

Eat Abroad App Project

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Team Liberian Tele

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Responsibilities:

For the Eat Abroad App project, Joseph chose to work alone. He created the project proposal, conducted interviews for design, performed low-fidelity prototyping, produced a video write up, presented a progress check-in, presented a final presentation, and wrote a final paper. The project proposal consisted of a usage scenario, potential outcome and significance, target audience, design and justification, technical aspects, and a timeline. Interviews were conducted for design purposes to learn from the user what they would expect from the project idea. The low-fidelity prototype was created to conduct user testing on the design and functionality of the app. The video write up included information about the project, team member, mission statement, pictures of the paper prototype, footage of participants interacting with the prototype, observation and results from usability testing, and decisions for the next iteration of the app. The progress check-in presentation gave a status report of the project at its midway point. The final presentation featured the project, team member, goals, components and features of the app, and a live demonstration of the app. Last, this final paper was written as a final report for the project. In summary, Joseph was responsible for every aspect of this project.

The Effect of Using a Foreign Food Mobile Application to Cultivate Cultural Empathy

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ABSTRACT

The Eat Abroad App is a mobile application on the Android platform that teaches users not only how to eat different foods from around the world, but understand the culture with the foods. The goal of Eat Abroad App is to cultivate cultural empathy by exposing people to traditional food eating customs around the world. The app aggregates pictures and names of foods to display to users in an organized format based on countries. Users then will be able to select specific foods and learn how to eat them via video tutorials. After using the app, users should be able to understand, be aware, and be sensitive to the experience of eating particular foods as it would be eaten in its cultural setting. In result of this project, users were enlightened about foreign foods and its culture, empathized with the culture, and suggested improvements for the app.

INTRODUCTION

The United States has traditionally been referred to as a melting pot where it welcomes people from many different countries, races, and religions from around the world to find freedom, new opportunities, and a better way of life. Immigration in the United States has increased by the millions over the years [3]. With many different backgrounds migrating into the United States, culture has been fused in publically shared environments. It's inevitable in the United States to witness someone's culture in a public environment such as school, work, or an event. As a result, people are exposed to others' culture, but are often timid to inquire about foreign culture first hand. So, the Eat Abroad App addresses this problem by giving users who are naïve of others' culture a platform to engage into foreign culture.

From past literature, there were some works related to the problem of people lacking engagement into foreign culture. In Nelson Brooks' "Teaching Culture in the Foreign Language Classroom", he focuses on culture being taught in classrooms [1]. It identifies culture in 5 different meanings: growth, refinement, fine arts, patterns of living, and a total way of life. Nelson proposes ideas that would

help lead to wide acceptance of foreign culture. This work relates to Eat Abroad App because it shows the importance of spreading and accepting culture worldwide.

In "Refashioning Nature: Food, Ecology and Culture", the authors explore food preferences in society among different cultures in the world [2]. Food is linked to culture, agriculture, environments, and the household. Many cultural foods are influenced not only by people, but from the environment themselves. This book relates to Eat Abroad App because it explains why people eat the types of food that they eat within their culture.

"Food and Culture" is a book featuring contemporary information on health, culture, food, and nutrition habits of the most common racial and ethnic groups residing in the United States [4]. Coverage for this book include Native Americans, Europeans, Africans, Mexicans and Central Americans, Caribbean Islanders, South Americans, Chinese, Japanese, Koreans, Southeast Asians, Pacific Islanders, People of the Balkans, Middle Easterners, Asian Indians, and regional Americans. This book relates to Eat Abroad as it provides insight on different ethnic and cultural groups in a sensitive manner in relation to their respective food cultures.

OBJECTIVES

The main objective of the Eat Abroad App is to cultivate cultural empathy by exposing people to traditional food eating customs around the world. Goals to help achieve this objective are recognizing foreign foods by name, sight, and origin; learn to eat foods in its traditional cultural customs; and feel more comfortable and less anxious to eat in cultural environments. The app features well organized foods that are structured by continent and county with the food pictures and names matched to each other in their respective categories. This helps with recall of learning foreign foods by name, sight, and origin. The app features video instructions to help users learn to eat foods in its traditional cultural customs. As an overall result of using the features on the app as a preparation tool, users will feel

more comfortable and less anxious to eat foreign foods in their respective cultural environments. Therefore, the Eat Abroad App cultivates cultural empathy by supporting these goals.

PROTOTYPE

The low fidelity prototype of Eat Abroad App was created using Axure RP Pro 7.0. This early stage design incorporated feedback from interviewing stakeholders and target users of the app when the project proposal idea was presented to them. To gain more feedback on the user interface (UI) design, simple usability testing was conducted on the low fidelity prototype. The test included three tasks: sign up for an Eat Abroad account (simple), view history of foods not liked (moderate), and learn how to Eat Doro Wot from Ethiopian culture.



