

IAT 432 Assignment #2: Usability Study for Vine

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Introduction

The rising prevalence in technological dependency has reached a new crescendo in today's age as a plethora of social media networks have gained immense popularity over recent years. A variety of social media platforms, such as Facebook, Twitter and Instagram, have provided unprecedented opportunities for *anyone* to express their voices, share their stories and freely connect with others. In essence, these social media networks continually promote themselves as *multifaceted portals* for self expression where users are given the agency to upload photos, videos, comment on posts, and message friends or followers. The line between real world and cyber interactions are becoming ever more closely conflated all within the accessibility of the Internet.

While many social media networks compete to gain users' favouritism and, ultimately, their dependencies, Vine has made its introduction to the social media arena in early 2013. Acquired by Twitter, Vine is best known as a video sharing service that gives users the privilege of sharing six-second looping video clips. Comparable to widely used and similar social media platforms, such as Instagram and Viddy, Vine's other main functions include the ability for users to share/ "revine" posted videos to their personal profiles, "like" and comment on other's posts as well as message their friends and followers.

As a vast array of video sharing mediums coexist, some succeed by gaining a loyal user base while others trail behind in failure. Based on prior knowledge and experience, our research team agreed and concluded that Vine is neither a wholly successful social media network nor an entirely ineffective medium. Although Vine has gained millions of users over its time of existence, it is not deemed as a frequently used platform by all. More often than not, reasons for infrequent usage is derived by the system's lack in providing its specified users an efficient, effective and engaging experience for achieving their goals. As such, our team conducted a usability study to identify the high-level problems variously skilled users face with Vine's interface and to better understand their conceptual models of the system.

Methodology

The usability of a system can be evaluated based upon its learnability, efficiency, memorability as well as its capacity to assist users in avoiding errors and thus, enhance their satisfaction with the overall interface. In order to assess these fundamental factors of usability, our team conducted a usability study in which several steps were completed. In preparation of the actual study itself, our team first generated a series of 9 tasks which were derived from our own experiences with using the software (*Table 1*). The goal of these tasks was not only to identify the basic usability problems of Vine, but to fully evaluate a range of interactions that users may encounter both through the application and its web-page form. This way, the system could be evaluated comprehensively. Tasks were divided into 2 main categories: frequent tasks that are commonly performed and infrequent yet important tasks.

Next, a set of pretest and posttest questionnaires were created. The pretest questionnaire contained ten questions that gathered information on the participant's occupation as well as their competency and familiarity with using computers, the Internet, mobile devices, social media platforms and Vine (*Table 2*). Some questionnaires also captured participants' expectations and thoughts in regards to Vine. While the pretest questionnaire was created to gain an initial conceptual model of Vine, the posttest questionnaire was aimed to obtain users' formative conceptual model of the system. The posttest questionnaire consisted of five questions that collected information regarding participants' thoughts about the system's usability (in terms of learnability, memorability, efficiency, errors, and satisfaction), aspects that they liked and disliked, as well as recommendations (*Table 3*).

Once the representative tasks and questionnaires were finalized, our team recruited four participants all of which ranged in age and technological skill level. Two of these participants engaged in the think-aloud method while the rest participated in the constructive interaction method. To preserve the identity of these participants, our team has labelled them as P1, P2, P3 and P4 (abbreviated for Participant 1, Participant 2, Participant 3 and Participant 4).

Think-Aloud is an observational method which encourages participants to verbally describe what they are thinking while they carry out the tasks and their justification for their actions. The participants who partook in this technique are P3 and P4. P3 is an older gentleman in his late 50s that claims to be a novice user of both computers, the

Internet and mobile phones. Although he is familiar with various social media networks, he has never used or heard of Vine prior to this study. On the other hand, P4 is young male in his early 20s who claims to be an intermediate to an expert at using computers and mobile devices. He has had prior experience with using many social media networks but uses Vine the least out of them all.

Constructive Interaction is an evaluation method where two users work together to complete a task which also fosters a co-learning experience. The more experienced participant was assigned as the “coach” while the novice participant was assigned as the user who predominantly interacts with the system. The coach’s role was to aid the novice user as he tries to complete his tasks without directly touching the computer or the mobile phone. Both participants were encouraged to converse and talk aloud for more effective results. P1 is a recent graduate from BCIT who majored in computer science. Thus, based on his familiarity with technology and high level engagement in various social media platforms, our team assigned him as the “coach” for this method of study. P2, who was being coached, is a financial broker who has never used Vine, and is somewhat familiar with only one other social media channel - Facebook. He also uses his computer, phone and the Internet often for work so he feels comfortable using these mediums.

Before each study, all participants were given instructions (*Table 4*) and were asked to fill in the pre-test questionnaire. The data collection method for the Think-Aloud technique was audio recording and note taking, whereas video recording as well as note taking was utilized for the constructive interaction method (*Table 5 -10*). After completing the tasks, the participants were asked to complete a posttest questionnaire and to partake in an informal reflective discussion in order to understand the participant’s thoughts on the system. All data was consolidated and all observations were documented in written form (*Table 11*). They were then rearranged for the affinity diagram and categorized in order to draw conclusions about the high-level usability problems that were most prevalent amongst all participants (*Figure 1a-1k*).

Observations

Majority of our team’s observations centralized around 3 major themes that highlighted predominant usability issues of Vine’s interface: inconsistency, unfamiliar interactions and features as well as extremely discreet to poor user feedback.

A system’s consistency in its use of icons, terminology and layout hierarchy can directly affect a user’s onboarding process and their ability to use it autonomously. When a system is filled with icons and terms that do not align with a user’s conceptual model, he/she becomes uncertain about his/her performance which ultimately dampens their user engagement and satisfaction levels. A particularly good example of highlighting this usability problem was the occasion where P2 (novice) asked P1 (coach) about a specific icon, questioning its actual function because this icon has been used to represent two distinct functions in two completely different contexts. Specifically, the “refresh” icon is used to unrevine videos (undo a revine action), as well as to reverse the back and front facing camera of the mobile phone. When the task asked P2 to switch the camera around to film himself, he hesitated because he assumed pressing the “refresh” icon (used here to switch camera views), would somehow revine his video instead (*Figure 2*). This hesitation highlights an important usability problem in which a user’s existing knowledge of an icon (the “refresh” button) is conflicted by the interface’s disparate effect (to reverse a camera or unrevine a video).

Another observation that illustrated an inconsistency of terminology applied across the mobile and web platform. Labels such as “trending”, “popular” and “on the rise” videos all directed to the same content. However, as participants migrated from the mobile to web experience, they stated that they weren’t sure if they were looking at the right pages due the page description discrepancies that existed between platforms.

Lastly, there were situations where merely performing a few tasks on the mobile application, led users in becoming accustomed to certain positioning of elements. For example, when P4 was asked to comment on Justin Bieber’s post on the webpage, he automatically assumed that the button next to “like” was “comment” (as displayed on the app), so he pressed the second button unconsciously which led to an error of revining the video rather than permitting him to comment.

