

# Teach Me and Trust Me: Creating an Empowered Online Community of Tweens and Parents

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## Abstract

Although research has shown increasing potential for new media literacy and identity development through the use of social networking tools, there are limited opportunities for young people under age thirteen to legally take part in these environments. We challenge the dominant narrative that young people under thirteen need constant adult surveillance and are incapable of practicing safe online practices. Instead, we present a potential solution through the design of a safe, virtual learning space for tweens that integrates community-based rules and moderation. In partnership with the National Park Service, which is committed to having their virtual learning space accessible to all ages, we collaborate with a group of tweens and their parents by using bonded inquiry and focus group methods. We collate the needs, concerns, and online practices of these tweens and their parents to develop a preliminary design of a cyber-safety framework that learning institutions can employ to allow tween participation. By focusing on building a resilient online community of tweens, parents, and site developers, the framework emphasizes the value of an online environment that balances freedom and protection of tween privacy.

**Keywords:** privacy, new media literacy, social networking, cyber-safety, children, virtual environments, parent engagement

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## 1 Introduction

As access to the Internet increases around the world, research has found that young people are increasingly taking part in a participatory online culture that includes creation, collaboration, and sharing of information with their peers and the general public. These emerging virtual spaces provide critical environments in which young people can develop new media literacies (Jenkins, 2006; Ito et al., 2010). Such virtual learning spaces may incorporate social networks, blogs, games, storytelling, virtual worlds, and other features that allow interpersonal interactions. In fact, significant social networking practices may well occur within the games, storytelling, virtual worlds, and other non-traditional<sup>1</sup> sites in which young people participate. Grimes and Fields (2012) refer to this inclusive range of online activities and practices as social networking forums (SNF).<sup>2</sup> Although SNFs provide learning environments accessible to diverse populations, there are

<sup>1</sup> Traditional social networking sites are sites such as Facebook, Twitter, Instagram, and Myspace.

<sup>2</sup> Grimes and Fields (2012) defined *social networking forums* “as a particular online forum or web-enabled platform containing technological affordances that enable *forms of communication* between users, the creation of *personal profiles*, and the production of *networking residues* while enacting *hierarchies of Access...*” (p. 55). We use this definition of social networking forum throughout this paper, to be inclusive of the range of online activities that are inherently “social.”

limited opportunities for young people under age thirteen to legally take part in such environments (Grimes & Fields, 2012). Access to these sites prior to age thirteen, and instruction on how to appropriately and safely use such tools, however, is often omitted from instruction in public schools (Jenkins, 2006; Ahn, Bivona, & DiScala, 2011). Before age thirteen, young people are not legally permitted to engage in these SNFs. In reality, however, many young people ages nine to twelve, known as tweens (Rideout, 2007), are engaged in mainstream SNFs. Additionally, due to the development of social media platforms and online social norms, tweens are making much more personal information public now than they did six years ago (Madden et al., 2013). In this evolving media landscape, it is critical to introduce tweens to SNFs in a manner that protects them and empowers safe behavior. Numerous studies highlight the disparity in new media literacy skills among young people (Ahn, et. al, 2012; Bennett, Maton, & Kervin, 2008; Foss et al., 2012), potentially affecting how they handle matters of online privacy and confidentiality. Although we understand the hesitation to encourage tween involvement in SNFs, the trend of increased tween use of social media sites indicates that tweens will continue to engage in these environments regardless of adequate privacy education or parental supervision (boyd, 2004; boyd, 2007; Lenhart, Purcell, Smith & Zickuhr, 2010; Madden & Zickuhr, 2011; Rideout, Foehr & Roberts, 2010; Livingstone et al., 2011). We work from the assumption that tweens can be empowered to be safe online and take on a leading role in promoting safe community spaces in SNFs. We therefore must consider the diverse experiences that young people have with SNFs, the concerns that a parent/guardian has with their tween's SNF practices, and the role that a parent/guardian chooses to play in their tween's online life.

This study proposes a cyber-safety framework that can be used to design safe SNFs for tweens and young people through community-based rules and moderation. Although this study targets the needs and educational goals of learning institutions, the resulting framework can be adapted by commercial organizations interested in designing SNFs that target young people under the age of thirteen. The cyber-safety framework is developed based on the examination of findings to the following research questions:

1. How do tweens navigate privacy and cyber-security restrictions put in place by website administrators based on legal policies?
2. What are the concerns that parents have about their tweens' social networking practices?
3. What are the roles that parents play in their tweens' social networking practices?

