Ethan Wu

CS 6750 Project: Total Word Count: 2029 words

Introduction (55 words)

The interface I chose to redesign was Pokémon Go. This mobile Augmented Reality app can be found in the iOS and Google Play store and is free to download. Created by Niantic, Pokémon Go users walk in the real world and have "Pokémon" encounters, virtual imprints of lovage creatures that can be captured and collected.

Initial Needfinding (418 words)

Initial Needfinding will consist of the following approaches: Analysis of Existing Data, Analysis of Product Reviews and Surveys.

To perform Analysis of Existing Data, usage rate for Pokémon Go application over its two-year history will be investigated along with details on user base. This information is available with a simple Google search and will provide a snapshot of who plays the game and indicates the status of Niantic's Pokémon experience.

For Analysis of Product Reviews, most recent negative reviews will be read and evaluated from the Google Play Store Review page. We aim to read 100 reviews and hope to gain some insight on what the interface does not do well and features the interface is expected to have but lacks.

Lastly, a quick survey will be distributed amongst some friends who have some history with Pokémon Go. The survey will include the following questions:

- Do you still actively play Pokémon Go? Yes/No
- If no, please provide a reason why.

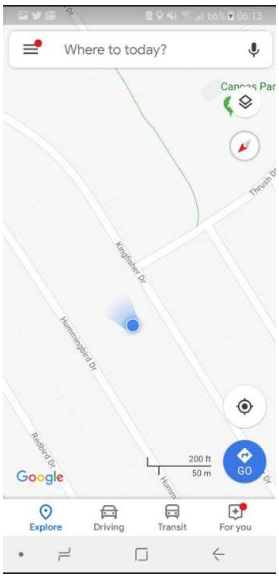
A response rate of 20 people will be sufficient and the purpose is to understand why users stop using the application in hopes to inform our redesign. (Appendix)

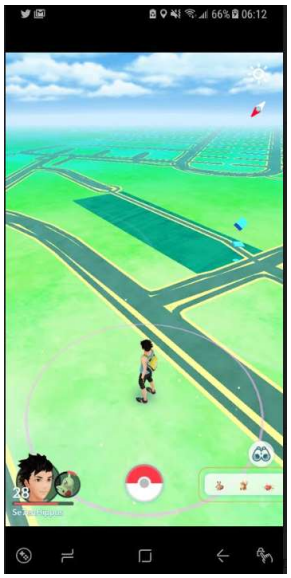
Results of Needfinding indicate that the Augmented Reality application is declining in use. Since its initial release in July 2016, daily usage rate has dropped 80% (28.5 million at its peak to 5 million current). Though dramatic, the drop can be attributed to the initial craze of an innovative application dying down. Reviews and survey results confirm this. Majority of players are from the Millennial generation reliving their childhood Pokémon adventures through the AR experience. These users have an expectation of what the Pokémon adventure looks and from negative reviews it seems developer Niantic has been slow to **push these features**, such as Trade, Player vs. Player (PvP).

Another prominent complaint is the lack of playability in rural areas where the experience is virtually non-existent. It is difficult to capture your audience when the neighborhood you live in has no Pokémon activity. This indicates a **need for hard criteria for less populated areas** (ie: PokéStops every 1 km, etc). There are also a **lot of features/game mechanics that are virtually undiscoverable within the game interface** without consulting a Google search or YouTube video. Non-Pokémon fanatics expressed that when the novelty of "Catching them all" faded, there was nothing about the application will keep them playing. This indicates a **need to include some soft features** like an Exercise Mode that the game can take advantage of to make exercising more fun for users.

