



PD Connect

PD Connect Final Report

Lindsey McKim

Ana Hart

May 7, 2020

TABLE OF CONTENTS

Executive Summary.....	2
Problem Statement.....	3
Related Work.....	4
Design Process.....	6
User Research.....	6
Personas.....	7
Scenarios.....	8
Storyboards.....	9
Design Requirements.....	11
Design Solutions.....	12
Brainstorming and sketches.....	12
The Three Best Concepts.....	13
Paper prototype and Testing.....	14
Low-fidelity prototype and feedback.....	15
High-fidelity prototype and evaluation.....	16
Usability Testing and Design Recommendations.....	18
Participants.....	18
Testing Methods.....	19
Findings and Recommendations.....	20
Conclusion.....	21
Works Cited.....	22

EXECUTIVE SUMMARY

We created PD Connect in order to bring event organizers, volunteers, and especially caregivers of individuals with Parkinson's Disease together in one central hub.

These three groups of users are seeking P.D. programs that engage physically as well as to build a community with other individuals and efficiently communicate within these communities and programs. PD Connect serves as a resource for these groups to plan, coordinate, and discover various classes and events in their local community for individuals with Parkinson's Disease. The app also includes ways to connect to support groups and message boards for the users.

In this app, organizers, volunteers, and caregivers will be able to create and explore events as well as discussions, all of which are related to caring for and supporting those with Parkinson's Disease and/or their caregivers.

In conducting user research interviews, we were fortunate to have access to the Dance for Parkinson's Disease Program at James Madison University. Through this connection, we were able to interview the organizer, several volunteers, and numerous caregivers of the program's participants. As a result of this interview process, we gained valuable insight into the use of technology of our users as well as their frustrations regarding communication and outreach. This was synthesized in the usability testing phase.

Soon after, we were able to create and test our paper prototype for the app. Then, we commenced the low-fidelity prototype creation which was tested. This testing then informed us in making our high-fidelity prototype, which was tested and our data was compiled and analyzed in order to create further design recommendations and improvements.

PROBLEM STATEMENT

Caregivers to people with Parkinson's disease need a way to connect to other caregivers and find Parkinson's Disease-related events because they may feel alone or struggle giving the best care to their loved one. Organizers need a way to connect and promote events to volunteers and caregivers of individuals with Parkinson's Disease.

RELATED WORK

1. Parkinson's Central

<http://myhealthapps.net/app/details/309/parkinsons-central>

The design problem that this app identifies is giving information about Parkinson's disease. The app includes information about symptoms and treatments and allows users to track and schedule doctor visits. It offers information for both the caregiver and the person dealing with Parkinson's disease. This system addresses the problem by allowing people with Parkinson's Disease to have all of their medical information in one place. It helps both the caregiver and the individual better understand the disease and track their medical information. The design looks easy to use and clear to find information. It's great that it gives so much information on the disease and allow the user to be interactive by tracking their medications and doctor visits. We will attempt to be clear and concise with our design in order to be user friendly. A frustrating aspect of their design is that there is no chat feature to the app. Users can't connect to doctors or other individuals with Parkinson's or caregivers to receive help if needed.

2. Caregiver Connect

<https://www.caregiver.org/caregiver-connect>

The design problem this system identifies is connecting to other caregivers and learning more information about how they can best care for their loved one. The system addresses the problem by providing caregivers with classes, events and support groups. The website facilitates conversation between caregivers by having online chat rooms as well as support groups in person. The system is great for connecting caregivers to one another and supporting one another. We will attempt to make connections between caregivers easy and efficient in our design. We will focus specifically on caregivers for people with Parkinson's disease and have a user friendly design that allows them to connect, chat, and find events near them easily. The system is frustrating because it connects different caregivers. It doesn't focus on one disability or disease, but connects caregivers who care for a wide variety of ailments. It's also hard to find specific information and you have to click through different pages to find exactly what you're looking for.

3. Events

<https://www.parkinson.org/get-involved/events>

The design problem this system identifies is giving information about Parkinson's disease as well as events nearby. This system addresses the problem by having a page for understanding Parkinson's with information on symptoms, treatment, diagnosis, etc. It also has a page to find events nearby. This website has useful information about Parkinson's and lists events. We will have a part of our app have available events for people with Parkinson's disease. While this app gives events, it only has a few events listed for the entire state. I know of multiple events for people with Parkinson's here in Harrisonburg, and the site only lists a few events for the entire state. It's frustrating that the website doesn't list all available events, and you can't search by date or location. We will attempt to give all available events and users will be able to search based on location, date, cost, or type of event.

4. mPower

<https://www.mobihealthnews.com/content/study-app-accurately-tracks-parkinsons-disease-symptoms>

<https://www.mobihealthnews.com/content/sage-bionetworks-releases-data-first-six-months-parkinsons-mpower-researchkit-study>

The design problem this system identifies is capturing the progress of an individual with Parkinson's disease outside of the doctor's office. This system addresses the problem of individuals with P.D. not being able to see or understand the progress that the disease might be taking through an app that requires the individual to perform several tasks/exercises. This website that discusses the app provides helpful information in understanding how an app can be integrated into an individual with P.D.'s life.

Additionally, it provides a visual of a simple to use interface that could help in designing our own system. The difference with this app is that it is more focused on the medical tracking aspect of P.D. where we are more focused on creating a system that allows for communication; however, because it is made for individuals with P.D., it can be a helpful resource in determining what might be easily usable for individuals with P.D. and their loved ones.

5. Parkinson Care Partner Community: Get Involved!

<https://parkinsonsdisease.net/caregivers/care-partners-get-involved/>

The design problem that this system identifies is the need for a central location for events and resources to be posted for the caretakers of individuals with Parkinson's to get involved in and build a community. This system addresses the problem through listing several links to different resources that caretakers and volunteers might be interested in in order to find out more information on research, fundraising, and finding support (ie. self-care and support groups). This website offers many helpful resources and tools for volunteers and caretakers, and provides text and typeface that is easy to read which is definitely something to consider while designing our system. Additionally, it also offers excellent resources which I think our system could pull from; however, we will also focus more on the events and support that caretakers, volunteers, and organizations can find. Finally, it could definitely be better organized so that individuals wouldn't have to go through so much information in order to find what they are looking for.

