learned

This was the first app I worked on as a UX designer, and in an Agile development environment. I learned about the importance of clarifying the role of each deliverable with the client, and communicating what kind of feedback was desired. I tried my hand at using Principle to mock up micro-animations. Through lots of trial and error, I learned about the kinds of information a developer needs to build a product.

End User Epics/User Stories					
EPIC	E1 Keep track of schedule	E2 Keep track of tasks	E3 Carry out tasks	E4 Communicate	E5 Get to/from work, home
Story	E1S1 I need to see today's schedule so that I can plan my day	E2S1 I need to see today's tasks so that I can plan my day	E3S1 I need to know what is involved in a task so that I can complete it successfully	E4S1 I need to be able to ask someone for help in transit	E5S1 I need to know how to get to a work location so I don't get fired
Story	E1S2 I need to see this week's schedule so that I can plan my week	E2S2 I need to see this week's tasks so that I can plan my week	E3S2 I need to be able to hear/view instructions so that I can complete a task	E4S2 I need to be able to reach my supporter so that I can get help	

Diving into my new role as UX designer, I created Epics and Stories for use in an Agile development environment.