Zeal: Motivating Online Petitioning by Browsing the News

Xinlan Emily Hu[†]

Computer Science, Stanford University, Stanford, CA, USA, xehu@stanford.edu

Angela Lee Luo

Symbolic Systems, Stanford University, Stanford, CA, USA, angluo@stanford.edu

Logan Kayla Pearce

Symbolic Systems, Stanford University, Stanford, CA, USA, loganp@stanford.edu

[†] All authors contributed equally. Order is alphabetical by last name.

ABSTRACT

Online petitions are a powerful but at times deeply flawed digital space. Despite the increasing importance of online petitions in galvanizing support for key issues [3], over 99% of petitions fail to achieve their goal, and the top 5% of users on Change.org (a popular online petitioning website) write 50% of the signatures [1]. As a result, engagement in online petitions is incredibly uneven, and there are far more passive observers than active petitioners.

We introduce Zeal, a mobile application that encourages the otherwise passive consumer of content to take social action in the online petition space. Zeal combines news, a commonly consumed type of mobile content, with petitions related to the news articles. Drawing from the Fogg Behavior Model [9], we hypothesized that users who were invested in the news (motivated), faced with a simple ask (signing a petition), and given a prompt (Zeal's news/petitions interface) would increase their petition-signing behavior. We then conducted a 10-day field study, through which we validated Zeal as a proof-of-concept for encouraging social action, but found that news alone is insufficient to fully motivate petition-signing behavior.

CCS CONCEPTS

• Human-centered computing • Human-computer interaction

KEYWORDS

online petitions, social action, activism, human behavior

1 Introduction

A week after George Floyd, an unarmed Black man, was brutally killed by a Minneapolis police officer, searches for "Justice for George Floyd" returned 1,923 results on Change.org. The most popular petition among these now has over 16 million supporters [7].

Indeed, online petitions are an increasingly powerful outlet and space for civic action. Especially when integrated with social media, they can powerfully reshape the policy-making process with ideas from the grassroots. Even a few dozen signatures may be influential enough to catch the attention of a local politician. And even when failed, petitions generate increased social awareness of important issues.

A million people sign online petitions every week [8]; however, the median number of petitions that each registered user ever signs is *one* [4]. Amongst those who view a petition online, our generative field study found that only 7.81% of users sign the petition. Thus, the online petitions space is in fact dominated by a small but vocal number of activists, with the vast majority being occasional participants and lurkers. This

inequality is problematic: online petitions should empower the collective voices of citizens, rather than act as a megaphone for the few.

Our work seeks to address this inequality by motivating lurkers to sign online petitions. This paper makes two major contributions: first, we perform field work and a content analysis that maps out the key activities and trends that define the online petition space. Second, we build upon our fieldwork to introduce Zeal, an application that motivates lurkers to actively sign petitions.

During our fieldwork, we found that no individual we interviewed ever actively *seeks out* a petition; however, many sign petitions when prompted. We also learned that even those who rarely sign petitions still consume news, often via social media feeds, dedicated apps, or more traditional outlets. Thus, Zeal's core design insight is to integrate information about petitions within a user's typical news consumption. In this way, users can be prompted to sign petitions even when they are not seeking petitions out.

Zeal's design draws upon the Fogg Behavior Model (FBM), which theorizes that behaviors occur when three factors converge: *motivation*, *ability*, and *prompt* [9]. First, Zeal increases the *motivation* to sign petitions by providing users with news articles that make them invested in particular social issues. Next, Zeal increases the *ability* for users to sign petitions by enabling them to sign in-app. Finally, Zeal creates a *prompt* for users to sign petitions, by linking related petitions with the news articles. In theory, this would make users more likely to engage in online petitioning behaviors than they would otherwise.

We launched our application for a 10-day field study, and report promising results with substantial areas for improvement. Over the course of the study, users managed to integrate Zeal into their daily news consumption, reading hundreds of articles and signing dozens of timely petitions. However, some users found that news articles alone did not provide sufficient detail to make them feel fully informed. Future iterations of Zeal should thus expand to include more curated resources for learning.

2 Related Work

2.1 Literature Review

We first examined the theoretical literature for knowledge-sharing online. "Understanding Knowledge-Sharing in Online Communities of Practice" [5] describes norms and effective design principles for online communities of practice (CoP), which they define as "groups of people informally bound together by shared expertise and passion for a joint enterprise" (188). In the case of online petitions, the clear joint enterprise is the cause being petitioned. The fundamental task of petitioning is to share knowledge—about the cause, and about the existence of the petition—and to ultimately generate as much publicity as possible. Authors Sharatt and Usoro provide 7 theoretical areas of interest, of which we highlight 2 that are relevant to our work:

1. Technical Infrastructure
Motivation to share content is described by two factors: (1) the ease of taking the action; and (2) the perceived usefulness of the outcome (190). These are both crucial insights for online petitioning: they implied that we should make the process of engaging with petitions as frictionless as possible, and should closely couple petitions with concrete outcomes. People are not keen to shout into a void; the knowledge that their voice contributes to a specific action, rather than a vague cause, will encourage more activity.

2. Motivation
The authors describe knowledge sharing as a communal, intrinsically-motivated activity (191), that will suffer if induced by extrinsic factors (191). Indeed, extrinsic motivators may "rupture pro-social behaviour" and turn a moral action into a self-interested one. Thus, our design took care to tap into intrinsic rather than extrinsic motivations for sharing online petitions: gamification would have been an especially poor strategy. Users motivated by tokens and badges may soon lose sight of the social zeal that underlies online movements, producing, at worst, disingenuous support for causes.

Sharatt and Usoro's theoretical paper laid the groundwork for how we approached our domain of interest. We then studied how users behave on online petitioning websites.

Researchers analyzed user behavior over a period of four years on an e-petition site launched by the German parliament [4]. The researchers identified four types of users: "*singletons*, who sign just one petition, *returnees*, who sign 2-23 petitions, *highly active* users who sign 24-118 petitions, and *hyperactive* users who sign between 119-1981 petitions" (210). They found that "the median number of signed petitions per registered user is one" (210). Our design insight was that many users simply go to a petition site to sign one particular petition and never return; we must consider how to encourage continued user engagement.