DESIGN PROCESS

USER RESEARCH

The Users:

- Primary Users: Caregivers of individuals with Parkinson's disease.
- Secondary Users: Organizers of Parkinson's Disease-related events and groups.
- Tertiary Users: Volunteers for Parkinson's Disease-related events and groups.

All of the groups of users are seeking P.D. programs that engage physically as well as to build a community with other individuals and efficiently communicate within these communities and programs.

How interviews were conducted:

For the interview process, we came up with approximately 10 questions that were slightly altered and tailored for each group of users.

In terms of reaching out to organizers of P.D. events, we have had interaction and experience with Kate Trammell and the Dance for P.D. classes making it feasible to consider asking to interview her and for her help in conducting this research. Since Kate has so many connections to the caregivers of individuals with P.D. through her classes, we asked her to facilitate our connection with the participants of her classes. We chose these participants because of our connection with Kate Trammell and the fact that we knew we would be able to reach these participants through Kate. Additionally, as we have both volunteered before for the Dance for Parkinson's Disease classes at JMU along with many other dance majors, we were able to easily connect with and interview several volunteers.

Talking with volunteers and organizers was feasible and easy because many of the volunteers and assistants are in the JMU dance program. We also have worked closely with Kate Trammell in the past during her time as a professor here. They were all willing to talk to us about their experiences. It was more difficult to interview the caregivers. We only got to see them in person one Saturday, and we were unable to interview them that day. We gave them our information and sent multiple emails, but it took awhile before anyone got back to us. We had to send them questions and have them send their responses via email. Since caregivers to people with PD is such a small population, it was more difficult to find and access those users. However, we were eventually able to hear back from several caretakers. Once we had received all of our responses, we began to analyze the data through a data coding process.

PERSONAS

PRIMARY PERSONA

SECONDARY PERSONA



Beatrice Williams

"I try to be grateful for all that we have and also try to take away something good from each new experience."

Biography

Beatrice Williams was an elementary school counselor before she had to retire to take care of her husband who got diagnosed with Parkinson's disease approximately 5 years ago. Her life revolves around her husband. She tracks his pills, lays out his clothes, helps him shower, and assists him with daily tasks. Everyday is different, and she has to adapt to situations as they come. She recently started bringing her husband to Dance for Parkinson's classes in the Harrisonburg area. She enjoys taking them because she sees how her husband benefits and is able to spend time with him.

Through her time as a caregiver, Beatrice has found different forms of support through other caregivers from the classes that her husband takes. However, since most of her life is focused on the care of her husband, she has tried to seek out other resources and support groups for caregivers as well. When she first became a caregiver, she found that it could be difficult to find all of the resources needed in order to take care of her husband. Since then, she has had more experience, but wishes there had been a simpler way for her to navigate this situation in the past.

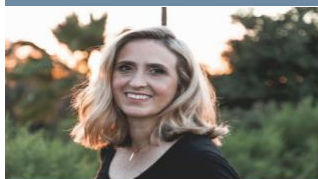
Age: 62 years old
Occupation: Retired, Caretaker of husband with Parkinson's disease
Organizes dance for PD classes
Lives: Harrisonburg, VA
Technology: smartphone, landline, computer

Character Traits: organized, informed, patient, sociable

Goals: wants to find more classes and groups related to PD in the area

Frustrations: communication issues
email is not always efficient or reliable
last minute communication is often impossible
there isn't one central location for various events

Attitudes and behaviors: uses husband's smartphone, otherwise prefers the landline, uses their computer for research, hears about events through email, word of mouth.



Anne Fields

"I would love to build a stronger network of communication for people with Parkinson's disease and their caretakers."

Biography

Anne has trained in dance for most of her life. She spent years performing professionally and transitioned into the role of professor at JMU. She lives in Harrisonburg, VA and taught dance at JMU for 30 years. Anne became interested in Dance for Parkinson's Disease and began to take classes and receive certification to teach the classes at the end of her career at JMU. When retiring, she didn't want to be completely cut off from her students and coworkers, and transitioned into leading and organizing a Dance for PD program at JMU that allows her to stay connected to her community and continue to pursue her passion in a different outlet.

Anne coordinates class information with participants, caregivers, and volunteers each week but feels frustrated with having to do it all through email. She wishes there could be an easier way to communicate all of the information as well as have other organizers who work with individuals with PD be included in the group to post information about their work and classes.

Age: 61 years old
Occupation: Retired, but active in PD community
Organizes dance for PD classes
Lives: Harrisonburg, VA
Technology: iPhone, macbook

Character traits: social, loving, compassionate, patient

Goals: grow her program
being able to talk to other organizers, volunteers, participants, and caretakers in one central place
have an easy means of communication for her program

Frustrations: communication issues
email is not always efficient or reliable
last minute communication is often impossible

Attitudes and behaviors related to technology use: on email threads
hears about events through email, word of mouth

SCENARIOS

Beatrice Williams (Caretaker):

Beatrice Williams retired approximately 5 years ago in order to become a caretaker for her husband who suffers from Parkinson's disease. Her life revolves around her husband. She tracks his pills, lays out his clothes, helps him shower, and assists him with daily tasks. Everyday is different, but she has to adapt to situations as they come. She recently started bringing her husband to Dance for Parkinson's classes in the Harrisonburg area. She enjoys taking them because she sees how her husband benefits and is able to spend time with him. However, she rarely checks her email and doesn't stay updated with information on the classes. She once drove 30 minutes to class after a long morning with her husband. He fell and had trouble getting ready for the day. When she arrived at class, she was confused as nobody was there. Class had been cancelled, but she didn't see the email with the information.

Beatrice remembered the organizer for the Dance for PD classes mentioned an app that connects the organizers, volunteers, caretakers, and participants. The organizer stated that she would send out information and updates on classes and events. Beatrice downloaded the app and was shocked she hadn't heard of it before. She was excited to receive alerts and notifications to her phone about important information. She's also able to connect to other caretakers and share tips and experiences. She learned of a new occupational therapist in the area that someone recommended on the app. She loved how user friendly and simple the app is and is excited she has it so she'll never miss out on important information.

