

# **Awesomesauce**



**Kasidi Bellanger**

**Jennifer (Ashley) Armstrong**

# Evaluation And Recommendations for Photo Editing Mobile Application

**Jennifer (Ashley) Armstrong**  
jaa572@mail.usask.ca

**Kasidi Bellanger**  
ksb961@mail.usask.ca

## PROBLEM AND MOTIVATION

### Problem

Current photo editing applications on mobile devices tend to focus on one specific aspect of editing while leaving out other useful options. For example, a application that offers many filters may not have the ability to add text to an image. Another application may have the ability to overlay text on an image yet won't allow the user to adjust the hue and saturation. The use of multiple applications requires more time and effort than necessary for simple editing tasks.

### Motivation

We found that we use numerous applications prior to posting photos on social media. After discussing this with numerous people we found this to be a fairly common problem. To start with, we generally adjust the brightness and contrast of an image prior to any other manipulations. After that image has been saved, we will open another application to apply a filter or effect to that image before saving again. Another application is then used to overlay text on our image so that we can adjust and manipulate this text as needed. At this point, the image has been saved three different times already and there may still be more editing to do. This process requires an unnecessary amount of time and storage space just to enhance a single image. This leads to a loss of productivity and an increase in frustration due to this tedious process. Our goal is to simplify this process and minimize the time and effort required to perform simple editing techniques. These, and other common image adjustments, could easily be accomplished in a single application. This would reduce user frustration while saving valuable time and resources.

## RELATED LITERATURE AND BACKGROUND

Our application is designed around key features of a few popular photo editing applications. Each of these applications is good for one specific feature while lacking the features that the other applications provide. The following is a table of the applications and the features we've included from each one.

Aplication	Features
Instagram	Filters
Diptic	Borders
Font Candy	Text Overlay
Photoshop	Adjustments

## SYSTEM DESCRIPTION

### Solution

Our solution to this problem is to design a single application that offers many common editing techniques in one place.

- An application that guides the user step by step through the editing process.
- Perform light and color manipulations such as those offered in Photoshop Express (e.g. contrast, exposure, vibrance, tint, etc.) [1].
- Apply filters similar to Instagram [3].
- Choose to add a border like those found in Diptic [4].
- Add stylized text to their images, like they could with Font Candy [2].

### Functionality

The application we are going to make is a photo editing mobile application. We have divided the different editing options into separate tabs, based on their functionality. We have an Adjustment tab that manipulations such as brightness, contrast, and colour of an image and offers portrait enhancing features. The Filters tab allows the user to choose from multiple pre-made filters and apply them to an image. The Borders tab offers different border layouts depending on how many images the user is editing. We have a text tab that allows the user to customize text and add it to their image. Then we also have a presets tab that allows the users to customize and store sets of common modifications that they frequently use.

## Design Decisions

We based our design decisions around features that are commonly used among other popular applications. For our overall layout we chose tabs to separate the functionality of our application. We chose this because it allowed us to easily group together feature and adjustments that were similar while making it clear to the user where they could perform these adjustments. We made the layout within each tab consistent with a majority of the screen being the photo with the various adjustments that can be made laid out below it. All options are shown on the screen so that users will always be able to see all of the different things they can do without having to scroll.

## USER REPORT EVALUATION

### Goals

Our main goal when designing our mobile application was to create a simple user interface with recognizable elements. We wanted to combine elements of multiple applications into an easy to use format that would minimize the effort required by the user. The following is a list of evaluation goals, ranked in order of importance, that will help us ensure that we've achieved this goal.

- understand how to use tab layout
- know what each tab is for
- know where to get help
- know how to save the image
- understand how to make different adjustments
- understand that they can make different adjustments
- how to apply and adjust filters
- how to add and remove a border
- how to add and adjust text
- know how to undo
- know how to start over
- understand how to save to presets

### Approach

Our approach for performing our evaluation was to use a combination of the 'observation' and 'interview' methods covered in class. Combining these two methods together gave us both subjective and objective responses, covering most of the spectrum of qualitative data. With the observation method we were able to see any problems that arose while the user was testing, even if the user wasn't aware of them. With the interview method we were able to get feedback from users about any problems they ran into and any other

thoughts and opinions they had while using the application. Using both methods, rather than just one, gave us a better evaluation of our application overall.

