

## **Developing and Evaluating a Personal Task Analysis App – A Usability Study**

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**Abstract:** The amazing explosion of technology and innovation that has catapulted societies all over the world from the late 20th century into the 21st century brought in an advent of changes. It is often suggested that recent technology has condensed many day-to-day tasks that would normally take much longer. However, do people have more time on their hands, or less? The purpose of this usability project was to develop and evaluate the ease of use for a gamified app of a personal task analysis from an activity in a graduate course used at a university on the island of O`ahu. Development of the app was done with the platform Appery.io, and gamification as an approach was also considered in the overall development. The usability study was conducted with six participants aged 20-60, who had previous experience with the personal task analysis activity in the graduate program. The study was divided into two rounds, with two iterations each. And pre and post survey was sent to participants to solicit more information. Audio recording data was analyzed together with screen capture data to evaluate app usability. Qualitative data suggested that the second iteration was less confusing and more positive in contrast to the first iteration in terms of navigability and visual aesthetic. It is hoped that future iterations of the app continue to improve its function, and usability.

### **Introduction**

With the amazing explosion of technology and innovation that has catapulted societies all over the world from the late 20th century into the 21st century brought in an advent of changes. It is often suggested that recent technology has condensed many day-to-day tasks that would normally take much longer. Word processing software has replaced typewriters and the introduction of the smartphone takes older technologies such as calendars, clocks, and written notes on the go. In light of these newfound conveniences, do people have more time on their hands, or less? The answer may vary from individual to individual, but conducting a personal task can illuminate various areas about each person's lives and encourage them to change how they spend their hours in a day. Breaking down how each person's hours are spent in a week using questions inspired from Maslow's Hierarchy of needs and integrating it with a gamified value, a personal task analysis can both be easy to approach and understand.

The need that this project addresses is twofold: develop a digital form for a pre-existing classroom activity that the researcher participated in, and creating a more publicly accessible app for conducting personal task analyses. The researcher first took interest in this topic after conducting a personal task analysis on himself, and then considered the possibility of reducing the amount of time needed to complete the analysis. It is highly suggested that this app will

benefit future students and instructors in the class, in addition to any individual who may be curious to look at their own time commitments in a week. If properly developed and evaluated, the app itself can reduce the amount of time needed to conduct the activity, and can also simplify the process for its users. The impact or difference this can make will be dependent on the user -- but the app itself can remain as a self-help tool in the future if properly maintained. As such, this project aims to digitalize and develop a stable prototype for an activity that analyzes a person's personal, professional, and student life in accordance to Maslow's Hierarchy of Needs (1970) which displays their time investments in a tangible manner.

Implementing a usability study is the most appropriate method to test a developed prototype, and working with former students who have had experience with the app can provide the greatest amount of relevant feedback as they are familiar with the content. The purpose of this usability project was to develop and evaluate the ease of use for a gamified app of a personal task analysis from an activity in a graduate course used at a university on the island of O`ahu. Development of the app was done with the platform Appery.io, and gamification as an approach was also considered in the overall development. The usability study was conducted with six participants aged 20-60, who had previous experience with the personal task analysis activity in the graduate program. The study was divided into two rounds, with two iterations each. And pre and post survey was sent to participants to solicit more information. Audio recording data was analyzed together with screen capture data to evaluate app usability. Qualitative data suggested that the second iteration was less confusing and more positive in contrast to the first iteration in terms of navigability and visual aesthetic. It is hoped that future iterations of the app continue to improve its function, and usability.

## **Literature Review**

A personal task analyses stems from taking inventory of one's time management, commitments, and various degrees of "self-help" tools that are still important well into the 21st century. Matthews discusses in his article from entrepreneur magazine (2012) that much time is wasted on menial tasks, while a recent study has shown that time management can be assisted in a variety of ways (Oettingen, G., Kappes et al., 2015). Combined with the foundation of Maslow's Hierarchy of Needs (1970) that still maintains its relevance today, a personal task analysis is a tool that can be easily categorized, managed, and performed independently by oneself, provided that it has enough structure. Such structure has previously been completed and finalized by a professor (Personal Task Analysis, 2015) the researcher is working with, asking a variety of questions about tasks that a person may do in a week.

A method selected to assist in digitalizing the structure is in gamification. Gamification as outlined by Martens discusses thoroughly the recent impacts gamified media have had in everyday recent media (2014). Mentioning a recent and popular trend of website platforms that record a person's achievements, Martens vigorously extends this to games that include elements of story and interaction. Other researchers, who have both defined and outlined the benefits to gamification in different contexts all strongly suggest the popularity and level of engagement with its users (D., Khaled, R., & Nacke, L, 2011; Geelan, B., de Salas, K., Lewis, I., King, C.,

Edwards, D., & O'Mara, A, 2015). Successful implementations of gamification and learning (Tu, C. H., Sujo-Montes, L. E., & Yen, C. J., 2015) agree with this level of engagement, in addition to offering beneficial incentivized effects (Landers, R. N., Bauer, K. N., Callan, R. C., & Armstrong, M. B., 2015) Blending mobile design (Rasool, G., Khan, M., & Hussain, S., 2015) with patterns of game design and gamification elements that have been identified by various researchers (Hamari, Koivisto, & Sarsa, 2014) also add to the depth of tying in gamification, learning, interactivity, and engagement together. Considering that the original activity was also developed with gamification in mind, this adds to the digitization process.