Across nearly all our participants' studies, our team observed that majority had to complete their tasks through a method of trial and error due to Vine's presence of unfamiliar interactions and features. During Task 3, in which participants were required to record numerous segments, some participants looked for a "camera"/ "record" icon in which they could've pressed to start recording. P2, P3 and P4 even fiddled with all the buttons on the video recording screen before they realized that none of them was the actual "record" button. While half the participants were eventually able to complete this task, all expressed frustration or hesitation. This can be noted by P4's continuous statement, "I guess I'll press this to go next?"

Lastly, it was noticed that a vast number of our participants awaited for the system to interpret their inputs and to provide feedback after carrying out a task. While a system's providence of user feedback is essential in informing the user on what it is doing, Vine often fails to do so, especially in times of great importance such as removing revined videos from one's profile. For example, after P2 and P4 unrevined a video, both participants had to refresh their web browsers to confirm that the system had processed their input and that the video had indeed been removed from their profiles. Another incident of poor user feedback can be highlighted during Task 3 where participants had to specifically edit a six-second video clip into a three-second one. This proved to be another incident in which a user had to guess their way through a task since there was no timer that clearly indicated the length of the video clip. In order words, users had a hard time estimating what a three-second clip looked like in the progress bar. Their best guess was that if a video clip filled half the progress bar, it would approximately be 3 seconds in length (*Figure 3*).

Interpretations

Despite Vine being an interface that is seemingly tainted with various issues of inconsistency, unfamiliar interactions and features as well as poor user feedback, there are several strengths of this system that should be noted. Firstly, Vine utilizes familiar icons, gestures and interactions that contain pre-instilled social meanings which users recognize in order to foster intuitive actions. It is important to have these elements, both for visual and behavioral purposes, because they follow the language of conventional networking platforms, such as Twitter, and allows for a much more seamless transition for users who have previous experience with other social media channels. All in all, this facilitates an easier process of learning since users are already familiar with certain features and functions. In contrast, there is a big learning curve for novice users who have little experience with Vine or other social media platforms because what semi to experienced users find intuitive is foreign for users with no prior knowledge of social media channels.

The second strength to which our team would like to praise Vine for is its video editing function that provides users a chance to create a rich narrative. Users can express a lot more in a 6 second video than they can with a 140 character tweet. More to the point, Vine allows users to put multiple shots together in a simple way and to edit clips or cut from one video perspective to another. This enables users to create a rich narrative without exerting too much effort. Hence, the system's user experience becomes much more rewarding.

Although Vine contains some notable strengths within its interface, its weaknesses are still much more pervasive. Take for instance, the desktop version of Vine. Instead of having a simple and appealing design that works together in a way that helps users perform efficiently, various elements on vine.co compete for users' attention and distract them from the important content. For example, the separation of the "home" and "home feed" pages seem redundant since users would have to flip between pages if they wanted to see featured vines as well as the vines of people that they followed. More damningly, this unnecessary distinction prevents users from minimizing their memory load as they would have to recall which button views which types of videos. In addition, while the list, grid and tv modes give users more flexibility in terms of viewing options, it can be overwhelming as users try to choose between the modes and learn how each one works.

Another alarming weakness is the misalignment between the system and real world metaphors which prompts users to recall functions rather than recognize them. Based on our in depth analysis, our team has noticed that Vine is generally an interface that caters more towards intermediate to expert users of social media, including Twitter, rather than beginners. To support this point, when changing privacy settings, the term "discoverability" is presented. For those

who are unfamiliar with what this means, such as P4 (novice), it would be nearly impossible for them to edit their privacy settings. The concerns related to using familiar conceptual models should not only be restricted to language, but also to other non-verbal elements such as Vine's icons. Numerous unfamiliar icons are presented in the system which require both beginners and experts to guess what each function does (*Figure 3*). This unfamiliarity in icons results in a slower learning process, which further leads to frustration, as observed from parts of the study. Although the use of icons is a good way to reflect single functionalities, they should also be illustrated in ways that use appropriate metaphors, allowing users to easily make connections between system interactions and actions in a real world context.

A third major weakness in Vine's interface is its lack in consistency and standards across mediums. Maintaining consistency is essential in helping users adapt to the interface's dialogue. This way, users can better experience a transition from consciously learning an interface to becoming autonomous where every action seems intuitive. An example of inconsistency can be depicted by comparing the layout hierarchy of Vine's webpage interface and its mobile application. For example, to revine on a mobile device, users have to click share, *and then* revine which presents an additional level of navigation. On the other hand, on desktop, users can simply click "revine" (1 level of navigation). Similarly, under videos on mobile, the icons are "like, comment and share", whereas on its webpage, it is denoted as "like, revine and share". This disparity in information and layout hierarchies provokes us to question the primary purpose of this platform. Shouldn't the option to "revine" be on the first level of navigation across all platforms if the objective of Vine is allow its users to share videos? This weakness ultimately places a burden on users' conceptual models.

The final weakness that we would like to present is Vine's lack in providing user feedback. As mentioned previously, user feedback is imperative to the intuitiveness of a system as it allows users to recognize that their input gestures have been processed by the system. Vine not only lacks this function when users attempt to unrevine videos, but also when users are recording videos; a fundamental function that Vine prides itself of. When users record their own videos or edit segments, there is only a process bar at the top that discretely indicates how much of 6 seconds the user's current clip has filled. Providing a green progress bar at the top as a user holds on the video recording screen does not provide users enough feedback that the video is indeed being recorded for whatever duration.

Recommendations

In reflection to the various usability problems outlined, our team has devised 5 key recommendations that can pave the way towards a more effective, efficient and engaging interface for Vine. First and foremost, Vine should consolidate its web experience by displaying vines/videos in chronological order or as a list since users would most likely favour seeing videos from other users they have followed. Essentially speaking, it is unnecessary and counterintuitive to give users excessive flexibility by offering 3 different view modes. In turn, this will only overload their mental model and impede on minimizing a user's memory load. As a suggestion, Vine should consider adopting a similar interface as Instagram in which users will only have to scroll down their feed. This also makes it easier to scroll past videos they don't want to watch.

Vine should also focus their attention on promoting consistency in its icons, terminology and layout hierarchy across platforms. For instance, Vine should create a more seamless user experience between its mobile and desktop platforms to eliminate the need for users to recall various functions. As an example, instead of using "trending", "on the rise" and "popular" interchangeably, Vine should just stick to the term "trending" to display this category of videos. The system should also ensure that all levels of hierarchy are the same. If revining videos is one of the most prominent goals for its users, then it should be in the first level of navigation for both mobile and web-based experiences. Plus, it should always be placed next to "like" option to avoid unconsciously made errors.

Another recommendation that cannot be stressed enough is the opportunity to provide valuable feedback to its users, especially in times of greatest importance such as recording or sharing videos. When a user is holding the video record screen, there should be a timer that indicates the current length of the video to which is being recorded. Although this is a subtle suggestion, it makes all the difference in providing users feedback that a video is being captured. Moreover, when users are revining a video, adding a small red notification on the profile icon, similar to

Facebook, can effectively inform users that the video they have revined appears on their profile directly. Lastly, when a user has unrevined a video, this gesture should immediately cause the video to disappear from the user's profile page rather than requiring the user to manually refresh the browser in order to receive this form of feedback.

