Participation on a Parenting Website:

Testing Predictors of Parents' Passive and Active Site Participation

By

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Abstract

Parents increasingly search for parenting education and support on the Internet. Although professionals often suggest the Internet as a way to minimize barriers to providing supportive parenting resources, few online programs exist for parents and little research has been conducted regarding the delivery and impact of these online programs. However, existing research in this and related fields shows that most online programs struggle with attrition despite having promising initial interest. Therefore, understanding the process of maintaining engagement is key to supporting the success of educational outreach and programming online. This evaluation applied the theoretical frameworks of Adult Learning Theory, Diffusion of Innovation Theory and (Instructional) Scaffolding Theory to identify factors potentially related to parents' participation on one parenting website. In particular, this evaluation utilized a randomized control trial to explore the relationship between email reminder content and participation levels and type. Factors related to parent characteristics and parents' perceptions of an online parenting resource were also measured via questionnaire. Participants were recruited from a website for parents of 10-16 year olds called Parenthetical. Two research samples were formed: Sample 1 composed of 60 parents who consented to complete all evaluation components and Sample 2 composed of the remaining membership of Parenthetical (609 parents) from whom only observational participatory data was gathered. Participants were primarily white females with at least a college education. The evaluation results showed that contrary to expectations participant characteristics and perceptions of the website did not significantly relate to participation levels. Interestingly, although participation frequencies were low, email reminder types did significantly relate to higher participation with those receiving scaffolding emails showing small but

significantly more comments. Additionally, those receiving information only emails had significantly more logins than the other email reminder groups and control. The findings of this evaluation suggest that email reminders can serve as a method for incorporating parenting education and support into parents' daily, social ecology. Additionally, push technologies, such as email reminders, can play a role in maintaining participation in an online parenting program, even supporting particular types of engagement.

Introduction

Specific Aim

The overall aim of the current study is use a Randomized Control Trial and two surveys to identify factors related to increased participation on a parenting website. To explore this aim I tested the following hypotheses: a) more positive participant perceptions of the website's ease of use, compatibility, and superiority to other parenting resources will be significantly related to increased participation and b) participants receiving one of the three treatments will show greater participation over the intervention than will controls and those receiving the scaffolding treatment will show the most participation of all. Because there is some evidence that more educated, younger women are more likely to utilize online parenting resources (Radey & Randolph, 2009; Sakardi & Bremberg, 2005; Steimle & Duncan, 2004; Walker, Dworkin, & Connell, 2011), I also sought to describe the population accessing the website. This study is part of the ongoing evaluation of Parenthetical, a University of Wisconsin-Extension learning community for parents. As such, the findings from this evaluation will be used to guide quality improvement of this parenting resource. I also aim to utilize the findings from this study to provide general recommendations for increasing participation in websites for parents.

Significance

With over 4 million children born every year in the United States, quality parenting is vital not only for the development of individual children (Collins, Maccoby, Steinberg, Hetherington, & Bornstein, 2000; Roche, Ahmed, & Blum, 2008) but also for the successful functioning of society (CDC, 2011; Grusec, Goodnow, & Kuczynski, 2000; Riley &

Bogenschneider, 2006). Parenting education and support through face-to-face programming is one method that has been shown to be effective in promoting competent parenting and positive child outcomes (Bunting, 2004; Carter, 1996; Small & Mather, 2009). However, while many organizations and Federal agencies advocate for the universal education and support of families, parenting programs are often hampered by a lack of political support, minimal financial resources, and the difficulty of making parent education services both accessible and convenient (Fiore, 2008; N. Long, 2004). Internet-based parenting resources have received increased attention and support as a viable and popular option to overcome these obstacles. Thus, furthering our understanding of how parents engage and learn online may be key to offering effective online support and education to parents.

Parents' Online Participation

The majority of parents already utilize the Internet to search for parenting information (Plantin & Daneback, 2009), and previous evaluations of family living websites suggest that parenting websites can influence positive behavioral change (Duncan, Steed, & Needham, 2009; Gelatt, Adler-Baeder, & Seeley, 2010). For instance, research suggests that a greater dosage of (exposure to or participation in) an online program is associated with increased behavior change (Gelatt et al., 2010). This positive association is even true across disciplines; a meta-analysis of 31 studies of online interventions for voluntary health behaviors, such as smoking cessation, showed that study adherence significantly correlated with positive behavioral outcomes (Cugelman, Thelwall, & Dawes, 2011). While parenting websites show promise as a valuable educational resource with potential for behavior change, online programs across disciplines face the challenge of steep attrition with many programs unable to maintain participants' continued

voluntary use of a resource over time (Eysenbach, 2005). In other words, simply creating a web-based parenting resource does not ensure the long-term presence of an active community of users. These findings not only support the expectation that participation in online programs can impact behavior change but also underscore the importance of studying how to foster long-term participation online.

In order to better understand how to foster ongoing website use and active participation, implementation evaluations should be considered fundamental to a programs' evaluation plan. Indeed, careful analyses of website components and patterns of use are a prerequisite for measuring successful outcomes of online parenting resources because they build an understanding of the processes through which participant engagement is attracted and sustained. In order to attract participants and meet educational and program goals, website facilitators will first need to better understand effective methods of dissemination and engagement in an online environment – in particular, why do parents use a resource, who uses a resource, how is a resource being used, and what encourages parents to return repeatedly to a program (Hughes, Bowers, Mitchell, Curtiss, & Ebata, 2012).

Program Description

One parenting website can be used as a microcosm for studying adult participation and online learning. The program developed and tested in the current study was the University of Wisconsin-Extension's parenting website called Parenthetical. Parenthetical (http://myparenthetical.com) is a self-directed, interactive website for parents of 10-16 year olds. The website was built on a blog platform and new content is primarily presented in a weekly blog-post style. Parents can also anonymously post questions or respond to questions related to

parenting a teen. Finally, the site offers a newsfeed of articles related to parenting and teen development. The website was intended to provide relevant developmental and parenting information and to foster active learning among a community of parents and parenting specialists. Based on self-directed learning theory and component display theory, Parenthetical has a flexible, interactive and reflective design potentially linked with positive learner outcomes, such as greater developmental knowledge and more positive parenting.

However, while efficacy trials are the eventual evaluation goal for this and most online parenting programs, conducting an efficacy trial to evaluate program outcomes before evaluating program implementation or processes can undermine the goals of a program. For instance, evaluating outcomes too early in a program's development can lead to false conclusions that a program is ineffective (Type II error). Additionally, a focus on outcomes such as behavior change too early in a program's development may come at the expense of enhancing program performance or understanding why the program is failing to maintain participation. Outcome evaluations take time and resources to adequately implement and may not always be the appropriate evaluation for a program (Fischer, 2001; Jacobs, 2003; Jacobs & Goldberg, 2009; Olds, Sadler, & Kitzman, 2007). Furthermore, evaluators are increasingly recommending a more embedded approach to evaluation research – evaluation that assesses not only program effects but also program processes (Fink, 2005; Weiss, 1998). For these reasons, there is a need to use ongoing, developmental models of evaluation with an initial focus on processes, such as site use and participation (Jacobs & Goldberg, 2009; Olds et al., 2007). Thus, the current study is an evaluation of factors related to building engagement and participation on a parenting website rather than evaluating impact.

