

---

# Feelbook: A Social Media App for Teens Designed to Foster Positive Online Behavior and Prevent Cyberbullying

**Mingyue Fan**

School of Information Science  
University of Pittsburgh  
Pittsburgh, PA 15260, USA  
[myf716@gmail.com](mailto:myf716@gmail.com)

**Liyue Yu**

School of Information Science  
University of Pittsburgh  
Pittsburgh, PA 15260, USA  
[ponyo.yu.liyue@gmail.com](mailto:ponyo.yu.liyue@gmail.com)

**Leanne Bowler**

School of Information Science  
University of Pittsburgh  
Pittsburgh, PA 15260, USA  
[lbowler@sis.pitt.edu](mailto:lbowler@sis.pitt.edu)

Permission to make digital or hard copies of part or all of this work for personal or classroom use is granted without fee provided that copies are not made or distributed for profit or commercial advantage and that copies bear this notice and the full citation on the first page. Copyrights for third-party components of this work must be honored. For all other uses, contact the Owner/Author. Copyright is held by the owner/author(s).  
*CHI'16 Extended Abstracts*, May 07-12, 2016, San Jose, CA, USA  
ACM 978-1-4503-4082-3/16/05.  
<http://dx.doi.org/10.1145/2851581.2892398>

**Abstract**

This project presents a prototype for a stand-alone social media application designed for teenage users in order to prevent and mitigate mean and cruel online behavior. The purpose of the app is to create a nurturing environment where teenagers use a variety of features designed to help raise self-awareness of their own online behavior, seek support when needed, and learn to control and, when possible, correct aggressive behavior. The prototype is framed by four design principles: *design for reflection*, *design for empathy*, *design for empowerment*, and *design for the whole*. We conclude by outlining the next steps in our project to develop an application that helps to improve the online experiences of young people. This work has implications for the CHI community because it applies software solutions to tackle a critical social problem that can affect the health and well being of young people.

**Author Keywords**

Cyberbullying; social media; social computing; empathy; reflection; teens; young adults.

**ACM Classification Keywords**

K.4.2. Social Issues; K.4.m. Miscellaneous;

**Cyberbullying**

Cyberbullying is defined as “an individual or a group willfully using information and communication involving electronic technologies to facilitate deliberate and repeated harassment or threat to another individual or group by sending or posting cruel text and/or graphics using technological means” (Manson 2008). A more succinct definition describes this behavior as the “intentional and repeated harm inflicted through the use of computers, cell phones and other electronic devices” (Hinduja & Patchin 2014).

**Introduction**

The lives of teens are increasingly mediated through social media. In the United States, at least 92% of teens between the ages 13 to 17 years, go online daily (Lenhart 2015). Among online teens, 81% use social media (Pew Research Center 2012), and of that number, Facebook remains the most used social media site for 71% (Lenhart 2015). While social media has a positive effect on teens (Ahn 2012), its presence in the lives of young people also presents a risk. Almost half of teens who go online have experienced some form of cyberbullying (Cyber Bullying Statistics 2014 2015) and up to 75% of middle school Facebook users in the USA have experienced cyberbullying (Chapin 2014). Given this situation, methods are needed to help young people navigate the complex world of social computing. Most actionable solutions can come from three areas: law and policy, curriculum and education, or through technological responses. This project explores the third category—technological responses—and does so through the lens of software and from the perspective of teens.

**Methodology**

Software designed to prevent, reduce, or alleviate the harm of cyberbullying must map to the physical world experiences of young people. Design ideas abound but do they make sense to youth? *Feelbook*, the software solution presented in this paper, presents a range of technological responses to cyberbullying and adopts principles that arise from Bowler, Knobel, and Mattern’s (2015) empirical work with young people, exploring cyberbullying. Bowler, Knobel and Mattern (2015) looked at mean and cruel online behavior through a software lens, with the goal of developing a framework for positive technologies that reflect youth perspectives. The study resulted in a user-generated framework consisting

of seven design principles, each accompanied by a range of suggestions for the design of affordances on social media sites to counter cyberbullying. The design themes from Bowler, Knobel and Mattern’s study are: *design for hesitation, design for consequence, design for empathy, design for personal empowerment, design for fear, design for attention, and design for control and suppression*. *Feelbook* applies three of the themes in this project—*design for empathy, design for personal empowerment, and design for reflection*—selected through a second level of analysis that mapped Bowler, Knobel and Mattern’s seven design principles to Cheng and Fleischman’s (2010) meta-inventory of 16 values. The typology of values can serve as an analysis tool for evaluating technology through a human values lens. A fourth design principle is presented in this paper—*design for the whole*—a theme arising from a synthesis of the positive values identified in Cheng and Fleischman’s human-values typology and the literature on cyberbullying which speaks to the notion of the circle of bullying.

