

iPad Application Development

Dine Right: a study in Education Interface Design and App Development



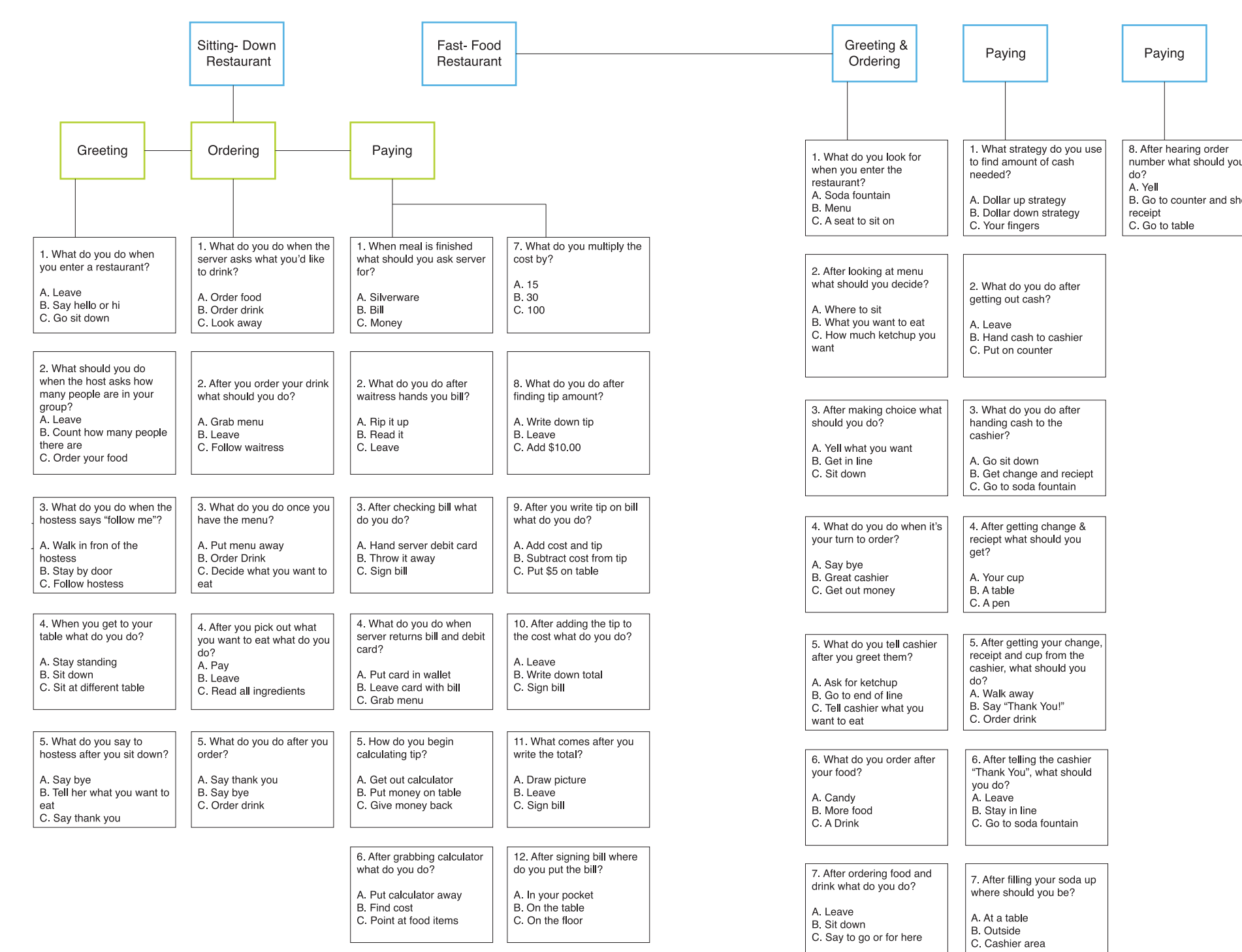
Department of Art & Design - University of Wisconsin- Eau Claire
 Students: Derek Hestekin & Steven Scherz, BFA, Graphic Design, Brendon Hernandez, Computer Science
 Faculty Mentor: Sooyun Im, Department of Art & Design



Abstract

The purpose of this research was to develop a prototype of an educational iPad application to teach life skills to students with developmental disabilities. It was a collaborative project between the University of Wisconsin- Eau Claire Special Education Department and the Art & Design Department. In today's society, it is crucial for students with special needs to acquire life skills such as shopping, purchasing, mobility, banking, and restaurant skills that promote independent living. However, the current tools for teaching these skills are not very effective or efficient. They are visually unpleasant and confusing; the texts are often overwhelming, and not logically grouped or organized. The point of collaboration between the design and special education departments was to develop an iPad application that was visual, easy to use, portable, and presented social skills in ways that are easy to learn. The app is intended for students with developmental disabilities specifically those with an IQ of 80 or below. Our research project uses the most current technology, an iPad as a learning tool and it incorporates multimedia and interactivity into the learning process to offer greater realism in the learning process. The more attractive visual design and videos can motivate the users and increase learning retention and effectiveness.