### Prototype Rationale

We first decided we wanted to do a horizontal prototype so we could demonstrate all of the main components of our interface and give the user an accurate idea of what our application will encompass. We wanted to include the major functionality of our system in terms of allowing the user to switch between tabs and apply adjustments to images. The users only need to be able to perform one task per tab to understand how that tab functions so we only needed to give the illusion of a functioning prototype.

For medium fidelity prototyping we feel immersion is especially important in the sense that it will give the user an actual feel for how the application will function; the user will see how to interact with the system not just how the system looks. Keynote is especially good at capturing this immersive element. / It lends itself well to the wireframe process due to the fact that you can create links between slides, giving the impression of touch interactions. Keynote also has various shading techniques that are useful to denote 'pressed' or 'selected' buttons. A button in an application has a perceived affordance that it can be pressed and with Keynote we are able to give visual feedback to let the user know that a button press has occurred.

### Participant Pool

<b>User 1</b>	male, mid-twenties, experience with photo editing apps, heavy phone user, computer engineer
<b>User 2</b>	male, mid-forties, doesn't have smart phone, no experience with photo editing
<b>User 3</b>	female, early-twenties, very little experience with photo editing or apps in general
<b>User 4</b>	female, late sixties, recently retired, little knowledge of digital photography

### Execution Details

We conducted our evaluations in an office at Ashley's house. It was a quiet environment with access to a

computer where the users evaluated our interface. We observed the users and made note of their actions and responses. Once they had finished going through the application, we sat down with them and asked them a series of questions while recording their feedback. This allowed us to acquire qualitative information about the application and gave us the opportunity to learn of any problems that arose. Once we had completed the evaluations we combined the feedback from the users with our own observations. Our estimations were correct and the evaluations took around half an hour.

### **Evaluation Plan Divergence**

One of the users we had planned to demo our application wasn't available; she was our young, tech savvy evaluator. After performing the first three evaluations, and due to the nature of our application, we decided to have a less experienced user for our final evaluation. We know it's a mistake to design for the average user and it's better to design for the 5th percentile, so by choosing a less experienced user this helps to ensure that we cater to the largest audience.

### **Results**

The questions that we asked our users are included in Appendix A1, Figure 1. The raw data from our observations and interviews is included in Appendix A2, Figures 1-4.

### **Conclusions**

Our evaluations went well, the methods we used gave us valuable information about our application. The evaluations were pretty quick, the users either understood how to use keynote or figured it out very quickly so it wasn't a learning hurdle. Doing an observation with an interview allowed us to notice when they made mistakes that they overlooked or didn't realize and then we were able to ask them about those mistakes specifically to figure out what their thought process was. Because we had a short list of tasks for the users to complete we felt that the users didn't get bored or frustrated with the time spent doing the evaluation. This means that when we got to the interview part we felt that their answers were very genuine and they weren't rushing through things trying to hurry the process along.

## **FINAL RECOMENDATIONS**

### **Conclusions**

The evaluation process gave us insight on the good and bad aspects of our application design. We were able to identify a few common problems with our design and we have some ideas for adjustments based on their

feedback. The following is a list of problems that the users identified:

- tried to swipe to adjust border
- no way to crop a photo
- couldn't select adjustments properly
- save image is in settings
- save presets is in settings
- presets preview confusing
- gear is in different location in tutorial than in actual application

The following is a list of features that our users identified as good:

- tab layout
- static view of editing options on each tab
- wasn't too many editing options, only common ones
- actions felt very natural
- icons made sense

Based on the feedback from our users, we believe that our application would work quite well for our identified users and tasks. The problems identified don't actually hinder the functionality of the application. All of the issues pointed out were things that would have only been an issues once and the users would have known the proper way to do things the next time through. Therefore, even if no changes were made our application would still fulfill our requirements. All of our users stated that they felt they application was very simple and easy to use which was our goal.