Assessing human values and aligning them with design principles helped us to understand the association between the social and individual needs of users in the context of social media, making it easier to prioritize and operationalize the design principles into a functioning prototype. The three design principles that initially guided our work—*design for empathy, design for personal empowerment, and design for reflection* mapped positively with the values of freedom, helpfulness, accomplishment, honesty, self-respect, broad-mindset, creativity, equality, intelligence, responsibility, social order, competence, justice, and security. Further analysis of the literature on cyberbullying led to a fourth design principle—*design for*

### Roles in Cyberbullying

Software responses to cyberbullying must acknowledge that the phenomenon is not a simple binary relationship between victim and bully. The circle of cyberbullying is wide and it is dynamic, the people involved playing different roles at different times in the bullying narrative. Cyberbullying roles including that of bully, victim, bystander, reinforcer, assistant, defender, outsider, and those with no role whatsoever such as the cyber-lurkers and voyeurs (Salmivalli et al, 1996; Sharriff, 2013; Sutton and Smith, 1999; Twemlow & Sacco, 2013). There can be a significant amount of shape-shifting in the cyberbullying narrative, victims turning into bullies, and bullies into victims, when the victim turns around and uses the Internet as their own tool to retaliate (Manson, 2008, Bowler et al, 2015). Those who stand at the periphery of the bullying such as teachers and parents, can themselves become the victims of bullying online.

*the whole*—which is the design that fits into teens' everyday lives and tackles the many roles that people can play in cyberbullying. Below we discuss the design principles in greater detail:

- *Design for Empowerment*: The empowerment principle suggests that social media should be designed in ways that help create greater equity amongst users in terms of the control of power (Bowler, Knobel, & Mattern, 2015). Unlike in the physical world, physical power does not dominate in social media space. Users can be empowered in many ways by designing certain protective features.
- *Design for empathy*: The empathy principle suggests that affordances for expressing emotion, caring for others, and feeling empathy should be designed into social media in order to let users feel the pain of others more concretely. As Bowler et al point out, one of the challenges for this design principle is how to “expose feelings without exposing the person” because the users being hurt may not wish to be labeled as victims and show their vulnerability (2015, p1286).
- *Design for reflection*: The reflection principle calls for design that provokes “self-reflection about the user’s own feelings, motivations, and values” and a re-assessment of one’s online behavior (Bowler, Knobel, & Mattern, 2015, p1282).
- *Design for the whole*: We propose a new design principle—*design for the whole*—which refers to the notion that design features that tackle mean and cruel online behavior should reflect a holistic approach to cyberbullying, taking an ecological stance to the problem whilst targeting a range of positive values. The ideal design for countering mean and cruel online behavior must speak to the whole person—reflecting their

everyday lives, both on- and offline—and work within the broader circle of bullying to include people who can defend and support the bullied.

### Procedures

Guided by the four design principles discussed above, the developers went through a brainstorming exercise to create a preliminary framework. Ideas were classified into specific features using affinity diagramming. The result was then organized into a mind map. Six main features were derived, grouped as direct and indirect interventions, serving as either a direct cyberbullying intervention or a mechanism to attract teens to the app through fun, interest, or practical need.

### Results

The proposed framework is a dynamic integrity of two types of features: *direct* and *indirect* interventions. The direct interventions, aimed at preventing and mitigating cruel and mean online behavior, include the “Feel button” system, the trusted adults’ connection, and the tutorial for app users. *Indirect interventions* are designed to attract teen users to this nurturing environment and cultivate digital citizenship. These features include a reward system for positive online behavior, personalization that encourages empathic practices, and interface customization and other accessories that will attract teens to the app. Below we describe the direct and indirect interventions in detail.

#### *Direct Interventions:*

- “Feel button” System: The “feel button” system replaces conventional “Like” with “Feel” in a social media post in order to allow more emotional engagement and clearer emotional expression. It may encourage teens to

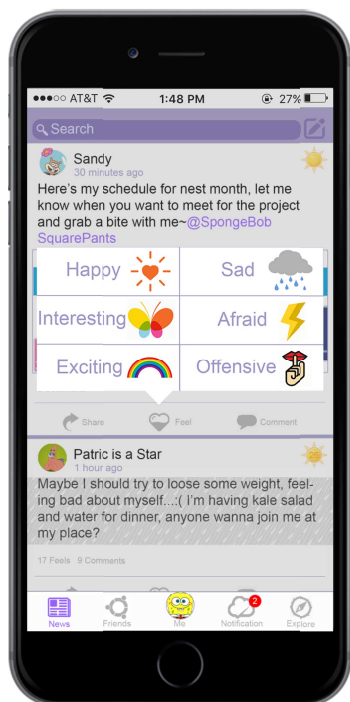


Figure 1: Feelbutton gives six options of emotions: happy, sad, interesting, afraid, exciting, offensive. The offensive button will ask users to pick reasons from a list and will show additional coping strategies after users submit the reasons.

express their feelings more accurately and empower users who feel vulnerable because of an offensive post. (Design for Empowerment, Design for Empathy, Design for Reflection).