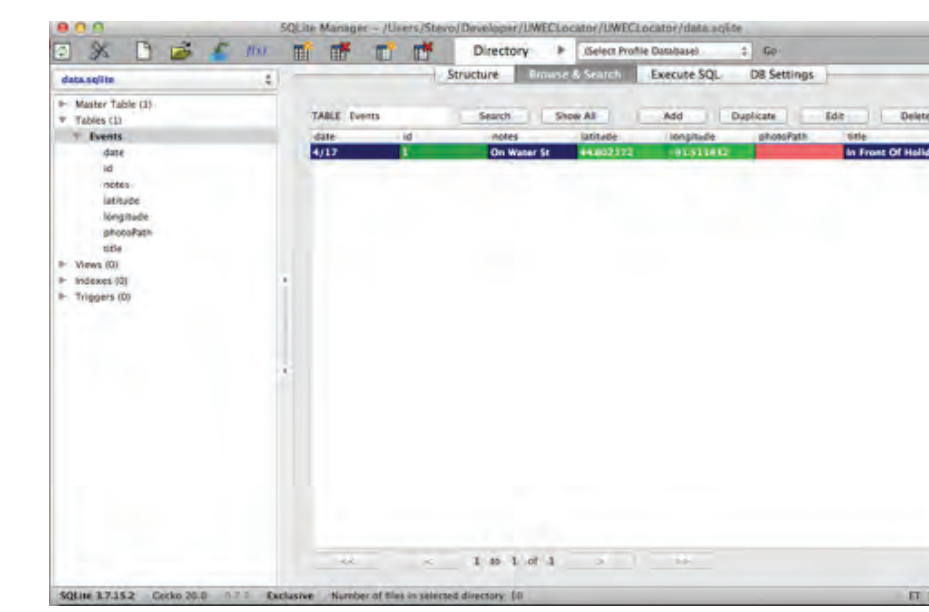
Dine Right Flow Chart



Application Development

Technological Process

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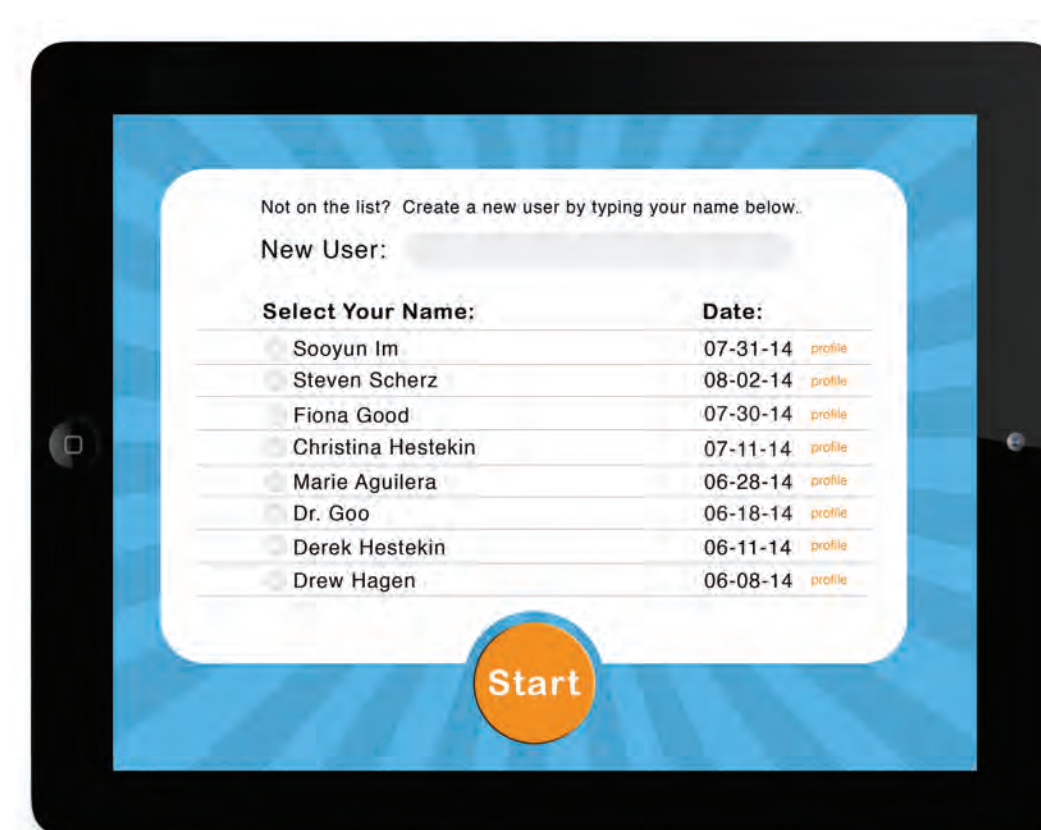