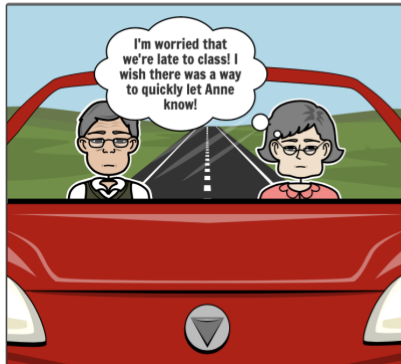
Anne Fields (Organizer):

Anne Fields has been organizing dance for Parkinson's disease classes for over a year now which takes place on Saturday mornings. Anne had sent her weekly email to the participants on Thursday morning, explaining exactly where the class would be taking place and how to get there. She asked the participants to invite any other individuals that they may know of who would be interested in joining the class as well. Anne is continuously looking for ways to get more individuals to join her classes and grow the program. Several of the participants responded back asking Anne if she knew of any other classes in the area that they might be able to take during the week. Anne quickly sent an email back to the participants listing some organizations off the top of her head, but she felt badly that she couldn't give them more information. Then, on Friday afternoon, Anne Fields received a text message that the space they had reserved was unfortunately no longer available to them. After scrambling to find another place to hold her Saturday morning class last minute, she sent an email to all of the participants once again in order to update them on the change. However, Anne was concerned that the caretakers, their loved ones, and the volunteers might not get her email in time. She was worried that the participants might get lost and be put in dangerous situations due to confusion and/or lack of mobility. She is desperately looking for a better way to communicate with her participants, volunteers, as well as other PD organizations in the area.

Anne remembered hearing about an app called PDConnect. The site allows organizers, caretakers, participants, and volunteers to be able to connect in one central place. The site sends notifications to your phone and can send alerts when something is urgent. It allows users to connect, share stories and experiences and post about events. Anne downloads the app and announces at her next class how participants, caretakers, and volunteers can join. Once everyone has joined, Anne sends out weekly reminders and updates on the classes each week. Whenever an issue arises, Anne posts immediately and an update or alert is sent to everyone's phones. Anne is now able to update her class quickly and easily. Everyone involved receives the information in a timely manner and there isn't a delay in information. They have stated how this system is much better because it allows them to communicate with each other in one central hub. They are able to hear information about classes and events, share tips and tricks, and update each other on their lives. Anne is satisfied with the site and wishes she found it sooner.

STORYBOARDS

Storyboard 1: Caregiver



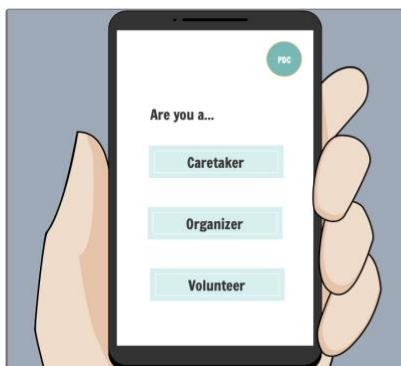
After a long morning, Beatrice drives her husband to the Dance for Parkinson's class that they attend every morning. She wishes that she could quickly let the organizer, Anne, know that they will be a bit late.



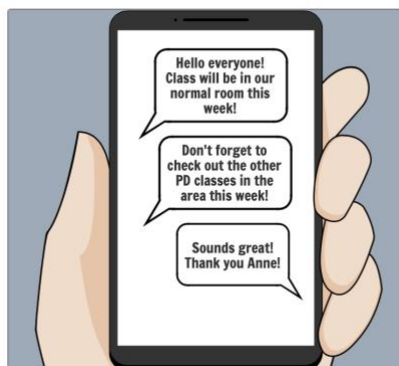
However, when they arrive to the class, they find that there is no one there. Disappointed and confused, Beatrice and her husband head back home.



Upon arriving home, Beatrice checks her email and sees this message. She wishes she had gotten it much sooner so that she and her husband could have attended class and not have wasted so much time.



Beatrice downloads the app and explores the features. She likes the user friendly layout and accessibility. She is able to indicate that she is a caretaker for her husband and is able to find local PD events as well as receive class updates from Anne.

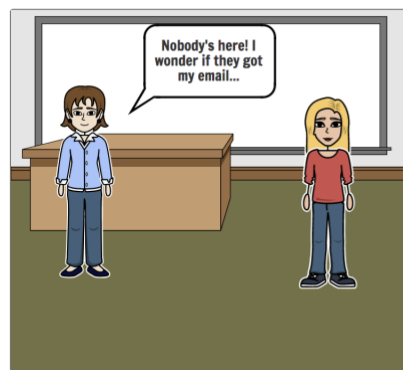


Beatrice receives messages and alerts from Anne about class the following week, and feels confident that she won't miss out on a class again.

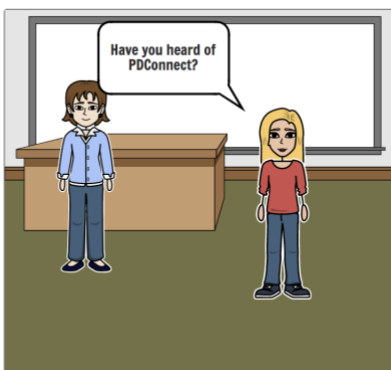


Next week the class was full and everyone received the notification that the location had been changed. Beatrice loves using the app and is so happy that she and her husband are able to discover so many more PD opportunities in the community!

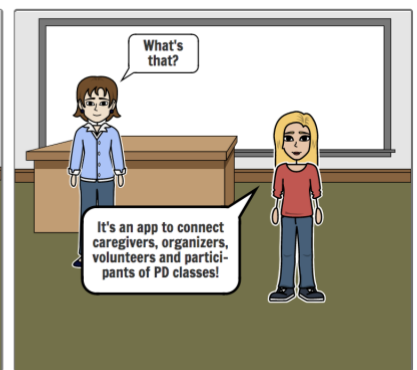
Storyboard 2: Organizer



Anne is confused nobody is at the Dance for PD class. She sent an email that the location was changed to the caretakers, participants, and volunteers and only one volunteer showed up.