Another noteworthy aspect of this study is what researchers found about the way in which highly active and hyperactive users sign petitions. These users engage in marathon signing sessions -- instances where they "sign large numbers of petitions in a single sitting and over longer stretches of time" (215). Significantly, they sign petitions "across virtually all policy areas, suggesting that *they are not following a clearly defined agenda* … but [rather] browse the website to make relatively spontaneous signatures" (215, emphasis added). While we wanted users to be more active than only signing one petition on our platform, we also didn't want them to sign petitions on whims. Taking both of these aspects together, our design sought to promote *continued* and *intentional* engagement.

2.2 Existing Products

We reviewed 2 existing products related to e-petitioning and more general social action: Change.org and "The Breakdown" from DoSomething.org.

Change.org is one of the most popular and well-known online petition platforms. It is a free service with little barrier to entry, so anyone can create a profile and start a petition on its website. Change.org has an established brand, and many people who are looking to create a petition will often turn to this website first. Due to its large user base, petitions that are sponsored or trending can gain even more attention by being displayed on the front page. The ability to browse petitions on Change.org, which are categorized by Featured, Popular, Recent, and Victories, is another feature that can be instrumental in a petition's success.

However, many user reviews on TrustPilot [10] and SiteJabber [11] for Change.org commented on the lack of credibility and fact-checking for the petitions that appear on the website. Because anyone can create a petition, this opens the door to a large possibility for misinformation to be spread. There is no ability to fact-check what is said on a petition; no objective third-party perspective can be voiced. Thus, petitions can end up looking very one-sided and can be misleading for the unexpecting lurker. Some Change.org users have even complained about petitions having "hidden agendas", further clouding the credibility of some of the petitions hosted on the platform.

The next product we looked at was The Breakdown, which is a semi-weekly email newsletter produced by DoSomething.org. The newsletter summarizes the week's news headlines and pairs them with various ways to take action about them. These action items can include links to petitions to sign, resources for learning more about the subject, or support hotlines for those who need help. The news and actions are all curated by DoSomething.org.

Overall, subscribers to The Breakdown found it to be extremely educational and informative about current events, but many users felt that the content was highly politicized and discussed topics from only one point of view. Furthermore, because the newsletters were a summary of the events that happened in the past week, users felt that many of the campaigns that were being promoted were for things that had already been resolved or were currently being fixed. Some user reviews complained about the actions being too vague. For example, the newsletter might tell readers to "Stand up for LGBTQ+ inclusivity at your school" as a way to take action about LGBTQ+ rights [13].

We were inspired by The Breakdown's motto of "read the news and change the news" and how that could apply to the e-petitioning space. Across these two products and the literature that we reviewed, we identified two main areas that we wanted to learn more about in our generative study: user motivations behind various online petition activities and user concerns about petition legitimacy. Specifically, we wondered:

How do people find or hear about petitions?

What types of research do people do before signing a petition?

What causes users to cross the tipping point from a mere lurker to someone who is willing to sign? What motivates someone who has never created an online petition to create one for the first time? Indeed, we suspected that there were different motivation thresholds for *reading, signing, sharing*, and *starting* a petition. Where do these thresholds lie, and how can we tap into them to encourage greater engagement with petitions?

3 Motivation

In our generative research study, we sought to answer some of the open questions remaining from our literature review. This led us to perform a content analysis to better understand the trends and key activities that define the online petition space.

3.1 Method 1: Content Analysis

For our content analysis, we were interested in what kinds of entities are creating and receiving petitions, how often users sign petitions, and how user engagement varies over time. To do so, we analyzed a total of 205 petitions from GoPetition.com, a petition platform that hosts petitions from over 75 countries and at one point had a No. 1 rating on Google [2]. We looked only at petitions within the United States. GoPetition subdivides the set of American petitions into four categories: *Recent, Active, Archived,* and *Popular*. We initially set out to analyze the top 50 results from each category, but we found that there were only 10 petitions listed under Active, even though there were many more openly active petitions on the site. Instead, we analyzed 65 petitions in each of the other categories, as well as those 10, to reach our original goal of 200 petitions. We also made sure to delete duplicate petitions that were cross-listed in multiple categories.

For each petition, we recorded a large range of metadata, including the number of Facebook likes and comments, the number of views, the number of signatures, and the number of tags on the petition. In addition, we calculated a sentiment score for each petition's content, using an online tool [12]. We also calculated the signing rate for each petition, which we define as:

$$signing\ rate = \frac{number\ of\ signatures}{number\ of\ views} * 100$$

3.1.1 Findings

The following is a summary of the findings from our content analysis.

The online tool that we used to calculate a sentiment score for each petition gave scores from -100 to +100, where -100 is extremely negative or serious, and +100 is extremely positive or enthusiastic. Below is a histogram of all the sentiment scores. We noticed a strongly bimodal distribution, indicating polarization in the sentiment of petition content (i.e., extreme positive or negative language).

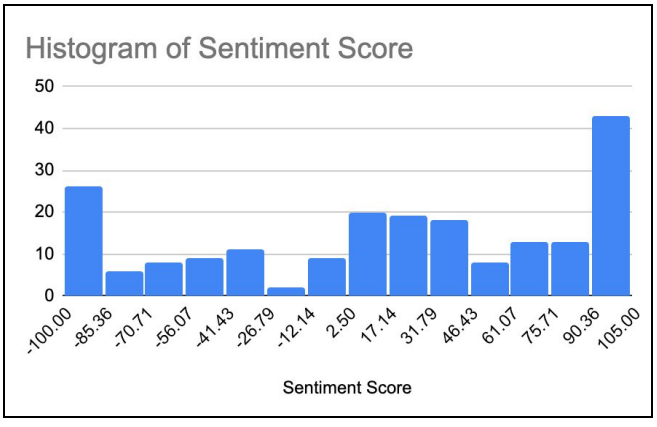

Figure 1. Histogram of sentiment scores.