Lastly, planning and carrying out a usability study is still a strong method to be used with developing apps or programs. Krug's work in his book *Rocket surgery made easy* illuminates many methodologies and ideas assisted in the construction of my instrumentation (2011). Taking sample scripts from his demonstration videos, for example, can offer a brief but comprehensive usability study to measure the success of the app. Usability studies by nature are still popular methods to test the success of technology and implementation. Recent studies such as Brown and Hocutt's work on Google Apps (2015) are contemporary examples that confirm usability studies to be effective in testing out the functionality of any user interface.

### **Project Development**

As much of the project's content was already developed, the researcher sought to find an appropriate platform to develop the app. After tinkering with GameSalad, the researcher found intuitive design elements, but discovered that the actual process required designing multiple assets in which the researcher did not have a dedicated team for. After exploring other free options, the researcher settled on using Appery.io, a platform that requires a small subscription fee but allows for designing with built-in assets from the website. Automatic saving on the site's cloud platform was also a plus, and it was decided that Appery.io became the platform of use.

The beginning of the design process involved making decisions on what pages needed to exist, and how the pages would transition to one another. After roughly prototyping the pages on paper (Figure 1), the researcher quickly moved onto designing the actual pages' buttons and navigational elements. Deciding that users may not select all options for the three lives was also a factor (Figure 2). Next, designing the actual content pages that involved the questions asked from the users required some more forward thinking. Initially, the app operated solely on scripted events that the researcher had to learn from scratch. Scripting these events was relatively easy to learn, but faced with the difficulty of implementing actual point values in the app, the researcher needed to look elsewhere beyond the app design platform. Consulting a close, tech-savvy friend, the researcher adopted rudimentary levels of JavaScript that was then embedded into the pages of the app (Figure 3). Much trial-and-error along with close tutelage constructed the final code needed to allow the point values in the app to change accordingly.

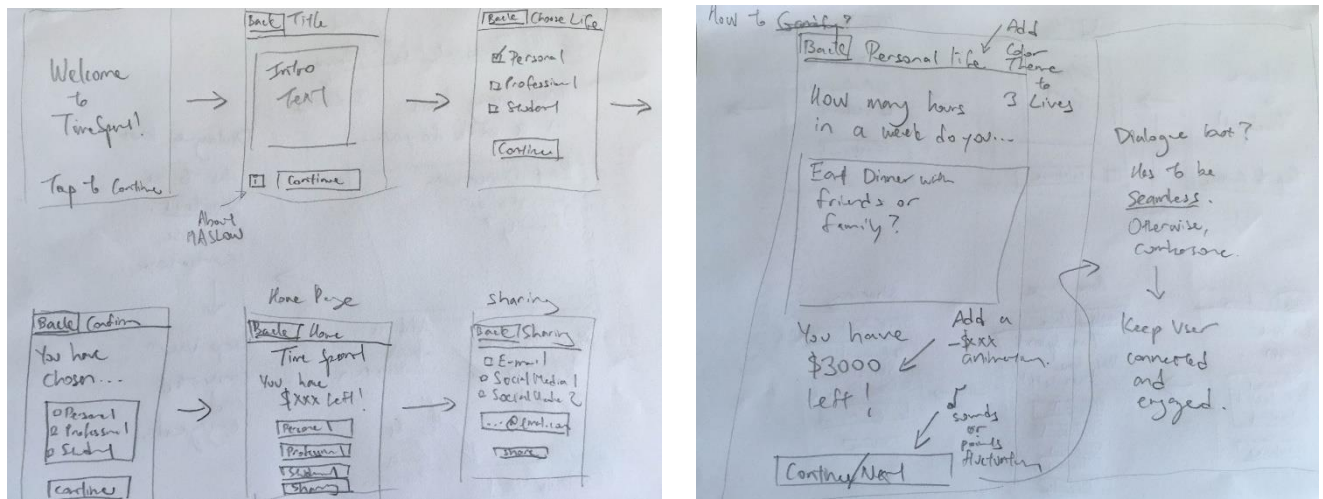


Figure 1. Paper Prototypes

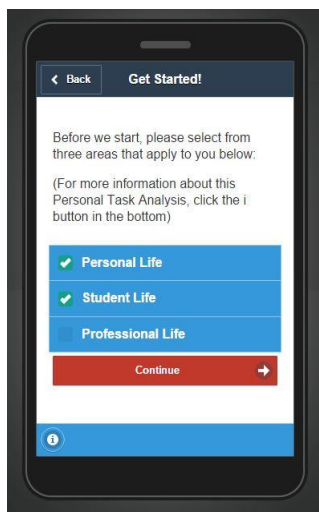


Figure 2. First Iteration Prototype Example of Buttons and Themes

```

1 |var hours = Number(Apperyio("hourinput").val());
2 |
3 |var hourscal = hours * 20;
4 |
5 |
6 |Apperyio("moneysubtraction").text(hourscal.toFixed(2));

```

Figure 3. Sample JavaScript included inside the App

In addition, critical feedback from the researcher's advisor and critical friends also supplemented the overall process. After initial versions of the app were designed, many suggestions were put

forward to improve the overall aesthetic design of the app. A name was added, and more gamified ‘dialogue’ was added (Figure 4). Other gamified elements that promote interactivity have been kept in reserve, such as adding more dialogues in between pages. These elements have been kept in reserve at the researcher’s discretion in anticipation of the first round of usability studies. As it is an iterative process, the researcher will solicit feedback prior to implementing more features that might distract the user from the overall usability of the app. Other unimplemented features such as the sharing and results screen will also be added as they are further developed. The prototype app as it is updated can be found at <http://ptayng.app.appery.io/> (best viewed on a mobile device), or accessed via the Appery.io Tester App using code 664-969-342.