Theories of Participation

Given the limited knowledge of factors contributing to adults' engagement in online parenting programs and the problem of attrition in most online programs, theory needs to be used to frame a better understanding of parents' use of online resources and also to develop website features specifically intended to increase active participation, such as commenting and resource sharing. Theories of adult education (i.e., androgogy, self-directed learning) and cognitive theories (i.e., instructional scaffolding) can be useful frameworks for conceptualizing why parents use parenting websites and what factors might support parents' continued active use of a website or program (Cercone, 2008; H. B. Long, 2003). For instance, although active engagement is linked with stronger learning outcomes, many of the available online parenting resources do not provide opportunities for active participant interaction with ideas, experts or peers (Bowers, Mitchell, Hardesty, & Hughes, 2011).

In the current study, Adult Learning Theory, Diffusion of Innovation Theory and Scaffolding Theory shaped my framing of who might participate on parenting websites and what factors may relate to increased participation on these websites. For instance, according to adult learning theories, characteristics of parents may influence not only what questions parents have and where they search for information but also how they use a resource to gather information. Additionally, parents' perceptions of a new parenting website, such as if it is easy to use, fits with their existing skills or is better than other available resources, are likely to play a role in parents' participation levels on the website (Rogers, 2003). Finally, scaffolding theory supports the idea that participation skills can be taught via emails that gradually scaffold parents' participation on a parenting website (Brush & Saye, 2002).

Summary

In summary, parenting websites have the potential to meet the need for accessible parenting support. However, while parenting websites are potentially efficacious, they are stifled by high attrition rates and low participation, which are likely a product of passive site design, competition for parent attention, and participant expectations of passive online interactions. I hypothesized that participant characteristics, experiences and perceptions may be related to differing levels of participation. Active participation, such as commenting or reflecting on material, is particularly important because previous research has suggested it correlates with increased learning. Additionally, I hypothesized that an email intervention that scaffolds participation behavior could promote increased commenting on a parenting website. Thus, the following questions were posed to explore which factors were associated with participation on a parenting website.

- **Question 1: What are the characteristics of parents of early teens who are drawn to a parenting website?** Little is known about which parents are most likely to participate on parenting websites. Understanding which parents utilize a site could help program facilitators to tailor materials to better meet the needs of a wider parent audience or to target materials to specific parent audiences.
- **Question 2: How do parents perceive the usefulness of a parenting website compared to other sources of parenting information? Do these perceptions relate to how they use the site?** Parents' perceptions of a parenting website may be related to their willingness to use and actively engage with that resource. Learning how parents view the ease of using a website or compare it to another parenting resource could help

program facilitators revise existing resources and develop new parenting websites to better meet the need for high-quality, research-based parenting support and education in online settings.

- **Question 3: How can online programs increase ongoing, active participation?** Web-based parenting resources compete with hundreds of other demands on parents' time and attention. A good website design is unlikely to be sufficient to maintain parents' attention over time yet the small dosage of learning from online environments is likely to be most effective when received over a long time period. Facilitators of parenting websites need to better understand how to grow and maintain parents' active engagement and participation. Simply reminding parents of new content on the website will increase the participation of some parents, but other parents may need to learn how to actively use a site. Therefore, this study will use a randomized control trial to test if email content that scaffolds active participation skills is linked to increased participation.

Literature Review: Online Parenting Resources

Promise of Online Parenting Resources

Many parents can and do choose the Internet as a way to learn about parenting. Parents today have increasing access to and comfort with technology (Allen & Rainie, 2002). Analyses of the literature on parenting and the Internet confirm that parents consider the Internet to be a positive source of parenting information (Daneback & Plantin, 2008). Eighty-five percent of parents report that they use online parenting information, and parents are more likely than other adults to have access to the Internet and more likely to say that they like the information available online (Allen & Rainie, 2002; Rothbaum, Martland, & Beswick Jannsen, 2008). The importance of the Internet as a parenting resource is corroborated by the continued growth of unique visitors and comment counts on popular parenting websites – with some sites reporting hundreds of thousands of visitors per day or tens of thousands of comments per day (Plantin & Daneback, 2009).

Research shows that parents use the Internet for self-directed learning tasks, such as searching for information, problem solving (particularly on topics such as health care and children's development), and to seek and exchange social support (Plantin & Danebek, 2009). Another strength of parenting websites, in particular, is that they can provide timely assistance during transitions when parents are most open to and seeking new knowledge (Colosi & Dunifon, 2003) or as soon as they identify a need for help (Drentea & Moren-Cross, 2005; O'Connor & Madge, 2004). As a result, parents have more opportunities to obtain critical support at the onset of a problem before it becomes entrenched and more difficult to change.

The Internet appears well suited as a learning environment for parents. Websites can be collaborative, learner driven, available on an "as needed" basis, self-paced, individualized and interactive, which allows learners to follow their specific interests and learning objectives – all characteristics key to adult learning (Knowles, 1984; H.B. Long, 2003). Furthermore, research outside the field of parenting and family life education points to the potential of online interventions in effectively promoting learning and behavior change. In 2010, the U.S. Department of Education conducted a meta-analysis of 50 studies of online learning showing that online learning outcomes for adults were moderately better than those of adults learning the same materials in face-to-face educational settings. Other research indicates that online programs can be efficacious in changing knowledge and attitudes regarding pregnancy, STDs, and HIV prevention (Roberto, Zimmerman, Carlyle, & Abner, 2007); providing mental health interventions (Calear & Christensen, 2010; Currie, McGrath, & Day, 2010); and promoting the cessation of smoking in adults (Myung, McDonnell, Kazinets, Seo, & Moskowitz, 2009).

Research on the efficacy of websites to promote positive parenting behaviors is limited (N. Long, 2004), but the results of two randomized efficacy trials of online family life education programs suggest that related programs can be effective in changing parenting outcomes. The first efficacy trial, a randomized study of an online family life education program for stepfamilies, showed that participation in an online program significantly decreased self-reported parental coerciveness and increased parents' intentions to use positive parenting behaviors compared to controls (Gelatt et al., 2010). The second randomized study of an online family life education program found that web-based marriage and relationship education produced results equal to a face-to-face setting and exceeding those of controls (Duncan et al., 2009). Though

both studies report that online interventions can be effective, the field needs to move beyond self-report measures to incorporate measures linking individual online behaviors with observed or externally reported parenting behaviors. Such measures would minimize the potential social desirability bias of self-report measures.

Additionally, these studies provide little information about how and why participants used their websites and how website components were related to program outcomes. Duncan et al. (2009) did note that steep attrition caused them to be unable to conduct planned analyses based on a three-month follow-up to their post-test. However, they did not investigate why participants dropped the program. The challenge of retaining parent participation is not a new problem in family education (Harachi, Catalano, & Hawkins, 1997; Kumpfer, Alvarado, Smith & Bellamy, 2002), but more needs to be learned about the processes and components related minimizing attrition in order to maximize the efficacy of parenting websites.

Challenges to Online Parenting Resources

Many studies show that maintaining participant engagement and encouraging return participation is a considerable challenge for online interventions and programs (Bishop, 2007; Butler, Sproull, Kiesler, & Kraut, 2007; Hughes et al., 2012; Preece, Nonnecke, & Andrews, 2004). For example, an evaluation of one parenting website developed by family life educators reported a large early recruitment of thousands of visitors (23,972 unique visitors in two months) but the return rate to the site was 25% and visits from new (unique) users showed a steady drop after the initial press release (Steimle & Duncan, 2004). Initial interest and participation in online programs followed by a steep drop in participation is so common that Eysenbach (2005)

argued for the development of a "science of attrition" to track why online programs lose participants to follow-up and why participants stop actively participating.