In partnership with the National Park Service (NPS), we took preliminary steps to create a safe SNF that enhances the experiences young people have with the *Junior Ranger* in-person program (<http://www.nps.gov/learn/juniorranger.cfm>) and the online activity center, *WebRangers* (<http://www.nps.gov/webangers/>). Social networking features such as media sharing and collaboration are currently not available in *WebRangers*. Inspired by *WebRangers*' current participants' desire to share and socialize, we worked with tweens (aged 10 through 13) from various socio-economic backgrounds to co-design the features for an engaging *WebRangers* environment. In addition to this, we co-designed the cyber-safety framework with these participating tweens and their parents. The focus of this paper will be on the latter goal of constructing a cyber-safety framework for SNFs that target tweens.

We challenge the dominant narrative that young people under thirteen need constant adult surveillance and are not capable of safe behavior in virtual learning environments. Instead, we present a potential solution through the design of a safe virtual learning space for tweens that integrates community-based rules and moderation.

## 2 Related Work: Social Networking Forums, New Media Literacy, Privacy, and Parent Engagement

While recent studies vary in their definition of social media, the upward use trend of SNFs has been evidenced in numerous reports describing the behavior of young people (boyd, 2004; boyd, 2007; Lenhart

et al., 2010; Madden & Zickuhr, 2011; Rideout, Foehr & Roberts, 2010; Livingstone et al., 2011). Specifically, surveys conducted by *EU Kids Online II* (Livingston et al., 2011) found that 38% of children aged 9–12 years from various European countries have their own profile in social networking sites, and Lenhart et al.'s (2010) *Pew Internet and American Life Project* study reports that 46% of surveyed 12-year-olds have used a social networking site.

The Children's Online Privacy and Protection Act (COPPA) is legislation that restricts websites from collecting personal and identifying information from kids under age thirteen (Children's Online Privacy and Protection, n.d.). COPPA requires site operators who target children and tweens to obtain verifiable parent consent if any personal information is collected. Although the legal age to participate in social networking sites such as *Facebook* and *Myspace* is thirteen, a study conducted by *Consumer Reports* quoted in Grimes & Fields (2012) found that 7.5 million out of the 20 million *Facebook* users are under the age of thirteen. Tweens are able to find ways around age restrictions, typically by lying about their age (Grimes & Fields, 2012; Lenhart et al., 2011; Livingstone, 2008; Steeves, 2006). Studies are still scarce in this topic, making it difficult to understand what tweens do on these sites and how parents are involved (Grimes & Fields, 2012).

In this era, where participating in traditional social networking sites and other means of active online engagement has been linked to advancement in new media literacy (Ito et al., 2010; Jenkins, Purushotma, Clinton, Weigel, & Robinson, 2006) and identity development (boyd & Ellison, 2007; Livingstone, 2008; Regan & Steeves, 2010), researchers have begun examining COPPA's unintended consequence of dissuading children from participating in these informal learning environments (Grimes, 2008). In the pretext of being compliant to COPPA, many sites simply prohibit tween participation and do not even attempt to confront the challenges of meeting COPPA requirements. Situating this challenge within the context of informal learning institutions that have been recognized as third places of learning (Watson, 2010), we strongly feel that these institutions must tackle these issues to avoid the "digital divide" that is currently prevalent. The "digital divide" is no longer about access, but instead the depth of engagement and level of participation (Hassani, 2006); it is heavily influenced by socio-economic status, race, ethnicity, gender, parent education level, and household income (boyd & Hargittai, 2013; Thompson, Subramaniam, Taylor, Jaeger & Bertot, in press; Warschauer & Matuchniak, 2010).

Navigating the complex privacy and cyber-safety structure requires the mastery of new media literacy by tweens, strong parent engagement, and commitment from the developers of virtual spaces and SNFs to make these spaces safe. In Livingstone's (2008) study, where she interviewed teens between the ages of 13 and 17, she found that "teenagers described thoughtful decisions about what, how and to whom they reveal personal information, drawing their own boundaries about what information to post and what to keep off the site, making deliberate choices that match their mode of communication (and its particular affordances) to particular communicative content" (p. 404). However, the teens in her study also lacked the media literacy needed to manage these privacy settings and listed the operation of privacy settings as one of the priority areas that need to change in social networks (Livingstone, 2008).

Family dynamics play a crucial role in tweens activities and experiences online (Lenhart et al., 2010). There has been some research on parental involvement in a child's engagement with media that studies the impact of co-viewing, co-reading, and intergenerational play (Takeuchi & Stevens, 2011; Williams & Merten, 2011). In studies with young children (between the ages of 3 and 10), families impose a variety of rules and practices at their homes (Takeuchi, 2011). They also monitor their child's activities online by friending them on social media, checking on the websites that their child has visited, and blocking or filtering specific content (Lenhart et al., 2011; Rideout, 2007). In the *Parents, Children & Media: A Kaiser Foundation Survey*, parents of 9- to 17-year-olds believe that they know "a lot" about what their kids are doing online, but also feel that the tools they use to exercise parental control are far from perfect (Rideout, 2007, p. 10). In studies with older children, Ito et al. (2010) finds that young people generally

perceive the rules imposed (such as blanket prohibitions, technical barriers such as filtering, and time limits) as “raw and ill-formed exercises of power” (p. 343). However, Lenhart et al. (2011) found that 86% of older children (ages 12 to 17) still list parents as their best choice for advice about challenging online experiences.