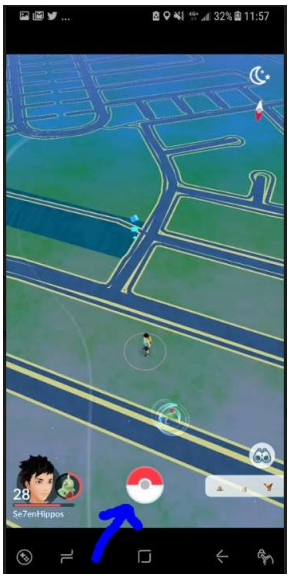
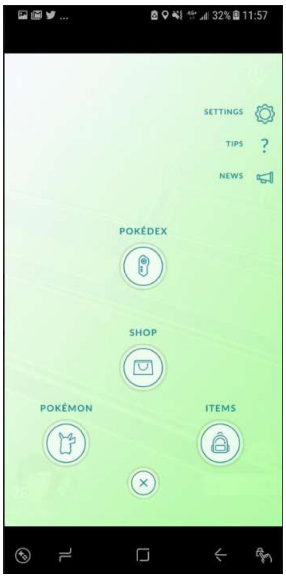
Heuristic Evaluation (734 words)

Ethan Wu





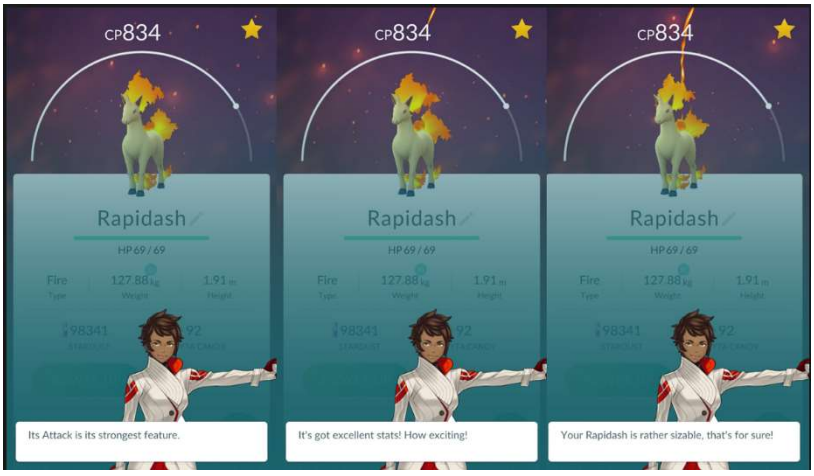

Pokémon Go is a game that advocates for users to get out of the house and move around. Pokémon Go does a great job of emulating real-world environment on the virtual canvas. This is the principle of **Mapping.** The virtual canvas is a reflection of the real world as seen in the figures above. My current location as indicated on Google Maps is the same as my avatars location in Pokémon Go. Additionally, my real-world vantage point shows accurate mapping of the roads and intersections. Successful mapping reduces the amount of confusion users experience when they attempt to navigate around searching for Pokémon. **Gulf of Evaluation** is narrowed because our character indicates our current location. It acts similarly to the dot indicator on most GPS navigation systems. We interpret that our movements are correct by seeing our actual movements mirroring the avatars movement.

Pokémon Go leverages **Affordances** positively and negatively. On a given screen there are many things that can be pressed or interacted with. The main menu icon is a button is elevated and visually looks like it is popping out of the interface. That affords the action of then pushing it down. The design of this button hints at how it is supposed to be used. It hints that it is supposed to be pressed. Pokémon

interactions follow the same principle as there is a small ring that surrounds it. The interface uses this visual indicator to hint an object can be interacted with.

Staying with **Affordance** discussion, Pokémon Go does a poor job of this in other areas. The bottom left of the screen includes an image of your avatar with level/experience indicator. Just from looking at the screen, nothing points to it having any functionality. There are no visual indicators, no affordances that would hint at how it should be used. Users often stumble upon it when clicking around randomly and are surprised to find a plethora of features and options (character customization, journal, badges, etc). With time and experience this lack of Affordance becomes less of an issue as users learn the interface and becomes **Invisible through learning** but ideally, we want to achieve **Invisibility by design**.