As a fourth suggestion for improvement, the system should improve its navigation in terms of recording videos. Since the very essence of this social media platform is to allow users to create videos, users should be able to do so effortlessly and intuitively, which unfortunately, isn't the case. Besides adding a timer or time stamp to its video recording system which helps to provide user feedback and enable users to make more precise actions, Vine should also follow normal conventions of video recording by adding a noticeable camera/ record button. Users will then intuitively know where to click rather than having to guess upon their first trial.

As the final recommendation, we suggest that Vine strive to provide clearly marked exits for its users. As denoted in our observational notes (*Table 11*), P3 and P4 both experienced struggles in navigating through various screens on the mobile application as well as on the desktop when the user would click into the various screen modes, such as "TV mode". Because the colors of the back arrow buttons on the application are extremely faint, they often camouflage behind the banner at the top of the screen, hindering older users from easily navigating around the interface. As a solution, Vine should make the exits more noticeable, simply by a change in the hue of these buttons.

Conclusion

Vine can be deemed a notable video-sharing site that has undeniably gained an immense user base since its emergence into the social media arena nearly 3 years ago. As it continues on its crusade in attempting to outshine its rival video-supporting networks, such as Instagram and Viddy, its success in doing so may be hindered by its numerous high-level usability problems. Presenting an abundance of unfamiliar icons across its application and web-based platform creates a complex and unnatural dialogue for its users rather than an intuitive interface. Furthermore, the disparity between its application and desktop features, layout and terminology renders its interface as an extremely confusing system as users are required to remember what each unfamiliar icon does. Lack of user feedback also presents itself as a predominant problem, especially during times of greatest significance. While Vine prides itself as an intuitive and fun video recording system, the video recording screen is perhaps the most intimidating and perplexing part of it all. With its nearly invisible to unresponsive video recording function and timer as well as its misguided use of icons, such as the "refresh" button, the process of producing a video becomes more difficult than it ought to be (*Figure 2*).

In retrospect, if Vine wishes to gain supremacy over its competitors, their agenda should focus on providing its users valuable system feedback, consistency across features and platforms as well as a natural and simplistic dialogue in midst of video recording and sharing moments. It is only until then that we can consider Vine as not only a social media network with a vast user-base, but one which will thrive well into the future.

Appendix

A. Representative Tasks, Questionnaires and Observations

Table 1. A list of representative tasks used for the usability study

Frequent, Commonly Performed Tasks

1. Edit your Vine profile by adding a short biography about yourself, your location and a profile color. Then edit your privacy settings so that others can only find you through your email address.
2. Follow Justin Bieber on Vine. Then, “like” the first video that appears on his page and comment on this video with the phrase “I got Bieber Fever!” Finally, revine the video that you have liked and commented on.
3. Record a full length continuous video of yourself talking and then edit it to only run for half the length that you have recorded it for (*6 seconds to 3 seconds only*). Once this task has been completed, add a short caption describing the video. Then tag the location to which this video was recorded at. Finally, add a channel that best applies to your video and share it to Vine and Twitter.
4. Record a full length video made up of 5 short segmented video clips with the gridview activated. Then, edit it by deleting the last two clips that appear at the end of the entire video. Next, reverse the order of the remaining 3 video clips (*so that the last video clip will appear at the beginning*). Once this has been completed, duplicate the last clip to appear at the very end of your entire video footage. As a result, you should only have 4 segmented video clips that make up your entire 6 second video. Lastly, share your video on Vine.
5. Find the first video that appears under the food channel and pause it midway. Replay the video to finish viewing it. Next, follow the profile that posted this video and ensure you will receive a notification whenever they post a new Vine (video). Lastly, send them a message saying, “Great vines! Keep it up!”
6. Check your message inbox and reply to any messages that you have received. After that, follow each person that has messaged you.

Infrequent, yet Important Tasks

7. Import a video from the mobile phone’s camera roll and edit it so that only 3 seconds of the video remains. Then complete the entire 6 seconds of video footage by filming your surroundings. Finally, share it on your Vine, and Facebook profile.
8. Unvine the Justin Bieber video that you have revined and unfollow Justin Bieber’s profile.
9. Copy the embed code link of the first video that appears under the top most “trending” category.

Table 2. Pre-test questionnaire used for the usability study

Pre-Test Questionnaire

Participant ID:

Date:

1. What is your current occupation?

2. Please identify your level of expertise with using information technology such as computers and the Internet:

Beginner

Intermediate

Expert

3. How many hours per day do you spend using a computer and the Internet?

0-2

3-5

6-8

More than 9

4. Please rate your level of expertise with using mobile phones:

Beginner

Intermediate

Expert

5. How many hours per day do you use a mobile phone?

0-2

3-5

6-8

More than 9

6. How often do you go on social media platforms to browse, create or share content?

1
Never

2
Rarely

3
Sometimes

4
Often

5
Always

7. Which of the following social media platforms do you use? (Please choose all that are applicable)

Facebook

Instagram

Twitter

Vine

Others

None

8. Please rate the level of importance for each activity performed on mobile social networks with 1 being the least important to 5 being the most important:

Watching video clips posted by friends _____

Uploading/ sharing photos and videos _____

Liking posts, photos and/or videos _____

Commenting on posts, photos and/or videos _____

Messaging friends on a one-on-one basis _____

9. How often do you use Vine?

1
Never

2
Rarely

3
Sometimes

4
Often

5
Always

10. What types of features do you expect a social media platform like Vine to be able to do?

Table 3. Post-test questionnaire used for the usability study

Post-Test Questionnaire

Participant ID: Date:

1. Please rank the following tasks in terms of their difficulty (1 = easiest, 5 = hardest)

- Task 1
- Task 2
- Task 3
- Task 4
- Task 5
- Task 6
- Task 7
- Task 8
- Task 9

2. Please rate how much you agree or disagree with the following statements as indicated below:

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
a. I found the interface easy to use					
b. It was easy to learn how the interface worked when I first used it					
c. I was able to complete the tasks and scenarios quickly using the system					
d. Whenever I made a mistake with the system, I could recover quickly and easily					
e. I could remember how to use the different features/ functions when I returned to the system a second time					
f. The organization of information on the interface was clear					
g. The system has all the functions and capabilities I expect it to have					
h. I had a pleasant experience using this system					

3. List 2 things that you liked about the system

4. List 2 things that you disliked about the system

5. Are there anything that you would change about the system and why?

Table 4. Instructions given to participants for the usability study

Introduce yourself.

My name is _____, and I will be giving you instructions on what to do in this usability study and will answer any questions you may have.

Tell your participants about the experiment.

We're exploring the design of the system and interface for Vine, a video sharing service where users can share looping, 6-second videos. We will be looking at both the mobile (app) and web page experience. We want to know where the design is difficult to use and where improvements are needed. I'm going to show you the interface and then ask you to perform a series of tasks with it.