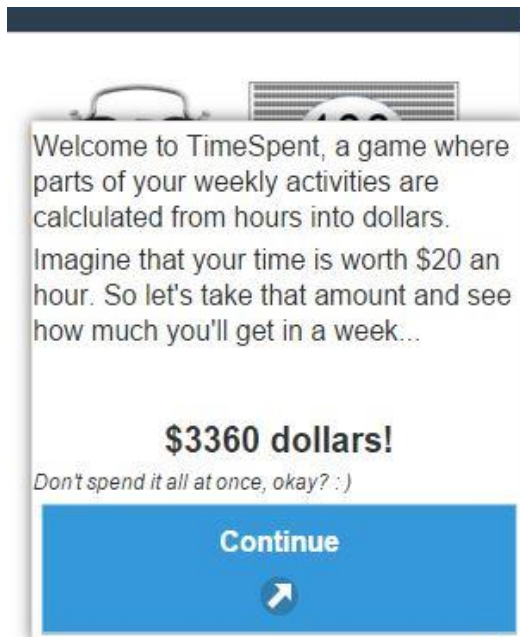


Figure 4. First Iteration Dialog within the App

For round two of testing, the developer decided that a new platform may be required. Attempting to implement certain features such as sound and pop-ups were unsuccessful, and these spoke to the limitations of Appery to the developer. The researcher sought to look into other platforms, including AppMakr, AppsMoment, and AppyPie, and while these all offered their own pros and cons, failed to offer the flexibility that Appery ultimately offered. Returning to Appery, the researcher sought to implement general feedback into the second iteration of the app. A newer approach to the overall design and visual aesthetic of the app was decided on, and the theme was changed entirely (Figure 5). Anticipating a more gamified approach, the researcher also hoped that this would clear overall confusion with the first iteration’s visual approach. Achievement pages were also considered to add to the gamification idea. Slightly modifying the content of the original Task Analysis to include more gamified elements was also done at the researcher’s discretion.

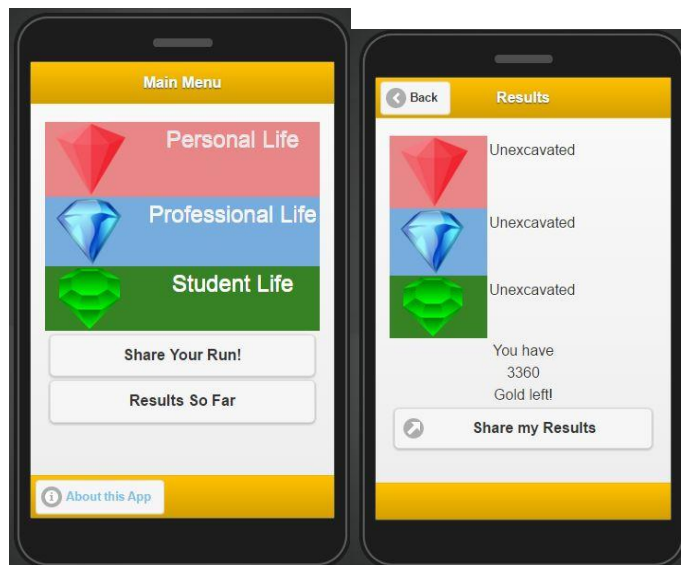


Figure 5. Second Iteration Theme and “Achievement Page

Further developments after the second iteration were implemented, including a more detailed stage-by-stage approach to Maslow’s Hierarchy in each section, a more detailed results page, and working sharing queries for e-mails.

## Methodology

As a previous student that participated in the activity, the researcher sought to recruit other members who have also had experience with the activity for a usability study.

As a usability study, the focus was on the navigational and ease of use aspects of the app. As such, the research questions were:

- 1) How easy is it for participants to navigate to elements of task analysis in the app?
- 2) How easy is it for participants to access the points system of the app?

Each of these questions specifically deal with navigation and finding certain elements of the app to determine its success. The questions themselves were kept relatively simple in order to ascertain further qualitative data based on the participants’ inputs. The pre and post study survey in its entirety can be found in Appendices A and B.

The usability study pulled six college-level participants aged from 20-60, with a variety of experience with apps and prior experience with the personal task analysis activity in the testing app. Criteria for these participants will included:

- Previous experience with personal task analyses
- Variety of experience with apps
- Physically and mentally able to operate an app

Participants were recruited via email with a recruitment message. From the pre-survey data, all students had experience managing their time and had previously completed the task analysis

activity. They were also comfortable with using apps, and already were using a variety of apps in their daily lives.

Roughly 30 minutes of their time were required for each session, tasked with navigating through the app as the researcher conducted the usability study. Participants were given a form of consent which also included consent for audio data recording from the study. A pre-survey was sent to the participant, which they completed prior to the usability study. A post-survey was also sent to solicit additional feedback as necessary. Data involving participant identity was then assigned to Participant 1-6 for anonymity.

The usability study was mainly designed with inspiration from Krug's work in *Rocket Surgery Made Easy* (2011). Audio and screen capture data was recorded using recording software on a computer device, saved onto a passworded computer, with an additional backup onto a secure and encrypted external hard drive. Additional notes were taken by the researcher on a notepad as the usability study was conducted, and these notes were kept in a confidential folder used only by the researcher. Audio data and research notes measured qualitative data from the participants' reactions, successes, and difficulties during the usability study process. Survey data were collated under one database under the researcher's institutional Google account.