Design Process

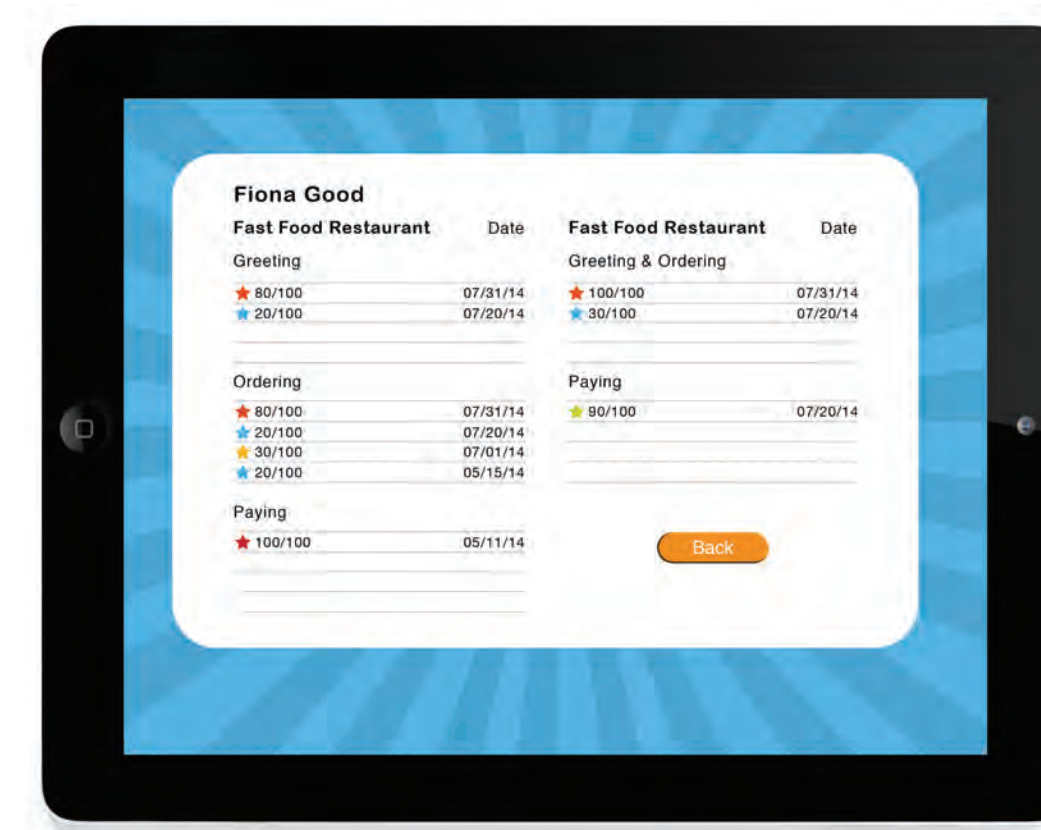
Deciding on a restaurant skills concept for the application, Derek gathered a series of images in a "mood board", and developed a set of application icons, as seen below. A plate and flatware inspired the app icon. Without previously knowing the context, the visual icon may inform a user of the app's uses and functions. After additional academic research, Derek established a color palette for Dine Right that was exciting, yet not distracting to those with short attention spans. This included an analogous color palette of varying shades of blue with lime green accents. For areas of importance, such as play video and start buttons, a complimentary orange color was introduced. This ensures that the app is usable for a wide variety of IQ levels and age groups. In addition to the color scheme and icon, Derek created several sketches illustrating the information flow. This can be seen in the final product, with a continuous nav bar and simplistic design layout, which makes the navigation and use of the app easier for users. Throughout the development and design of the application, Derek would regularly present his designs to both the Special Education Department and Art & Design Department, making the design a true collaboration.



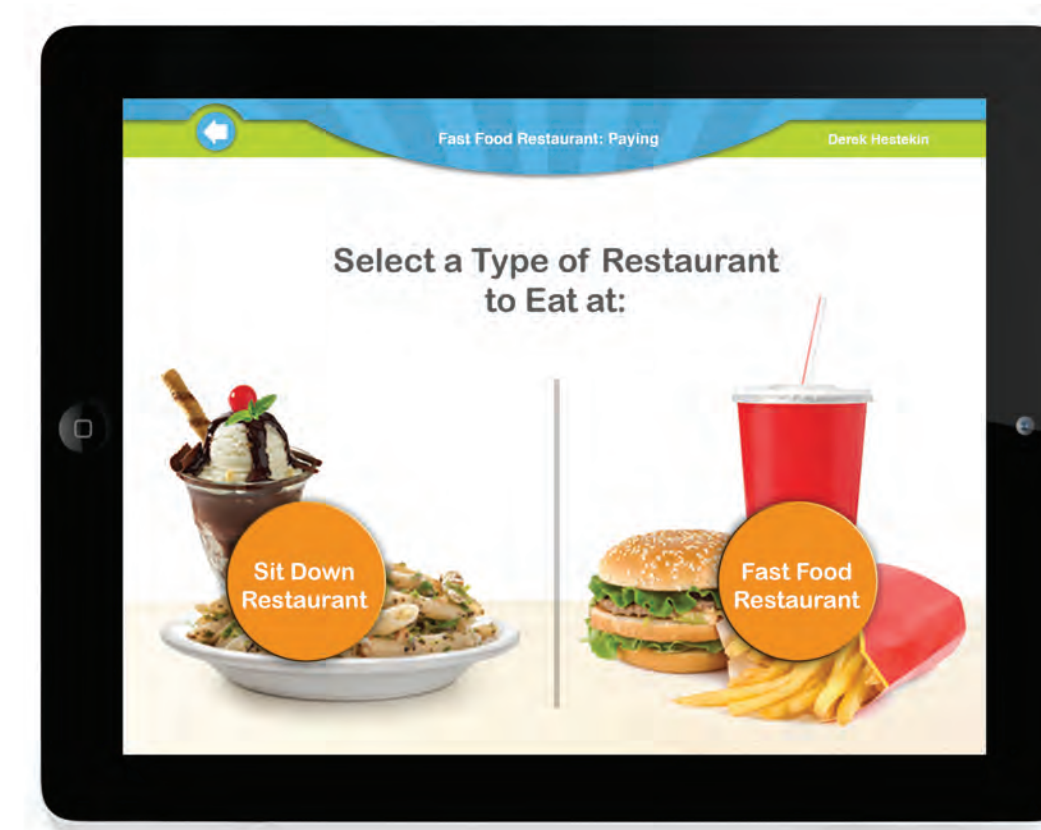
Opening screen establishes overall design scheme, while letting user know that the app is loading properly.