Your tasks require a stable Internet connection so there is a chance that video clips might not play smoothly. As well, if you have any difficulties performing any of the following tasks, please remember that it is the fault of the design and not your own. Remember, we are testing the design, not you.

As you carry out the tasks, I will be making observations and taking notes. You will also be video/ audio-recorded so that I can later go back and listen to your comments as you use the system and perform the tasks. All data that we record here in this session will be kept confidential and anonymous. This means that none of the data will reveal your identity; pseudonyms will also be used in the reports.

Tell them that it's OK to quit at any time.

If you feel uncomfortable at any time, please let me know; you can quit anytime without any consequences. Do you have any questions up until this point?

Explain Both of the Methods (Think Aloud or Constructive Interaction)

1. Think Aloud:

While you carry out your tasks, I encourage you to think-aloud and describe what you are thinking and your justification for doing what you are doing. While this may feel strange and you may be uncomfortable at times, I would still encourage you to think aloud. If you forget to speak up, I will simply remind you to keep talking. Would you a demonstration of this?

2. Constructive Interaction:

While you perform your tasks, the two of you will be working together as a team. We will be assigning one of as the 'coach' and the other person as the individual who interacts with the interface. The coach will be the person who has more experience with interfaces of this type.

As the coach, you will not be allowed to touch the laptop's keyboard and mouse, or the mobile phone. Your role is to help out your partner as he/she tries to use the interface. I encourage the two of you to converse as you go through the tasks.

Wrap Up

Now, I will be handing out the pre-test questionnaire, please take a minute to finish it.

After you are done, I will show you guys the interface on both the web page and mobile app. Please take some time to look around and try things out.

Table 5. Notes for constructive interaction method on mobile (P1 and P2)

Tasks	Notes	Task completed?
1	<ul style="list-style-type: none"> Clicked “person” icon on home page because he assumed that this particular icon meant “profile”, just like other social media platforms Thought “person +” icon meant “add new profile”, then discovered that it meant “add friends” No location tag popped up when he tried to add a location for his profile Was able to easily access the privacy setting and change it 	<ul style="list-style-type: none"> Yes
2	<ul style="list-style-type: none"> Wasn’t sure which “JB” user he should click on as multiple ones popped up, clicked on the one that looked “certified” (just like Twitter - reminded by coach) Thought “...” icon would bring up the option to “revine” “Revine/arrow” button is not intuitive Unsure if said revined video was actually revined, had to go back to profile to double check 	<ul style="list-style-type: none"> Yes, but with help from the coach
3	<ul style="list-style-type: none"> Did not know how to record a video; there was no obvious “camera” button (showed frustration) Too many buttons on the “record” page, a lot of which weren’t familiar to the novice participant (expert helped him out, told him that pressing on the screen actually records) Not sure what was “6 seconds”/“3 seconds” because there was no timer When editing his video clip, had to assume that half the bar meant 3 seconds The location tag for uploaded vines was imprecise → could not type in the actual address, could only pick “official” locations (ie, could not type in the address of the participant’s house, but could choose smth that was close by like metrotown) 	<ul style="list-style-type: none"> Yes, but with help from the coach
4	<ul style="list-style-type: none"> Did not realize that when you paused from recording a clip, you could press and continue recording a second segment within the same clip (found out through trial and error) Difficult to drag and drop different clip segments in different order (the interaction is not sensitive); however, the idea of drag and drop to reorder makes sense Quote: Once you figured out how to edit different clip segment, it was actually pretty easy to do, it’s convenient. 	<ul style="list-style-type: none"> Yes
5	<ul style="list-style-type: none"> Searched “food” instead of scrolling down and clicking the food channel button Clicked the clip to play and pause it, however there was no layover ontop of the video with a play or pause icon so participant wasn’t sure if the video was laggy and stopped playing, or whether he had actually paused it Tried to click “...” for more options to ensure that he gets a notification for new vines uploaded by a particular user, but could not do so (expert reminded him that the action to doing so will be similar to Twitter) 	<ul style="list-style-type: none"> Yes, but with help from the coach
6	<ul style="list-style-type: none"> After messaging someone, participant noticed that his msg did not get through (had an exclamation mark next to it) à showed msg “in order to send a VM to someone who doesn’t follow you, you must verify your number” → participant was confused as to why he would need to verify his number in order to msg someone 	<ul style="list-style-type: none"> Yes

	<ul style="list-style-type: none"> Expected a message icon at the bottom of the dock→ the msg button on top was too small Unsure of “friends” label in messages; these are people that the participant followed, and not necessarily “friends” 	
7	<ul style="list-style-type: none"> Had no problems with this task, participant remembered how to record a video from a previous task 	<ul style="list-style-type: none"> Yes
8	<ul style="list-style-type: none"> Couldn't find unvine option; thought unfollowing someone would mean unvining their things as well Thought “...” would bring up the delete/ unvine option, but it didn't The unvine/delete icon (looked like a refresh logo, which is the same as the flip perspective icon for the camera) is not familiar to the participant à also noticed the switch between the vine (arrow icon) and unvine (refresh icon) change Not sure if video was actually unvined → no msg saying so 	<ul style="list-style-type: none"> Yes
9	<ul style="list-style-type: none"> Had no problem copying link 	<ul style="list-style-type: none"> Yes

Table 6. Notes for constructive interaction method on desktop (P1 and P2)

Tasks	Notes	Task completed?
1	<ul style="list-style-type: none"> Thought the “home” and “home feed” pages were confusing; knew the difference between the two (home feed was based on people you follow and home contained featured posts) but didn’t get the point of having these pages separated Noticed that on mobile, to save any changes to the profile, he would click “done” on the phones keyboard whereas on the web, its “save” Cannot change privacy settings on web 	<ul style="list-style-type: none"> Partially (the parts that the desktop version allowed him to do)
2	<ul style="list-style-type: none"> Under search, it doesn’t show the certified icon like it does on mobile On web, the like icon is a heart, on the mobile app, it’s a happy face Clicked “share”, but wasn’t sure if the video was actually shared (no feedback) When you click “share” a list of options popup as a layover on top of the video, the placement of that is a bit far from the share button Noted that on mobile, when you “share” the options are: revine, twitter, facebook, tumblr; on the webpage, when you share, the options are: twitter, facebook, link, vm and embed Noted that on mobile, under each video, the icons are: like, comment and share; on web, its: like, revine and share 	<ul style="list-style-type: none"> Yes
3	<ul style="list-style-type: none"> Cannot record/upload videos on web 	<ul style="list-style-type: none"> No (no function for this task)
4	<ul style="list-style-type: none"> Cannot record/upload videos on web 	<ul style="list-style-type: none"> No (no function for this task)
5	<ul style="list-style-type: none"> The channel illustrations are not labeled (however, if you hover over it, the name of that channel will be displayed at the top) à at first glance, might not know what channels the illustration represents Did not know how to play a video on the food channel page, assumed you would have to click on a video to play/pause it (press to play, press to pause) In the “list” view, you play/pause videos by clicking it; in the grid view, you can play/pause the video by hovering over it <ul style="list-style-type: none"> In the grid view, if you click on a video, it expands it, bringing it almost full screen Unlike mobile, there is no “star” icon to let user ensure that he is getting notifications 	<ul style="list-style-type: none"> Yes
6	<ul style="list-style-type: none"> Couldn’t find message icon → assumed you cant access it on web (also didn’t have a notification icon) 	<ul style="list-style-type: none"> No (no function for this task)
7	<ul style="list-style-type: none"> Cannot record/upload videos on web 	<ul style="list-style-type: none"> No (no function for this task)
8	<ul style="list-style-type: none"> After he unrevines a video (by clicking the revine icon), he didn’t know if that video has actually been deleted because there is no indication and the video still shows up on your page 	<ul style="list-style-type: none"> Yes