Next, we looked at the signing rate. The average signing rate was 13.47%, whereas the median was 7.81% with a standard deviation of 20.70. Overall, we noticed a very small signing rate across most of the petitions, suggesting that many viewers of the petition did not end up signing it. As a caveat, we could not control for people viewing a petition multiple numbers of times, but these small rates were still an indicator of low lurker-to-signer turnover. In other words, for most of the petitions that we analyzed, many people viewed the petition, but did not sign it.

We also found an interesting relationship between the number of views and the number of petition tags. On GoPetition.com, petition tags are used for tagging petitions with certain keywords, which allows users to search for petitions of a specific subject matter. We predicted that petitions with a lot of tags would have higher visibility due to the petition appearing in a larger number of searches. The following is a scatterplot of the data:

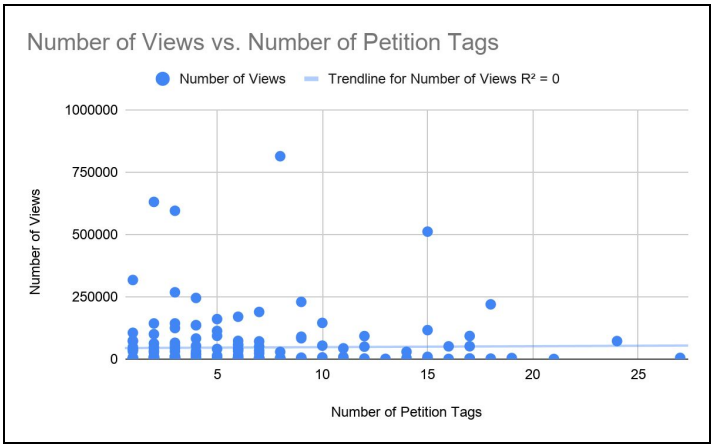

Figure 2. Scatterplot of the relationship between the number of views and the number of petition tags.

From this scatterplot, we noticed that a larger number of petition tags did not necessarily lead to a higher number of views. In fact, we can clearly see that some petitions with fewer petition tags have more views. Our prediction was incorrect; namely, the number of petition tags was not positively correlated with the petition's visibility, or the number of views a petition had. (Indeed, $R^2 = 0$, indicating no correlation). We speculate that this may be because users are not browsing petitions on petition websites.

3.2 Method 2: Interviews

In addition to the content analysis, we also used interviews in our generative research study.

3.2.1 Participant Criteria and Recruitment

We looked to interview participants who had a diverse range of experiences with online petitions. Our main screening criteria was some level of engagement with online petitions; specifically, participants must have had a history of either reading, signing, or starting at least one online petition. We handpicked participants such that we interviewed at least one person who was involved in petition creation, petition signing, and petition reading.

We recruited participants in a two-pronged approach. First, we directly reached out to student activities on campus. We searched email and social media for people who were actively starting and sharing petitions, and cold-contacted these people. Next, we reached out to our personal and extended networks with our screen criterion - i.e., "Has anyone ever signed or started an online petition?" - and recruited the remainder of our participants in this way.

We successfully recruited six participants, aged 22 to 52. Two of our participants had started petitions; one of them is a power user who has started more than 4 petitions in the span of 1-2 months. Three of our participants sign petitions online with varying frequencies. Our sixth participant primarily reads petitions,

but signs them very rarely. Our participants also come from a racially diverse pool. They represent 4 races and originate from 3 different countries.

We interviewed our six participants using a standard set of questions focused on specific instances of creating and signing petitions and the motivations behind taking those actions. A few questions from our interview guide include:

1. What motivated you to start your petition?
2. Tell me about a time when you looked at a petition, but didn't sign it.
3. Do you ever browse petitions to potentially sign? Why or why not?

3.2.2 **Key Themes**

Next, we discuss the three key themes we identified from our interviews and content analysis.

1. People never seek out petitions.
We learned from our content analysis that petitions with a lot of tags don't necessarily receive more views. We predicted that this is because people are not going out of their way to search petitions based on subject content. Our interviews corroborated this prediction. Namely, four of our six participants mentioned in their interviews that they never search or browse for petitions. One interviewee said that "[A petition] has to come to me; I'm not seeking it out, per se." Another mentioned that they "have never gone out looking for petitions" and would only look at petitions if they "popped up on my feed." Our design takeaway from this is that if people are never searching for petitions, then we must bring the petitions to them.

2. Petitions often capitalize on emotional moments.
All six of our interviewees mentioned emotions as being tied to petitions in some way. When asked what motivated them to start a petition, one of our participants remarked that "the most important thing was that [I was] really fired up about it at that point in time." Similarly, several of our interviewees told us that they would sign petitions because they were "really, really angry about it" or that they "felt compelled…moved by the emotion of it." This trend was also reflected in the sentiment scores that we calculated during the content analysis. The bimodal distribution in sentiment scores showed that petition content is often filled with extremely emotional language. Interestingly, one of our participants mentioned that they were often skeptical of petitions because they tend to be "sensational or emotional...a kind of way for people to vent." Thus, we learned that we could tap into people's emotions to galvanize them to take social action - either through creating or signing a petition. However, we knew that we would also need to ensure that the emotional content of petitions is still grounded in factual information.

3. Petition legitimacy is a concern.
Three of our interviewees brought up concerns with the legitimacy of petitions. One participant, who often reads petitions but does not sign them, explained that they are "leery of signing petitions because they feel like they don't have the full information in order to sign." Several other participants remembered questioning whether certain petitions were real. This theme is reflected in many of the user reviews of existing products that we reviewed. Namely, many people are skeptical of petitions due to the inability to fact-check them or hear the other side of the story. Our takeaway from this skepticism was that we should include objective and factual information alongside a petition to allow users to feel fully informed before signing it.

4 System Description

We built Zeal for iOS, using React Native. Zeal has two primary areas of engagement:

1. *News Engagement.* Enabling users to browse and read the news;
2. *Petition Engagement.* Enabling users to view, sign, create, and share petitions.