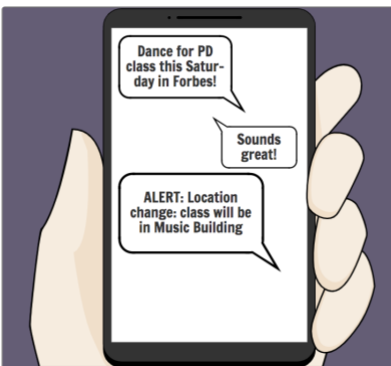
Her volunteer Allie, mentioned an app called PDConnect. Anne has never heard of it before.



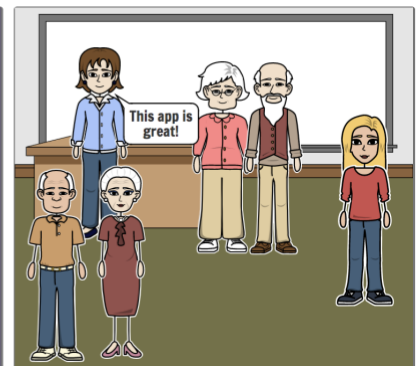
Allie describes how it connects caregivers, organizers, volunteers, and participants. Anne could use it to reach out to people taking her classes.



Anne downloads the app and explores the features. She likes the user friendly layout and accessibility. She tells the caregivers, participants and volunteers to download it.



Anne sends out messages and updates to those coming to the classes. They all received an alert that the location of the class has changed.



Next week the class was full and everyone received the notification that the location had been changed. She loves using the app and is so happy everyone receives her updates!

DESIGN REQUIREMENTS

Data Requirements

- User information (Profile)
 - Name, Age, Gender
- Messages
- Date and Time
- Map and Location
- Images (of locations and user for profile)

Functional Requirements

- Ability to connect users
- Ability to organize classes
- Ability to use location
- Ability to browse and confirm appointments

Contextual Requirements

- Users capable of basic smartphone operations
- Used on-the-go
- Display of user preferences (ie preferred class, group, or appointment) before a user decides to change them

Technical Requirements

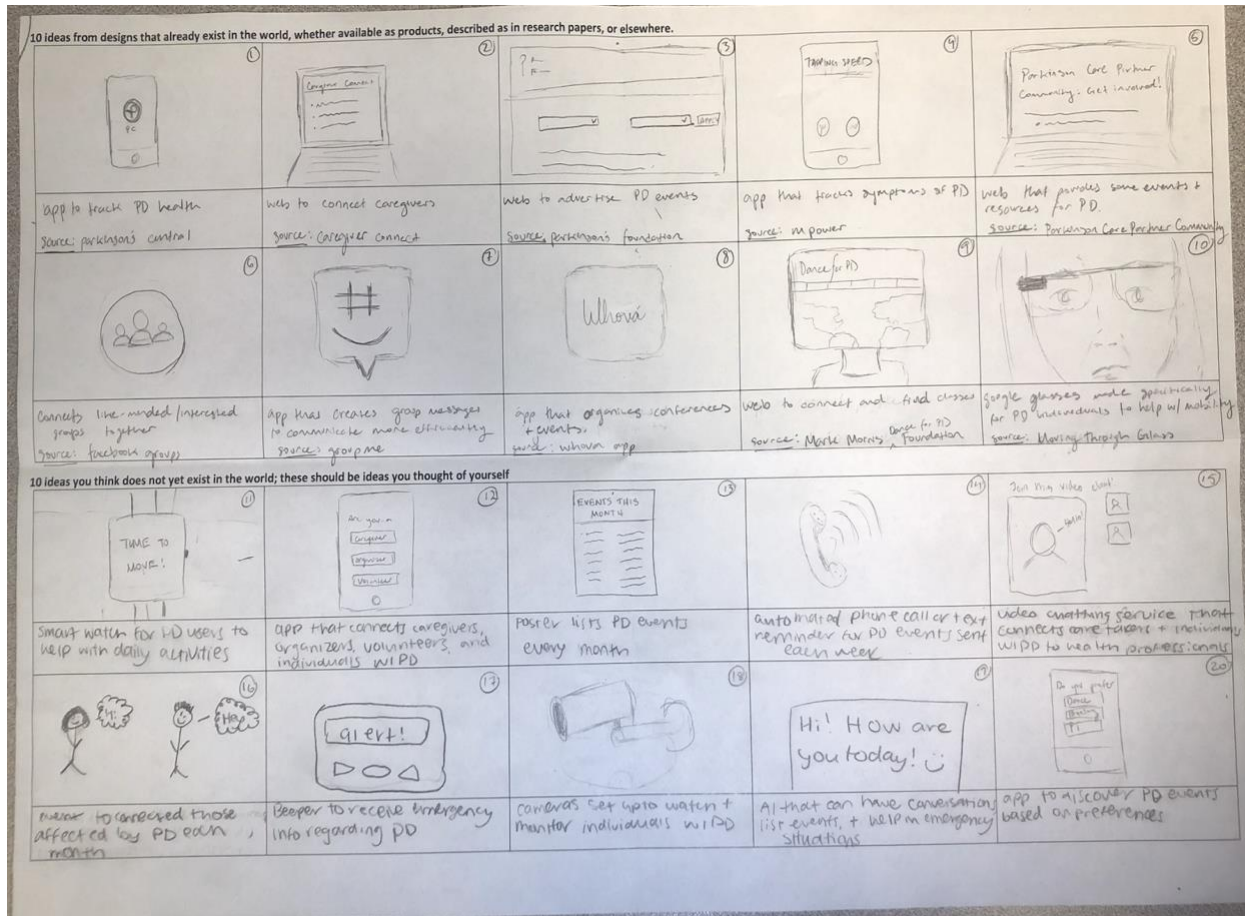
- Software platform choice: Mobile phones, tablets, personal computer site.
- Support on both iOS and Androids
- Internet or Wifi connection
- Location Services

User Requirements

- Ease of installation and cost of purchase is free download
- Ease of profile set-up and customizability
- Though many users either choose to disregard them or read them only partially, the product should have a standard licensing policy and terms of use policy that is considerate and fair to the user
- Easy to use
- Feedback messages
- Notifications / Reminders