Steep attrition on parenting websites may be an artifact of intense competition for parents' attention and time. Parents have massive quantities of resources at their fingertips online and the amount of web-based parenting information and support continues to grow. A Google search for "parenting" found 4,830,000 hits in 2003 (N. Long, 2004); a similar search conducted by the author in 2013 listed 214,000,000 hits, roughly 44 times as many potential information sources about parenting. Even as increasingly large proportions of parents seek parenting information and support online, attracting and holding parents' attention can be challenging due to the numerous available choices. Also, parents do not access the Internet or search for parenting information on a daily basis. One study interviewing 120 parents (60 mothers and 60 fathers) about their web use found that across all socio-economic groups the majority (94%) of "online" parents use the Internet on a weekly or monthly basis to find information about children and families, while only 1% do on a daily basis (Rothbaum et al., 2008). An earlier study by Allen and Rainie (2002) supports the finding that parents seek information about parenting online but not necessarily everyday. With limited time and so many available resources, parents will select resources that best fit their needs, values and interests (Ebata & Dennis, 2011). Thus, identifying factors and elements that match parents' needs, values and interests could lead to website design intended to minimize attrition and foster long-term participation in online programs.

Defining Online Participation

The ways individuals participate in online programs vary greatly but can be conceptualized along a continuum of participation. On one end, online participation can be active, such as writing and responding to messages, posting or answering questions; on the other end of the continuum, participation can be passive, such as reading content (Butler et al., 2007). Program design influences the ways in which participants can engage. For instance, parenting websites that are composed of written articles without space for comments encourage passive interaction with the site. In contrast, parenting websites with a forum for parents to pose and answer questions encourage active community participation.

Passive participation. In a review of six online programs for divorcing parents, Bowers and colleagues (2011) emphasized that parenting websites have a tendency for passive design. Indeed, reading content is perhaps the most common form of online engagement. Many websites report large numbers of users who read material but do not add their own comments or participate in site discussions; these silent members have primarily been called "lurkers" in the literature but can also be more positively considered as "passive" rather than active users (Nonnecke & Preece, 2000; Van Uden-Kraan, Drossaert, Taal, Seydel, & van de Laar, 2008). Passive engagement with online material is common for parents. The majority (57%) of parents report only reading information, while fewer (43%) parents said they also post comments online (Allen & Rainie, 2002). Reports of parents' participation online suggest that parents, more than non-parents are passive site users. For instance, non-parents are slightly more likely than parents to use instant messaging or go to online chat rooms (Allen & Rainie, 2002). Despite the possible negative connotations with passive engagement, research on online bulletin boards and themed

chat rooms indicates that passive engagement is accepted by most community members and can positively be used as a way to get to know an online community better (Nonnecke, Andrews, & Preece, 2006; Preece et al., 2004). Regularly visiting a site and reading site materials are common ways for participants to be engaged with a website and a common method for online parenting programs to share information. Although learning can happen from reading written educational materials (Waterston et al., 2009), passive users may not be as likely to change their attitudes or behaviors as participants who are actively conversing or reflecting on material through writing.

Active participation. Online communities also have the potential for more active forms of participant engagement. Specifically, websites have the potential to be collaborative and learner driven with users responding to content or suggesting content, which mirrors the interactive, ongoing educational relationship that is the hallmark of most successful parenting programs. Such a learning environment matches parents' adult learning needs to build learning around past experiences and to search for knowledge based on current experiences (Knowles, 1984; H.B. Long, 2004). Research on learning suggests the importance of more active engagement in promoting learning and behavioral outcomes. Scholars of adult learning highlight active engagement, such as getting feedback or actively processing information by talking or writing about it, as key to improving learners' retention of material (Hill, 2001). In an online setting this often manifests in chat, comments or questions from parents.

Measuring participation. Differentiating between types of passive and active participation is a key measurement clarification as passive and active participation may correlate with different outcomes. Prior studies have often used narrow measures of participation, usually

limited to counts of site visits or pages viewed, which can be described as passive participation. Due to these incomplete measures of participation, little is known about more active measures of participant engagement behaviors, such as counting participant comments on the site. Indeed, parenting websites are only slowly incorporating features that allow for these more active behaviors, such as posting comments and questions or submitting materials. Therefore, in the current study, I will address this weakness by operationalizing active participation as the number of weekly participant comments on the website, either those comments left on facilitator created content, responses to peer-posed questions, or submissions of suggested material for the website. Passive participation throughout the study will mean the number of weeks participants logged into or accessed the site.

Methods to Encourage Online Participation

Facilitators of parenting websites need to better understand which factors encourage long-term participation. Typically, websites rely on strong parent need, high quality content, good design and a good first impression or perception of the site to draw parents to return to the site. In this model, participants take the initiative to seek out an online resource and return to that community if the "pull" of a website's content, design or initial recruitment strategy is strong enough. However, results from numerous online education and support programs show that no matter how strong initially websites often fail to continue to draw participants back for return visits to the site over time (Eysenbach, 2005). Furthermore, the initial pull of a website may not be exclusively related to an initial goodness of fit between a participant and site content but may actually be an artifact of increased website promotion early in the life span of an online program (i.e., recruitment). Christensen & Mackinnon (2006) describe the creation of relevant

and engaging websites as both "a science (and an art) of participation and encouragement" (Christensen & Mackinnon, 2006, p. 3). Accordingly, content experts and resource developers have a responsibility to create an engaging and relevant learning environment (Song & Hill, 2007) while parents are responsible for choosing which online resource to use, which content to consume, and how they will learn it.

In a review and meta-analysis of 85 studies of Internet-based health interventions, Webb, Joseph, Yardley, and Mitchie (2010) showed that programs that communicated with participants through multiple modes (i.e., web and email, text or phone) had significantly larger positive program effects on behavior change. In other words, programs that relied not only on pull technologies, which attract individuals to a site with relevant content or engaging design, but also on "push" or reminder technologies to reach out to participants and inspire increased program engagement were more effective. Push technologies, such as email reminders or Facebook posts or texts, reach beyond the website and serve as repeated, mini-recruitments that deliver content to the user and encourage continued exploration of new content at a minimal expense to users (Abdolrasulnia et al., 2004). This push approach has also been found to increase participation in face-to-face settings in other fields, such as increasing attendance at medical appointments (Chen, Fang, Chen, & Dai, 2008; Koshy, Car, & Majeed, 2008).

Email reminders. Several studies have highlighted the promise of email reminders as a push technology that is successful at increasing online participation. In our pilot study of an earlier version of Parenthetical, we studied whether regularly updating and adding to the content of the site alone (i.e., a pull approach) or with email reminders (i.e., a push approach) was associated with stronger increases in participation. We found that although site activity did not

increase on days new content was posted, site views did increase when emails announcing new content were sent to participants (Clarkson, Mather, & Small, 2012). Similarly, Houston and colleagues (2010) found that on days that email reminders were sent, site participation increased to six times that of days when no emails were sent (Houston et al., 2010). Several other studies have also seen increased site participation after sending a reminder email (Abdolrasulnia et al., 2004; Woodall et al., 2007). Emails sent early in the week appear to have the largest influence on response rate. In a study of the impact of email reminders on dental professionals' participation in an online intervention, Houston and colleagues (2010) found that, no matter the content of the email, participation increased when emails were sent early in the week. This pattern was also seen in our pilot study of Parenthetical; email reminders sent early in the week led to larger spikes in participant visits to the website (Clarkson et al., 2012). These findings suggest that push technologies, such as email reminders especially if sent early in a week, are a favorable way to encourage passive website visits. However, these studies did not assess push email's effect on long-term active participation, such as commenting. Most of the research on the effects of email as a push technology assess the success of the technology by the number of participant "log-ins" to the website after receiving the reminder. This outcome does not explore if push technologies can be effective at encouraging participants to engage more actively in an online community. The current study will extend previous research by measuring the effect of push emails on both passive and active participation, measured by login and commenting behaviors.