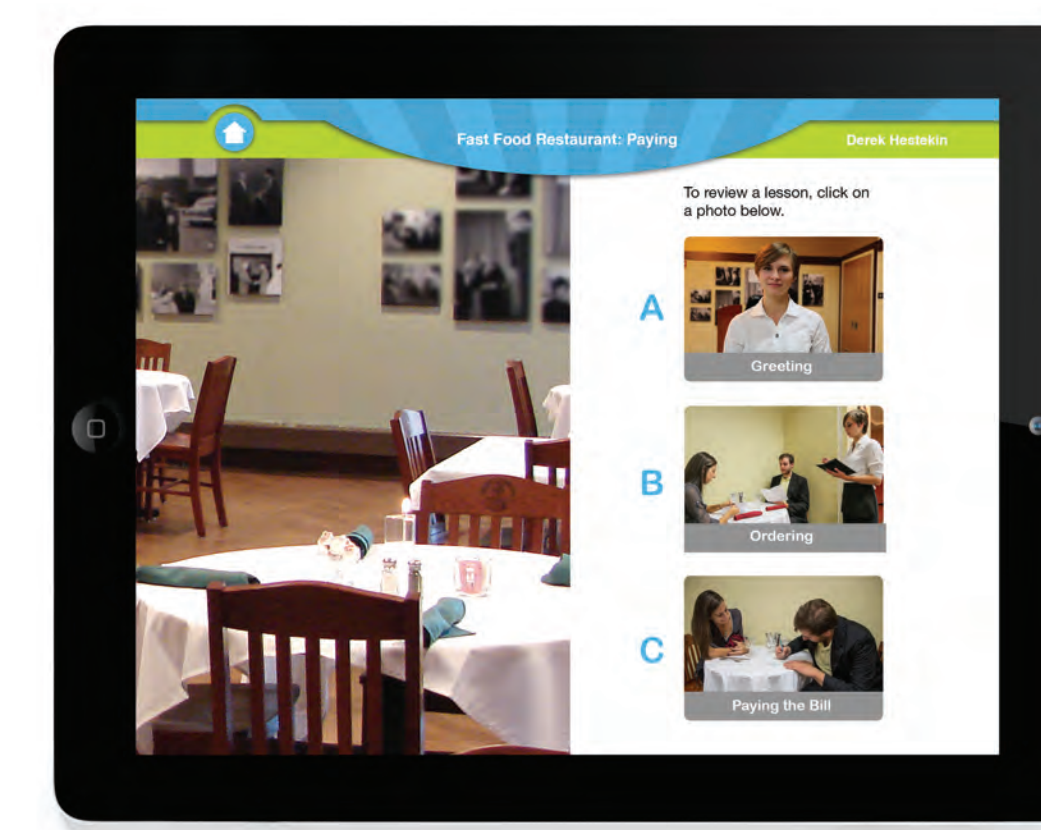
User screen allows for students to continue where they left off, or the ability to create a new profile.