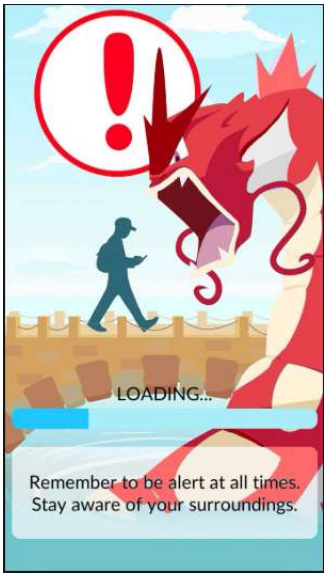


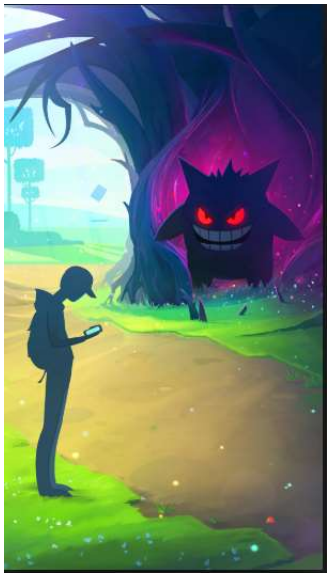
There are features of Pokémon battle system that are undiscoverable within the game. Many players, casual and serious, are unaware of the fact that not all Pokémon are created equal. This means some Pokémon are stronger statistically than others. Developer Niantic did not make this key game mechanic **discoverable** to users when the game was first released. Users were presented with a broad **Gulf of Evaluation** because there was nothing to indicate a Pokémon's stats other than its "Combat Power" (CP) value, which later proved to be an inaccurate way of evaluating the strength of a Pokémon. Niantic later

added in the “Appraise” feature however this failed to bridge the gulf because it is unclear how the phrase: “It’s got excellent stats! How exciting!” compares to the phrase: “I’m blown away by its stats! It can do anything.”

	Team Mystic (Blanche)	Team Valor (Candela)	Team Instinct (Spark)	IVs
Overall	Overall, your (Pokemon Name) is a wonder! What a breathtaking Pokemon!	Overall, your (Pokemon Name) simply amazes me. It can accomplish anything!	Overall, your (Pokemon Name) looks like it can really battle with the best of them!	Range of 82.2% - 100% (IV total = 37/45 - 45/45)
	Overall, your (Pokemon Name) has certainly caught my attention.	Overall, your (Pokemon Name) is a strong Pokemon. You should be proud!	Overall, your (Pokemon Name) is really strong!	Range of 66.7% - 80.0% (IV total = 30/45 - 36/45)
	Overall, your (Pokemon Name) is above average.	Overall, your (Pokemon Name) is a decent Pokemon.	Overall, your (Pokemon Name) is pretty decent!	Range of 51.1% - 64.4% (IV total = 23/45 - 29/45)
	Overall, your (Pokemon Name) is not likely to make much headway in battle.	Overall, your (Pokemon Name) may not be great in battle, but I still like it!	Overall, your (Pokemon Name) has room for improvement as far as battling goes.	Range of 0% - 48.9% (IV total = 0/45 - 22/45)
Stats	Its stats exceed my calculations. It’s incredible!	I’m blown away by its stats. WOW!	Its stats are the best I’ve ever seen! No doubt about it!	Perfect IVs in at least one stat
	I am certainly impressed by its stats, I must say.	It’s got excellent stats! How exciting!	Its stats are really strong! Impressive.	IVs of 13-14 in at least one stat
	Its stats are noticeably trending to the positive.	Its stats indicate that in battle, it’ll get the job done.	It’s definitely got some good stats. Definitely!	IVs of 8-12 in at least one stat
	Its stats are not out of the norm, in my opinion.	Its stats don’t point to greatness in battle.	Its stats are all right, but kinda basic, as far as I can see.	IVs of 0-7 in at least one stat

Most users will need to consult a large spreadsheet of possible Appraisal phrases like the one show above to understand this mechanic. Over time this information becomes second nature through time and experience, however in design we should aim for expertise through a discoverable interface and not through Google search.