Typically, websites use email reminders to alert participants to new site content, which increases site visits. However, more research is needed regarding the content of reminder

emails. Since not all learners are equally motivated and many learners primarily engage passively online, more encouragement to utilize a resource actively may be necessary (Cercone, 2008). For instance, scaffolding participants' skills in how to use a website may be important to supporting participation. Thus, email content that is *prescriptive* or tells a participant how to use a site, for instance, may directly impact active user participation more than emails describing new site content. Houston et al. (2010) varied the information content of their email reminders to compare the different effects of project information, intervention information and unrelated health information and found no difference in frequency of participation. Nonetheless, these content changes only addressed differences in *descriptive* content but did not test the effect of including prescriptive content, such as directions that scaffold how to engage more actively with a website. Thus, in the current study we utilized a randomized control trial design to compare the effects of descriptive versus prescriptive email content on login and commenting behaviors on a parenting website.

Theories of Online Participation

As has been described, the potential of parenting websites to promote competent parenting first requires that the websites be able to attract, maintain, and fully engage the voluntary interest of parents. To survive, websites need to be (or at least appear to be) active by showing site activity regularly because "there is so much happening on the Internet that people do not return to silent communities" (Preece et al., 2004, p. 203). In a review of effective programs for parents of infants and toddlers, one of the preeminent practitioners of randomized controlled evaluations of parenting programs, David Olds and his colleagues (2007) reasoned that interventions need a "theory of program engagement, as many interventions that depend

upon parent participation fail to reach and involve the targeted population" (p. 357). Since searching for and using parenting websites is typically a voluntary, self-directed behavior rather than mandatory behavior, a website must have a theory not only of what initially draws initial users but also why participants return to the website repeatedly.

In this study Adult Learning Theory, Diffusion of Innovation Theory and Scaffolding Theory were applied to explore reasons why parents might use an online resource and to develop push reminders to encourage participation. These theories illuminate several factors, corroborated in some research literature, that may be related to building online participation and forming an ongoing, active relationship between the learner and the learning environment (Cercone, 2008; H. B. Long, 2003). Therefore, these factors were measured in relation to participants' login and commenting behaviors to explore their possible role in parents' online engagement. Table 1 provides a list of these factors theorized to be related to building participation in parenting websites. These theories are thought to relate to the focus of this evaluation – factors that build parents' online participation; theories utilized in the development of the website are described under program design.

Adult learning theory. Theories of adult learning (i.e., adult education, andragogy, life-long learning) suggest that the structure of a learning environment and characteristics of learners both may influence how adults learn. Due to increased life experience, the learning needs of adults may be different from children and should be considered when developing educational resources for adult learners (Knowles, 1984). Adult learning is typically self-directed and motivated by questions or needs that arise from current life experiences. For instance, a parent is more likely to pursue answers to a parenting situation he or she currently feels ill equipped to

handle than to learn about parenting tips several years in advance. Adult learning theory describes that an adult learner (1) is independent and self-directed, (2) builds on previous life experiences, (3) is most ready to learn information that is relevant to current needs, (4) seeks to understand why learning something will be a benefit, and (5) is motivated internally by his or her own goals (Merriam, 2001).

Table 1

Factors Hypothesized to Promote Use of a Parenting Website

Factors
Parent Characteristics
Demographics (Younger, Female, etc.)
Parent Stress
Internet Use
Internet Commenting Experience
Parenting Experience (1st Time Parents)
Parent Perceptions
Superior in Comparison to Similar Resources Regarding
• Relative Advantage
• Compatibility with Existing Needs and Skills
• Ease of Use
Website "Push" Characteristics
Email Reminders
• Site Content Updates
• Scaffolding Active Participation Skills

Studies of online programs also suggest that characteristics of the participants should be considered as potential factors affecting participant engagement (Christensen & Mackinnon, 2006). For instance, younger parents and parents with younger children tend to report more active technology use (Walker et al., 2011). Additionally, though early research cautioned that a "digital divide" caused unequal access for women, minorities and the poor to web-based

interventions, recent research shows that the greatest growth in access to online technologies is among those historically seen as without access (Ebata & Dennis, 2011). Although those with the most resources often will be the first to adopt a new technology, research has evidenced that those often considered on the other side of the digital divide (i.e., young, unmarried mothers or less educated parents) show a greater likelihood of using and/or benefiting from online parenting resources (Radey & Randolph, 2009; Sakardi & Bremberg, 2005; Steimle & Duncan, 2004). Thus, when developing new online communities, a careful assessment of the unique characteristics and experiences of adult learners is important to potentially growing participation.

Additionally, adults are often driven to gather knowledge relevant to their current or past experiences. In his article reviewing how to prepare e-learners for self-directed learning, H. B. Long (2003) described inexperience, poor past experiences, and no connection between learning and life experience as three possible barriers to adults' independent online learning. Therefore, parents' past and present life experiences from parenting older children, feelings of competence or stress based on these experiences, and experiences using online resources might all influence the ways in which they use a parenting website. Assessing participant characteristics, such as gender, education or race/ethnicity, and participant experiences, such as parenting or prior Internet usage experience, are essential for understanding the implementation of an online program. Such an assessment can be used to identify for whom the program works and also to identify the populations to which the findings can be generalized.

Diffusion of innovations theory. In addition to participant characteristics and experiences, users' perceptions of a website are connected with their adoption and use of that site. In 1962, Everett Rogers proposed a theory of the diffusion of innovations, in which he

suggested that successful new ideas often go through a similar process before being adopted into use by a population. Rogers' model outlined the process through which an innovation is diffused or spread among people. Rogers argued that it was not only the characteristics of a consumer that mattered but also the perceptions people have of a new product that play a role in its acceptance. According to Rogers, the rate of adoption of an innovation is related to how positively people perceive the innovation (Rogers, 2003). Specifically, this theory posits that adoption grows when an innovation is perceived as being superior or relatively advantageous to other related innovations, is compatible with a person's existing values, needs and beliefs, is easy to use, is available to test before adoption, and is visible to others (Rogers, 2003). Three of the characteristics, in particular, appear to impact website use: relative advantage, compatibility with existing experiences, and ease of use. Understanding how parents' perceive these three characteristics in a parenting website could provide an initial clue into why parents use a website. These metrics can be applied to comparisons between different parenting websites and/or other parenting resources.

Relative advantage. The first component of diffusion of innovation theory, research suggests that parents may find online parenting information superior or relatively advantaged to other forms of parenting information. The Internet is the first place many people look for information and large numbers of parents report using the Internet to search for parenting information in particular (Allen & Rainie, 2002). Furthermore, the Internet ranks in the top three most common sources of information for parents (used by 76% of parents), surpassed only by books and magazines (94%) and family members (80%) (Radey & Randolph, 2009).

Compatibility with existing experiences. Secondly, as suggested by diffusion of innovation theory and also theories of adult learning, compatibility with participants' existing experiences may also influence the likelihood of adopting a resource. In particular, parents who are comfortable using the Internet and view the Internet as a valuable source of information may be more likely to use a parenting website. Also websites with familiar designs may be perceived more positively because they are easily navigable. Information that is short and "scannable" at a glance may grab users attention more easily while using a website (Cockburn & McKenzie, 2001).