	<ul style="list-style-type: none">○ User had to refresh to see that the video actually disappeared	
9	<ul style="list-style-type: none">• Couldn't quickly identify the trending icon...tried hovering over it but there was no text à assumed the trending icon was the one with the increasing chart	<ul style="list-style-type: none">• Yes

Table 7. Think aloud method part 1 on mobile for P3

Tasks	Notes	Task completed?
1	<ul style="list-style-type: none"> Was on the home screen and continued scrolling down the feed Assumes his profile will be on the home screen/ "first page" (as he calls it) Then pressed the 3 dots on the top right corner> settings> easily found the profile and could edit biography, location and profile color Frustrated at how to edit privacy settings so that people can only find him via email <ul style="list-style-type: none"> Kept pressing address book Didn't understand terminology of "discoverability" Didn't realize he could tap on the green enable/disable switches on the side so he kept pressing on the text which did nothing and led to frustration <ul style="list-style-type: none"> Thought he could tap and insert email address since he didn't know his email was already synced to his vine account Didn't know how to go back since the gray privacy back button camouflaged with the black banner (<i>*screenshot of privacy screen</i>) When he finally went back, he scrolled down and pressed "privacy policy" <ul style="list-style-type: none"> Full wall of text so he went back again 	<ul style="list-style-type: none"> Half completed (could edit profile but not privacy settings so only people could find him via email)
2	<ul style="list-style-type: none"> Settings > find people Screen opened up to suggestions of who to follow; thought he could scroll all the way down till he found JB Have hard time navigating back/ forgets to press on top bar Realized could search for people in search bar so he typed in "Justin Bieber" <ul style="list-style-type: none"> Selected the first option (luckily it's the official JB) Clicked on the list JB is following Finally clicks real follow button To like → clicks on the likes JB made <ul style="list-style-type: none"> Showed him how to like JB's first video Knows how to like (recognizes heart button) Doesn't know how to revine (thought it's comment icon) Finally presses revine amount but doesn't actually do the revine action (doesn't know he needs to actually press the revine icon) 	<ul style="list-style-type: none"> No
3	<ul style="list-style-type: none"> Settings to look for video recorder <ul style="list-style-type: none"> No luck Discovers the search icon and becomes confident that he can simply "search for a video function" by typing in "video" Showed him the video recording icon Pressed all punch of icons on video screen// finally found the reverse camera button to face himself <ul style="list-style-type: none"> Doesn't know how to record so keeps pressing everywhere again and even on the screen Doesn't know he records each time he touches the video screen → minimal feedback Presses disk icon which saves the video <ul style="list-style-type: none"> Doesn't want to save so he automatically presses the only other option which is to discard the video he didn't know he recorded 	<ul style="list-style-type: none"> No

	<ul style="list-style-type: none"> Automatically brings user to dark screen with a square and video icon on it (confused// * <i>we should add screenshot of this</i>) 	
4	<ul style="list-style-type: none"> Showed him how to record a video Knows to point in different areas to record segmented video clips but continues to hold on screen which automatically films a continuous vid Isn't aware that he should film till the entire top bar is green or that the green bar represents how long the video will be Knows that edit = wrench icon <ul style="list-style-type: none"> Now he's confused by the second row of icons that appear below Keeps randomly pressing each one Presses save button and accidentally deletes video 	<ul style="list-style-type: none"> No
5	<ul style="list-style-type: none"> Goes to home and scrolls down the feed <ul style="list-style-type: none"> "I'm going to scroll until I find something about food i guess" Scrolls back up and sees search bar// decides to search for "food" Find food network and selects that Finds first video and knows that tapping will start/stop video Did not really understand the term "follow profile" so he kept scrolling down the food network page <ul style="list-style-type: none"> Did not know if I wanted him to follow the video or the profile since he did not know what a profile was Finally saw the "follow" button and pressed it but did not know what that did <ul style="list-style-type: none"> "I'm not sure if I even finished this task" 	<ul style="list-style-type: none"> Yes (can start/stop a video, able to follow a profile but wasn't aware he completed this task because no user feedback)
6	<ul style="list-style-type: none"> Wanted to go back but confused on how to do so again <ul style="list-style-type: none"> Back button at top camouflaged again by black profile banner (<i>i'll add a screenshot here too</i>) Showed him back button Went to profile (knows it's the far left figure icon now) <ul style="list-style-type: none"> Went to settings and scrolled down to see email assumed email = messages <ul style="list-style-type: none"> Could only enter email so knew that wasn't it Then scrolled down to "invite via email" (realized this didn't work too) Decided to search for "email" in search bar 	<ul style="list-style-type: none"> No
7	<ul style="list-style-type: none"> Home>video record icon> presses upload icon Didn't know how to add/import video Showed him how to Could find the edit button since it was labelled "edit" clearly Confused on how to trim video// kept pressing on video to play and stop it Finally pressed on frame below and a yellow bar appeared <ul style="list-style-type: none"> Dragged to half way Stuck at how to complete the rest of the video by filming surroundings 	<ul style="list-style-type: none"> Half (can import video and trim it but cannot edit so that other half is of surrounding)
8	<ul style="list-style-type: none"> Presses revine button again and assumes to "cancel" (big green button) <ul style="list-style-type: none"> Then presses undo later on 	<ul style="list-style-type: none"> Yes
9	<ul style="list-style-type: none"> Pressed 3 dots on side of video >copy link 	<ul style="list-style-type: none"> Yes