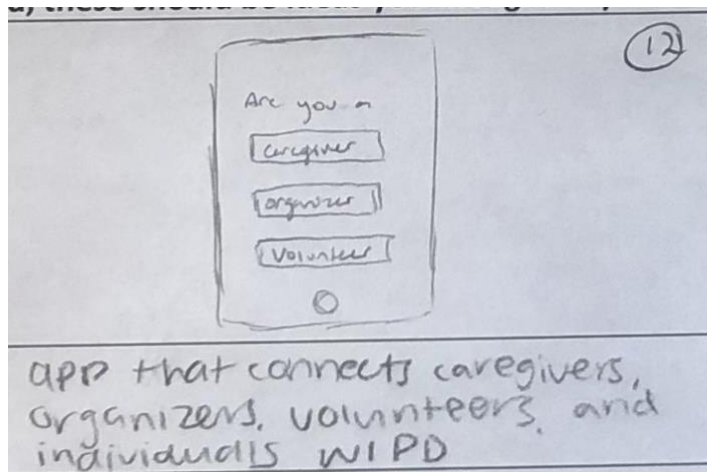
DESIGN SOLUTIONS

BRAINSTORMING & SKETCHES

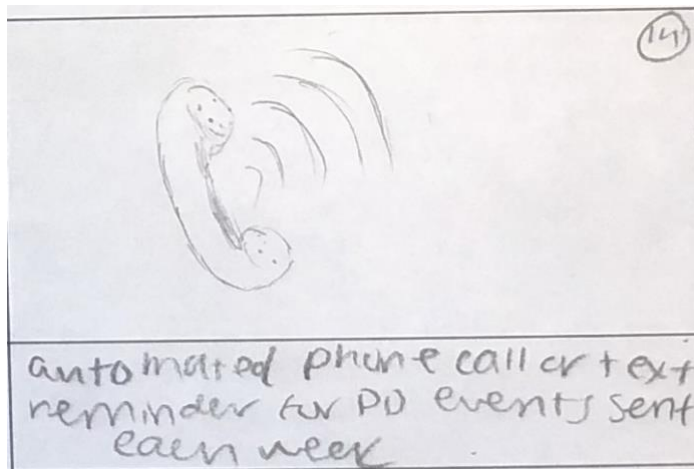


During the concept ideation and sketching part of this process, we brainstormed 10 “old” ideas that already existed and we could make connections to as well as 10 new ideas that we did not believe existed in the world. This phase of brainstorming really helped us in thinking of potential features and ideas that could be included in the app moving forward. This brainstorming process was also significant in helping us determine and learn from apps and services that already exist in the world. Ultimately, this was a challenging process; however, it certainly helped us in determining how we wanted to progress with our app design and features. After brainstorming these 20 concepts, we proceeded in choosing our “top three” ideas; these can be found on the following page.

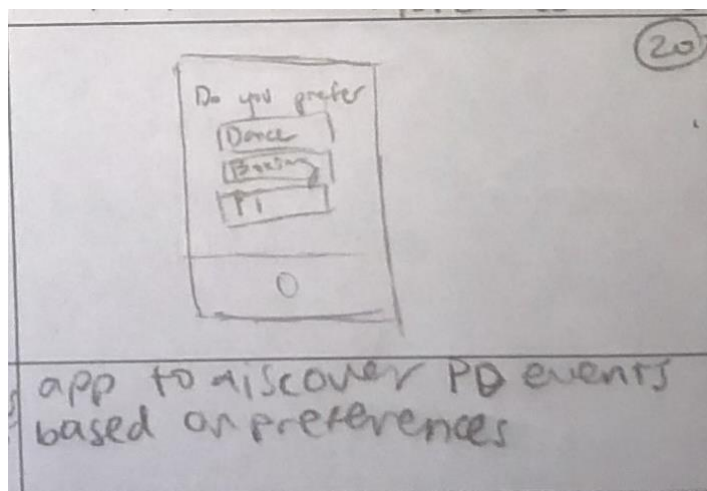
THE THREE BEST CONCEPTS



1. App that connects caregivers, organizers, volunteers, and individuals with PD.



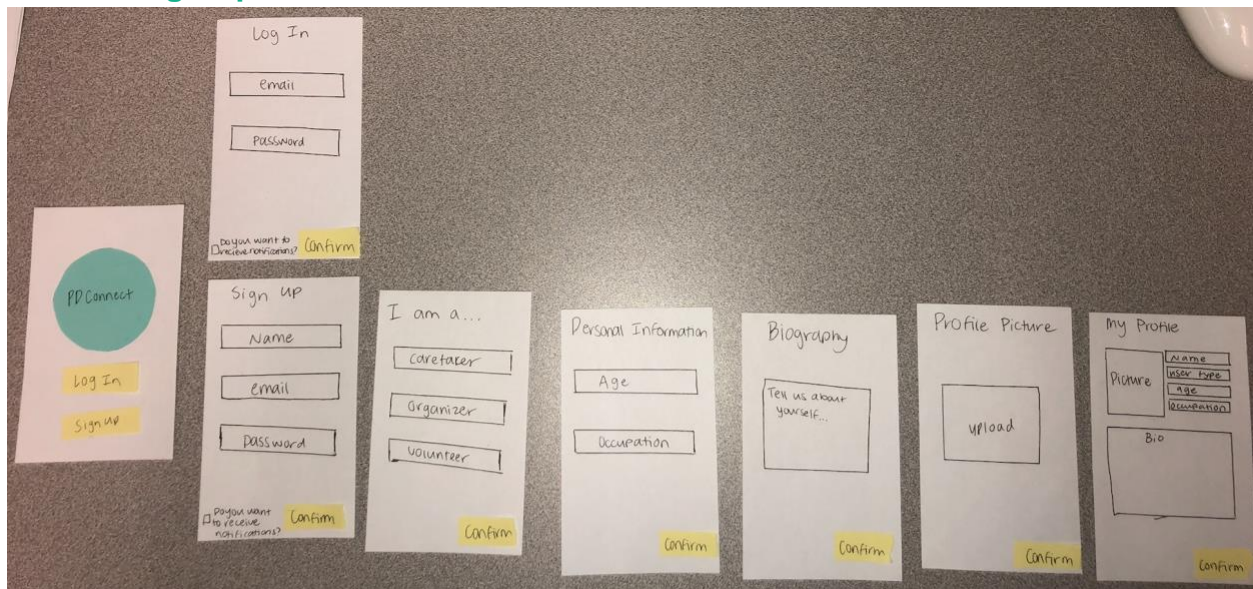
2. An automated phone call or text reminder for PD events sent each week.