These two areas of engagement capture our design goals and define the primary user actions within our app. Upon logging into the app, users are taken to a standard news feed, populated by the News API. This is users' primary screen, as they begin their usage of Zeal by simply browsing the news (Figure 3).

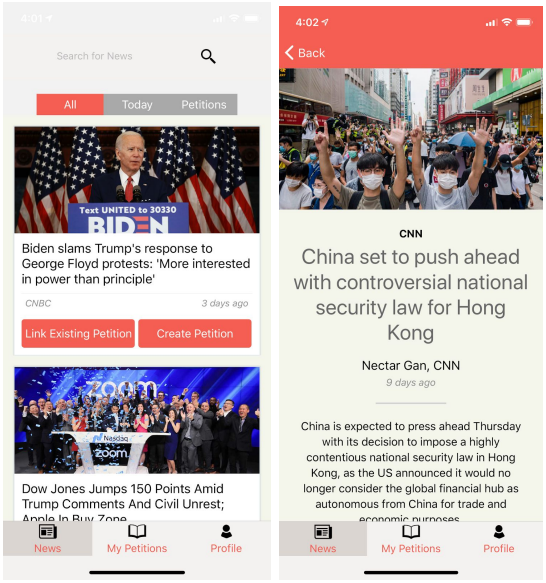

Figure 3. The news feed screen (L). This is users' primary screen, where they can read news articles (R), discover petitions to engage with, or add petitions to relevant articles.

Since our fieldwork revealed that users never proactively seek petitions, we did not include functionality for users to search for and browse petitions. Rather, Zeal is *a news app with petitions built in*; for news articles where a petition is available, users are prompted to "View Related Petition" (Figure 4). For news articles that do not have a related petition, users are given options to add a related petition of their own (Figure 5). In this way, the app maintains relevant petitions via crowdsourcing.

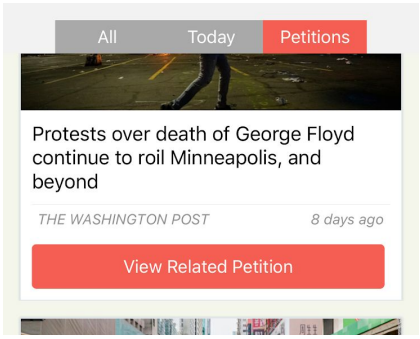

Figure 4. A news article with a petition attached displays "View Related Petition" underneath the article card.

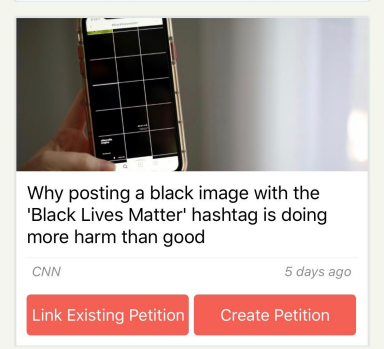

Figure 5. A news article without a petition attached displays options for the user to add a relevant petition: "Link Existing Petition" or "Create Petition."

Once users click "View Related Petition," they can see third-party petitions (such as those on Change.org and WeThePeople) embedded within the app (Figure 6).

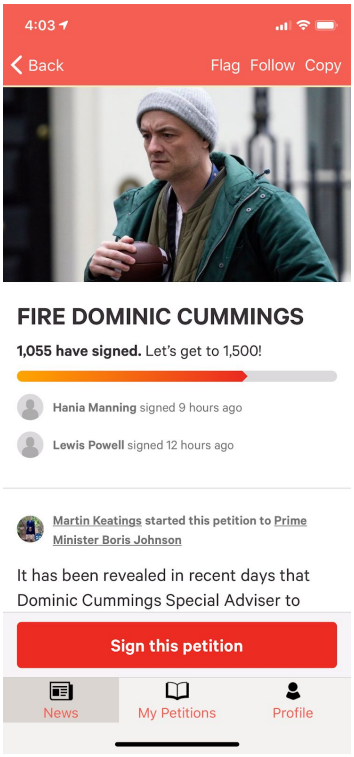

Figure 6. The petition view, which embeds petitions from third-party websites within the app.

After a user reads or signs a petition, they can "follow" a petition to remain up-to-date with petition updates. This also enables users to keep track of the petitions they have signed to date, as we had found in our initial fieldwork that some of the more prolific petition-signers "didn't really keep track of what [they] [were] signing - [they] might have signed the same petition twice."

In addition to "following" a petition, users can also copy a petition link (to share on social media) or flag a petition as inappropriate, and request its removal from the platform (Figure 7).

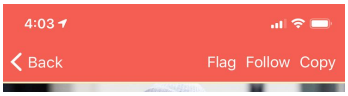

Figure 7. The "Flag," "Follow," and "Copy" buttons appear for each petition.

The petitions that users choose to follow are then visible in the "Following" tab of the "My Petitions" page. Additionally, the "My Petitions" page includes a "Linked" tab that enables users to keep track of the petitions that they have added to the platform (Figure 8).

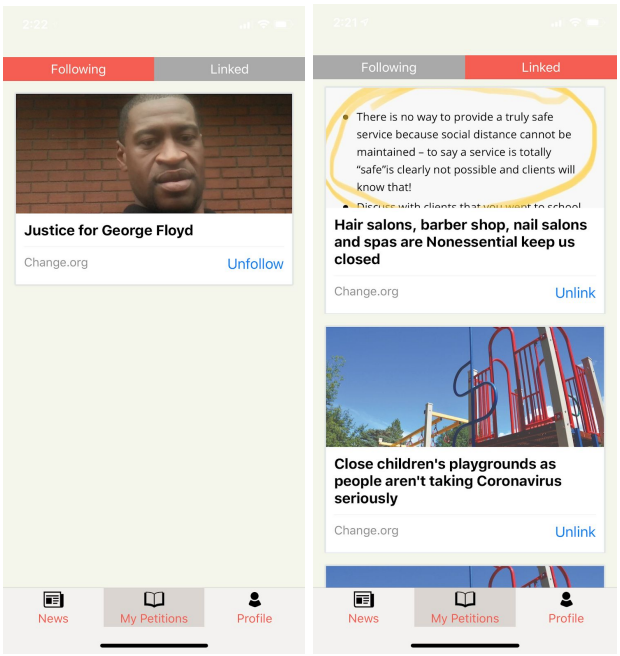

Figure 8. The "My Petitions" page. Users can view the petitions that they are following in the app (L) or those that they had linked into the app (R).