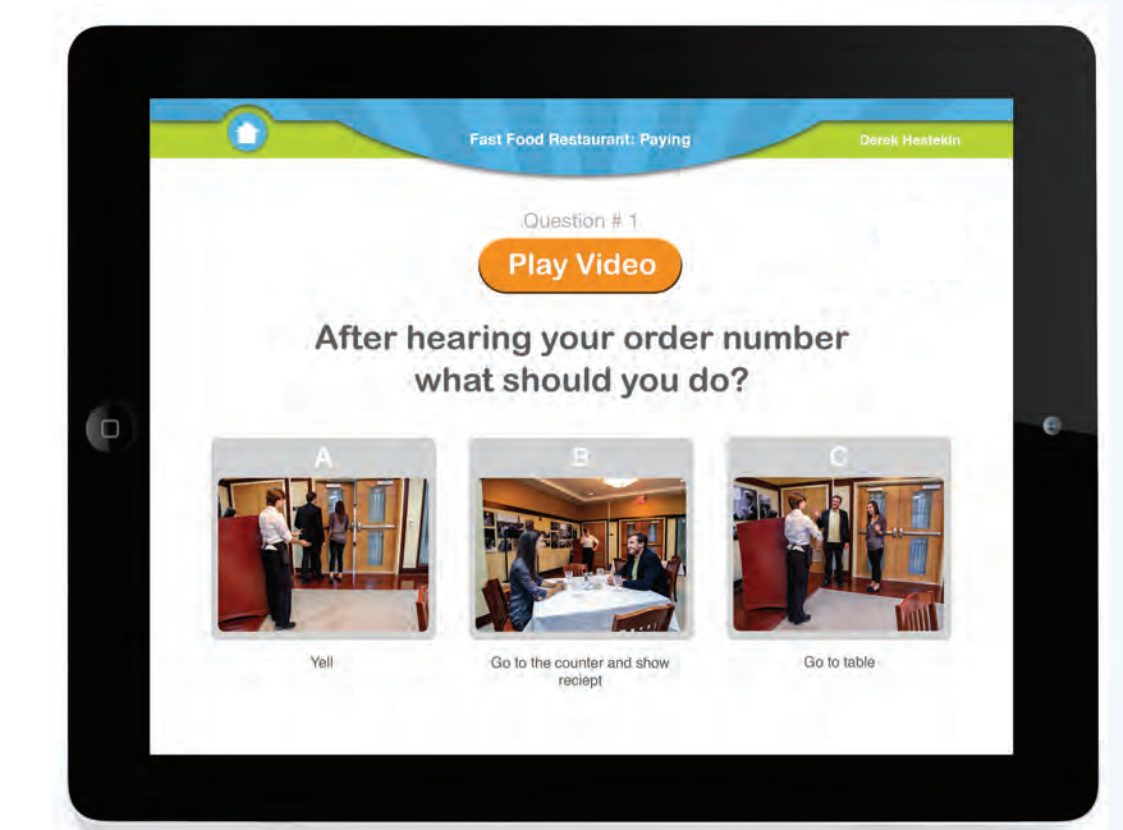
User profile page allows educators and parents to track the student's progress over a period of time.



Home screen serves as the principle page for the app and allows the user to select the desired restaurant setting.



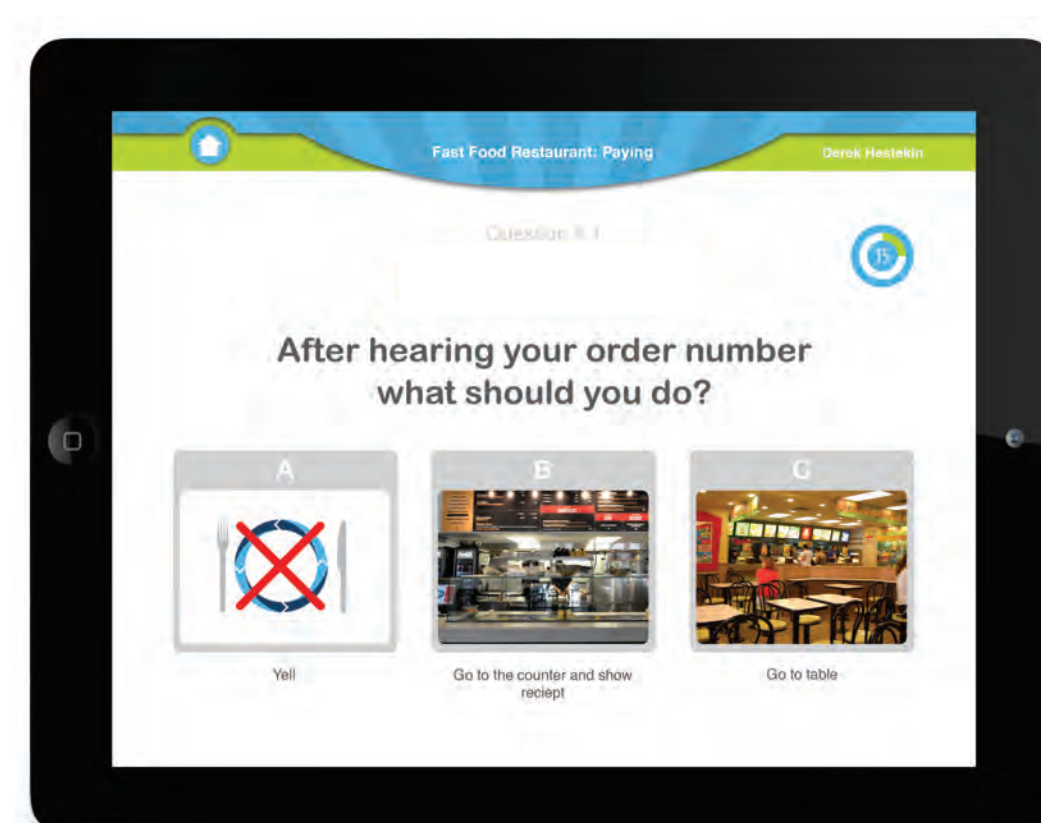
After selecting the setting, this page prompts the user with different restaurant sequences.