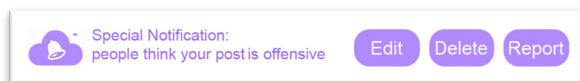


Figure 2: Notification that the post has been rated offensive

- **Trusted Adult Connection:** A reporting option can be offered to users who are willing to report and seek help from adults. Connecting to trusted adults could work in conjunction with the Feel Button and fill in the family connection gap. (Design for Empowerment, Design for the Whole).  
**A tutorial for app users:** The first time users log into Feelbook, they will take a short tutorial on privacy and security and how to use the application. The tutorial will help to assure that users understand Feelbook features and know how to get help when needed (Design for Empowerment).

#### *Indirect Interventions:*

One of the problems that any cyberbullying intervention might face is actually getting teens to use it. It is therefore important to build appeal factors into any app designed for teens. The features must fit seamlessly into the lives of teens, appeal to their interests and everyday needs, be fun to use, and nurture positive online behavior through passive affordances rather than system responses to specific cyberbullying events.

- **Personalization that encourages empathetic practices:** A complement to the feel button system, this empathy tool allows users to express their feelings and in response to other users' expressions of emotion through design

elements. It provides teens with a fun, interactive method for personalization, using the metaphor of weather to express emotion. (Design for Empathy).

- **Reward system for positive online behavior:** Feelbook rewards users for having no offensive posts in one year. Users receive special benefits from Feelbook in the form of a badge and early access to new accessories. (Design for Empathy, Design for Reflection).
- **Interface customization and other accessories:** Feelbook allows users to customize the interface and add self-designed themes that better represent their personalities and fit their usage habits. As a social media app designed specially for teenage users, Feelbook will have a variety of embedded accessories to assist teens at school and in their everyday lives, the hope being that these features will attract users to the app. For example, Feelbook will allow users to import the school calendar and share class schedules for easier event planning and due date notification. (Design for the Whole)

#### **Discussion**

The design framework proposed in this study presents a range of features that operationalize four design principles—*design for empowerment*, *design for empathy*, *design for reflection*, and *design for the whole*. Our social media app provides a platform for further exploration and evaluation of these design themes in a physical world context. We prioritized design for empowerment and see it as a powerful tool for the vulnerable, including not just victims of cyberbullying but also, the bystanders and the circle of people who are witness to mean and cruel online behavior. The holistic approach of design for the whole also tackles empowerment issues by widening the circle of bullying to include parents and other trusted people. Imbalance of



Figure 3: The post background is set to rainy to express sad feelings without a detailed explanation.

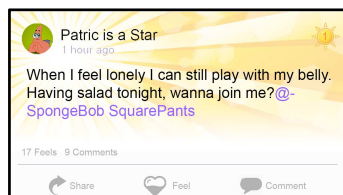


Figure 4: A friend responds by clicking the sun button on the right upper corner to send sunshine. The post background is changed to sunny as a reflection of friend support.

power in social media will, however, always exist to a certain degree. And although empowerment is a positive tool for the bullied, power can be misused. That is why our ultimate goal in this design project is to cultivate positive habits of mind and behavior through our set of indirect interventions.

One concern is that we do not want to present Feelbook to teens as a “cyberbullying preventer”. Teens will not want to expose themselves as vulnerable and in need of anti-cyberbullying help. And if an application is aimed specifically at cyberbullying prevention, there is little chance that bullies will want to install it. Having an app on one’s mobile device that is overtly identified as an “anti-cyberbullying” tool will not be appealing to any of the players in the cyberbullying story. Instead, Feelbook should be presented as a “cool” social media application for teens with fun features like the feel button to express mood. As well, the embedded features like the school calendar will fit into the everyday lives of teens, making the presence of such an app on a mobile device less invasive and reducing the potential for embarrassment.

Compared to other available applications aimed at cyberbullying prevention, we suggest that our design framework may result in better outcomes because of the following advantages: a) it creates a separate, better regulated social media space for teenagers instead of being a tool whose usage largely depends on installation; b) it cares for the well-being of all the users instead of only focusing on bullies and bullied in the circle of bullying and avoids labeling users as bullies or victims; c) its features are designed for positive reinforcement, empathy, and to encourage teens to solve problems by themselves, and d) at the same time, it gives teens the

power to invite trusted adults in order to help recalibrate the balance of power, should that be required.