Table 8. Think aloud method part 1 on desktop for P3

Tasks	Notes	Task Completed?
1	<ul style="list-style-type: none"> Profile icon> edit (straightforward) 	<ul style="list-style-type: none"> Yes
2	<ul style="list-style-type: none"> Searched for JB , found profile, commented and liked first video Didn't know how to revine since the revine icon is different than on the app <ul style="list-style-type: none"> It's called "share" on desktop version Tried to click the 3 dots on top of vid Clicked on "vine" at the top thinking it can "revine" but it led home instead 	<ul style="list-style-type: none"> Half (liked & commented video but couldn't revine)
3	<ul style="list-style-type: none"> Settings> home> thought the eyeball icon was to record a video I asked, " do you think you can record a video through the desktop?" <ul style="list-style-type: none"> Answer: "yes since that's the basic function of vine anyways" Ended up searching for "camera" in search bar 	<ul style="list-style-type: none"> No (no function for this task)
4	<ul style="list-style-type: none"> "I know I can't record a video here" 	<ul style="list-style-type: none"> No (no function for this task)
5	<ul style="list-style-type: none"> Searched for "food" in the search bar Selected "food network" Knows how to click to pause/play video To follow the profile, he thought its the comment button <ul style="list-style-type: none"> Then clicked on 3 dots and followed Couldn't find the "favourite" button to ensure notification is received Tried to message by hovering over the 3 icons on the left side (hover state shows tooltip) → good feedback so didn't click any icons Tried settings but couldn't find message option 	<ul style="list-style-type: none"> Could play/pause vid and follow profile Couldn't favourite profile No message function?
6	<ul style="list-style-type: none"> "Well, I know there's no message function so I can't message this person" 	<ul style="list-style-type: none"> No (no function for this task)
7	<ul style="list-style-type: none"> "Since i can't upload a video, I don't think I can import a video too" 	<ul style="list-style-type: none"> No (no function for this task)
8	<ul style="list-style-type: none"> Searched for Justin Bieber again and went back to his profile Confused with pressing "follow"/"following" <ul style="list-style-type: none"> Didn't know if he actually unfollowed or not Went to the video he liked before and clicked on 3 dots to unfollow <ul style="list-style-type: none"> Knew he did it right since the option was labeled "Unfollow" this time Clicked revine button again but couldn't really tell if the task of undoing the revine was done <ul style="list-style-type: none"> Only showed revine button spinning and changing color 	<ul style="list-style-type: none"> Yes but was confused a lot
9	<ul style="list-style-type: none"> Home> then clicked through every icon next to the home icon (frustrated because he didn't know what each one led to until he clicked on it) Found trending category Clicked on 1st video <ul style="list-style-type: none"> Tried looking at like, comment section Had to show him where embed code was 	<ul style="list-style-type: none"> No

Table 9. Think aloud method part 2 on mobile for P4

Tasks	Notes	Task Completed
1	<ul style="list-style-type: none"> Settings>location, filled in bio easily Scrolled down to see privacy options <ul style="list-style-type: none"> Unchecked all options except for email discoverability 	<ul style="list-style-type: none"> Yes (easily accomplished)
2	<ul style="list-style-type: none"> Clicked back until saw search icon in profile <ul style="list-style-type: none"> Searched for JB JB's profile displayed underneath input ("i'll check this add profile icon since I know this is the official Justin Bieber") <ul style="list-style-type: none"> Knows he's following JB once clicked on icon because it turns green and the "+" sign is gone Clicks into profile to see his first vid <ul style="list-style-type: none"> Like = heart , Comment = speech bubble And assumes last icon is revine Recognized due to prior knowledge 	<ul style="list-style-type: none"> Yes
3	<ul style="list-style-type: none"> On an iPhone, video/camera button middle button of screen Could easily recognize the reverse camera button Took awhile to realize he could hold onto screen to record a video Recorded video Assumed wrench icon was to edit but isn't Hit the next (>) button on top right <ul style="list-style-type: none"> "I guess I'll press this to go next?" Found "edit" button with scissors icon so knew he could trim video this way Clicked on first frame and dragged yellow bar to half way mark <ul style="list-style-type: none"> "I guess I'll eyeball it to 3 seconds?" Save > caption and location (rest was easy) 	<ul style="list-style-type: none"> Yes
4	<ul style="list-style-type: none"> Knew wrench icon could access gridview now Recorded 5 segmented clips , deleted last 2 frames easily (trash can icon) but had hard time reversing order of remaining 3 frames <ul style="list-style-type: none"> Pressed copy frame icon (left of delete) which duplicated frames Had to show him to old and drag frames to reverse order "I wish there was a button to show how to reverse the order rather than me guessing" Now he knows how to duplicate last clip 	<ul style="list-style-type: none"> Yes (had troubles reversing order of clips)
5	<ul style="list-style-type: none"> Search> saw various channels and selected "food" Easily knew how to play/pause video Clicked on Tasty profile icon> clicked "follow" Clicked "favourite" icon correctly (didn't know what it did at first but knew he did it right when there was a feedback message) Often went by his intuition and prior knowledge of apps when dealing with unfamiliar icons like the favourite button 	<ul style="list-style-type: none"> Yes
6	<ul style="list-style-type: none"> Top right>chat icon>messages 	<ul style="list-style-type: none"> Yes
7	<ul style="list-style-type: none"> Easily done 	<ul style="list-style-type: none"> Yes
8	<ul style="list-style-type: none"> Troubles finding where he revined the video to 	<ul style="list-style-type: none"> Yes

	<ul style="list-style-type: none"> • Knew there was an easier way than going back to JB's profile <ul style="list-style-type: none"> ○ Went to his profile (guessing again) ○ Found video he revined> clicked revine icon and undo 	
9	<ul style="list-style-type: none"> • Assumed it was "popular" under the search page • There's no trending category in app • Clicked 3 dots> copy link 	<ul style="list-style-type: none"> • Yes

Table 10. Think aloud method part 2 on desktop for P4

Tasks	Notes	Task Completed?
1	<ul style="list-style-type: none"> Easily done 	<ul style="list-style-type: none"> Yes
2	<ul style="list-style-type: none"> Easily found JB through search and could easily like his first video but assumed the button next to “like” was comment but on desktop version, it’s revine Found the “say something nice” section to comment and finally revined 	<ul style="list-style-type: none"> Yes
3	<ul style="list-style-type: none"> “I don’t think you can actually record a video through the desktop. It’s kind of like instagram where it doesn’t allow you to do it on a laptop you know” Still attempts to find the record button Looks at the 3 icons on the left and goes to TV mode (guessing) <ul style="list-style-type: none"> Had a hard time getting out of tv mode which was frustrating Couldn’t see the exit (X) button on top right because camouflaged with the black background 	<ul style="list-style-type: none"> No function for this task
4	<ul style="list-style-type: none"> Knew this couldn’t be done on desktop 	<ul style="list-style-type: none"> No function for this task
5	<ul style="list-style-type: none"> Clicked vine icon at top <ul style="list-style-type: none"> Knew this would bring him back to the homepage Found list of channels on side Knew what each icon category was since it would be labelled at top <ul style="list-style-type: none"> Clicked hamburger icon Knew how to play/pause video and get to the profile to follow them Hard time favouriting profile <ul style="list-style-type: none"> Clicked on 3 dots next to first video but wasn’t it Kept scrolling down feed -> frustrated 	<ul style="list-style-type: none"> Yes
6	<ul style="list-style-type: none"> Profile> then homepage Looked through each icon on top left Looking for a chat/ mail icon Couldn’t find 	<ul style="list-style-type: none"> No function for this task
7	<ul style="list-style-type: none"> Home> kept scrolling Gave up easily because he knew you couldn’t make/post any videos via desktop 	<ul style="list-style-type: none"> No function for task
8	<ul style="list-style-type: none"> Went back to his profile to see the video he revined Clicked on revine icon which changed to a gray color but could still see the video on his page so was confused <ul style="list-style-type: none"> Wished there was a undo button so better feedback I had to tell him to refresh his page to see the update he made Unsure if he did it correctly 	<ul style="list-style-type: none"> Yes
9	<ul style="list-style-type: none"> Easily done 	<ul style="list-style-type: none"> Yes