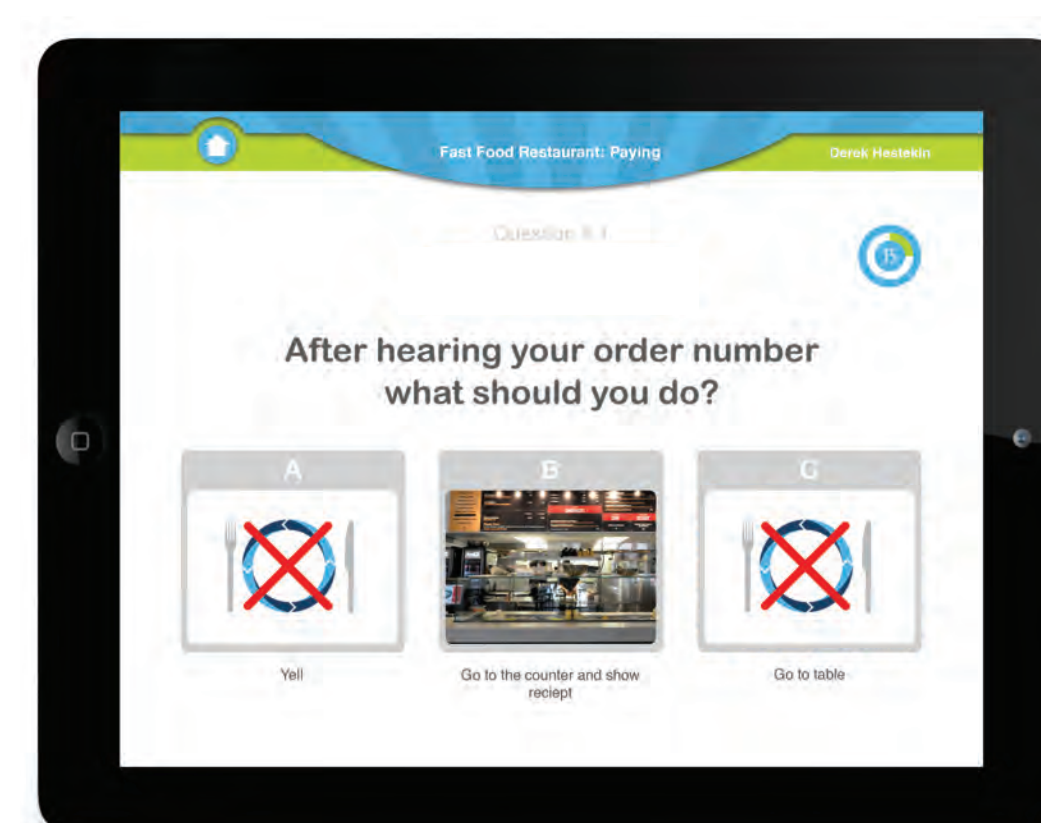
The user reads the prompt at his/her own pace, and then clicks the "Play Video" button to load video.



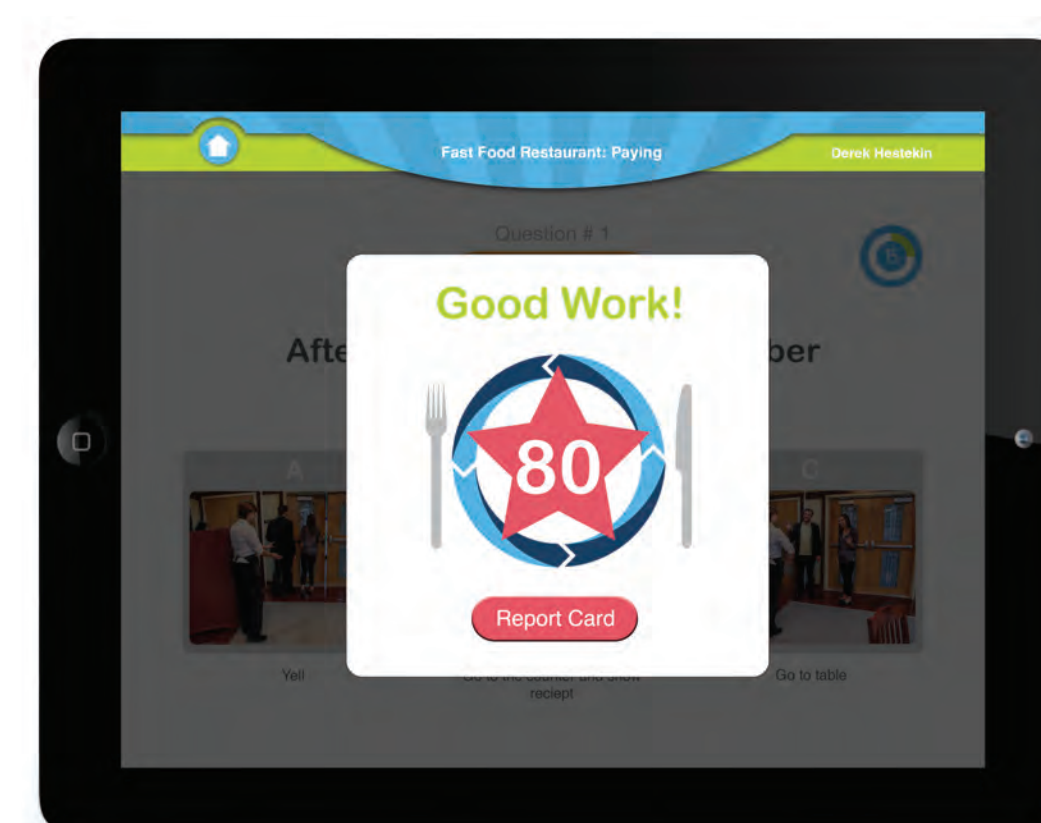
Each 10 second video clip was shot by Drew Hagen in UWEC eating spaces.