5 Study Methods

We recruited 13 participants into a 10-day closed beta test of the app. Participants were chosen based on two criteria: *interest in reading news* and *interest in petitions*. Test users demonstrated strong interest in reading news, but not all had experience in signing petitions. Indeed, part of the purpose of Zeal was to encourage users who otherwise signed few petitions to engage in petition-signing activity. The median age of our participants was 33.5, and 61.5% of users were female. Most users were based in the United States; one was based in Canada.

Our study focused on two key questions:

1. Do users effectively integrate Zeal into their daily news consumption?
2. How does the use of Zeal affect users' petition-signing behavior?

To answer these questions, we used four methods:

1. An ongoing diary study through 9 days of the field study;
2. Desk tours with users as they used the app live;
3. Post-study interviews;
4. Extensive instrumentation throughout the app.

5.1 Diary Study

With the exception of the first day, we sent out a diary log to all participants each day. While key questions remained the same, we changed the supplemental questions throughout the study in order to collect targeted feedback about particular new features. In total, we received over 80 pieces of diary logs.

5.2 Desk Tours

We were able to witness 5 users install our app live and take extensive notes of their process. This process helped us understand difficulties in the onboarding process and receive real-time feedback about aspects of the app that users found confusing. Additionally, we were able to observe how users integrated the app within their mobile app ecosystems.

5.3 Post-Study Interviews

Following the 10-day study, we interviewed 5 of the 13 participants who we felt were particularly interesting. Our interviewees included:

1. *"Bad" users:* One individual who "trolled" on our platform by posting numerous frivolous petitions;
2. *"Interesting" users*: Two individuals who left interesting diary logs;
3. *"Regular" users:* Two users who used the app on the majority of days studied.

5.4 Instrumentation

We tracked a total of 38 unique events, covering nearly every clickable object within the app. For each event, we tracked metadata, including the time of the event, notable details (e.g.., the name of a petition or article), and the screen on which the event occurred. We logged 1,050 events over the course of the study.

Following the 10-day test period, we analyzed the most frequently used features, usage funnels for UI flows, and trends in usage over time.

6 Findings

Our quantitative and qualitative data yielded promising results, but also uncovered legitimate concerns and design directions that we need to improve upon going forward.

6.1 Active Engagement with App Content

We found that participants were actively engaging with the content on the app. Our top five most used buttons across all participants were: *article-clicked* (reading a snippet of an article), *view-petition-news-feed* (clicking on a petition that was already linked to a particular news card), *read-more-article* (reading the full article after seeing a preview), *to-news-with-petitions* (pressing the toggling button that only showed news articles with petitions attached), and *to-today's-news* (clicking on the toggling button that only showed the current day's news articles).

Below is the chart of the usage of these top five most popular buttons.

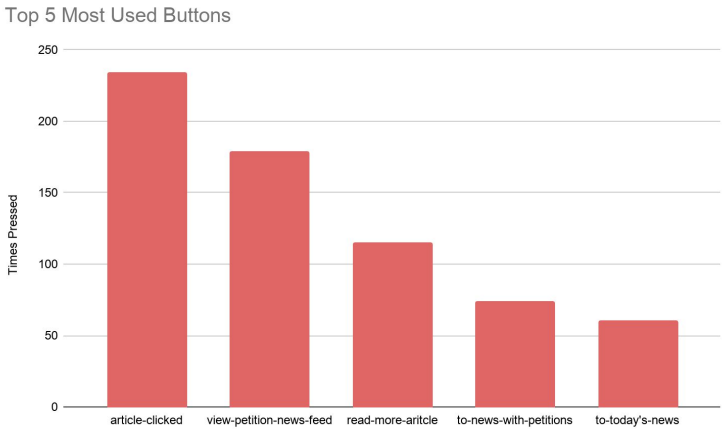

Figure 9. The top five most used buttons.

Effectiveness as a News App

Our users collectively read 234 article snippets and viewed 179 petitions, indicating substantial engagement with the content. Participants who read article snippets opted to read more of the article 49% of the time. Indeed, in a Diary Log, a user reported: *"The content is good. Zeal has become one of my daily news sources these days."*

And in an interview, another user reported: *"I definitely got into a rhythm of scrolling through news and signing petitions, as opposed to just consuming my news passively on the TV."*

Engagement with Toggle Buttons

Additionally, the toggling buttons that we added in the middle of the study proved to be extremely useful to participants. They toggled to view news with petitions 74 times and to view the current day's news 61 times.

We received several pieces of positive qualitative feedback in diary logs when we asked the users what they thought of the toggle buttons. For instance, one participant wrote: *"I like [the updated news feed] a lot better. The today, all, and petitions page are great and appropriate filters."*

While people enjoyed the toggling buttons, they still craved more advanced filtering options. Specifically, they wanted to be able to filter by category. As these users requested in their diary logs:

"Please organize the news feed into categories such as politics, Covid-19, etc."

"The news seems to generally follow what is trending now which I like. One suggestion regarding the news would be to add a filter by category!"

Session Length

Another promising finding was that on average, participants used Zeal for 3.65 minutes per session. They used the app for an average of 4.31 minutes the first time that they used Zeal on a particular day. In other words, users were not simply opening the app and closing it during a particular session.

Retention

Additionally, our 7-day rolling retention was 92.31%, which indicates that users were continuing to use the app near the end of the study. Rolling retention is defined as "which proportion of users come back to the app on Day+N or any day after that" [6].