Due to COPPA and the emerging strong interest in cyber-safety, sites aimed towards younger children and tweens employ a variety of administrative and community moderation mechanisms that shape the culture of engagement and empowerment on the site. Some sites for tweens and younger children have an automated system that blocks certain words, removes postings, applies filters to chat-based communication, and limits the type of friendships that one can have with adults. Some sites have dedicated employees who screen for messages considered inappropriate and block users for revealing their real identities (such as real names versus screen names). Some sites rely more on parents to select from access options provided for their children and limit their child’s interaction with other users (such as limiting the chat words or sets of words or icons that can be used) (Grimes & Fields, 2012).

We take advantage of our partnership with NPS to examine how tweens, their parents, and learning institutions committed to virtual engagement and cyber-security can join forces to create a cyber-safety framework. This study begins exploration of this potential partnership by collating the needs, concerns, and online practices of tweens and parents to develop a preliminary cyber-safety framework that learning institutions can employ to allow for tween participation. We challenge the dominant ethos that points the finger to any one of these entities as holding sole responsibility for the safety of tweens.

### 3 Settings and Methodology

The research team was approached by the personnel from NPS with the task of constructing a safe SNF to augment and enhance the experiences that young people nationwide have with the *Junior Ranger* in-person program. While NPS values the impact of such socio-technical systems to advance their mission, visibility, marketing, and international tourism, they remain cautious about such an initiative for three primary reasons:

1. NPS was uncertain about SNFs and the features necessary to address the needs and interests of younger children, especially tweens;
2. The current traffic to WebRangers includes people of all ages. Thus, NPS was unsure of the cyber-security features needed to maintain the safety of the younger children on the site; and
3. Similar to other federal government agencies, NPS is vigilant about the personnel time that must be invested in the implementation of SNFs. They emphasized their inability to dedicate extensive personnel time to monitor or moderate the virtual learning space (such as the moderation practices in Scratch’s online community).<sup>3</sup>

Using these concerns as pivotal considerations, we designed a study that included identification of the SNF features that tweens might be interested in and the creation of a framework for social interaction that promotes and maintains cyber-safety. This paper focuses on one, small portion of the larger study, highlighting findings pertaining to the creation of a cyber-safety framework that can be implemented in the newly proposed NPS site and by other organizations that are interested in setting up such space for their communities or patrons.

We examined the various participatory design methods that were available when working with children, such as informant design (Scaife, Rogers, Aldrich, & Davies, 1997), cooperative inquiry (Druin, 1999, 2005; Guha et al., 2005), and bonded design (Large, Nettet, Beheshti & Bowler, 2006; Large, Bowler, Beheshti & Nettet, 2007). Upon close examination, we decided to utilize the bonded design method to gather input from tweens on how they navigate legal policies and manage their information and privacy on

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<sup>3</sup> Scratch is a programming language for kids ages 8–16, featuring a SNF where users can post their work and interact and collaborate with others. An explanation of the Scratch moderation system is available at <http://scratch.mit.edu/parents/>.

SNFs. Large et al. (2006) define the bonded inquiry method as placed between informant design and cooperative inquiry, essentially drawing the strengths of various design-based methodologies to create low-tech or working prototypes for technology design. Large et al. (2006) describes bonded design inquiry as:

...[a] means of bringing together a team that unites in diversity. It brings together adult experts in design and child experts in being children, who work together throughout the design process. Like cooperative inquiry, it emphasizes an intergenerational partnership in working towards a common goal and the idea that children should play an active role in design rather than merely being evaluators or testers at the end of the design process. It does question, however, the nature of the cooperation between adults and children within the team. In this respect, it shares some of Scaife et al.'s (1997) reservations concerning the extent to which true equality can exist within an intergenerational team. At the same time, however, bonded design differs importantly from informant design in its inclusion of children throughout the design process and as full team members. It also rejects Scaife's view that children are most helpful at suggesting ideas only for motivational and fun aspects. (p. 79)

We adopted the bonded design methodology for three primary reasons. First, we believe in the power of children involved as full design partners, as a means of attaining the true perspective of children. Secondly, we engaged diverse tweens who have varying new media literacy skills and familiarity with SNFs. Thus, although we strived for equal partnership between the tweens and ourselves (the adult partners), the adult partners had to set the agenda and maintain the direction and organization of the sessions. Lastly, due to the short length of the study (the study was restricted to five months as a result of financial and scheduling constraints), we were only able to participate in two co-design sessions (90 minutes each), which essentially required the adult partners to pay attention to specific aspects of the research to ensure that the research goals were achieved. Although the atmosphere of the co-design sessions was informal, we set time limits for each activity and brought things to order when necessary. In such cases where design sessions cannot evolve into an equal partnership and for an extended period of time, bonded design is most appropriate (Large et al., 2006; 2007).