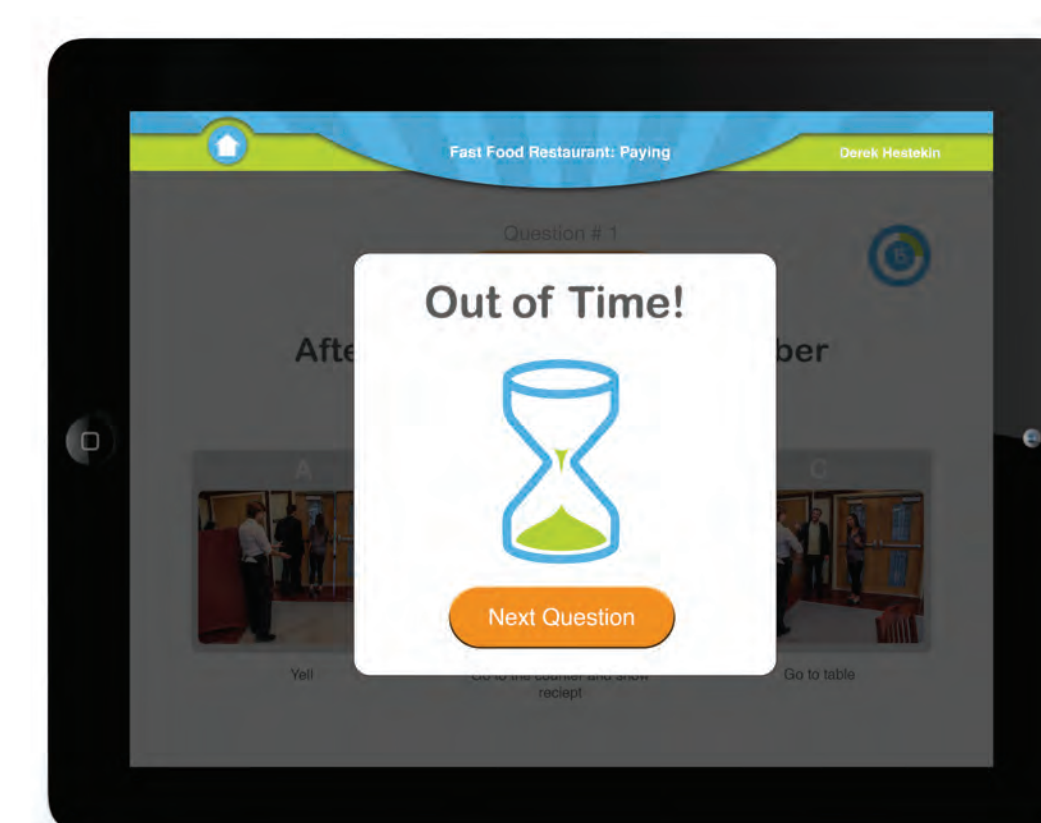
After the video ends, the user has 20 seconds to answer the question by selecting the correct text image.