6.2 Deficit in Petition Engagement after Reading Article

Viewing a Related Petition

However, there were significant points of concern from our study. Two of our key flows did not yield the results that we expected. One flow was: Article-Clicked -> Read More on Article -> View Petition. On the article landing page, participants had the option to press "Read More." After reading the full article, users

could go back to the original article landing page. From this landing page, they could view a related petition. However, users never viewed a related article from the article view. The funnel is shown below:

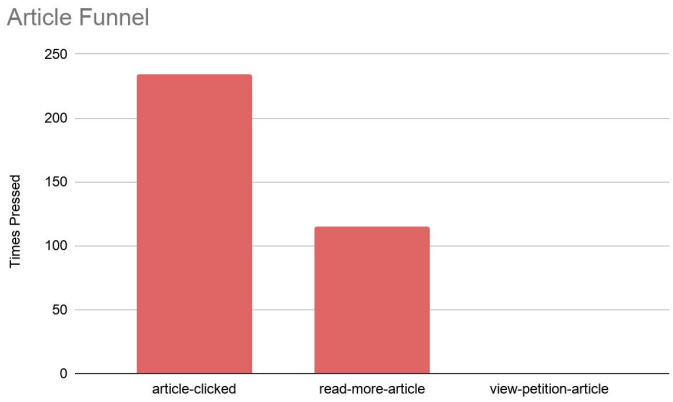

Figure 10. The article reading funnel.

We expected participants to read a news article and then view a petition related to it, but it seems like users a) only read the news or b) only viewed the petition based on the news headline, since no one clicked on "view petition" from the article view.

Perhaps this reluctance to view the petition after reading the article occurred because users *did not feel like they had the full understanding of an issue after reading a single article.* In other words, even though they were more informed after reading the article, they still were not comfortable taking action.

As a user wrote in their diary study: *"I'm genuinely confused by how these petitions work and I personally need to understand nuance and context before signing something."*

They elaborated during a follow-up interview: *"News articles will say what happens, but it doesn't give me a deep understanding of something. I don't want to tread in the water if I don't want to jump in."*

This feedback is critical to future designs. We must give users a chance to absorb more information and understand more sides of the story before signing a petition.

It is also possible that users didn't notice the "view petition" button since they had to scroll to access it:

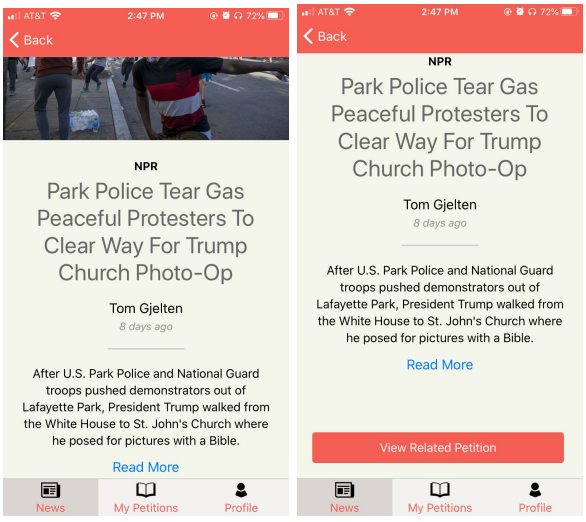

Figure 11. The "Article View" page. Users are initially presented with the option to read more (L) and must scroll down to view the related petition (R).

In a future design, we should move the "View Petition" button up so that it is more prominent.

Linking a Related Petition

Our other funnel examined how many times users actually entered a petition link after landing on the Link Petition Screen. There are three ways that a user could get to this screen: from the news feed (58.1%), after creating a petition (24.2%), and on the screen that shows an article snippet (17.7%). Once on the Link Petition Screen, users entered a link 37.3% of the time and pressed cancel 62.3% of the time.

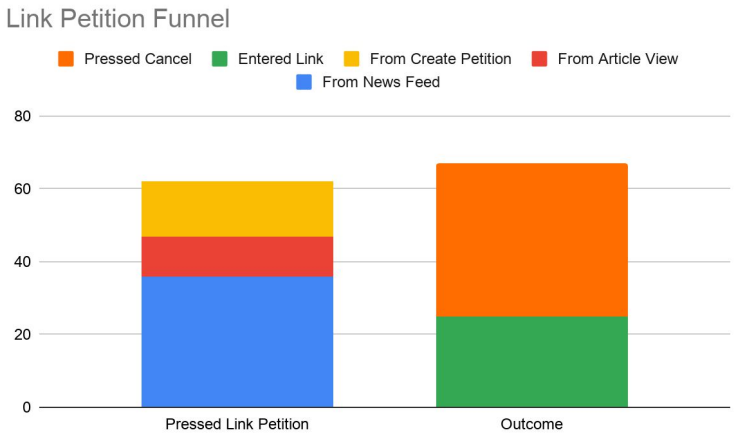

Figure 12. The link petition funnel.

Unfortunately, users were more likely to hit cancel than to link a petition. Based on qualitative feedback we received in diary logs and interviews, we realized that there was a lot of confusion surrounding the "Link Petition" button. This button was located on each article card on the news feed, which is also the location where users were most likely to press the "Link Petition" button (58.1%). Specifically, some users interpreted the "Link Petition" button as "Link to Petition." In other words, they didn't want to link a petition, they wanted to view a petition.

As one user wrote in their diary log: *"When I first joined the app, I thought 'Link Existing Petition' would take me to an existing petition (aka I interpreted it as 'Link to Existing Petition' instead, since the other button 'Create Petition' already had to do with inputting new info for a petition)."*

Future design updates will attempt to alleviate this confusion.

Another unfortunate statistic was that only 5 of 13 users linked any petitions. Collectively, they linked 25 petitions; however, a single user accounted for 17 of the petitions. We assumed that participants would want to link petitions, but this assumption was incorrect. One major issue was that many users didn't have petitions on hand to link.