Figure 1: Tweens participating in activity with Ranger at the Kenilworth Park and Aquatic Gardens

Tweens were recruited from local public schools in the Washington, D.C, and Maryland area, and we paid special attention to the socio-economic distribution of these families. Four of the seven participating tweens receive Free and Reduced Meals (FARMS) at their schools. FARMS is a common indicator of poverty rate in schools in the United States (U.S.). We brought these seven tweens and their parent (all tweens were accompanied by one parent, with the exception of two tween siblings who came with both of their parents) to *Kenilworth Park and Aquatic Gardens* in the Washington, D.C, area to participate in activities inspired by the park's *Junior Ranger* activity booklet.<sup>4</sup>

Following the activities in the physical park space, the tweens took part in bonded design activities that allowed them to create a low-tech prototype of the virtual learning space that would act as an extension of their experiences in the park. We utilized a variety of co-design techniques to engage tweens to obtain feedback pertaining to the larger study, including

<sup>4</sup> Most of the national parks in the U.S. participate in the *Junior Ranger* program. It provides guides to young adults to enhance their in-person park experiences, through activities delineated in a booklet that allow them to earn physical badges.

bags-of-stuff<sup>5</sup> and sticky noting<sup>6</sup> (Guha, Druin & Fails, 2012). The tweens came up with a variety of SNFs (with very involved contribution by the adult design partners) that can be integrated into *WebRangers*, including virtual parks, massive multiplayer online games, scavenger hunts based on virtual park interactions, a scrapbook, avatar creation, and live webcams in the park. Tweens wanted these forums to be connected to each other and reactive to user activity (for example, earning a badge through a scavenger hunt will allow the badge to appear in their scrapbook). Tweens also discussed desired social media elements, including a personal profile, avatar, and newsfeed, as well as the ability to contribute information about various parks, connect to friends, and subscribe to other users and discussion topics (similar to the friending in *Facebook* and following activity on *Twitter* and *Instagram*). Whenever appropriate, we engaged tweens in a discussion of their current online and privacy activities as they designed and described their prototype of the virtual learning space by intermixing prompting, brainstorming, and critiquing as stipulated in the bonded design method (Large et al., 2006). A concurrent, separate parent focus group (based on guidelines by Morgan (1988)) generated discussion regarding parents' perspective on tween engagement in social media, safety concerns, and family practices.

A month later, a second bonded inquiry session reconvened the tweens to take part in more specific design activities inspired by their ideas from the first meeting. The activities prompted them to reflect on their ideas about social media and online privacy practices. In this second session, we had five tweens and four parents participating. In small groups, the tweens selected the SNFs that they were interested in from the list generated by brainstorming in the first session, designed a more detailed prototype of these SNFs, and integrated the social media-like activities into the design, using the bags of



Figure 2: Tweens participating in bonded design inquiry

stuff technique. We engaged them in a discussion on functionality and privacy concerns as they imagined themselves participating in their own design of the SNFs. At the conclusion of this co-design activity, we asked the tweens to answer a series of privacy-related questions in the form of tweets (in 140 characters or less). As tweens shared their responses, the researchers asked them to elaborate on their answers.

Concurrently, parents of these tweens took part in a focus group discussion where they provided feedback that helped to refine the recommendations provided in the first focus group session. We discussed the idea of having layers of privacy and community moderation. After these discussions, parents participated in a “deal breaker” activity, where they were asked to indicate their comfort level with different features on a site (green indicated they were okay with a feature in a public space, yellow indicated they would be okay with a feature if it were only used with selected connections, and red signaled that they would not be comfortable with their child using a feature, regardless of the privacy customization). Finally, parents were also asked to write tweets (in 140 characters or less) in response to a series of privacy-related questions.

<sup>5</sup> Bags of Stuff is a prototyping technique in which children use big bags filled with art supplies such as glue, clay, string, markers, socks, and scissors to create low-tech prototypes of technology.

<sup>6</sup> Sticky noting is a technique for critiquing a prototype. The technique involves children and the adult design partners writing down on sticky notes what they like or dislike about the current prototype.

All of these sessions were video-recorded, and the researchers also reflected on the sessions through observational notes immediately afterwards. All artifacts and prototypes produced during these sessions were photographed. The researchers watched the videos of all sessions, noted vital points made by participants, and transcribed salient excerpts.

Adopting the approaches of grounded theory (Strauss & Corbin, 1998), all authors used open coding and selective coding techniques to analyze the transcripts from the design and the focus group sessions. Team members compared their coding to ensure consistency and reliability. Memos were kept of coding decisions to establish an audit trail. The memos were consulted to ensure that consistency had been maintained throughout the process. The emergent themes in relation to the research questions are reported below.