Since measuring navigability and ease of use was key, almost all of the tasks reflect this (Figure 6). Each of the tasks were developed in respect to relatable perspectives that the target audience could have. Ensuring that the script allowed the participant enough room to input feedback was also important to include. Lastly, step-by-step instructions were also considered should any contingencies arise that require the researcher to seek additional help in carrying out the usability study (Appendix C).

#### Usability Protocol Tasks

Scenarios ("tasks") for Cognitive Walkthrough
<p><b>Task 1</b></p> <p>You are a student who, after hearing about this new app that would help you manage your own time commitments, decides to download the app and try it out. You have heard that it can give you a good breakdown of where your time goes in a week. Find out where you can start this process.</p>
<p><b>Task 2</b></p> <p>You are a student who has decided to focus on studying and is unemployed at the moment. Find how you can do an analysis involving only your personal and student life.</p>
<p><b>Task 3</b></p> <p>You are a teacher who is looking to integrate this app into their classroom. After completing the app's process by yourself, you are now curious as to see where you can find options to share your results so your class can do the same when they complete it. Find out where you can do this.</p>
<p><b>Task 4</b></p> <p>You are a student who wants to try out the app and wants to access a summary of the money spent in the game. Find out where you can access this.</p>

Figure 6. Scenarios for Cognitive Walkthrough



The site of testing was at a public area inside a university, with minimal noise and minimal exposure to the public. Participants were led through a series of tasks while the researcher took notes. Detailed procedures the researcher followed can be found in the Usability Protocol Script (Appendix D).

Analysis of the data involved matching audio data to researcher's notes made during the session, soliciting reactions and feedback in relation to usability, accessibility, and visual elements. Comparing and contrasting the different iterations of the app between the two rounds of testing was yielded valuable data regarding the improvement of the app. Attributing the iterative nature of developing an app, this would also contribute to the researcher's continued work on the app.

## Results

### Round 1.

Round 1 of testing was met with mixed results, with confusion leaning towards certain tasks from the Usability protocol. Participant 1 found the overall experience to be confusing, while Participant 2 and 3 were leaning towards an easy usability testing experience. General impressions of the app were mixed, with participant 1 questioning much of the content on the app pages. Participant 2 focused more on the navigational aspect of the app, praising it for the confirmation page, and participant 3 found the title page visually confusing. Figure 7 highlights two screenshots from two participants during the 1<sup>st</sup> round of testing.

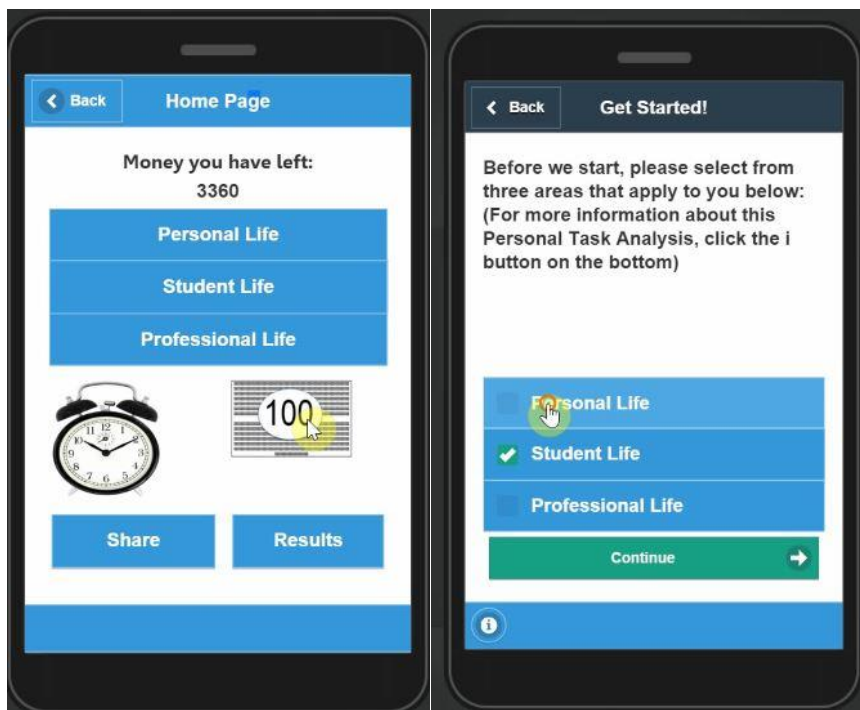


Figure 7. Screenshots during Round 1



The yellow circles that reveal where participants were clicking, and much of it was spent on clicking on elements that hampered the completion of the usability tasks. Clicking on visual elements and wasting time on the confirmation page were huge roadblocks for Participant 1 and Participant 3. As a result, the average clicks it took for Participants in round 1 to complete certain tasks were high (Figure 8).

Task	Average Clicks
1	4
2	3
3	2
4	2

Figure 8. Round 1 Click Chart

For the usability tasks, Task 1 was hampered by a splash page that didn't quite point to the title page of the app. Participant 1 and 2 both struggled with this. Participant 3 understood that the splash page wasn't quite the title page. A participant noted that they weren't "sure what this is here for." Task 2 also was confusing overall as the splash page served a double function of allowing users to select specific lives for their analysis. Participant 1 and 2 struggled with this, browsing through different pages from the home screen rather than returning to splash. Only participant 3 was able to return to the splash page. Task 3 was a simple endeavor for all participants. The share button was very clearly on the title screen. Participant 2 noted that the idea of share and results could be streamlined together. Task 4 was mostly confusing to the three participants. While Participant 2 and 3 found it in a relatively short time, Participant 1 did not equate summary to results in the app. All participants attempted to complete the app questions rather than accessing the results screen immediately. The confusion can be seen quite clearly in the post-survey numbers (Figure 8).