As one user said in a desk tour: *"link petition [is] not useful; users rarely know where to find a linked petition."*

Another participant echoed: *"I found the 'Link existing petitions' button to be least useful. I would have found it much more useful if that button allowed me to find or search for related petitions. I don't even know if there's any petition out there, so how can I link to it? There's no point."*

6.3 Lack of Content Moderation

Troll Petitions

Our most active petition-linker typically decided to link "troll" petitions, frivolous petitions that were obviously about non-serious causes. Only two of the petitions they linked actually referred to legitimate causes. Examples of the troll petitions can be found below:

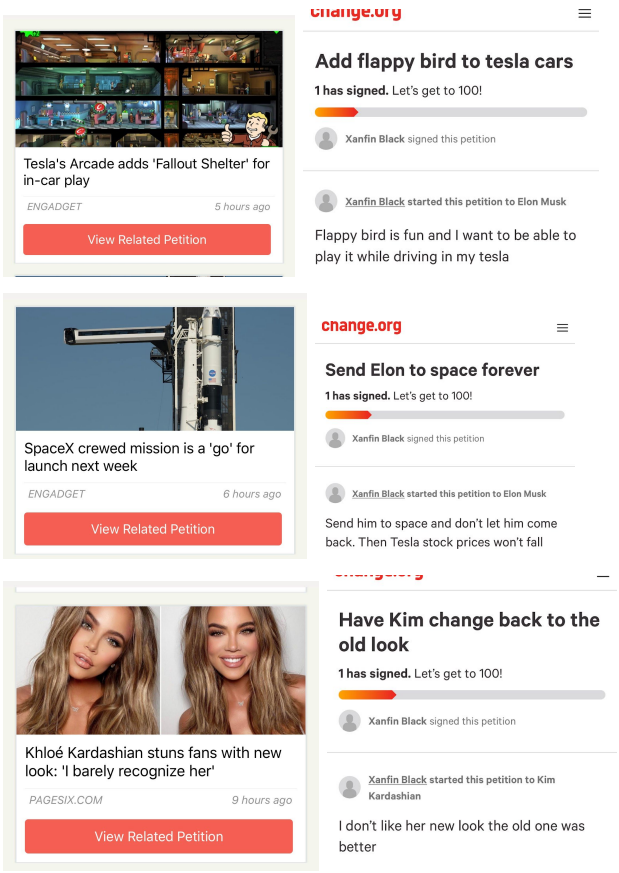

Figure 13. Numerous "troll" petitions created on Zeal (R). The attached articles are displayed on the left.

The actions of this particular user shed light on the fairly minimal content moderation built into Zeal. We performed light error checking on the links that users enter: we verify that they are valid links (by sending an HTTP request and verifying that it comes back 200) and limiting the links to 9 petition-related domains. However, it was evident that a user could simply create a throwaway account on Change.org and post frivolous petitions.

Impact of Troll Petitions

In diary logs and interviews, other users stated that they felt the humorous petitions undermined the theme of social action on our app

In a Desk Tour, one participant reported: *"I wouldn't want somebody to put unrelated petitions on there. I would be so disappointed."*

In an interview, a different participant said:

"They were all humorous but they distracted from my ability or motivation to go find new petitions."

"Let them know that you down-ranked or filtered out certain spam petitions, and give them the option to see what those spam ones are and determine whether they want to keep them or not."

Other participants, however, expressed in diary logs that they found the frivolous petitions amusing:

"Haha, I am pretty sure you have created 'fake' petitions. I didn't know you can create 'fake' petitions on change.org so easily though."

"I followed a petition because I thought it was amusing."

Regardless of how the humor is interpreted, content moderation will be a major concern in future designs. We intend for Zeal to be an app that allows users to engage in meaningful social change.

7 Discussion

We were initially motivated to pair petitions with news articles by the findings from our literature review and generative research study - namely, that users never seek out petitions. By incorporating petitions with the daily content that people already consume - the news - we found that our participants frequently engaged with petitions. Specifically, viewing a petition was the second most used button on the app.

Additionally, Zeal proved to be a successful daily news app. The 7-day rolling retention was 92.31%, and collectively, almost 250 article snippets were read. In their diary logs, many participants expressed enjoying the news content they received through Zeal.

The other main finding from our previous research was that many users were concerned about petition legitimacy. We built Zeal with the expectation that providing news from trusted sources would alleviate some of these concerns. We expected users to read an article and subsequently become interested in viewing, creating, and signing a related petition. To our surprise, the data from our field study showed that the process of motivating people to take an action—like signing a petition—is much more gradual than simply giving users news articles to read. Indeed, our quantitative analysis found that no users clicked on "view petition" from the article view.

In qualitative feedback, users expressed that they needed more information to feel comfortable with signing petitions. They found the news feed overwhelming and at times redundant (with many similar news stories and petitions). Thus, we realized that activists are not born through news alone. Rather, people become activists after slowly growing their knowledge and interest in an area.

Moving forward, Zeal needs a major design shift. Rather than rely on users to link their own petitions (which occurred rarely), Zeal should focus on creating more personalized, expert-curated content that helps users slowly build knowledge and interest over time. By doing this, Zeal would be more on par with products like The Breakdown, which provides highly-curated news content. Personalizing the content would elevate the user experience even more.

8 Implications for Design

Concretely, we recommend the following 4 design changes for Zeal:

1. Start with a limited set of expert-curated news and social actions (i.e., petitions and places to donate).
Eliminating user-generated petitions would also address many other problems we saw:

a. *Asking users to link petitions*: many users on the app didn't have any petitions to link. Asking users to provide the petition content was an incorrect assumption.
b. *Content moderation*: there will no longer be "troll" petitions if the petitions are curated by experts.
c. *Redundancy*: the experts can curate the most promising petitions, rather than have multiple similar petitions on the platform.
d. *News diversity*: we can ask experts to curate local news in addition to national news. Towards the end of the study, the news app was pretty much entirely dominated by news regarding the riots; expert curators would have been better at creating a more diverse array of topics.
e. *Being able to represent both sides*: our existing app essentially blocked people from adding a second opinion once the lone petition slot was taken. This was done to prevent people from spamming multiple petitions, but it resulted in a lack of diverse voices on issues. If our app were more expert-curated, we could get the experts to write arguments for both sides, and try to more evenly and fairly represent opinions.