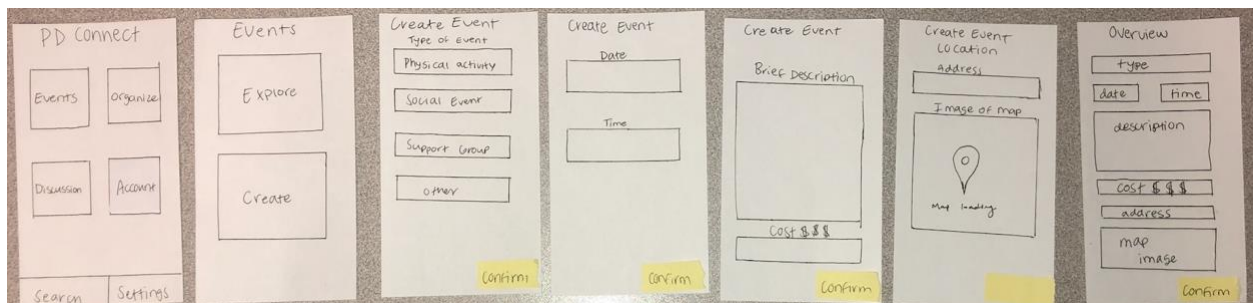
3. App that is used to discover PD events based on preferences.

PAPER PROTOTYPING & TESTING

Task 1 - Sign Up and Create An Account



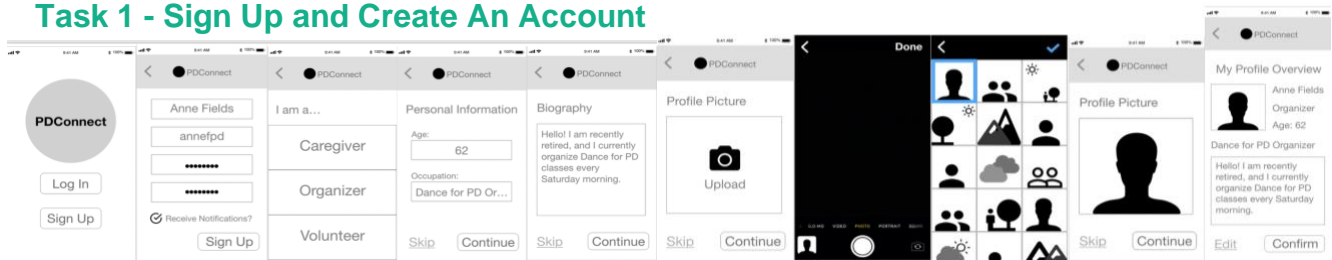
Task 2 - Create An Event



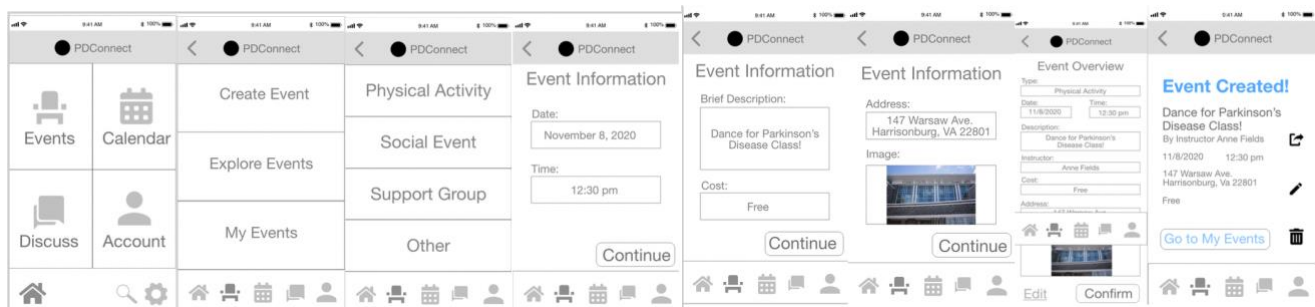
Before testing the paper prototype, we gave the participants a quick briefing on the app and the tasks they would be asked to complete. Then, the participants were asked to complete the above two tasks: sign up and create an account as well as create an event. Overall, the participants seemed to complete the tasks with ease and clarity with little to no issues. After the tests were complete, the participants were asked a few questions regarding their progression through the tasks in the app. This feedback was then used to further improve the app in the low-fidelity prototype phase.