Ease of use. Finally, research on site use and participation supports Rogers' theory that ease of use is a key factor in adoption of an innovation. The average length of time spent viewing a webpage to form a first impression is 19.2 seconds (Dahal, 2011). Consequently the user must be able to find compelling or sought after information very quickly and with minimal frustration. In a pilot study of an Internet-based smoking cessation program, Lenert and colleagues (2003) reported that while the site showed a reduction in smoking they were unable to hold participants' attention over the 8-week course of the program. According to follow-up questions, poor site usability was a reason participants' said they did not complete the program; participants described the site as "too complex" and "not browseable" (Lenert et al., 2003). Since people typically navigate rapidly between web pages – sometimes viewing several pages within seconds (Cockburn & McKenzie, 2001; Steimle & Duncan, 2004), looking at site design and ease of use may be one tool web users have developed for quickly assessing the value of a website (Fogg et al., 2002).

Participants' perceptions of the compatibility, usability and relative advantage of a website are likely to vary systematically with the personal and demographic characteristics of the user. Steimle and Duncan (2004) found that participant education and ethnic background were related to participant perceptions, specifically whether parents considered their attitudes about parenting after viewing the site. Additionally, a recent study found that high SES (socioeconomic status) parents were more likely than low or middle SES parents to trust websites related to a "credible organization," such as a university (Rothbaum et al., 2008, p. 123).

Scaffolding theory. Literature regarding online participation suggests that in order to grow participation, such as commenting, leaders may need to actively persuade or encourage the behavior change. Bishop (2007) argues that persuasive text (i.e., encouraging more active behavior) and responsiveness by community leaders or "elders" (i.e., responding positively and quickly to novice comments online) are most effective in building active participation on a website. However, adult learners in online settings may also need behavioral and cognitive support to learn how to actively engage online. For instance, some adult learners may lack the confidence or knowledge to write a comment on a webpage or submit a resource to share. In this case, facilitators may find that they can scaffold – gradually teach – participation skills beginning with a small engagement such as clicking on a hyperlink and building to more active engagement such as joining an online discussion.

Originally rooted in the work of psychologists Lev Vygotsky (Vygotsky, 1978) and Jerome Bruner (Bruner, 1978), scaffolding theory was first introduced to describe the process through which a novice learner gradually learned a new skill from a more expert companion

(Pea, 2004). Scaffolding has expanded to include the concept of instructional scaffolding or scaffolding used as an instructional tool to help parents and educators improve children's learning, often learning around language (Langer & Applebee, 1986). The learning of a skilled behavior through scaffolding has been shown to promote learning in a number of settings, including computer-based learning (Reiser, 2004). For instance, Kao, Lehman, & Cennamo (1996) embedded hyperlink and multimedia components within a software program to assist students in learning and using the software.

Assistance is provided to a learner in two primary ways during scaffolding; first, scaffolding channels and focuses the learner's attention on a specific task amid a complex array of possible tasks and, secondly, scaffolding offers a model of what the learned task or skill might look like (Pea, 2004). Brush and Saye (2002) further differentiate between the two types of scaffolding labeling them as soft and hard scaffolding. In soft scaffolding, skill building happens through informal interactions (i.e., watching someone do a task, modeling) while hard scaffolding is a planned process of learning a skill or task (i.e., reading step-by-step instructions). Hard scaffolding situations can be anticipated by an educator and planned in advance to support the most common needs of learners.

Scaffolding need not only be provided in face-to-face learning settings but can be provided in computer-mediated situations (Pea, 2004). Thus, written communication, such as an email reminder, can be used to provide scaffolding and show the process through which a learner can slowly increase their abilities. For instance, hard scaffolding could be utilized to teach parents how to participate more actively on a website. First a participant could be encouraged to read the website several times a week. Then, the participant could be encouraged to try "liking"

something on the site or submitting an article or video suggestion. Once a participant has clicked on a link or liked an article, the more work-intensive and vulnerable task of writing a comment on the website might be more manageable (Bishop, 2007). Next, the participant could be encouraged to write a supportive comment, such as "thanks for this" or "I like what you said" on the site; followed by encouragement to post a comment relating their parenting experience to the site content. Finally, participants could be asked to comment on the site regularly. These "scaffolding emails" would offer cues to parents regarding how they could learn the behavior of active participation on the site. For parents who do not comment online because they are uncomfortable with the technology or who need more direction, this form of scaffolding may increase participation. Providing email reminders with skill building content is likely to motivate more active online participation than emails that simply alert participants to new content or remind them to return to a site. Based on this concept, the current study will compare the effects of emails with scaffolding content on participants' login and commenting behaviors.

Participant characteristics are also likely to influence participants' need for and/or responsiveness to different modes of push technology both in form (i.e., email) and content (i.e., informational versus scaffolding). For instance, participants with less Internet commenting experience might comment more after receiving information about how to actively participate, such as how to comment, reply or submit materials to a website. In contrast, experienced users may be more responsive to encouragement or promotional content. For this reason, possible interactions between participant characteristics and push reminder exposure will also be considered.

In summary, theories of adult education, diffusion of innovation and scaffolding provide a useful framework for understanding why parents may use an online resource and how their characteristics and experiences may impact their use. First, Adult Learning Theory emphasizes that characteristics of the learner influence not only what questions a learner has and where they search for information but also how they use a resource to gather information (i.e., actively or passively). Secondly, Diffusion of Innovation Theory suggests that the perceived match between a learner and an online parenting resource may influence use. For instance, if a learner perceives a parenting website as being superior to other possible sources of information, they are more likely to adopt a resource as their primary information source (Rogers, 2003). Finally, Scaffolding Theory suggests that behaviors or skills beyond the current knowledge of a learner can be gradually taught to a learner, even in an online environment. Together these theories can frame how facilitators of parenting websites can best encourage repeated, active use of an online resource. In this study I used data from a parenting website, called Parenthetical, to evaluate how different populations of parents (1) engage passively and actively with a parenting website, (2) perceive a parenting website compared to other parenting resources (and how those perceptions relate to participation), and (3) if scaffolding of participation skills increases participation levels.

Research Questions

The overall aim of the current study is to identify factors related to increased participation through logins and commentary on a parenting website. To explore this aim I tested the following hypotheses and research questions using a sample from the parenting website, Parenthetical:

Question 1: What are the characteristics of parents of early teens who are drawn to a parenting website?

Research suggests that participant characteristics, such as education level and gender, are associated with utilization of online parenting programs (Radey & Randolph, 2009; Sakardi & Bremberg, 2005; Steimle & Duncan, 2004; Walker et al., 2011). Additionally, adult learning theory posits that life experiences are key to adults' engagement with learning (Merriam, 2001). However, little is known about who uses online parenting resources over the long-term, how parents participate on parenting websites, and why parents use online parenting resources. Therefore, the current study seeks to understand the relationship of parent characteristics and experiences with their participation on a parenting website and learn why parents joined the parenting website.

Question 1.1. How are participant characteristics related to (a) passive and (b) active participation, as measured by logins and comments?

Question 1.2. Why do parents report they joined the website?

Question 2: How do parents perceive the usefulness of a parenting website compared to other sources of parenting information? Do these perceptions relate to how they use the site?

According to Rogers' diffusion of innovation theory, the perceptions people have of a new innovation, such as a parenting website have been shown to influence the likelihood of whether a person will adopt and use the innovation (Rogers, 2003). Specifically, if parents observe that a parenting website is *compatible* with their current skills, *easy to use*, and at least

as beneficial or *superior* to other parenting resources then parents may consider an innovative parenting program to be useful to them. Therefore, the current study will assess how participant perceptions relate to use of a parenting website.

Question 2.1. How do parents (1) perceive the ease of use of a parenting website, (2) show compatibility between their existing skills and web-based learning, and (3) consider a parenting website to be advantageous when compared to other parenting resources?