2. Focus on informing people, rather than prematurely putting petitions in users' faces.

People who don't know enough about a topic won't really be convinced to sign after one article. Instead of immediately presenting users with petitions to sign, taking them on a journey that informs and motivates them. The flow for this might look like the following:

a. Upon opening the app, the user selects some topics that they are interested in.
b. Then, the user would see expert-curated learning materials to give them a briefing on the key arguments for and against the issue, and would get more resources they can read if they're curious.
c. After the user essentially participates in a choose-your-own-adventure of exploring the topic area, they can take a social action (i.e., sign a petition, make a donation) feeling more confident and informed.

3. Provide an onboarding flow for first-time users.

a. Users were confused by how some of the buttons were worded, i.e. "Link Existing Petition." Several users mentioned that having an onboarding screen would be helpful in terms of understanding the purpose and usage of the app. Providing an onboarding flow for first-time users to explain the main buttons and features of the app would have reduced the initial confusion we found when users first tried the app.

4. More customized and personalized news content.

Users wanted the ability to filter the news to their personal taste:

a. For example, some users were more interested in local news than national news.
b. Many users tried to search the news but were not satisfied with the functionality of the search bar.
c. The high usage of the toggle buttons suggests that users are interested in being able to filter the news. In the diary logs and interviews, many users mentioned wanting to be able to filter the news in additional dimensions (location, topic, etc).

Design changes that this would entail are:

a. In the onboarding flow, allow the user to choose what kind of news they are interested in (i.e. Sports, Politics, Entertainment, etc).
b. On the news screen, provide a menu for users to continue filtering the news to their liking. For example, provide filters for location, news source, and category in addition to the three already-existing toggle buttons.

We see these design changes as being useful not only for Zeal, but also for similar products in this space. For example, the news content in The Breakdown is curated, but not personalized. Providing a more personalized experience, better onboarding flow, and more informative content would provide users the tools they need to feel confident to take social action.

9 Conclusion

In the beginning, we set out to understand the various ways in which people interact with online petitions. From previous literature and existing products, we learned that engagement with petitions is often sporadic and noncontinuous. This was corroborated by the findings of our generative study, in which we talked to a diverse set of people to better understand what motivates them to interact with petitions. From there, we built Zeal, an app that pairs news articles with petitions to encourage increased petition engagement. During our 10-day field study, we learned that the simple pairing of news and petitions is still not enough to convert petition lurkers into petition signers and leaders. To do so, we'll need to introduce more personalized, curated content for users to feel more informed about the actions they can take and why they should take those actions. Overall, we have shown that Zeal is a proof of concept. News can inspire social action, but even more needs to be done to motivate users to impact the world.

ACKNOWLEDGMENTS

We thank the CS 377U teaching staff, Dr. Frank Bentley and Jenny Han, for their helpful feedback and support throughout this project. Thank you to our fellow classmates, for remotely embarking on this

journey with us, even in the worst of times. We'd also like to thank our friends and family, for believing in us and steadfastly supporting this project.

REFERENCES

[1] Shih-Wen Huang, Minhyang (Mia) Suh, Benjamin Mako Hill, and Gary Hsieh. 2015. How Activists Are Both Born and Made: An Analysis of Users on Change.org. In *Proceedings of the 33rd Annual ACM Conference on Human Factors in Computing Systems* (CHI '15), 211–220. https://doi.org/10.1145/2702123.2702559

[2] Julie Katz. 2010. 8 online petition tools: How to make a difference. *Socialbrite*. Retrieved June 10, 2020 from https://www.socialbrite.org/2010/07/20/9-online-petition-tools-how-to-make-a-difference/

[3] Oya Morva. 2016. Are E-Petitions Operative for Change? *On the Effectiveness and the Transformative Potential of E-Petitioning.* International Institute of Social and Economic Sciences. Retrieved June 8, 2020 from https://ideas.repec.org/p/sek/iacpro/3505977.html

[4] Cornelius Puschmann, Marco Toledo Bastos, and Jan-Hinrik Schmidt. 2017. Birds of a feather petition together? Characterizing e-petitioning through the lens of platform data. *Information, Communication & Society* 20, 2: 203–220. https://doi.org/10.1080/1369118X.2016.1162828

[5] Mark Sharratt and Abel Usoro. 2003. Understanding Knowledge-Sharing in Online Communities of Practice. *Electronic Journal on Knowledge Management 1*, 2: 187–96.

[6] 2019. User Retention – 5 Ways to Calculate It. *Applift.* Retrieved June 8, 2020 from https://applift.com/blog/user-retention

[7] Justice for George Floyd. *Change.org.* Retrieved June 8, 2020 from https://www.change.org/p/mayor-jacob-frey-justice-for-george-floyd

[8] Nearly every hour, a petition on Change.org achieves victory. *Change.org*. Retrieved June 8, 2020 from https://www.change.org/impact

[9] Fogg Behavior Model. *behaviormodel.* Retrieved June 8, 2020 from https://www.behaviormodel.org

[10] Change.org is rated "Bad" with 1.3 / 5 on Trustpilot. *Trustpilot.* Retrieved June 10, 2020 from https://www.trustpilot.com/review/www.change.org

[11] Change.org Reviews - 2.3 Stars. *SiteJabber.* Retrieved June 10, 2020 from https://www.sitejabber.com/reviews/change.org

[12] Free Sentiment Analyzer. Retrieved June 10, 2020 from https://www.danielsoper.com/sentimentanalysis/default.aspx

[13] Parent reviews for DoSomething.org | Common Sense Media. Retrieved June 10, 2020 from https://www.commonsensemedia.org/website-reviews/dosomethingorg/user-reviews.

A APPENDICES

A.1 Previous Reports

1. Literature Review
2. Generative Research Study
3. Field Study