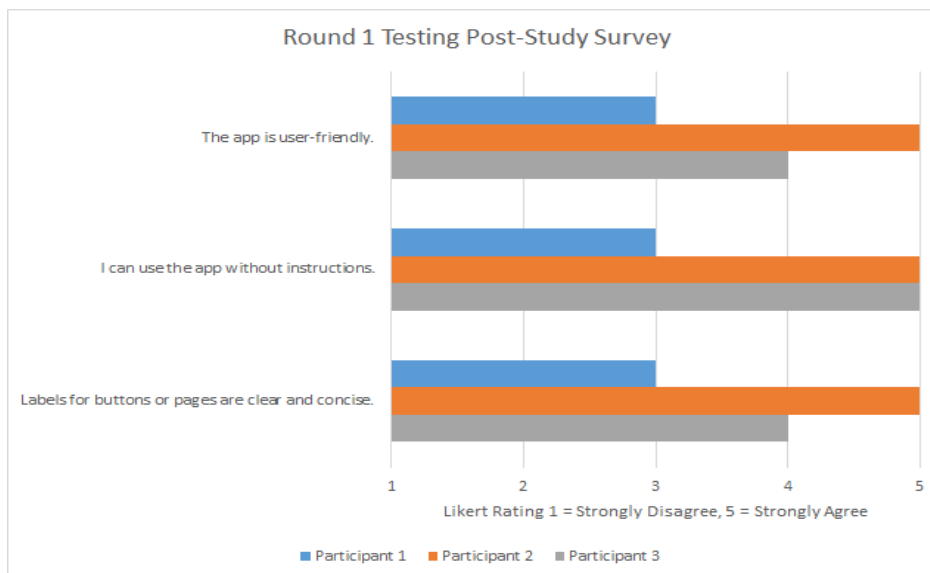


Figure 8. Round 1 Testing Post-Survey results

General feedback called for better explanation and clarity of why elements were in the app. A word cloud was created for the post-survey results from Round 1 (Figure 9):

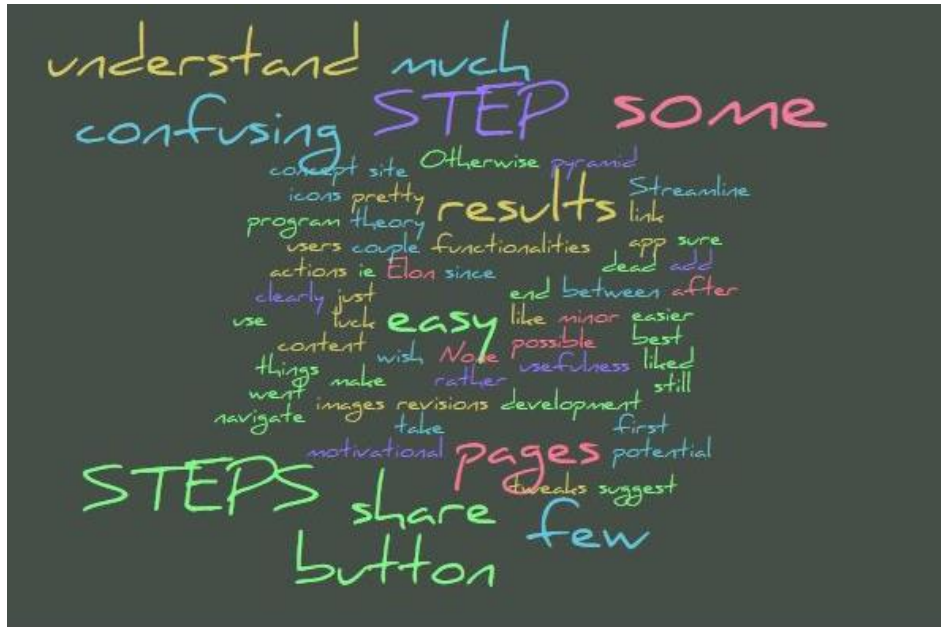


Figure 9. Round 1 Post-Test Word Cloud

The biggest words are step and steps, while confuse The confusion surrounding the splash page and the title page needed to be addressed, and the three lives were not very appealing at all. The currency of money also seemed to be a little confusing in terms of representation. These changes were addressed and the design was changed, overall.

## Round 2.

Round 2 of testing was positive overall, with further suggestions to improve app navigation and explanation. Participant 4 enjoyed the visual and up-front gamified approach, Participant 5 navigated the app quite well, and Participant 6 praised the overall construction of the app. General impressions of the app from the homepage were also positive, as the simple colors and theme stood out to each participant. Still, there were certain difficulties during the usability study that participants struggled with. Figure 9 shows two screenshots from the testing:

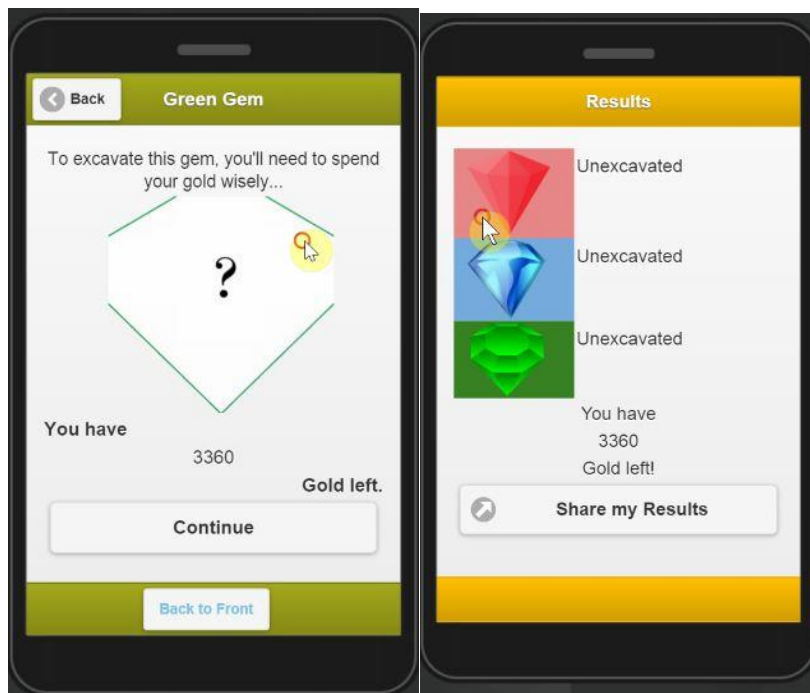


Figure 10. Screenshots during Round 2

While the visual aesthetic was improved, this did not stop participants from deviating from the task by exploring the different elements present on different pages. Participant 4 clicked around the life page, while Participant 5 found a bug in the achievement page. The yellow circles in the screen caps showed that participants were inherently curious about what was on the page, and clicked on areas that added overall to the task click count. Still, Figure 11 shows significantly less click count than round 1:

Task	Average Clicks
1	3
2	2
3	1
4	1

Figure 11. Round 2 Click Chart

The absence of a confirmation page no doubt contributed to the lower amount of clicks, while the cleaner visuals could've also contributed to less confusion for the tasks. Task 1 was completed quite easily by all participants as they were not mixed up by the splash page. As the first iteration required roughly 2-3 clicks/taps to reach the actual title page, reducing it to one click simplified the task significantly. Participant 4 did, however, attempt to click on different areas on the splash page to attempt navigating to the next page. Task 2 all participants walked through the process of completing the separate analyses successfully. For Task 3, finding the share button was relatively easy, while

Task 4 also saw participants finding the results section with little difficulty. It was immediately noticeable that the tasks were similarly impacted (Figure 12).

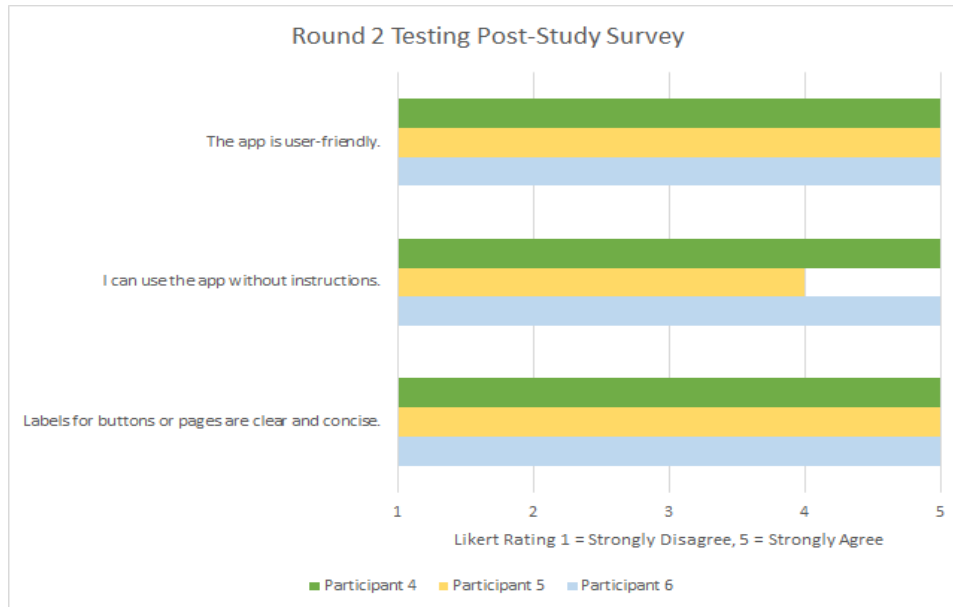


Figure 12. Round 2 Testing Post-Survey results

General feedback included streamlining the whole gamification experience for the overall app, in addition to revising the “back to front” button together with a “reset” button. Other areas such as redefining and explaining the gems in detail were also mentioned, and these feedback ideas seem to be a recurring concern that carried over from the first iteration. A word cloud including written feedback from the second round was created and examined, in addition to the full responses (Figure 13):

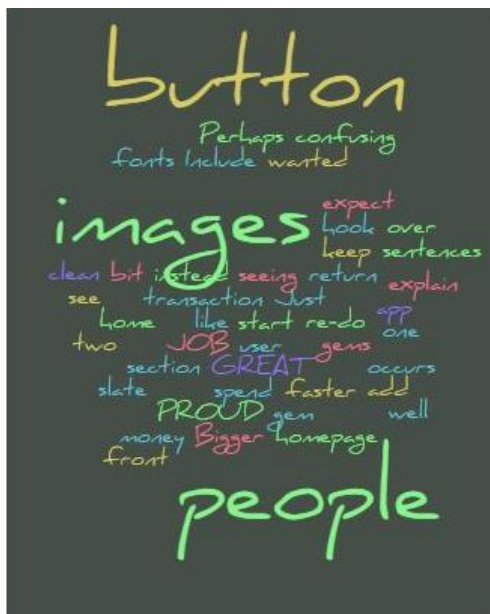


Figure 13. Round 2 Post-Test Word Cloud

The highest occurring words were button, images, and people, and most of these dealt with positive results that signified on the second iteration's improvements. Comments also added suggestions to improve the overall navigability, with font and elements that could be bigger to make them stand out.