Figure 1 - Eat Abroad App - Home Screen

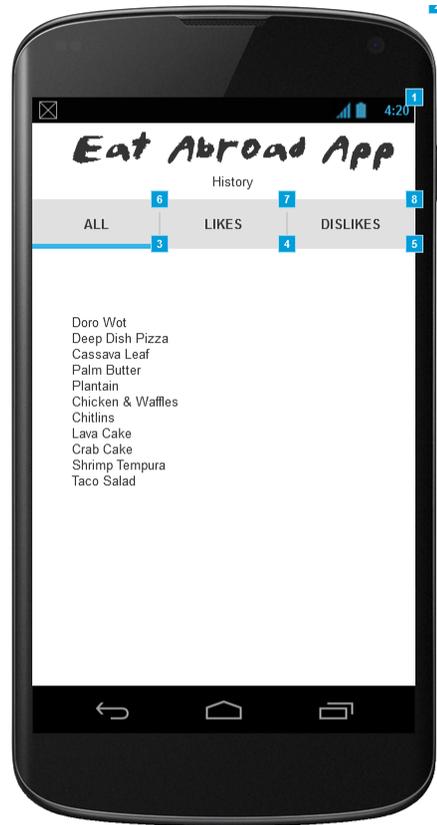


Figure 2 - Eat Abroad App - History Screen

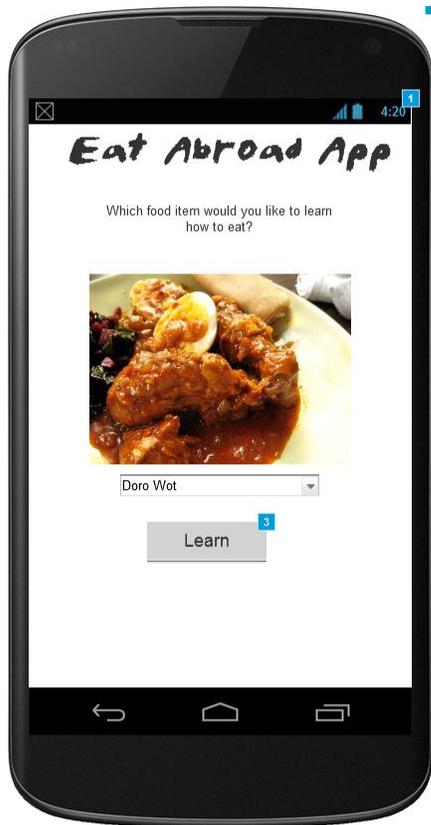


Figure 3 - Eat Abroad App- Ethiopian Food Selection Screen

From the usability testing on the low fidelity prototype, observations and user constructive criticisms were gathered. The results were that participants were not aware of the home button for navigation, participants thought the login screen was the same the signing up screen, there was not a way to navigate back to the login screen after logged in, the word “Eat” was confusing, participants mistakenly used the Eat button expecting the functionality of History, participants assumed the Eat and History buttons had the same functionality, and participants had troubles knowing what the foreign foods looked like. For the next iteration of the app design, decisions were considered based on the results of the usability testing. Those considerations were embedding the home and back navigation into the actual app interface, make login and sign up options equally visible on the first screen, allow users to log out and navigate back to the login and sign up screen, change “Eat” and “History” to more descriptive terms, and map food names to their respective pictures. As a result, usability testing was critical for the next iteration of the Eat Abroad App.



Figure 4 - Eat Abroad App - Doro Wot Instructional Video

HEURISTIC EVALUATION

For the initial high fidelity prototype, heuristic evaluations were performed. For these evaluations, the ten usability heuristics for user interface design by Jakob Nielsen was used [5]. Those heuristics are visibility of system status; match between system and the real world; user control and freedom; consistency and standards; error prevention; recognition rather than recall; flexibility and efficiency of use; aesthetic and minimalist design; help users recognize, diagnose, and recover from errors; and help and documentation. Using these ten heuristics, users performed four tasks using the Eat Abroad App high fidelity prototype: sign up, login, learn to eat rice with chopsticks from China, and discover history of liked foods. Each heuristic was given a severity rating from 1 to 5 where 1 is the least severe and 5 is the most severe. Four evaluators evaluated the prototype.

Sign up was a task where evaluators created accounts using the Eat Abroad App prototype. Evaluators reported Error Prevention with a severity of 2 because the placeholder text is not automatically removed on a tab over, Consistency and Standards with a severity of 3 because the password accepts without any authentication, and Consistency and

Standards with a severity of 5 because the password showed the actual character while typing.

Login was a task where evaluators used login credentials to access their account on the Eat Abroad App prototype. Evaluators reported Error Prevention with a severity of 4 because there was not an error message provided when there were empty login credentials, Visibility of System Status with a severity of 4 because there was no message indicating that a user is logged in or who is logged in, Consistency and Standards with a severity of 3 because it lacks password authentication, and Flexibility and Efficiency of use with a severity of 3 because the login does not go directly to the countries page.