### **Recommendations**

Based on the results of our evaluations, we believe our design approach is validated, with only minor adjustments needed. Our next step would be to adjust our prototype to fix the identified problems. We would move the save presets option to the presets tab so it's all in one place. We would add a save image icon to the main view in each tab so that an image can be saved wherever. We would add in the ability to crop an image when selecting a photo, before any other adjustments are made. Add the ability to adjust borders with swiping. We would also make sure that the user can click either on the word associated with the adjustment they want to make or the corresponding number to select that adjustment. We would adjust the tutorial so that it better represents where icons actually will be within our application, possible using a small screenshot. We would add a better explanation of how presets work and how they will be represented in the

presets tab. We feel like this would alleviate any confusions with how the presets work. Once we have fixed these issues in our prototype we would ideally repeat the evaluation process. It would be best if we could do this with the same users and also with new users. This would allow us to see if the issues have been fixed for our previous users and also see if there are any issues that have arisen from any changes that we made.

### Reflections

Although our application design is simple, we still saw minor adjustments that need to be made from user involvement. The fact that we forgot to add a cropping feature surprised us as this is a very basic editing feature.

The method we chose for prototyping worked decently well but could be improved, in hindsight it might be worth trying a different application to better simulate interactions such as swiping. It would also be nice to have an application that could be more complete in the sense of interactions so they could explore the application more.

The methods that we chose for the evaluation we felt worked extremely well. If we had only done an observation we would have missed a lot of information about both the good and bad aspects of our application. If we had only done an interview then we wouldn't have been able to see exactly what the issues were and would have been relying solely on our users memory which would have meant some issues possibly being overlooked. The combination of these two methods really allowed us to get the most valuable information from our evaluations. In hindsight we still feel like these methods are the best options and we wouldn't make any changes. The only improvement that might be made is some additional questions in our interviews.

In general out of the activities we've been asked to do for this project we felt that everything had some value however we felt a couple areas could use improvement. The layout of the project description PDF made it difficult to find the information needed for a particular milestone. It would be nice if each milestone was in its own PDF. Also the explanation and organization of some of the sections that needed to be included in the reports was slightly confusing. It was a bit difficult to determine exactly what should be included within each report and some of the explanations could be clearer. The reports themselves felt a bit repetitive and it seems like it would have made more sense for the reports to build on each other instead of being separate reports. This final report feels like a combination of at least parts of all the previous reports which kind of diminishes the value of some of the previous reports.

We definitely see the value in the reports overall just the nature of splitting them up felt a bit odd to us.

As far as activities we found valuable we felt the process overall was pretty valuable. Writing up the proposal helped us determine if an idea was even a good idea. Sketching out ideas and building a low fidelity prototype helped us nail down which design ideas were better for our specific application. Writing the various documents and reflecting on the process involved in each step was useful. However we feel like the most valuable activity was designing the medium fidelity prototype and performing the user evaluations. It helped us get a good idea of how our application would work with a minimal amount of effort. If we were to actually design this application, we could do so and know we have the right design before writing any code. This seems to be the most important step of the whole process and it was a really good experience for us.

Having gone through this course we definitely feel that we will apply these techniques in our next interface design project. Even when building a personal project these steps are still useful and really help to give you good feedback and design ideas. It helps you see if you've overlooked something and can give you new perspectives on looking at things. It also will minimize the amount of work you do because you find flaws before doing any coding so that when you start writing the code you can be confident in your design.

### REFERENCES

1. Adobe Systems, Inc. (2014). Adobe Photoshop Express (Version 4.2) [Mobile application software]. Retrieved from <http://itunes.apple.com>
2. Easy Tiger Apps, LLC. (2016). Font Candy (Version 4.7.4) [Mobile application software]. Retrieved from <http://itunes.apple.com>
3. Instagram, Inc. (2015). Instagram (Version 9.5) [Mobile application software]. Retrieved from <http://itunes.apple.com>
4. Peak Systems. (2016). Diptic (Version 9.1) [Mobile application software]. Retrieved from <http://itunes.apple.com>