Hypothesis 1. *(Ease of Use Hypothesis)* More positive perceptions of the ease of using a parenting website will be positively related to levels of both passive (logins) and active (comments) participation on the site, independently of participant characteristics.

Hypothesis 2. *(Compatibility Hypothesis)* Greater experience with Internet commenting will be positively related to levels of both passive (logins) and active (comments) participation on the site, independently of participant characteristics.

Hypothesis 3. *(Perception of Superiority Hypothesis)* Perceptions of a parenting website as more useful than other parenting resources will be positively related to levels of both passive (logins) and active (comments) participation on the site, independently of participant characteristics.

Question 3: How can parenting websites increase ongoing, active participation?

Little is known about what encourages parents to return to an online program and continue to engage. Many online programs initially report large numbers of program participants but fail to maintain long-term participant engagement (Eysenbach, 2005). Online programs may

be able to encourage continued participant engagement by using push technologies and scaffolding. Some programs have found push technologies, such as reminder emails to be effective in increasing return visits to the website (Abdolrasulnia et al., 2004; Clarkson et al., 2012; Houston et al., 2010; Woodall et al., 2007). Though these studies saw increased return visits to the site, they did not explore the effectiveness of email reminders in encouraging more active, on-going participation. Scaffolding or teaching new skills step-by-step has been shown to be successful in promoting learning in a number of settings (Reiser, 2004). Written scaffolding of active participation behaviors via push email reminders may increase active site participation. Therefore, the current study will compare the participation levels of three treatment groups receiving different types of push emails (site information update only, active participation scaffolding only, and information + scaffolding) and a control group that receives no push emails.

Hypothesis 4: Receiving the push email reminders will be positively associated with both passive (logins) and active (comments) participation on the website as compared to the control (no email).

Hypothesis 5: Receiving push emails that scaffold active participation skills (scaffold only or scaffold + information) will be positively associated with active (logins) and passive (comments) participation on the website more than receiving (a) no email (control) or (b) information only.

Hypothesis 6: Scaffolding content will be most effective at increasing commenting among individuals with the least Internet experience.

Parenthetical Development and Theory

Parenthetical (http://myparenthetical.com) is a parenting website designed and facilitated by University of Wisconsin-Extension professionals for parents of 10-16 year olds. Named Parenthetical in recognition of the important side conversations parents have with one another, this website was built on a WordPress blog site. Parenthetical was designed and produced by a team of University of Wisconsin-Extension colleagues led by Dr. Stephen Small, Rebecca Mather, MS, and Anne Clarkson, MPH. Although numerous resources exist for parents of infants and young children, fewer resources are available for parents of teens and more high-quality parenting resources are needed for parents of tweens and teens. To better meet this need and to test an online platform for parent education and support, we developed Parenthetical. The iteration of Parenthetical described in this paper was launched in May of 2013 and is still operative at the time of this writing. The version of Parenthetical described in this paper is the third iteration of the site (Parenthetical 3.0). To differentiate between references to earlier versions of the site pervious iterations will be labeled as Parenthetical 1.0 or Parenthetical 2.0 and for brevity all further references to "Parenthetical" denote Parenthetical 3.0.

Parenthetical pilots. The Parenthetical team began developing iterations of the online parenting community in 2010. The team has developed two prior iterations of Parenthetical in addition to the current version in order to study 1) the capabilities of web-based educational platforms, 2) the creation and development of online content, and 3) how to stimulate the engagement of parents in online education and support communities (Clarkson et al., 2012; Samuelson, Mather & Small, 2011). The two previous versions were developed exclusively as

pilot sites and only made available to limited test audiences. However, data gathered from these early iterations informed the development of the current site.

A survey evaluation of 40 mothers was conducted at the beginning and end of piloting Parenthetical 2.0 and followed by a focus group interview with some participating parents (Clarkson et al., 2012). Participant feedback from Parenthetical 2.0 was used to determine preferred content, length, type and timing of posts. Pilot participants, in particular, valued informational posts (Clarkson et al., 2012). Additionally, participants emphasized the value of a website for parents to teens. As one mother noted: "I liked the feeling of connectedness to other parents who have children at an age with similar issues" (Clarkson et al., 2012).

Parenthetical 1.0 and 2.0 were designed utilizing a more "program" oriented framework based on formal learning processes. For example, parents participated on Parenthetical 2.0 for a defined time period of nine weeks. During these nine weeks, participants received posts on a daily basis. At the end of that time, no additional content was provided on the site though parents could still access the site and browse old content. Although parents were positive about the website, we observed that a static programmatic approach where content was only provided for a set period of time was a poor fit for both adult learners and the interactive, "living" nature of the web. Additionally, Parenthetical 1.0 and 2.0 taught us the value of developing content specifically for online consumption by including more multimedia components, such as visuals and hyperlinks to content, rather than directly transferring an existing face-to-face curriculum to an online setting. These pilot recommendations and findings were merged with the theoretical concepts of self-directed learning and Instructional Design Theory to create Parenthetical 3.0 (all future references refer to Parenthetical 3.0 unless otherwise noted).

Audience. Parents of children aged 10-16 are the target audience for Parenthetical because this age range represents an important developmental transition time and a time when parenting programs have been shown to be effective in changing family outcomes and behaviors (Colosi & Dunifon, 2003). Parents of children this age are often seeking new information as they enter this transition (Allen & Rainie, 2002). Many are likely to experience an increase in parenting stress due to concerns about their competency in handling this transition and the often-challenging new behaviors exhibited by young adolescents (Small, Eastman, & Cornelius, 1988). Due to these changes in the parent-child relationship during adolescence, many parents are needing support and information to adjust their parenting skills, wanting confirmation of the normality of their child's changing behavior, and reflecting upon this transition time (Holden & Hawk, 2003; Plantain & Danebeck, 2009). An online setting is especially appropriate for and compatible with the busy lifestyles of parents of adolescents since parents of tweens and teens are highly networked and already using digital tools (Pew Research Internet Project, 2011).

Format. Parenthetical was designed to encourage parents' weekly engagement the site, normalization of adolescent development, and reflection on parenting practices. There is no stated minimum or maximum time commitment or process for participating parents, however, parents must register (for free) in order to access the site and to be able to leave comments, pose questions, receive the Parenthetical email newsletter, and participate in site giveaways or special events. Site members can engage by reading site content, commenting, asking questions, or submitting an article, video or cartoon suggestion. Additionally, all Parenthetical members receive weekly email updates of new content on the site to encourage repeat exposure to the community. Parents remain members of the website email list for as long as they deem valuable.

When parents are ready to leave the email list, they unsubscribe from the weekly email reminders.

Parenthetical consists primarily of a blog post about parenting and teen development, a space for parent's question and parent or facilitator answers, and a list of relevant parenting articles found elsewhere on the web. All elements are updated weekly. Figure 1 depicts the location of these site features, which include:

- *Wise Talk*: A parent-led question and answer section, where parents can ask and answer parenting questions in order to build on parents' lived experiences and provide a space for normative social comparisons with peers (Plantin & Daneback, 2009).
- *Topic of the Week*: A facilitator-written, research-based article on child development or parenting that is posted every week. Research suggests that parents seek expert-based information and may feel that their needs are unsupported without access to "expert advice" (Lam & Kwong, 2012). The Topic of the Week also has a comment space for parents to verbally process their responses to the article and to learn from peers since processing information is linked to retention (Reiser, 2004).
- *In the News*: A news feed of parenting and child development related articles available elsewhere on the Internet (i.e., newspapers, blogs, or research studies). Parents can suggest articles for facilitators to evaluate as possible resources for In the News.