Learn to eat rice with chopsticks from China was a task where the goal was to learn how to eat with chopsticks in Chinese culture. Evaluators reported Aesthetic and Minimalist Design with a severity of 1 because the app uses a drop down instead of a swipe scroll view, User Control and Freedom with a severity of 2 because the app did not have a back button for navigation, and Aesthetic and Minimalist Design with a severity of 5 because the app should make food selection a priority over country information.

Discover history of liked foods was a task where the goal was to find foods viewed, but not liked. Evaluators reported Aesthetic and Minimalistic Design with a severity of 2 because there was no logout button on the video view, Consistency and Standards with a severity of 2 because the list of foods is only text and lacks pictures of the foods, Consistency and Standards with a severity of 2 because there was not a function to dislike foods, and Match Between System and Real World with a severity of 5 because history can mislead the user to think of it as history of the food.

FINAL DESIGN

The final high fidelity prototype of Eat Abroad App was designed using Android Studio to create a mobile application on Android platform mobile devices. Features of the app included a navigation drawer material design, pictures of cultural foods organized by continent and country, video instructions on how to eat foods, and history views to display what has been eaten or tagged as a favorite. The main benefits of the app are the ability to learn how to eat various foods in one aggregated application and to feel more comfortable in foreign culture environments where foods and their eating customs are unfamiliar. The app is aimed to enlighten and relieve cultural food social setting anxiety. The aesthetics of the app uses Android's dark themed design for consistency and standards across most Android mobile applications.

EXPERIMENT DESIGN

In order to evaluate the final prototype of Eat Abroad App, an experiment will be designed. The research question to be answered is how effective is the Eat Abroad App with cultivating cultural empathy. The target subjects for the experiment will be a random sample of 40 college students where 20 will be males and 20 will be females. They will be aged between 18 and 28 with limited experience of eating foreign foods like fufu, Ethiopian injera, and foods used with chopsticks. In addition, there will be five confederates to act as expert foreign food eaters and one moderator to guide the experiment.

Data collection for the experiment will be gathered using computers for survey and video cameras to record actions observed. There will be computers provided for participants to complete a pre and post test. The criteria of the pre and post test will be similar. The pre test will ask questions about prior food experience, cultural experiences, and comfort in eating Ethiopian injera dishes on a Likert scale. The post test will ask the same questions about comfort in eating Ethiopian injera dishes. The setting will be in an open dining space with camera equipped in the room to record behaviors and interactions.

The experiment will be a between subjects design. The treatment group will use the Eat Abroad App to learn how to eat Ethiopian injera dishes prior to eating it. The control group will not use the Eat Abroad App prior to eating Ethiopian injera dishes. Both groups will be 20 participants each and an even gender ratio. Each food eating session will last 30 minutes and involve 4 participants, 5 confederates, and one moderator. The moderator will instruct in the beginning and close at the end.

The main objective for participants in the experiment will be to eat Ethiopian injera dishes served at a dining table. The participants will share the dish with other participants and the confederates. The procedure will consist of taking a pre test, eating the food, then taking a post test.

Measurements will be gathered from the pre test, post test, and video footage. The pre test and post test scores will be compared to measure change of their experience of eating Ethiopian injera dishes. The video footage will be analyzed to gather qualitative data. All data will be put into visual formats like bar graphs and pie charts. This data will be used to answer the main research question of the impact of the Eat Abroad App has on eating unfamiliar cultural foods.

DISCUSSION

Challenges of the Eat Abroad app include installing Android Studio, learning how to program an app in Android, discovering that the Android emulator runs significantly slow with Joseph's dated personal computer, configuring Android Studio to connect to Joseph's Android mobile phone, and embedding YouTube videos in the app.

Installing Android Studio was time consuming and required other dependencies to be installed in order for it to run. Learning how to program an app in Android took a few days to fully get through and understand their tutorials. Discovering that the Android emulator runs slow on Joseph's computer initiated a search to find other alternatives to run the app on a computer for demonstration. Configuring Android Studio to connect to my phone required me to find additional driver to install that I assumed were already installed. Embedding a YouTube video into the app required signing up for a Google Developer's account to retrieve a private key.

Suggestions to further develop and refine the Eat Abroad App would be to add more countries and foods, integrate text and diagram instruction, integrate a database, and utilize more user centered designs. The prototype created was limited to four countries among two continents. There should be some investigation in a food data that may already exist that holds information or create a user sustainable database. There may be cases where video watching is inconvenient to the user, so text and diagram instructions should be considered. The prototype created used the mobile device's memory, but is not persistent so it erases the user data on the closing of the app. Having a database will allow data to be readily available in a persistent manner. Also, keeping the user in the design process through each iteration is critical to the success of the usability of the app.

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