### Conclusion and Next Steps

This work has implications for the CHI community because it applies software solutions to tackle a critical social problem that can affect the health and well being of young people. The study explored a software solution for mean and cruel online behavior, presented a design framework for a social media application for teens, and operationalized three principles to arise from empirical work with teens and young adults: *design for empowerment*, *design for empathy*, and *design for reflection*. It also contributed a new design principle—*design for the whole*. The proposed application, named Feelbook, is designed to create a nurturing environment, cultivate good online behaviors, and ultimately, mitigate and prevent mean and cruel online behavior. The next step will be to investigate the reactions of teens and young adults to the proposed design framework, and to better understand the critical component of teens’ choice of social media.

**Acknowledgements:** The design framework presented in this study is built on a prototype named “Feelbook” developed by Mingyue Fan, Siwei Jiao, Han Liu, and Liyue Yu at the School of Information Sciences, University of Pittsburgh.

### References

1. Ahn, J. (2012). Teenagers’ experiences with social network sites: Relationships to bridging and bonding social capital. *The Information Society*, 28 (2), 99-109.
2. Arizona State University. (2013). BullyBlocker. Retrieved from <http://www.public.asu.edu/~ynsilva/BullyBlocker/>

3. Bowler, L., Knobel, C., & Mattern, E. (2015). From cyberbullying to well-being: A narrative-based participatory approach to values-oriented design for social media. *Journal of the Association for Information Science and Technology* , 55 (5), 1274–1293.
4. Bowler, L., Mattern, E., & Knobel, C. (2014). Developing Design Interventions for Cyberbullying: A Narrative-Based Participatory Approach. *iConference*, (pp. 153-162).
5. CCTV America. (n.d.). *Stop!t*. Retrieved from Stop!t: <http://stopitcyberbully.com/news/stopit-app-tries-to-prevent-children-from-cyber-bullying/>
6. Chapin, J. (2014, 08 17). Adolescents and Cyber Bullying: The Precaution Adoption Process Model. *Education and Information Technologies* , 1-10.
7. Cheng, A.-S., & Fleischmann , K. (2010). Developing a Meta-Inventory of Human Values . *Proceedings of the American Society for Information Science and Technology* , 47 (1), 1-10.
8. *Cyber Bullying Statistics 2014*. (2015, 09 10). Retrieved 10 03, 2015, from NoBullying.com: <http://nobullying.com/cyber-bullying-statistics-2014/>
9. Dinakar, K., Jones, B., Havasi, C., Lieberman, H., & Picard, R. (2012). Common sense reasoning for detection, prevention, and mitigation of cyberbullying. *ACM Transactions on Interactive Intelligent Systems (TiiS)*,2(3), 18
10. Hinduja, S., & Patchin, J. W. (2014, 06). *Cyberbullying Glossary: Brief Overview of Common Terms*. Retrieved 10 17, 2015, from Cyberbullying.org:<http://cyberbullying.org/cyberbullying-glossary.pdf>
11. Lenhart, A. (2015, 04 09). *Teens, Social Media & Technology Overview 2015*. Retrieved 09 22, 2015, from Pew Research Center: <http://www.pewinternet.org/2015/04/09/teens-social-media-technology-2015/>
12. Lenhart, A., Madden, M., Smith, A., Purcell, K., & Rainie, L. (2011, 11 9). *Teens, Kindness and Cruelty on Social Network Sites*. Retrieved from PewInternet: <http://www.pewinternet.org/2011/11/09/teens-kindness-and-cruelty-on-social-network-sites/>
13. Manson, K. L. (2008). Cyberbullying: A Preliminary Assessment For School Personnel. *Psychology in the Schools* , 45 (4).
14. Pew Research Center. (2012, 05 21). *Teens Fact Sheet: Highlights of the Pew Internet Project's research on teens*. Retrieved 09 23, 2015, from Pew Research Center: <http://www.pewinternet.org/fact-sheets/teens-fact-sheet/>
15. Salmivalli, Christina, et al. Bullying as a group process: Participant roles and their relations to social status within the group. *Aggressive behavior* 22.1 (1996): 1-15.
16. Shariff, S. (2013). Defining the line on cyberbullying. *The information behavior of a new generation: Children and teens in the 21st century*, 195-211.
17. Sutton, J., & Smith, P. K. (1999). Bullying as a group process: An adaptation of the participant role approach. *Aggressive Behavior*, 25(2), 97-111.
18. Twemlow, S. W., & Sacco, F. C. (2013). How & why does bystanding have such a startling impact on the architecture of school bullying and violence? *International Journal of Applied Psychoanalytic Studies*, 10(3), 289-306