LOW-FIDELITY PROTOTYPE & FEEDBACK

Task 1 - Sign Up and Create An Account



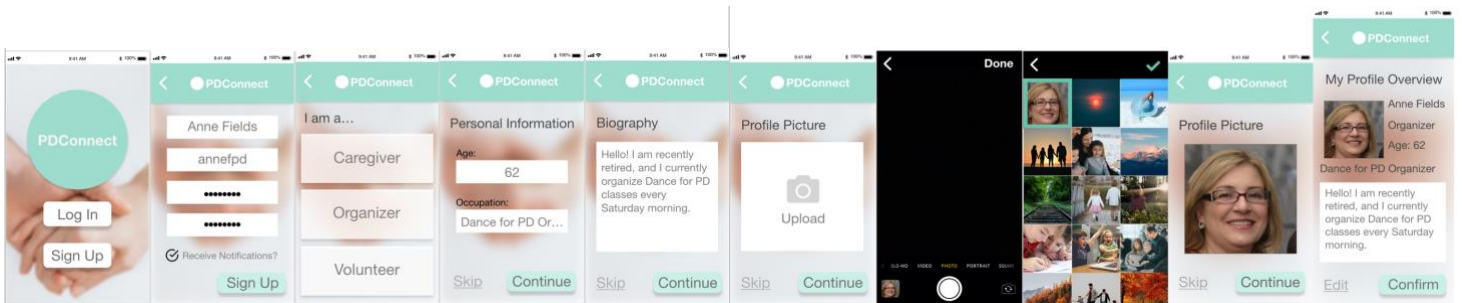
Task 2 - Create An Event



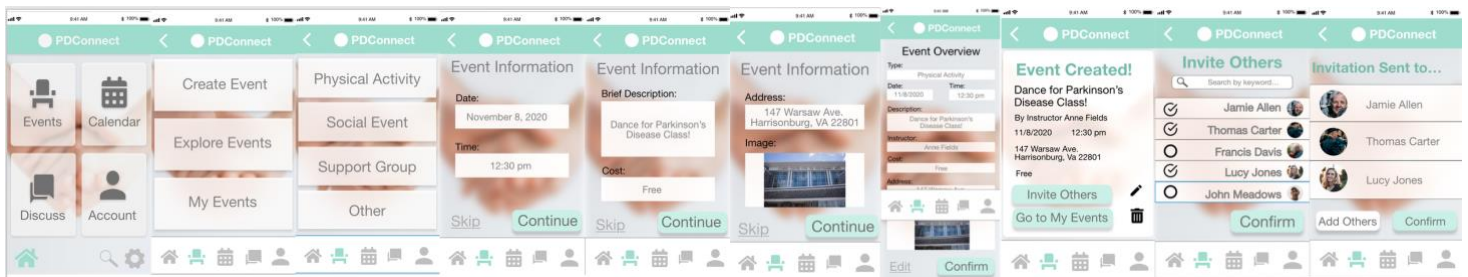
In creating this low-fidelity prototype we were wondering whether this app will make sense and be functional for all of our users in various age demographics--particularly for the older population. Additionally, we are wondering whether individual tasks and features seem logical and easy to follow through. One such example is where the user is asked to upload a profile picture. We are wondering if there is enough information for the user to complete this specific task. Additionally, we are wondering if the “homepage” format is logical and still necessary for the user as there is already a navigation bar included at the bottom of each page. Also, we want the process of creating an event or discussion to be as easy as possible. We want to hear feedback on how user friendly the process for creating events and discussions is, especially for older users. We’re wondering if it’s easy for users to then find their events and discussions after they’ve created or joined them. Overall, we’re wanting to hear how user friendly and accessible our app is for users.

HIGH-FIDELITY PROTOTYPE & EVALUATION

Task 1 - Sign Up and Create An Account



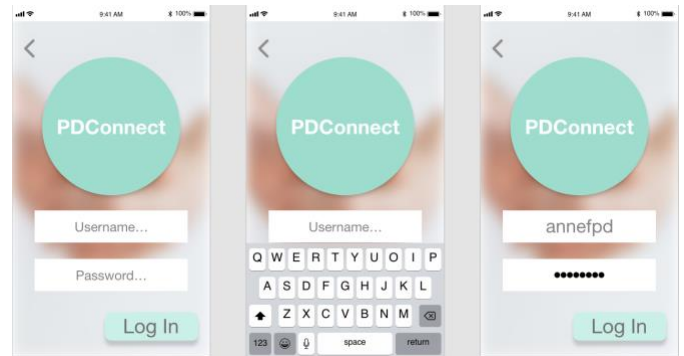
Task 2 - Create An Event



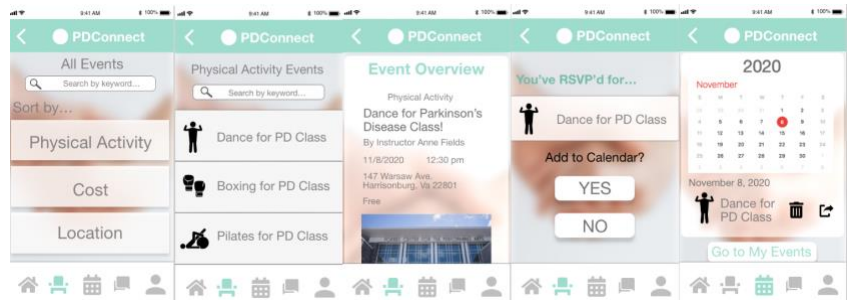
In our high fidelity prototype, we wanted to showcase key tasks that the user would do in our app. We displayed how the user would log in, sign up and create a profile, create an event, explore events, and explore discussions. These are crucial tasks that most users would complete when using the app. The log in task is very simple and user friendly. When creating an account we wanted the process to be easy for users. We allow them to go back if they want to edit information and skip to the next page if they don't want to fill in that information. The user can easily create an event and invite others as well as skip information they don't want to add. The user can also easily explore events and discussions from the home page and add events to their calendar or join discussions by searching by keyword or sorting by categories.

HIGH-FIDELITY PROTOTYPE

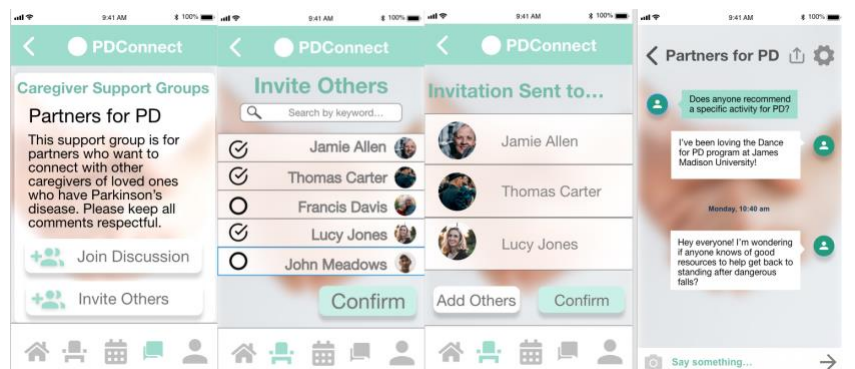
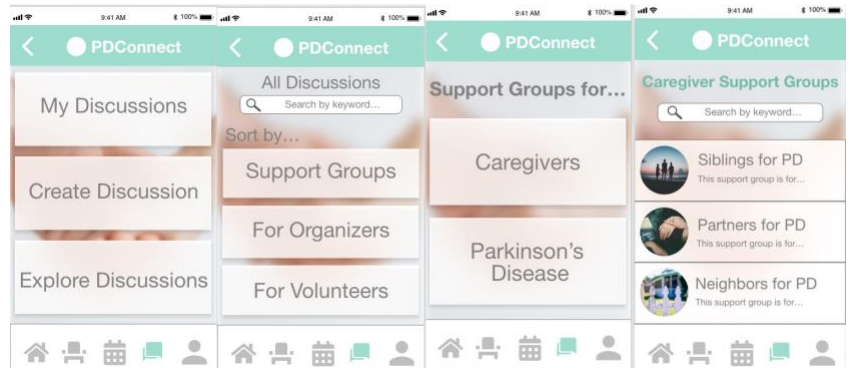
Task 3 - Log In



Task 4 - Explore Events



Task 5 - Explore Discussions



USABILITY TESTING AND DESIGN RECOMMENDATIONS

PARTICIPANTS

Participant 1: Jennifer McKim

Age: 52

Gender: Female

Occupation: Business Manager

Tech Use: Phone, laptop, consistent use

PD Involvement(?): Is the correct demographic for a typical organizer of Dance for Parkinson's Disease classes.