Table 11. All usability problems listed for the system Vine in a list

Mobile Observations

Web Observations

Interface not following a simple and natural dialogue

- Too many buttons on the “record” page for beginners
- Record page button icon illustrations not familiar to users
- Did not realize that you had to press the screen to record a video
- Message button is too small
- Gesture of dragging and dropping is not intuitive for some users
- Hard time reversing the order of video clips
- Assumed wrench icon means “edit”
- Couldn’t find the “favorite” button
- The “home” and “home feed” pages were confusing (didn’t get the point of having these pages as 2 separate ones)
- After clicking “share”, the placement of the list of options that popup are placed far
- There is no “star” icon to let P1 ensure that he is getting notifications
- Unsure of the point of having 3 view modes (list, grid, tv)
- Had a hard time getting out of TV view mode
- Back button camouflaged by the black

Mismatch between system and the real world

- “Revine/arrow” button is not recognized/ intuitive
- Record page icon illustrations not familiar to users
- Unsure of “friends” labels in messages; these are people that the participant followed, but not necessarily “friends”
- “What is discoverability?”
- The “unvine/delete” icon (looked like a refresh icon) is not familiar to P1
- Assumed wrench icon means “edit”
- Home page, then clicked through every icon next to it
- “Unvine” (refresh) icon → users understand this as “refreshing page”
- In the list view, you play/pause videos by clicking it; in the grid view, you can play/pause the video by hovering over it
- There is no “star” icon to let P1 ensure that he is getting notifications (like Twitter and unlike on mobile)
- Couldn’t identify the “trending” icon

Not enough recognition, too much recall

- No “record/camera” button
- Record page icon illustrations not familiar to users
- Did not realize that you had to press the screen to record a video
- Would click “...” icon looking for more options when P1 couldn’t find the feature that he was looking for (ie, ensuring that the gets a notification for new vines uploaded by a particular user)
- Couldn’t find the “unvine” option
- Trending icon is not familiar
- Geotagging locations for users’ profile is not available
- Under search, it doesn’t show the certified icon like it does on mobile
- Different level of hierarchy between web and mobile (ie, to revine on mobile, you have to click Share, then Revine, whereas for web, you just click the “revine” icon)
- Channel illustrations are not directly labeled (they are when you hover)
- In the list view, you play/pause videos by clicking it; in the grid view, you can play/pause the video by hovering over it

Inconsistency and standards

Inconsistency in meaning (icons and language)

- Refresh icon is used in 2 locations (flip camera perspective and unvine)
- Confused with “follow”, vs. “following”
- Vine/revine icon switches back and forth
- “Trending”, “on the rise” vs “popular”

Inconsistency in functionality

- Same position for vine/revine buttons (shown with 2 different icon illustrations: arrow icon and refresh icon)
- List view (play/pause by clicking on screen) vs. grid view (hovering over video plays/pauses it)

Inconsistency across platforms (web vs. mobile)

- On web to save profile, its “save”; on mobile, its “done”
- Under search, it doesn’t show the certified icon like it does on mobile
- On web, the share options are Twitter, FB, Link, VM and Embed; on mobile, its Revine, Twitter, FB and Tumblr
- Different level of hierarchy between web and mobile (ie, to revine on mobile, you have to click Share, then Revine, whereas for web, you just click the “revine” icon)
- Under videos on web, the icons are Like, Revine, and Share; on mobile, the icons are Like, Comment and Share
- Cannot record/upload videos
- There is no “star” icon to let P1 ensure that he is getting notifications (unlike Mobile)

Lack of feedback

- No indication if revined video was actually shared (had to go back to profile to double check)
- No timer when recording a video (had to assume that half the timer bar meant 3 seconds)
- No layover on top of the video with a play/pause icon so P1 wasn’t sure if the video was laggy or whether he actually paused it
- Unsure if video was actually unvined
- Having icon change to gray is too discreet
- Troubles finding where user revined the video to
- “I guess I’ll eyeball it to 3 seconds”
- Clicked revine button but couldn’t really tell
- Confused with pressing “follow” and “following”
- Trimming the video but couldn’t tell if he was doing it
- Doesn’t know how to record but keeps pressing the screen
- Clicked “share” but wasn’t sure if the video was actually shared
- Channel illustrations are not directly labeled (they are when you hover)
- No indication whether P1 has actually unrevined a video (user had to refresh browser to double check)
- Hover over icons at the top left but no description text

Inflexibility and efficiency of use for a range of users

- No timer when recording a video (had to assume that half the timer bar meant 3 seconds)
- Touchscreen sensitivity → difficult to order (drag and drop) different clip segments
- Confused as to why he would need to verify his number in order to message someone
- Too many buttons on the “record” page for beginners
- Can’t intuitively access the record page
- The “home” and “home feed” pages were confusing (didn’t get the point of having these pages as 2 separate ones)
- In the list view, you play/pause videos by clicking it; in the grid view, you can play/pause the video by hovering over it
- Novice and expert users’ results varied greatly

B. Figures and Screen Captures

Figure 1a. Process of writing out observations for the affinity diagram

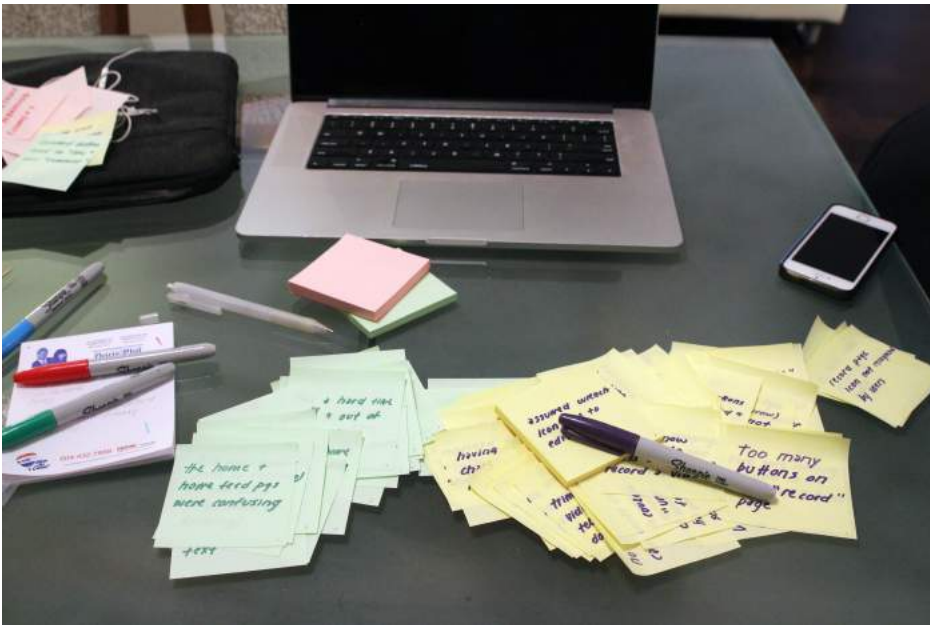


Figure 1b. All usability problems are separated into mobile (yellow) and web (green) categories