**Figure 2**

Observations	
<ul style="list-style-type: none"> <li>- initially confused as to how to click through tutorial</li> <li>- application went through even though he didn't click next on camera roll</li> <li>- clicked adjust tab to adjust the intensity of the filter, but stated he wouldn't do so again</li> <li>- clicked settings tab</li> <li>- confused as to how to adjust olden filter, getting frustrated</li> </ul>	
Interview	
1	I was able to complete each task and none of the tasks were difficult.
2	There should be something to let you know you can adjust something, like a button saying 'adjust levels'.
3	I understood what the buttons did.
4	Presets are a little confusing, I didn't know if it saved all of the features or just some of the features. View of presets was confusing, I didn't understand if they were just for this one photo or if I could use them on different photos because all the photos in the preset tab were the same photo.
5	I think it's easier than some photo editing apps or as easy as Instagram and easier than others.
6	Yes it was easy, it's very simple and not hard to achieve what you wanted to do.
7	Yes.
8	Yes, you'd have to be pretty stupid not to understand them.
9	Choose photo, then click presets tab, scroll through all the presets, pick the one you want, go back to text tab, click the style of the text you want, position it, click on it to change words, check mark it, then click the gear and click add to presets.
10	Assume you click the undo button by the top left of main photo.
11	I think the tabs are ordered well, thinks layout of image and adjustments underneath is pretty standard and good, I like the small images of filters and borders for a quick view of what the image will look like.
12	I thought out of habit that the border could be adjusted like with the first two editing features of the app.
13	There should be things showing when you can adjust stuff, like a plus and minus on either side of image to show when you can and can't adjust an adjustment or just a small scroll bar or something.
14	Yes I did, I thought it was good.
15	Yes, because it's easy and simple.

**Figure 1**

Observations	
<ul style="list-style-type: none"><li>- initially confused as to how to click through tutorial</li><li>- application went through even though he didn't click next on camera roll</li><li>- clicked adjust tab to adjust the intensity of the filter, but stated he wouldn't do so again</li><li>- clicked settings tab</li><li>- confused as to how to adjust olden filter, getting frustrated</li><li>- didn't see the difference between the unadjusted and adjusted filter, thought it was stupid</li><li>- clicked picture at border tab so he could adjust border, got confused it sent him to the text page</li><li>- suggests there should be something that says adjust if you can adjust it and nothing if it's like borders and you can't change it</li><li>- clicked the presets tab instead of saving image to presets, but now knows</li></ul>	
Interview	
1	I was able to complete each task and none of the tasks were difficult.
2	There should be something to let you know you can adjust something, like a button saying 'adjust levels'.
3	I understood what the buttons did.
4	Presets are a little confusing, I didn't know if it saved all of the features or just some of the features. View of presets was confusing, I didn't understand if they were just for this one photo or if I could use them on different photos because all the photos in the preset tab were the same photo.
5	I think it's easier than some photo editing apps or as easy as Instagram and easier than others.
6	Yes it was easy, it's very simple and not hard to achieve what you wanted to do.
7	Yes.
8	Yes, you'd have to be pretty stupid not to understand them.
9	Choose photo, then click presets tab, scroll through all the presets, pick the one you want, go back to text tab, click the style of the text you want, position it, click on it to change words, check mark it, then click the gear and click add to presets.
10	Assume you click the undo button by the top left of main photo.
11	I think the tabs are ordered well, thinks layout of image and adjustments underneath is pretty standard and good, I like the small images of filters and borders for a quick view of what the image will look like.
12	I thought out of habit that the border could be adjusted like with the first two editing features of the app.
13	There should be things showing when you can adjust stuff, like a plus and minus on either side of image to show when you can and can't adjust an adjustment or just a small scroll bar or something.
14	Yes I did, I thought it was good.

15 | Yes, because it's easy and simple.