The site features are visible from a front "home" page. After reading the "home" page, parents have the option to explore other community resources more deeply, such as reading

linked materials provided on the Resources pages, looking back at articles or questions shared over previous weeks, and reviewing comments throughout the site.

Figure 1. Screen shot of Parenthetical website. This figure illustrates the location of Parenthetical site learning components.

Content. Content on Parenthetical is updated on a weekly basis and includes articles on parenting and child development written by family and parenting specialists, parenting questions and answers written by parent participants, and relevant articles, videos or images from outside sources. All site content is archived in the site's "Past Topics" and "Resources" pages so parents can reread topics at will. Content for Parenthetical is identified using two methods; first, content for weekly articles written by family living and parenting specialists is selected based on reviews of the literature regarding the information and support needs of parents of adolescents (Simpson, 2001; Small & Covalt, 2006) and literature on the parenting skills and characteristics most clearly linked to positive youth outcomes, such as parental warmth, consistent discipline,

parental monitoring, and family communication (Sandler, Schoenfelder, Wolchik, & MacKinnon, 2011). The major categories of information on the site include: brain growth in adolescence, discipline, emotional changes in adolescence, fun with your teens, parenting skills, peers, physical changes in adolescence, risky behaviors in adolescence, school, technology, values and culture. Additionally, resources related to the context of parenting (i.e., school, neighborhoods, houses of worship) are also prioritized (Bronfenbrenner & Morris, 1998). Weekly topics from this content are selected based on the expertise of the weekly writer, relevant current events, and the expressed needs of the members of Parenthetical. Members of the site have opportunities to shape content by submitting parenting questions to Wise Talk and also through occasional surveys of the community.

Self-directed learning theory. Self-directed learning, a major theory of adult learning, influenced the design Parenthetical as a long-term (not time delineated) online program that parents navigate as they need. Research suggests that the majority of adult learning is informal and self-directed (Mocker & Spear, 1982). In other words, adult learning goals are often motivated or directed by their self-interests and needs rather than structured by an instructor. Programs, on the other hand, are often developed based on lock-step programmatic outcome goals to be achieved in a specific timeframe. However, as informal, self-directed learners, parents' immediate needs and timing may not fit the long-term programmatic goals. Rather than prioritizing content and timing based on program goals, the concept of self-directed learning illuminates the value of creating a resource to which parents might return repeatedly to answer their questions in their own timeline allowing parents to meet their individualized needs.

Self-directed learning is "a process in which individuals take the initiative, with or without the help of others, in diagnosing their learning needs, formulating goals, identifying human and material resources, choosing and implementing learning strategies and evaluating learning outcomes." (Knowles, 1975, p. 18). The self-directed learner is in charge of both *what* and *how* he will learn (Mocker & Spear, 1982). A self-directed learner identifies a question or a need, then identifies a way to answer the question, and finally meets her learning objective by answering the original question (Cross, 1981). For instance, a self-directed learner may decide he wants to learn how to knit a scarf (learning objective), choose to look for answers on the Internet and find YouTube videos explaining the process (learning environment or mode), and then spend hours teaching himself to knit. Figure 2 depicts the steps of the self-directed learning process adapted from the process described by Cross (1981). To accommodate self-directed learners, Parenthetical was designed not as a time delineated program but as a constantly accessible, consistently updated learning community. Parenthetical is an online space where parents can seek information and support as they identify their needs.

Self-directed learning is not necessarily an isolated process (Robertson, 2011). Self-directed learners utilize a wide variety of resources and learning environments to answer their questions, including informal and formal modes of learning, media (books, websites), people (family, friends, professionals), and personal experiences (Cross, 1981). This suggests that conceiving of adult learning environments as top-down, highly structured instructional environments, like a teacher in front of a chalkboard, might be misguided. Instead, resources for self-directed learners should be designed more like preschool learning centers, which allow for individualized, interest-based learning but also collaborative learning. Although participants

direct their own participation, educators can target specific skills by creating program components based upon techniques that have been shown to be effective in supporting and engaging parental learning. The multimedia and collaborative capabilities of online environments cater well to the explorative learning of self-directed learners and to best practices in parenting education. In this way, it may be possible to design online programs to support long-term relationships between learner and learning environments by making them more relevant and accessible choices for self-directed parents searching for parenting information.

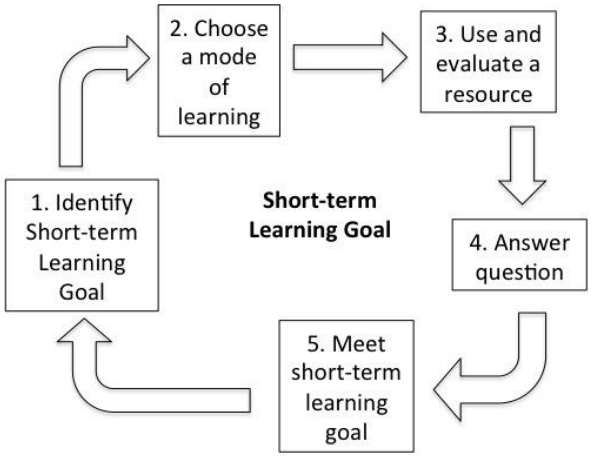

Figure 2. Diagram of the self-directed learning process for short-term gals. Developed based on the process of adult learning described by Cross (1981).

Developing a long-term relationship between self-directed learners and learning environments is particularly valuable since the process of self-directed learning happens repeatedly for learners as new questions or learning objectives are identified. However, some questions or challenges that adults face, such as how to parent a teen, are more complex long-term learning objectives and

require multiple repetitions of related questions to achieve their long-term learning goal. Figure 3 depicts the iterative process of exploring short-term learning goals as a way of meeting long-term learning goals. Many learners may, in fact, not even consciously attribute their short-term objectives (i.e., get my child to wear deodorant) with their long-term objectives. To answer short-term learning objectives, self-directed learners are likely to individually select a resource that is convenient, trusted, or a specific fit for the question. A parenting website could provide comprehensive information and support that could be relevant and useful to parents on many occasions. However, parents may not repeatedly use that resource even if it would be relevant to their questions because they may not see the resource as a consistently reliable source of answers to parenting questions.

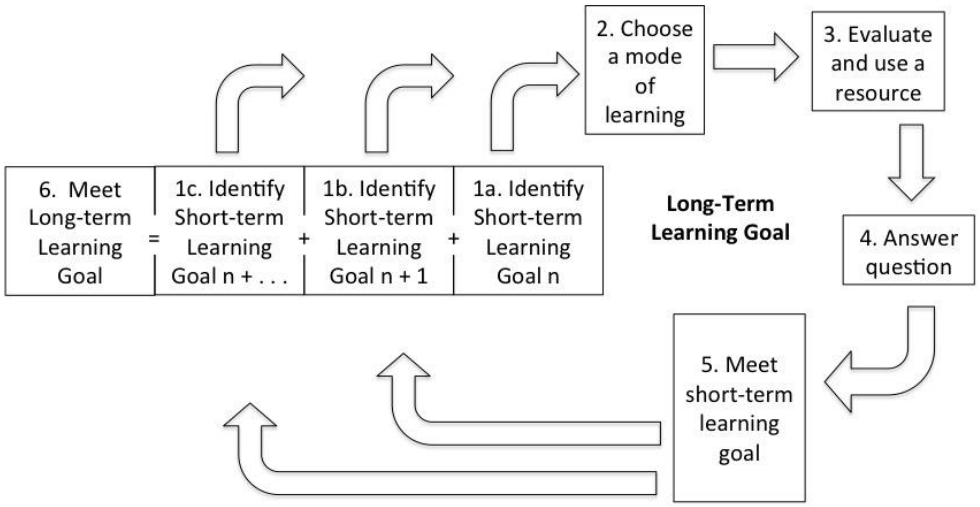

Figure 3. Diagram of the contribution of short-term learning goals in reaching long-term learning goals. This figure illustrates that learning is an iterative