Figure 1c. Close up of all the usability problems on the web platform

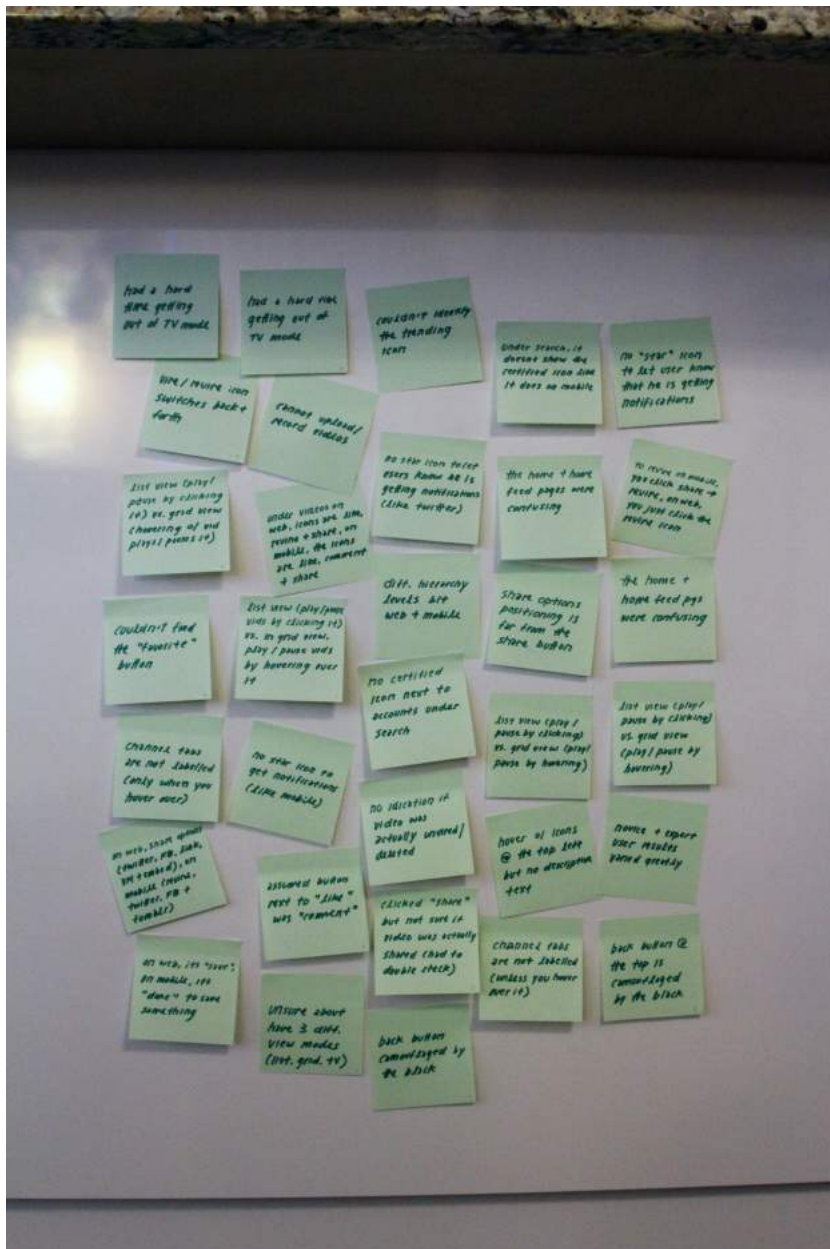


Figure 1d. Close up of all the usability problems on the mobile platform



Figure 1f. Usability problems revolving around the same theme are sorted into groups



Figure 1g. Usability problems are further categorized and labeled



Figure 1h. Close up of the first two sets of usability problems for the affinity diagram



Figure 1i. Close up of the third set of usability problems for the affinity diagram



Figure 1j. Close up of the fourth set of usability problems for the affinity diagram



Figure 1k. Close up of the last three sets of usability problems for the affinity diagram



Figure 2. Similar “refresh” icon used for two very different functions

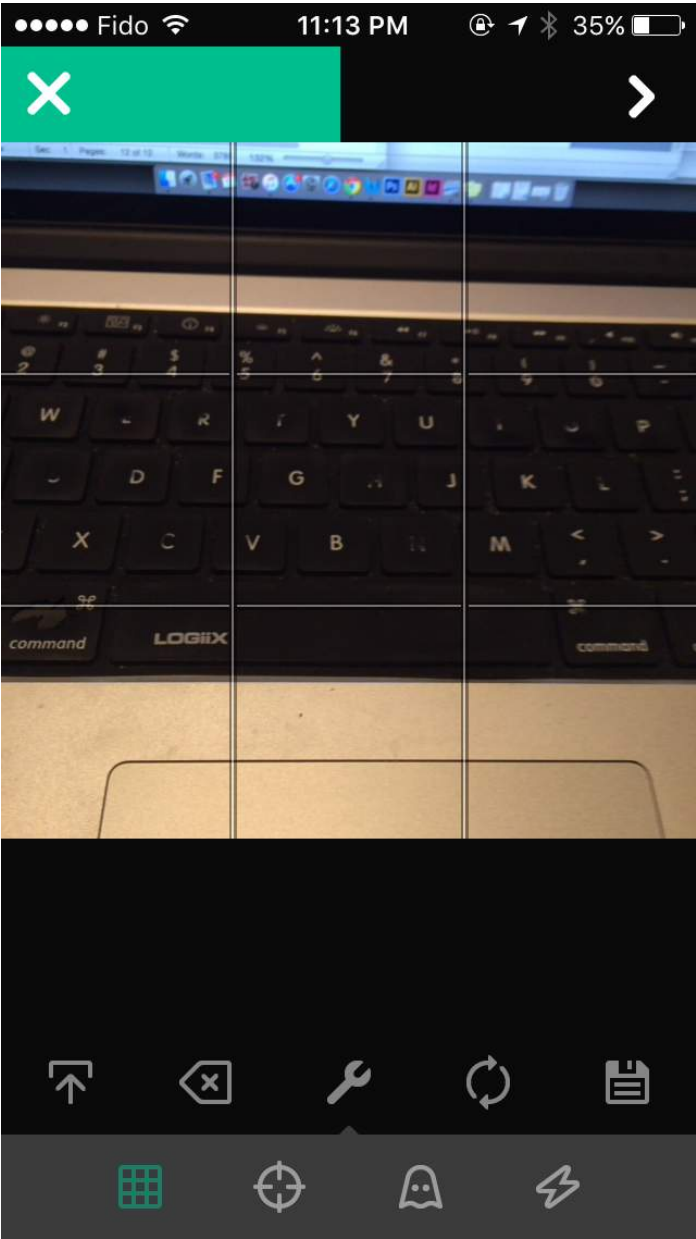


Figure 3. Unfamiliar icons and progress bar that shows the approximate length of a recording video