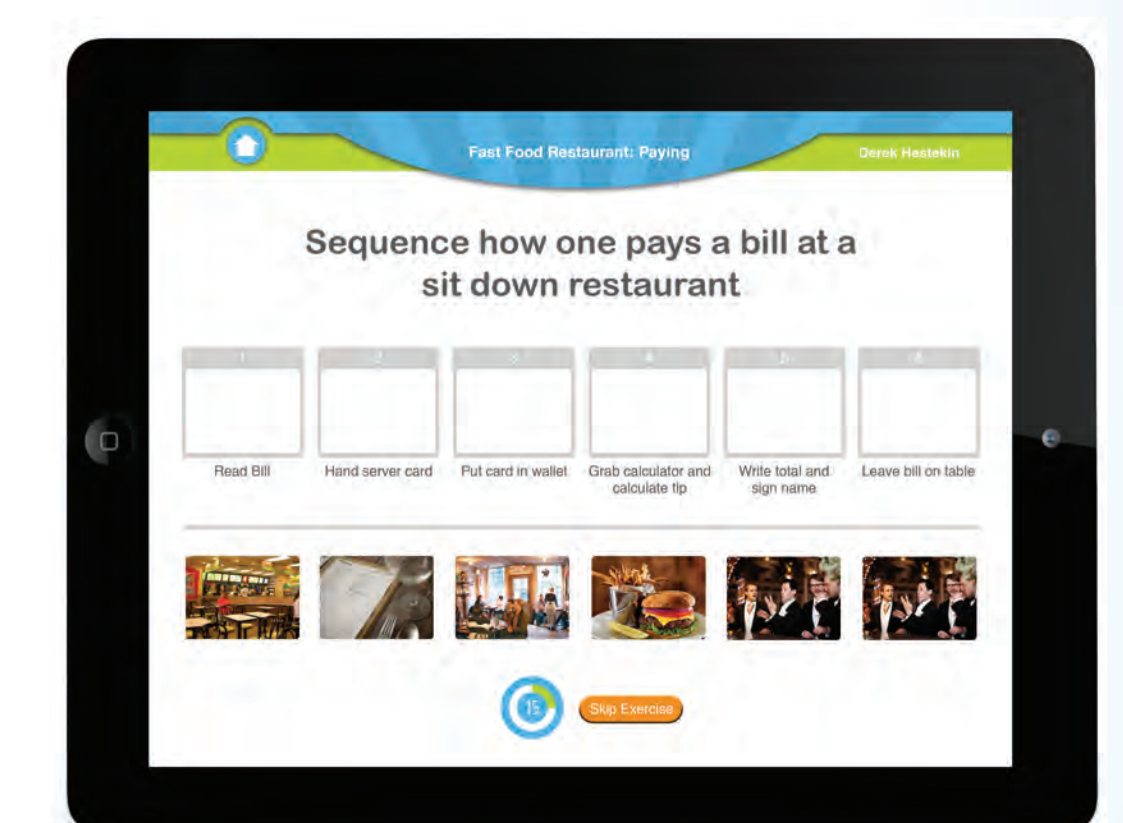
If the wrong answer is selected, an X will appear over the image. This allows for better learning.



Depending on the number of correct answers, the user will receive a score at the end of every lesson.



If the user fails to select the correct answer in 20 seconds, this time out will appear, and the user will be directed to the next question in the lesson.



Lastly, the user will finish each lesson by dragging steps into the correct sequence. If the task is too difficult for a user, they have the option to skip the exercise.

Research

Design Research

Derek's task throughout developing the app was to research current tablet interface designs and concepts. After the initial meeting with the special education department, Derek downloaded a variety of current iPad applications that had sequence-learning elements. Examples include My Life Skills Box (fig. 1), Let's Be Social (fig. 2), and Social Skill Builder (fig. 3). Derek researched existing educational tablet interface design, and evaluated the designs based on creativity, visual appeal, simplicity, color scheme, and user usability. Pairing this knowledge with researching academic articles that pertained to special education design, Derek developed a basic color palette and simple layout for Dine Right that would be user friendly for students.



Figure 1: My Life Skills Box (2010)



Figure 2: Let's Be Social (2011)

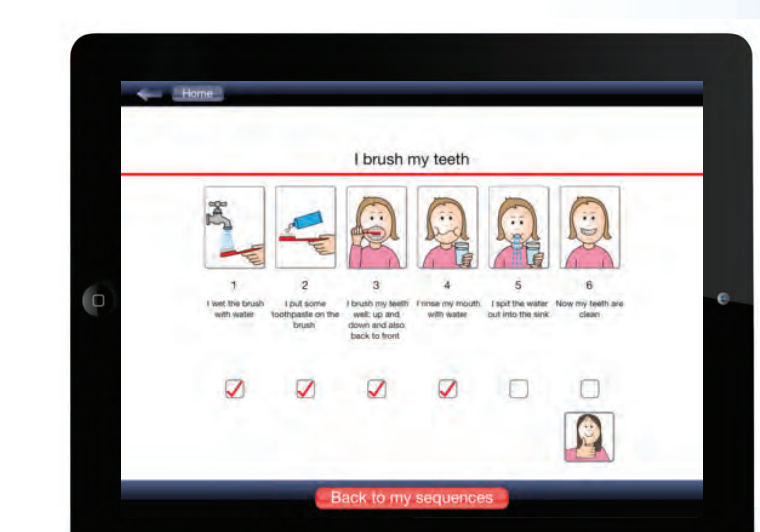


Figure 3: Social Skill Builder (2013)

Technological Research:

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Interdisciplinary Use

With Dine Right installed on an actual iPad device, the instructors and students in the Special Education Department could use this app to help students with developmental disabilities develop restaurant skills. Students with special needs would use this app to learn how to greet, order food, and pay in restaurants. The planned app would teach these skills through quizzes, multimedia instruction, and games. The instructors would be able to keep track of each student's learning progress using the history of progress feature in the iPad app. We believe this multimedia instructional tool would be beneficial as an aid to teaching and learning these essential life skills.