## 4 Findings

### 4.1 Navigating privacy and cyber-security restrictions: the tween perspective

All tweens who participated acknowledged that they have to lie about their age to access SNFs such as *Google+*, *YouTube*, *Facebook*, etc. Thus, lying is indeed a common way that tweens navigate the SNFs as indicated by previous studies (Grimes & Fields, 2012; Lenhart et al., 2011; Livingstone, 2008; Steeves, 2006). From our analysis, it was evident that the tweens' styles of navigating legal policies and managing privacy varied depending on their experience with SNFs and their perception on the responsibilities that they, their parents, and site developers play (or should play) in the privacy landscape.

Experience with SNFs is the key determinant to how “savvy” the tweens were in discovering how to circumvent restrictions imposed by COPPA. For example, Sean (pseudonyms are used for all tweens referenced in this paper), who is very familiar with SNFs, pays attention to patterns that sites use to detect a potential breach of COPPA. He describes:

If you accidentally put a [birth] year that shows that you are under thirteen, you then go again [to create an account], Google remembers that you have lied about your age, like you close the browser, and open a new one, and it [Google] kicks you.

He goes on to explain how he used a different computer to create an account. Another tween, Chris, manages multiple email accounts and uses these emails as parent emails to authenticate account creation on various gaming sites.

Several tweens mention that SNFs should not rely on age but the maturity of tweens and suggest that some simple tests be conducted to authenticate maturity before registering on a site. From the discussion, the nature of the test were not well defined and would not comply with COPPA, but the idea that the tweens think that they are mature enough to be online is intriguing. They also are vigilant about what to share, what people learn about them through their online activities, and what can happen if the information that they have shared gets into the hands of “creepy people.” Sean responds to a privacy-related prompt, “*Do not share info like where you live, how old you are, or your name or other important things to people you don't know.*” Sonya mentions: “*Be careful of the people you choose to be your contacts.*” She elaborates during the presentation that contacts who are adults must be adults that tweens are personally close to.

All participating tweens feel that parents must play a pertinent role in the online activities of their tweens. Chris strongly indicates, “*It is the parents' fault if something goes wrong, they should be watching their kids.*” Similarly, they also feel that SNF developers need be equally responsible by monitoring patterns of speech, spamming, and questionable online behavior of all of their users. For example, Leah stresses the following:

Let kids join, but monitor their accounts and if anything bad is said by or to them, ban whoever said it, [but]...give kids the space to do what they want, don't block everything...make sure kids get to do what the same thing that adults can do, but make it safe.

It is clear from the responses above that the tweens acknowledge that it is an equal responsibility of the tweens, their parents, and SNF developers to keep the SNFs safe.

#### 4.2 Parental concerns about social networking practices

Madden et al. (2008) identify three types of perceived online threats that can help to understand how the Internet is conceptualized in a negative light: sexual solicitation, online harassment, and problematic content. Using this lens, we found that sexual solicitation was not something that parents of these tweens were most concerned about. Online harassment, particularly in the form of cyber-bullying, however, is considered a vital threat. One parent describes her hesitation in having her son participate in social media due to the perceived threat of bullying and the lack of control in who he will come into contact with. When asked about what she was concerned about with her child participating in social media, she responded:

And the bullying aspect that they keep talking about in the media, so we just don't [participate in social media]. They did that penguin thing though, Club Penguin, but that's kind of really anonymous.

Another parent also identified the threat of online harassment through virtual bullying, but discussed how this threat could be related to how kids view social media as a space that is not subject to the same rules and expectations they encounter in physical spaces.

Kids can say harmful things in a physical room and they can do the same thing in a Google hangout...so learning the same sort of social etiquette that you would want a child to follow...in a physical space is also important in a virtual space."

Finally, problematic content most often refers to violent media and adult pornography (Madden et al., 2008). The consensus among parents is that youth will unwillingly be subjected to such content when participating in online activities and that they will easily be able to access problematic content despite parental or legal restrictions, and that both forms of exposure will negatively impact youth (Madden et al., 2008).

Although parents identified with the perceived threats described by Madden et al. (2008), they also acknowledged the power of learning via SNFs. Parents described how their children use social media sites like *YouTube* to help with school projects and engage in problem solving in games such as *MineCraft*.

#### 4.3 Parental roles in tween social networking practices

Based on parent responses in focus groups, we identified three types of roles that parents play in their tween's social media use. One adult may demonstrate a perspective that overlaps more than one of these broad categories, but such categorizations were useful to understanding parental views and behavior in relation to their tween's social media use.