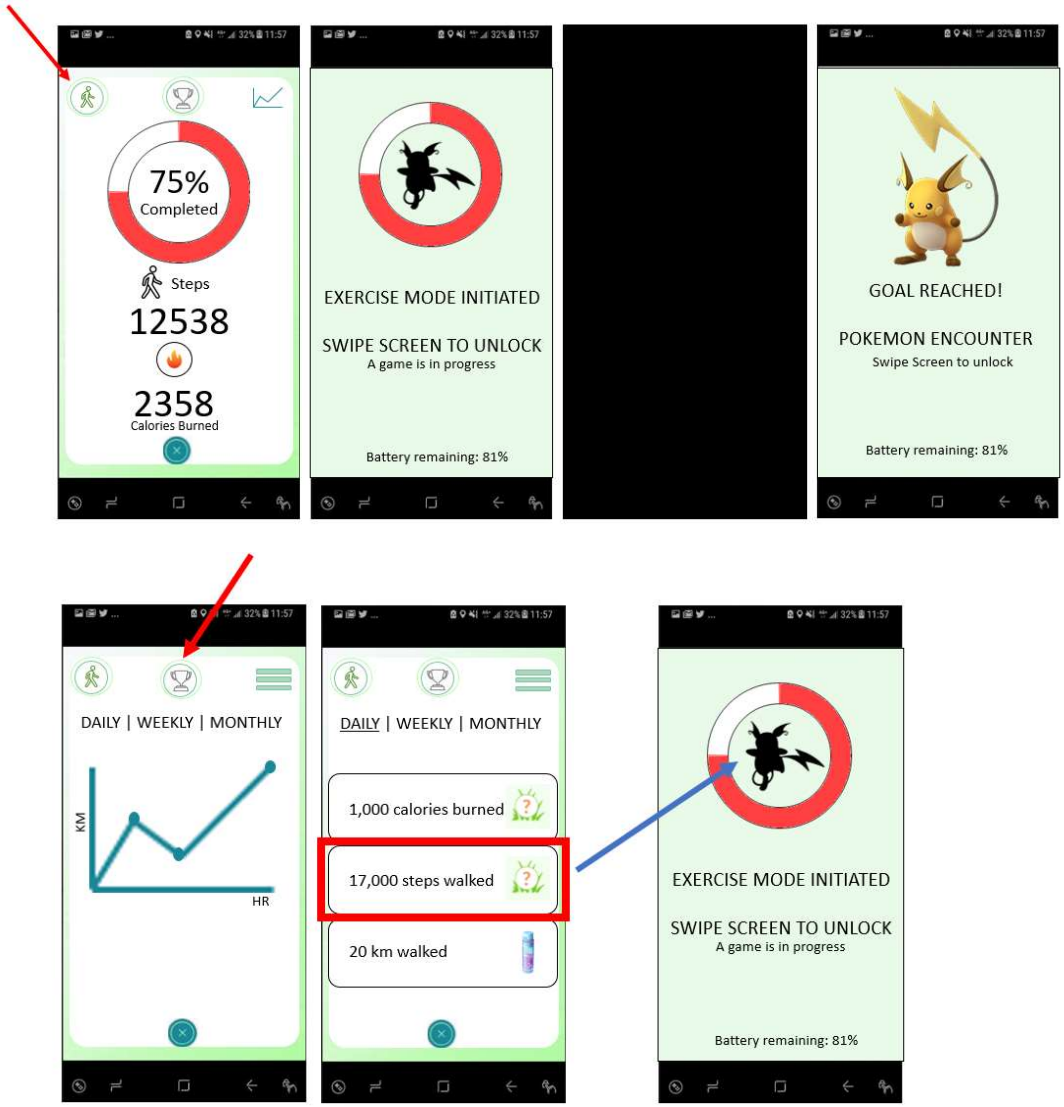


Another issue with Pokémon Go is the amount of **Cognitive Load** that it exerts on its users. Cognitive load refers to the minds ability to deal with a certain amount of information at a time. What happens when users play Pokémon Go is their eyes are fixed on the phone screen. To adequately play this game, users must keep track of their positioning on the map, the location of Pokémon as well as PokéStops. This ends up taking a lot of cognitive resources resulting in users being unaware of their surroundings and getting into accidents. Niantic attempts to manage this problem with reminders on loading screens and in-game. They take away from the experience are often annoying for users but falls in line with the **third motivation of HCI: Change**. This interface design decision serves no usability goals but they serve

the goal of user safety. Currently, purchasing a Pokémon Go Plus is the only method of **Distributed Cognition**, adding additional cognitive resources. This is unattractive for many reasons because it requires users to spend money on an external device that also limits the overall experience.