### **Discussion and Conclusion**

It is evident that the subsequent iteration, after having taken feedback from the first three participants, found more effective implementation with the second round of participants. This again speaks to the nature of the iterative process of developing interfaces, and highlights the effectiveness of conducting usability studies (Krug, 2011). Adding more fluent and up-front gamification elements in the second iteration also helped to appeal and "catch" the user, indicative of effective design (Deterding, S., Dixon, D., Khaled, R., & Nacke, L., 2011; Geelan, B., de Salas, K., Lewis, I., King, C., Edwards, D., & O'Mara, A., 2015). Navigability and accessing key components of the app were the main research questions behind this study, and much of these were addressed in their positive reactions to the interface itself. Nevertheless, improvements can always be made, and this indubitably supports the developing prototypical nature of the project as a whole. Soliciting feedback after the creation of future iterations and continued maintenance of the prototype by the researcher in the future will be key to the project's continuing success.

The project in a wider context sought to situate a personal task analysis tool for easy access to anyone curious in taking a quick inventory of their own time commitments. As the researcher worked with a professor on the content of the app, much of the usability study was focused on the actual navigability and ease of use of the app. Regardless, the app can see future use to be integrated into potential teaching use, and can also independently be improved on and shown as an example of gamification and interface design. In the field of Educational Technology, this project may still be such a small drop in a wide ocean of innovation, but is an endearing project for the researcher to digitalize and realize an enjoyable personal task analysis activity.

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## Appendix A

## Usability Study Pre-Survey

## Participation Pre-Survey for PTA App

Thank you for your interest in taking part in this study. This pre-survey is designed to gather background information regarding demographics, attitudes, and technology use for the research purposes only, and is not meant to assess your individual performance. This survey should only take you 5 minutes at most to complete.

**\* Required****What is your gender? \***

- ☐ Male
- ☐ Female

**What is your age group? \***

- ☐ 18-24
- ☐ 25-34
- ☐ 35-44
- ☐ 45-54
- ☐ 55-64
- ☐ 65+

**If you are a student, what degree are you pursuing currently? \***

- ☐ Bachelor
- ☐ Master's
- ☐ Doctorate
- ☐ Diploma or Certificate
- ☐ N/A (I'm not a student)
- ☐ Other:

**How often do you plan out a weekly schedule? \***

This can include looking at how many hours you spend on a daily activity, creating a to do-list, allocating hours in a schedule etc.

- ☐ Often
- ☐ Somewhat often
- ☐ Somewhat rarely
- ☐ Rarely
- ☐ Never

**How often do you prioritize daily activities in your schedule? \***

- ☐ Often

- ☐ ☐ Somewhat often
- ☐ ☐ Somewhat rarely
- ☐ ☐ Rarely
- ☐ ☐ Never

**How comfortable are you with using mobile apps? \***

- ☐ ☐ Comfortable
- ☐ ☐ Somewhat comfortable
- ☐ ☐ Somewhat uncomfortable
- ☐ ☐ Uncomfortable

**How many apps do you regularly use on your phone? \***

- ☐ ☐ 0
- ☐ ☐ 1-3
- ☐ ☐ 4-6
- ☐ ☐ 7+

**How many of the apps that you use can be considered "productive" or "self-help?" \***

Productive or Self-Help may be examples such as organizers, schedulers, calendars, to-do lists, etc.

- ☐ ☐ 0
- ☐ ☐ 1-3
- ☐ ☐ 4-6
- ☐ ☐ 7+

**What do you mainly use mobile apps for on your phone? (Please use the space below to briefly describe. You may leave the space blank if you wish.)**

**Your response has been recorded. Thank you for taking the time to do this, and I will contact you soon about the details for the study.**

## Appendix B

## Usability Post-Survey

## Participation Post-Survey

Thank so much for participating in my usability study. Below are questions I'd like for you to answer about your experience with the app. Your responses will be kept for research purposes only and is not meant to assess your individual performance. This post-survey should take no longer than 10 minutes to complete. As your responses can help me to improve the overall app, please respond in as much detail as possible. Thank you!

**\* Required**

**Design Layout**

The app pages are easy to understand. \*

1 2 3 4 5

Strongly Disagree ☐ ☐ ☐ ☐ ☐ Strongly Agree

The text on the pages are clear and easy to read. \*

1 2 3 4 5

Strongly Disagree ☐ ☐ ☐ ☐ ☐ Strongly Agree

The images are interesting. \*

1 2 3 4 5

Strongly Disagree ☐ ☐ ☐ ☐ ☐ Strongly Agree

The app itself is visually appealing. \*

1 2 3 4 5

Strongly Disagree ☐ ☐ ☐ ☐ ☐ Strongly Agree

The organization of the site is logical and easy to follow. \*

1 2 3 4 5

Strongly Disagree ☐ ☐ ☐ ☐ ☐ Strongly Agree

**Navigation**

The app was easy to navigate. \*



**Additional Comments**

Were there any features that were confusing to you? \*

Do you have any suggestions to improve the app? \*

Thank you so much for taking the time to do this!

Your feedback is crucial to help me improve the app. Please feel free to contact me with any additional comments or questions!