**Figure 4**

Observations	
<ul style="list-style-type: none"><li>- going through tasks quite easily</li><li>- hesitant at first for the “swiping” portion to change adjustments and filters but figured it out</li><li>- clicked around looking for the save preset feature</li><li>- hesitant when looking for the save image feature, but did find it</li></ul>	
Interview	
1	Each task was easy to do and understand.
2	Yes the application layout was easy to understand.
3	Yes, I understood what the buttons were for.
4	Everything in the system was pretty straight forward, the only thing I had a problem with was finding the “save presets” in the settings button. After I used the system more it would be easy to remember where it was.
5	Yes, the app was easier to use than others.
6	Other than the “save presets” in the settings button, the other design elements were easy to understand and use.
7	Yes it was.
8	Yes I did.
9	Choose what photo you want, then go to the presets tab, select which preset you want to add to your image, then go to the text tab, click what font you want, click it to edit the words, then click the check mark when you’re done. Then click the settings button and click “save to presets”.
10	Click the undo arrow button.
11	Yes I did, I thought it was simple and easy to understand.
12	Only finding the “save to presets” and then somewhat “save to images” but thought I remembered seeing it last time I opened settings.
13	Maybe having save image a button on its own because you will use it a lot.
14	Yes, I thought the app was easy to use and there wasn’t any extra elements that made it confusing.
15	Yes, it seems like a very good app.



**Figure 1**

Observations	
<ul style="list-style-type: none"> <li>- read tutorial carefully before clicking through</li> <li>- had a brief issue with understanding that clicking would simulate “swiping”</li> <li>- tried to click on number corresponding to contrast before figuring out to click on the word ‘contrast’</li> <li>- applied and adjusted filter with no problems</li> <li>- added border and text, also with no difficulty</li> <li>- had issues figuring out where/how to save to presets</li> <li>- didn’t understand what ‘presets’ meant, so wasn’t even sure what we meant by ‘save to presets’</li> <li>- tried to click on the presets tab, assuming that’s where the save to presets option would be</li> <li>- had to actually step in and direct what to do because she didn’t think to click on the gear for help</li> <li>- was confused by the gear being in a different location on the tutorial than it was in the actual app, but commented that it wasn’t a mistake she would make again since she now understood</li> </ul>	
Interview	
1	Yes, liked the layout of the tabs because for someone who isn’t used to photo editing, it made it easy to know what to do next; like a dummies guide! Only difficulty was the presets issue, because I didn’t know where to go to add to presets and didn’t think to click the gear since it was different that the tutorial.
2	If it was an actual phone, then the swipe thing would have made sense. Oh, and fixing it so you can click on the big number OR the word ‘contrast’ or whatever would be good. But it was easy to follow and understand everything though. Interactions made sense to me; just click the option you want, then swipe to adjust. It felt very natural to me.
3	Yes, aside from the terminology that I didn't understand, like presets or vignette.
4	I didn't know what most of the options actually did since I never edit pictures. But it was easy to follow the steps you told me to do since everything is clearly labeled. If this was something I could actually use on a phone, I would be able to figure it out quickly since the interactions are so simple, and everything is right there on the screen instead of clicking and scrolling through tons of options to get to what I need.
5	I actually think it was easier. The one on my phone has way too many other things I can do that I don't want to do at all! I like that everything is all right there without me having to find them. No scrolling is awesome!
6	Yes, which is surprising. If I actually wanted to do these things, I could totally make it happen.
7	Yeah, with the exception of the presets tab. Very user friendly.
8	Yep, even I have enough common sense to figure that out!
9	I would select the photo, then go to presets tabs, select the preset I want to use, go to text tab, choose text type that I want, click in box, type what I wanted, move and adjust the text as I wanted, click check mark to save my text, then I guess I would go into the gear and click save preset.
10	Click the backwards arrow thing by the top left corner of the image? Or click the gear for the start over option.
11	Yeah, it was all super easy to understand since the tabs like walk you through what to do.
12	Nothing that hasn't been covered already.
13	Basically things I’ve mentioned already, like clicking on the numbers to change things on adjustments tab, adding save preset to the preset tab instead of the gear, and fix the tutorial so the gear is in the same place for people like me who don't use this type of thing often.

- 14 I like the idea behind it, it was easy to use and makes life a lot simpler than the one on my phone already. The minimal aspect of it is really nice, without going too far. Like there's still options, but only the options I'd actually want. And everything I can do is already on the screen, so it's easy to find the one thing I need.
- 15 Yeah, I actually wish I could! The last photo I had to edit took like an hour to do! I had to go through like 14 different things and then scroll through all of them trying to find the one option I wanted since I didn't understand what any of the words actually meant and by the time I finished, I never wanted to use it again!