##### 4.3.1 The inspector:

This role is characterized by a parent that monitors their child through strict supervision of the tween's behaviors. One parent described her practice of reviewing her tween's search history to see which sites he visited. Other parents required that their child give them the password to all social media accounts, or use the parent's own account so the parent could log in to view their child's behavior. One parent also discussed managing a gaming server that their children and friends played on so history could be reviewed by the parent.



#### 4.3.2 The co-user:

Parents also described a role as a co-user when it came to interacting with their child and social media. This behavior included sitting next to tween while they use social media and engaging in conversation about what is happening online, requiring that a parent is in the same room when the tween uses the Internet, or establishing a virtual presence in social media, such as friending their child in social media or participating in the same game their tween plays.

#### 4.3.3 The independent:

The independent parental role indicates a parent who is comfortable with their child using social media with limited parental moderation. When it came to mainstream social media (a site targeted toward youth and adults alike), no parents in the study adopted an independent role. Some parents exercised the “independent” role, however, when their child used a site they knew had more built-in moderation structure, such as *Club Penguin*. Also, most parents were not aware of inherent “socialness” in gaming spaces and were more open to allowing their tweens to participate in these sites without any supervision.

## 5 Implications and Design Considerations

This study highlights the need to balance a tween’s freedom and protection while providing a flexible parental role, depending on varied parental concerns and perceived threat with SNFs. The participating tweens and their parents value the need for some type of moderation from the SNF developers, but embraced the idea of shared responsibility to sustain a safe virtual space.

Building on the findings that we described in the above section, we provide recommendations for a layered community structure and propose a cyber-safety framework for NPS *WebRangers* that highlights the ecosystem of socialization and communication that may happen between tweens, their known peers, their parents, unknown peers with similar interests (in specific parks, animals, badges, etc.), and the general public. In the layered community, we provide a structure that allows for interpersonal engagement on the site while promoting tween and parent engagement in safety decisions.

As discussed in the above findings, tweens and parents agreed that parents should play a role in keeping tweens safe online. Even “independent” parents who allowed their child the most freedom online expressed remaining concerns about safety. We also found that it is the interactive social features of SNFs that tweens find attractive, researchers find educational, and parents find concerning. In order to allow for tweens to legally participate in the dynamic learning environments of SNFs while allowing parents to be involved to varying extents, we devised a layered community structure that provides tweens the interaction and freedom they want while providing parents an easy way to observe their tween’s activity online and moderate if desired. We believe that creating an online community with many features of mainstream SNFs that welcomes tweens as well as their parents can provide a space where youth can learn, socialize, and develop safe online practices.

### 5.1 Empowered tweens

We propose two layered spaces for virtual engagement in an SNF (see Figure 3). Using *WebRangers* as a case, the public space layer is where tweens can interact with park-related content while having very limited ability to disclose identifying information about themselves. As minimal personal information is collected in this space, participation

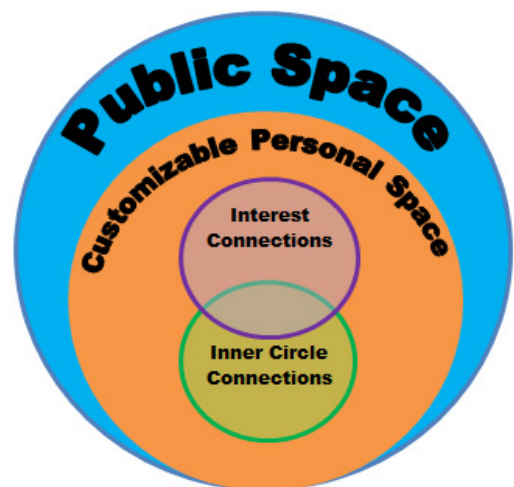


Figure 3: Layered Community Spaces

in these sections does not require parent consent, although a connected parent account is strongly recommended.

Livingstone (2008) discusses gradations of intimacy in SNFs by highlighting how a teenager wants to make distinction between her friends:

...she is frustrated that her site does not allow her to discriminate between who knows what about her 300 or so 'friends'... Being required to decide whether personal information should be disclosed to 'friends' or to 'anyone' fails to capture the varieties of privacy that teenagers wish to sustain." (Livingstone, 2008, p. 405)

This is similar to what tweens in this study conceptualize as balancing freedom and protection. Out participants showed a desire to express their maturity by navigating social online spaces, but also recognized that there were dangers in doing so and saw safety as a compromise between the platform, the parent, and the user. These findings speak to a desire to have finely grained control over interactions on the site to support safe use. Thus, we propose both interest and inner circle connections in the personal space area. Through the interest circle connections, we provide a way for tweens to connect to those they do not know in real life in order to support each other's interest in the parks or aspects of the park (such as animals, science, etc.). The inner circle represents reciprocal connections: both users must accept an inner circle connection in order to become part of each other's inner circle. Our participants showed a desire to be not only users of the space, but also active participants in maintaining their online safety. With this in mind, both spaces have affordances for tweens to practice community moderation (such as peer flagging), for problematic content and reporting online harassment. In addition to the community-based moderation, automatic flagging measures is enforced for postings which are obviously out of bounds (such as sharing personal information or using inappropriate language). This blended approach to security addresses our participants' desire for both autonomy and safety, while staying within the limited budget of public institutions like the NPS, which often cannot afford a full-time moderation staff. However, as our participants recognized, safety is a joint responsibility of the parent as well. Following from this, we make recommendations for the parent side of the cyber-safety framework in the following section.