Interface Redesign: Diagrammatic

Ethan Wu



Interface Justification (587 words)

For my Pokémon Go redesign I decided to improve upon the Pokémon Appraisal system and added an Exercise Mode feature to encourage casual user base.

Pokémon captured in Pokémon Go have inherent statistic values that are important for users to keep track of when deciding when to Battle Gyms and execute Raid Battles. Currently there is a wide **Gulf of Evaluation** as the current appraisal system utilizes ambiguous language to communicate your Pokémon's battle capabilities. Because of this gulf, user's must consult Google, YouTube or use online Pokémon statistic calculators to determine their Pokémon's strength. Redesign of the Appraisal system will leverage the following design principles: discoverability and consistency.

The principle of **discoverability** suggests that features of the interface objects, actions and options be visible in order to minimize memory load. Appraisal function is the interfaces way of making Pokémon stats easily retrievable. Redesign chose to keep the location of the button and naming convention the same and address mainly the execution of the function. Instead of ambiguous language, a hexagon stat

chart was implemented. Hexagon stat charts visibly depict the stat distribution of a Pokémon in a way many users are familiar with. Hexagon stat charts are often used in other games that have emphasis on stats such as RPG. Here we are leveraging the principle of **consistency**. Consistency in design suggests that we take things users are familiar with on other platforms and use them in our interface.

Visual representation of stats helps to narrow the Appraisal **Gulf of Evaluation**. The interface output is the hexagon stat chart. We can interpret the amount of each stat by visually seeing how much of the chart is filled and evaluate the entire process as successful because user now know how strong their Pokémon is and make the appropriate in-game decisions. **Expert-blind spot** is avoided because the interface does not assume expertise as this visualization of data is something even novices can understand.

Needfinding showed that user base was dropping and surveys revealed a need to make the application useable after the novelty of catching Pokémon fades. Exercise Mode uses the walk data from Pokémon Go (steps taken, distance traveled to hatch eggs) and combines them with into a fitness application. This fitness application gives users the option to have a more casual Pokémon Go experience complete with fitness goals and various Pokémon related rewards.

The Exercise Mode option is placed clearly in the main menu accessed easily from the center menu button. We wanted this option to be easily **discoverable** and chose to place it in the menu where the button **affords** itself to be pressed. The icon is an image of a someone walking which is **consistent** with other fitness app icons. Fitness application follows the **simplicity** principle with its minimalistic design communicating clearly and simply in user's own language.

A big issue with Pokémon Go current interface is the lack of "heads-up" play. The game in its current form requires users to expend a large amount of their **cognitive resources** playing the game. Exercise Mode pushes for more heads up play by removing the need to keep your eyes on the phone at all times by introducing an idle mode which keeps the screen dark and runs the application in the background. Pokémon Go's Exercise Mode reward system motivates users to achieve the fitness goals while maintaining the integrity of the game goal of "Catching them all". Less time spent expending cognitive resources on the app means more time using those resources on other things.

Evaluation Plan (235 words)

Qualitative Evaluation will be used to evaluate prototypes. Prototypes for Pokémon Go are new features so it is better suited for qualitative evaluations. Interview questions in Appendix.

Interviews are conducted in person so friends and family members will be recruited to perform this qualitative evaluation. There are biases we want to avoid, prominent ones being: interview bias, confirmation bias, and social desirability bias.

As the designer gathering information through interviews, it is easy to phrase questions that lead them to comment on issues you see and conclude solutions that you feel are relevant. This can be avoided with careful interview question writing and giving the participant space to comment on their task with open ended questions (5 W's). As interviewer, try to keep prompting to a minimum and do so only to keep conversation on track.