## Appendix C

## Usability Protocol Instructions

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*Modified from Usability Script- Rocket Surgery Made Easy © 2010 Steve Krug*

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**Technology Set-Up Checklist (Facilitator Computer)**

1. Facilitator should set up his/her computer or device and attach all cords/peripherals - make sure to use a wired mouse
2. Plug in to a power outlet (don't trust the battery)
3. Make sure computer device is connected to the Internet if you are using online resources
4. Prepare screencasting software and do a brief test to ensure
  - a. If a mobile device is being used for the walkthrough, ensure that an audio recording device is operating.
  - b. Video of screen is captured
  - c. Audio is captured

After computer or device is set up:

5. Load the app that you have been asked to walkthrough.
6. Start the screencasting software or audio recording software.

- *Start the screencasting / audio recording software -*
- *Ask participant a few preliminary questions: -*
- *Have participants do a narrative of the app's overall appearance for one or two minutes, at most.*
- *Ask participant to complete a few specific tasks (be sure to give the participant a handout of the scenarios): -*
- *Allow the user to proceed from one task to the next until you don't feel like it's producing any value or the user becomes very frustrated. Repeat for each task or until time runs out. -*
- *Stop the screencasting or audio recording software -*

## Appendix D

## Usability Protocol Script

## Cognitive Walkthrough Protocol

**Cognitive Walkthrough Protocol****Elon Ng****LTEC - University of Hawai'i**

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*Modified from Usability Script- Rocket Surgery Made Easy © 2010 Steve Krug*

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**Technology Set-Up Checklist (Facilitator Computer)**

1. Facilitator should set up his/her computer or device and attach all cords/peripherals - make sure to use a wired mouse
2. Plug in to a power outlet (don't trust the battery)
3. Make sure computer device is connected to the Internet if you are using online resources
4. Prepare screencasting software and do a brief test to ensure
  - a. If a mobile device is being used for the walkthrough, ensure that an audio recording device is operating.
  - b. Video of screen is captured
  - c. Audio is captured

After computer or device is set up:

5. Load the app that you have been asked to walkthrough.
6. Start the screencasting software or audio recording software.

**Facilitator Script**

- ***Start the screencasting / audio recording software -***

Hi, [insert participant's name]. My name is Elon Ng, and I'm going to be walking you through this session today.

Before we begin, I have some information for you, and I'm going to read it aloud to make sure that I cover everything.

Since you are in this program, you probably already have a good idea of why you are here, but let me go over it again briefly. I'm asking people to take a look at an app I've designed for a personal needs analysis as part of my master's project in LTEC. I would like to see what you think of it and how you think you would complete a few tasks with an app like this. The session should take about 10 minutes.



The first thing I want to make clear right away is that I'm testing the app, not you. You can't do anything wrong here. In fact, this is probably the one place today where you don't have to worry about making mistakes.

As you complete the tasks, I'm going to ask you as much as possible to try to *think out loud*: to say what you're looking at, what you're trying to do, and what you're thinking. This will be a big help to me.

Also, please don't worry that you're going to hurt my feelings. I'm doing this to improve my design, so I need to hear your honest reactions.

If you have any questions as we go along, just ask them. I may not be able to answer them right away, since I'm interested in how people do when they don't have someone who can help. But if you still have any questions when we're done I'll try to answer them then.

And if you need to take a break at any point, just let me know. Do you have any questions so far?

- ***Ask participant a few preliminary questions: -***

OK. Before we look at the site, I'd like to ask you just a few quick questions about your experience as a designer.

1. Have you ever built or helped edit an app?
2. If so, what program or software did you use?

OK, great. We're done with the questions, and we can start testing out the app.

- ***Have participants do a narrative of the app's overall appearance for one or two minutes, at most: -***

I'm going to ask you to look at the app's homepage and tell me what you make of it: what strikes you about it, whose app you think it is, what you can do here, and what it's for. Just look around and do a little narrative. You can click or tap around if you need to.

- ***Ask participant to complete a few specific tasks (be sure to give the participant a handout of the scenarios): -***

Thanks for doing that. You did a great job. Now I'm going to ask you to try doing some specific tasks. I'm going to read each one out loud. You should have received a copy of these before this study. Again, as much as possible, it will help me if you can try to think out loud as you go along.

- ***Allow the user to proceed from one task to the next until you don't feel like it's producing any value or the user becomes very frustrated. Repeat for each task or until time runs out. -***

**Scenarios ("tasks") for Cognitive Walkthrough****Task 1**

You are a student who, after hearing about this new app where it will help manage your own time commitments, decides to download the app and try it out. You have heard that it can give you a good breakdown of where your time goes in a week. Find out where you can start this process.

**Task 2**

You are a student who has decided to focus on studying and is unemployed at the moment. Find how you can do an analysis involving only your personal and student life.

**Task 3**

You are a teacher who is looking to integrate this app into their classroom. After completing the app's process by yourself, you are now curious as to see where you can find options to share your results so your class can do the same when they complete it. Find out where you can do this.

**Task 4**

You are a student who wants to try out the app and wants to access a summary of the money spent in the game. Find out where you can access this.

Thanks, that was very helpful.

We are done with the main questions, but I have a few more general questions to ask you.

1. On a scale of 1 to 5, with 1 representing very difficult and 5 representing very easy, how would you rate your experience during today's testing?
2. After participating in this study, would you recommend this app to any of your friends, classmates, or colleagues? Why?

That's the last question, Do you have any questions for me, now that we're done?

I want to thank you for your time and willingness to be a participant in this study. I will also be e-mailing you or giving you a brief survey to complete about your experience today and in the app shortly. Thank you!

- ***Stop the screencasting or audio recording software -***

**After the Session:**

1. Save screencast or audio recording to your local computer
2. Quickly scrub through the video and audio to ensure the integrity of the audio and video
3. Make backups of the recording and store it for data analysis use in a safe location.