## 5.2 Empowered parents

As mentioned in the *Findings* section, we observed that parents take on different roles in interacting with their tweens online. In order to allow parents flexibility in their online involvement and the ability to take on a role as an inspector, co-user, and independent, we include customizable parent features in our framework. Because tweens share personal information and media with their inner circle mentioned above, we built in a parent verification mechanism in this cyber-safety framework (parents can decide the extent of verification depending on what is shared and the role they wish to play). We recommend that in addition to parent verification for a tween to access an inner circle, parents should be encouraged to sign up with a parent account linked to their tween's account. Instead of requiring parents to frequently log in to check activity, customizable parent digest options are recommended. Parents will be able to decide how often they receive a digest and what updates they would like the digest to include. The digest will also contain approval options for the release of personal information within the inner circle, such as tagging, group formation etc. Customized options will allow parents to determine their involvement in their child's use of the SNF. Inspectors, for example, can require that they approve all posts their child shares with the inner circle and may choose to restrict their child from sharing certain media with inner circle members. Co-users may prefer a daily update of their child's activity along with approval requests for inner circle connections. Independent parents may instead opt to receive a weekly update of only inner circle connections as well as when others tag their child in a post. This level of the cyber-safety framework allows the parents to choose their involvement in the SNF, be aware of activity that is important to them, and modify their preferences over time.

The *Privacy Ecosystem* diagram (Figure 4) provides a breakdown of the cyber-safety framework, and it details various types of interactions, community moderation, and parental control that are available within the layered environment of the NPS virtual community. Similarly, the *Parent Interaction* diagram (Figure 5) captures the essence of parents' interactions on the site, highlighting the cyber-safety features that will allow parents to monitor their child's activity in the virtual community.