Ethan Wu

Confirmation bias happens when observer “see what they want to see based on preconceived ideas.” To avoid this, it is important to question and actively test to see if feedback given is truly correct. When interviewing family and friends, sometimes they try to be nice and do not want to criticize the design heavily knowing I am the designer of the interface. This phenomenon known as social desirability bias, and it gets in the way of getting good data. We can try to hide what the socially desirable response is by maybe having a third party conduct the interview.

Ethan Wu

Appendix

Survey Results

- Do you still actively play Pokémon Go? Yes/No
- If no, please provide a reason why.

Nothing New
Takes too long to load on my phone
The gameplay is lacking and repetitive
No updates. Gameplay is stale
It got boring
Time consuming
I lost interest because I found that there was not enough to do, the entire game consisted of random pokemon encounters, pokestops, and gyms that's it
It kills my battery and generally inconvenient to play after a while
I forget to open the app
Community is pretty serious and its annoying
Stopped being interesting
Not anymore, the app never improved
Waste of time
It got boring and I never understood how to play anyways…#bitter
Less time in my life, and I was anticipating gyms were going to more of a thing and they didn't end amounting to much
It became rather boring
It took way too much time. I was also put off when I discovered that people would cheat with bots or computer navigation
It got old and I realized that I wasn't never going to catch them all ☹
Bored of it

Interview questions:

Pokémon can be used in Battle in Gym/Raid Battles.

1) Please state your experience with Pokémon Go?

2) Please take a look at the following card prototype and description. Do you have any questions?

Ethan Wu

3) Please describe to me what you see in the first card.

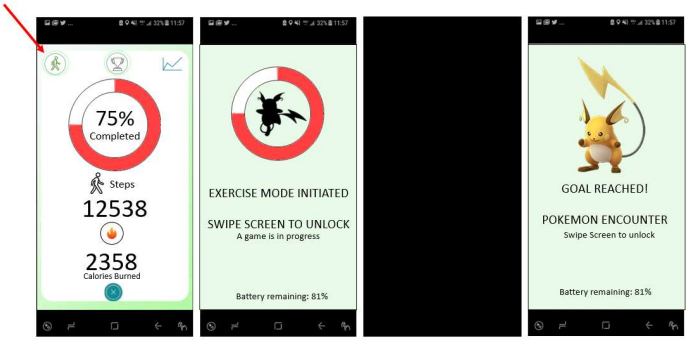
4) Please describe what you see in the second card.

5) Please describe what you see on the third card. What kind of information are we getting about the Pokémon?

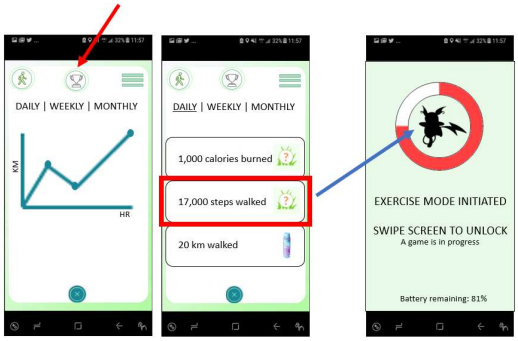
6) What do you think of the overall look of the interface?

7) (in the end) This interface is supposed to show user's Pokémon stats. Did you think this information was conveyed? How clear was this information conveyed? Any improvements?

Set 1: Card Prototype (New Feature of Pokémon Go. Exercise Mode - fitness tracking function within Pokémon interface)



Set 2: Card Prototype (New Feature of Pokémon Go. Exercise Mode - fitness tracking function within Pokémon interface)



Ethan Wu

Set 3: Card Prototype (New Feature of Pokémon Go. Exercise Mode – fitness tracking function within Pokémon interface)

1) Take a look at the card prototypes. What do you think about this design?

2) Please describe to me what you think is happening with the first set of card prototypes.

3) Please describe to me what you think is happening with the second set of card prototypes.

4) Please describe to me what you think is happening with the third set of card prototypes.

5) Look at the icons on the various wireframe. What do you think these icons do?

6) What do you think about an Exercise Mode in Pokémon Go?

7) Do you like the interface? Please share you likes/dislikes.