Participant 2: Timothy McKim

Age: 52

Gender: Male

Occupation: Project Manager

Tech Use: Phone, laptop for work, not often

PD Involvement(?): Is the correct demographic for a typical organizer of Dance for Parkinson's Disease classes.

Participant 3: Laura Ruple

Age: 21

Gender: Female

Occupation: Student

Tech Use: Phone, laptop, iPad; frequent and consistent use

Relevance to Target Demographic: Is the correct demographic for a typical volunteer for Dance Parkinson's Disease. Has experience with volunteering.

TESTING METHODS

I. Participant Briefing

Caregivers to people with Parkinson's disease need a way to connect to other caregivers because they may feel alone or struggle giving the best care to their loved one. Caretakers of Parkinson's disease, organizers for PD events, and volunteers for PD events don't have a central hub to communicate and relay information. Our app serves to connect caretakers, organizers, and volunteers. Users can create and discover events, chat with others about their experiences, and hear information and updates on PD events in the area. Events may consist of physical activity classes for individuals with Parkinson's disease as well as social events and support groups. Users are able to share tips and recommendations with other caretakers and organizers to best help their loved ones and participants.

II. Explain the tasks they will be required to complete

Participants will be asked to

- Sign Up as a
- Explore Events
- Make events.

III. Provide the user with the prototype and begin testing

IV. Once the testing is complete, a short debriefing session will occur where the user(s) will be asked a few open-ended questions.

Test Measures

- How long did it take the participant to complete the required task?
- How many participants/users completed the required task?
- Did the participant/user encounter any errors? If so, then what happened?

Open-ended Questions:

- What were some positive aspects that this app offered?
- What areas of the app could be improved?
- Were you ever confused during the testing of this app?
- Do you have any suggestions for how this app could be improved?

Test Environment/Equipment

- Users were tested in a quiet room and were provided with access to the app for testing.
- Users' interactions were recorded through a screen recording feature in Adobe XD.
- Users audio was recorded by using a headphone microphone and Voice Memos

FINDINGS & RECOMMENDATIONS



We had each user sit down and complete each task. We recorded how long it took them to complete each task. Each user completed all tasks easily and quickly, and had no questions or concerns on how to accomplish anything. ‘

The users took close to the same amount of time to complete most of the tasks. User 3 was usually the fastest to complete tasks. She is the youngest user, who uses different forms of technology and uses technology frequently. Users 1 and 2 are older and don’t use technology as frequently as User 3. Their time to complete tasks was generally slower than User 3, but not too far off.

For task 1, the time of completion was based on adding their information and clicking the login button. For task 2, users had to go through the process of creating an account. For task 3, users were asked to go through the steps of creating an event and inviting others to the event. For task 4, users explored events, RSVP’d to an event and added it to their calendar. Lastly, for task 5, users explored the discussions and joined one to interact with others.

During testing, users simply click on the text boxes, a keyboard screen appears, then text is entered. Adobe XD doesn’t allow for users to put in actual information and type in your own text. This is not an issue of our prototype, but simply how Adobe XD is set up. This is an issue because it doesn’t give an accurate representation for how long tasks would be completed if you users are inputting all of their text and information. However, users completed tasks with ease and had no issues when completing any of the tasks.

CONCLUSION

This semester, we have worked attentively and efficiently on creating and producing a prototype for the PD Connect application that worked to best fit the needs and desires of our users: organizers, volunteers, and caregivers of individuals with Parkinson's disease. Through this experience we have produced many materials as a result of our research and testing with our potential users. These materials and processes include compiled user interviews, research, brainstormed sketches, personas, scenarios, and storyboards. From these materials, we were able to create a paper prototype for three tasks included in the app which then informed us in creating our low-fidelity prototype. After conducting usability testing on the low-fidelity prototype, we were able to produce the high-fidelity prototype for PD Connect.

Throughout this whole process, we learned that no matter how much we may plan for the project course to play out, there are often numerous outside variables that could affect and change the course of the original plan. From this, we learned that while it is beneficial and important to have a plan, it is equally important to be open to changes within this plan that are out of your control. When this happens, it is necessary to be able to quickly adapt in order to continue progressing forward. Overall, this project was a challenging and engaging learning-opportunity that provided for growth and understanding of new skills within the world of UX-design.

WORKS CITED

- "Caregiver Connect." *Caregiver Connect | Family Caregiver Alliance*, www.caregiver.org/caregiver-connect.
- "Events." *Parkinson's Foundation*, www.parkinson.org/get-involved/events.
- Lovett, Laura. "Study: App accurately tracks Parkinson's disease symptoms." *MobiHealthNews*, 19 Apr. 2018, docs.google.com/document/d/1TyI23JLcnXXDQxIzfMMM9M4IGIvvy07IGJrdMUsYk7A/edit.
- Pai, Aditi. "Sage Bionetworks releases data from first six months of Parkinson's mPower ResearchKit study." *MobiHealthNews*, 2 Mar. 2016, www.mobihealthnews.com/content/sage-bionetworks-releases-data-first-six-months-parkinsons-mpower-researchkit-study.
- "Parkinson Care Partner Community: Get Involved!" *ParkinsonsDisease.net*, parkinsonsdisease.net/caregivers/care-partners-get-involved/.
- "Parkinson's Central." *Myhealthapps.net*, myhealthapps.net/app/details/309/parkinsons-central.