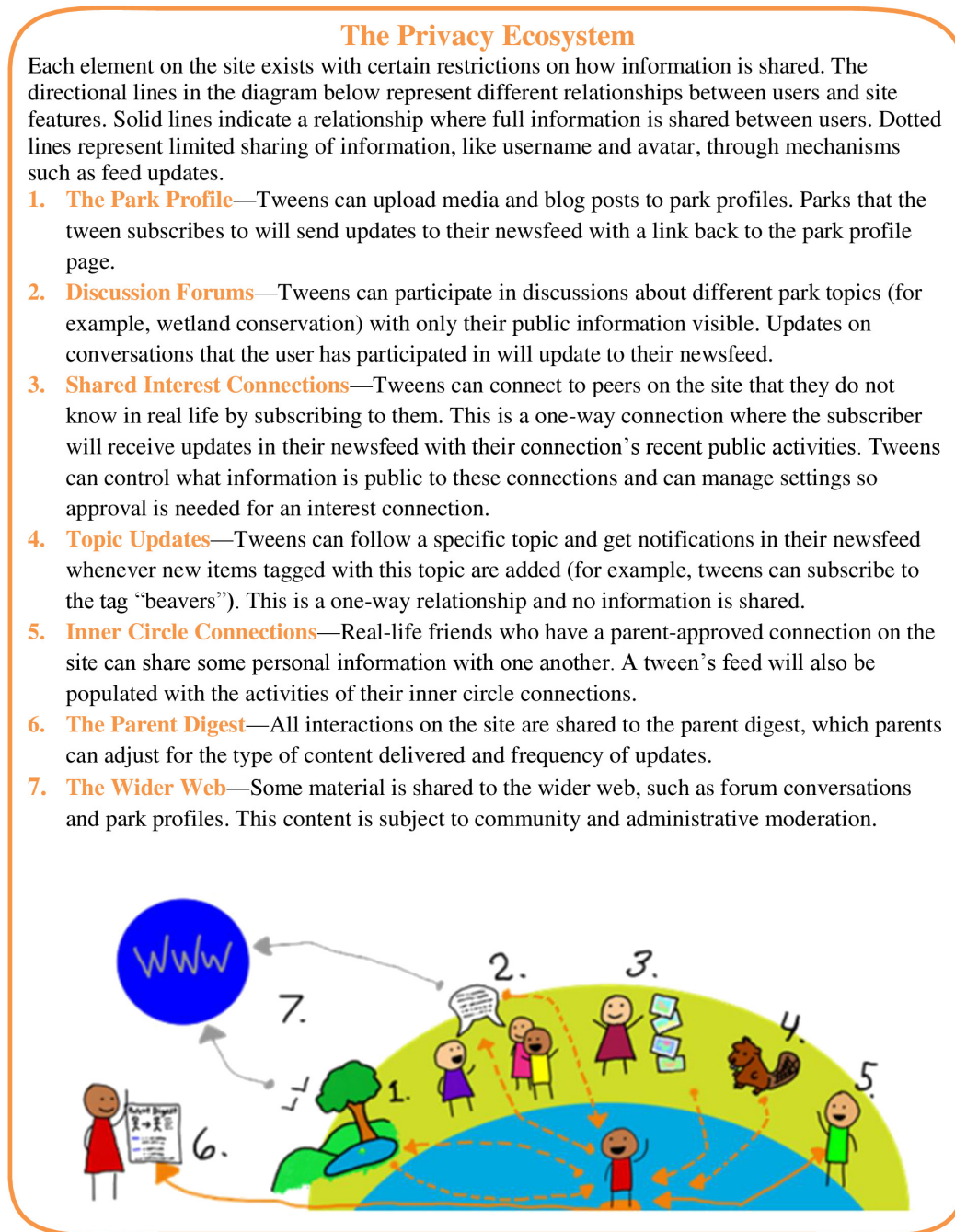


Figure 4: The Privacy Ecosystem

### Parent Interactions

1. **Approving Connections** – Parents are able to see recent interactions (for example tagging of content, or accepting requests for inner-circle friendship), and either approve or decline these connections. This feature was implemented to allow for rich social interactions such as tagging and friending, while still fitting with a level of control that our parent participants felt comfortable with. These interactions would be included in the parental digest (mentioned in item three).
2. **Determining Privacy Settings** – Tweens and parents would be able to work together to determine privacy settings, allowing parents to control what aspects of a tween's profile is available to the broader web.
3. **Parental Digest** – This is an automatically colated report which details recent interactions that the tween has taken on the site. This allows for the parent to be involved with their child's life online. Following our observation of the three different types of parental involvement (Inspector, Co-Users and Independent) this feature has a customizable level of reporting.
4. **Flagging Content** – Following from both the recognition of our participants of the importance of creating a healthy community, and the expense of live moderation, community flagging of objectionable content serves to a take a role in setting and upholding community norms for the site.

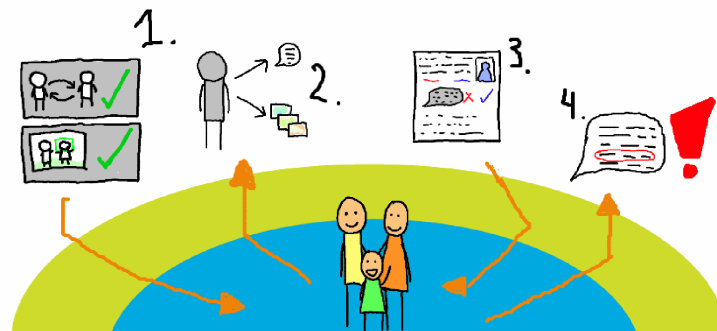


Figure 5: The Parent Interactions

## 6 Further Research

This study points to the importance of technology design that supports expectations of tweens and their parents regarding the disclosure of personal information to the public and selected friends. The resulting

cyber-safety framework can be applied across diverse SNFs that learning institutions may use to engage their tween audience. As an organization that is committed to providing access to their online and in-person programming for patrons across all ages, the NPS is invested in integrating the proposed cyber-safety framework to their existing *WebRangers* learning environment and currently working on acquiring funds, expertise and support from internal and external resources.

Although we believe that our proposed cyber-safety framework can be used by NPS and adapted by other organizations interested in building similar spaces for tweens, we acknowledge the underlying complexity of executing such privacy settings for socio-technical systems and the potential limitations of the suggested framework. Both the interface and interaction design need to be intuitive and easy to navigate for tweens and their parents who will have varying degrees of technical and new media literacy. In addition, the evolving needs of tweens, the variant roles that parents can play in their tweens' social networking practices (due to work or family obligations), and the affordances and limitations of technology platforms will need to be considered in the design of such virtual environments for tweens and younger children. The intricacies of the framework will also need to be refined based on the features/interactivity that the learning institutions ultimately decide to offer to the users of their site such as virtual parks, massive multiplayer online games, scavenger hunts, etc.

In the next phase of our work, we will be working with a larger number of tweens and their parents to design working prototypes, which will handle further practical and technological considerations. Nevertheless, this study opens up the possibilities of new approaches to create and sustain a workable and safe virtual environment that empowers tweens and their parents in protecting the cyber-safety of their community. Instead of throwing tweens into the wild or snooping on their activities, we promote nurturing their online practices by building a resilient community of tweens, parents, and SNF developers.

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