Therefore, experts developing learning environments have an opportunity to build a relationship between self-directed learners and specific learning environments (i.e., parenting websites). If a learner identifies that a specific learning environment can be useful in answering many of their short-term questions, rather than expending energy to seek new resources, learners might return to that resource repeatedly to seek answers to short-term objectives. For example, the search engine, Google, is often used as a verb (i.e., "Google" it) because individuals regularly use it to search for resources. Learning environments need to be positioned such that learners think to use them on an ongoing basis for answering short-term questions. Such learning environments could not only potentially guide learners to gather information relevant to their current short-term question but also to regularly integrate information from that learning environment with their lived experience. This process may lead learners to construct a more resilient, richer perspective of their long-term objective. Therefore, to promote this behavior, it is suggested that parenting websites, such as Parenthetical, need to repeatedly be found to be a reliable, trustworthy, searchable source of information relevant to parents' questions. To promote regular interactions between learners and an online learning environment in an effort to foster long-term learning, websites for parents may also need to regularly provide enticing content that might spark engagement as the pathway to longer term learning, in addition to shorter-term questions. For example, weekly emails to all learning community members are one way to keep learners engaged with the content of the site.

Instructional design theory. Instructional design is a theoretical body of work regarding best practices in designing education and instruction. Unlike potentially more abstract descriptive theories, design theories are intended to be applicable and prescriptive – outlining a

process to achieve a specific outcome (Snyder, 2009). The instructional design theory called Component Display Theory (CDT) was influential in structuring the presentation of information on Parenthetical. In particular, on Parenthetical, CDT principles were applied to develop features that not only provided new concepts to parents but also incorporated illustrative stories and invited parents' own telling of their interpretation of and experiences with parenting and developmental concepts.

CDT was developed by David Merrill and emphasizes that a balance of instructor- and student-generated information leads to the best learning outcomes (Merrill, 1983). Marshall & Goddard (2012) discussed the application of CDT to teaching family science and explained that CDT encourages the strengths both facilitators and students possess: "The leader should bring expert knowledge as well as facilitation skills. The learners bring their own discoveries, creativity, expertise, and a wealth of experience" (p. F2). CDT prescribes four steps or elements that can be given in any order (see Table 2). The first step in effective instruction is to share a principle or state a rule or fact. Then the next step is to illustrate that principle with an example or story. The expository stage or "telling" of the instructor is followed by an inquisitor stage when learners are invited to repeat the principle or fact in their own words and illustrate that principle with a story from their life. The steps do not need to be completed in a particular order. In fact, a learner could share a personal story or experience followed by a "fact" or lesson he or she takes away from this story. A facilitator could then link the student's story and principle to a related story and principle. The "call and response" of CDT is not limited to face-to-face educational settings. Written publications can also incorporate the opportunities for exposition

and inquiry by writing with a principle and story format in mind and providing a space for participants to write their reactions or reflect in writing with others (Marshall & Goddard, 2012).

Table 2

Primary presentation forms of Component Display Theory, from Marshall & Goddard, 2012

		Kind of Content	
		Generality (G): rule, definition, principle, or procedure	Instance (eg): a specific example of an event, process, or principle
Mode of Delivery or Presentation	Expository (E): present, tell, or show	1. EG: Tell a rule or principle	2. Eeg: Give an example or story that supports the principle
	Inquisitory (I): question, ask, or learner practice	3. IG: Invite learners to express the rule in their own way	4. Ieg: Ask learners to think of their own experiences that illustrate the principle

When learners restate principles from their perspective and link a principle to their lived experience, they may be better able to apply that learning in future instances. This ability to take a fact or skill and apply it to a relevant but unique situation is essential to competent parenting. In order to be most effective, parents need to know how to apply what knowledge and when. Ideally, being "mindful of the situation as opposed to parenting automatically" (Heath, 2006, p. 759). A learning environment designed according to CDT can prepare parents to think critically about the best approach in new, challenging parenting situations. This process of thinking about parenting or "meta-parenting" is a cognitive process through which learners anticipate their parenting needs and issues, problem solve by identifying multiple strategies for addressing a particular issue, and reflect on the effectiveness of the chosen approach (Holden & Hawk, 2003).

Based on CDT and research on the value of pre-emptively thinking about parenting situations, we integrated opportunities for reflection, sharing and teaching into all elements of Parenthetical. For instance, *Topic of the Week* articles, written by family and parenting specialists, were designed to follow the four CDT elements. All *Topic of the Week* articles incorporate some story or humor to illustrate the key topic, a deeper description of a developmental or parenting concept, and a question intended to encourage parents to reflect and use the comment section to restate their thoughts regarding the topic. Ideally, the reflections and restatements of parents in the commenting section would be strengthened by the responses of other parents to the comments. Therefore, commenting was intentionally encouraged to increase potential learning through reflection, sharing lived experience and learning through "teaching" that lived parenting wisdom. Even if parents did not write comments, they had the opportunity to learn vicariously through reading previous comments, which exemplify the meta-parenting process that is supported by CDT. Through this iterative process of exploring new knowledge and adding that learning to existing experience and previous knowledge, parents can build a deeper, more concrete and nuanced understanding of a topic or skill (Cairncross & Mannion, 2001). Furthermore, through actively applying concepts to their lived experience, parents can reflect on the relevance and application of new information and potentially become more confident in applying that information in a future parenting situation.

Overall, Parenthetical was designed with a dual focus 1) to provide relevant developmental and parenting information and 2) to foster active learning among parents and parenting specialists. The content of Parenthetical focused on normative adolescent development, positive parent-child interactions, and effective parenting skills and strategies. The

interactive design of the site supports self-directed, active learning and engagement through reflection and multimedia learning opportunities. Based on the assumptions of self-directed learning theory and component display theory, it is expected that the flexible, interactive and reflective design of the site will be linked with positive learner outcomes, such as greater developmental knowledge, increased participant engagement, and more positive parenting.

Methods

Procedure

Participants were members of the parenting website, Parenthetical (www.myparenthetical.com). Parenthetical is a publically available site and was advertised through professional channels (i.e., Extension list serves, parenting educator list serves), word of mouth, and public announcements (i.e., press releases, library posters). At the time study recruitment closed the site had a membership of 671 people. An average of 60 new members joined the site each month with monthly membership growth ranging from 11 to 138 people joining. Participants for the evaluation described in this study were recruited from these members of Parenthetical.

Members of Parenthetical received up to four emails inviting them to participate in a study about online parenting resources. (See Appendix A for recruitment materials and questionnaires.) The invitation provided basic details about the study, and linked potential participants to an online information and consent page with detailed information about the study. Once participants completed the online consent form, they were emailed a link to the baseline survey and randomized into one of four email reminder groups.

Recruitment for the study was conducted from November 15 to November 19, 2013 and December 20, 2013 to March 9, 2014. Recruitment was interrupted on November 19th when study enrollment and membership on Parenthetical dramatically increased with 130 people seeking participation in the study and 101 new members on Parenthetical. Further investigation

showed that non-members could access the study's Qualtrics-based consent and questionnaire. Due to this unanticipated outside access, study recruitment was paused until IRB changes could be made to minimize outside access to the online consent link. To minimize sampling beyond the Parenthetical membership, no one who joined Parenthetical on November 19, 2013 was included in any analyses conducted for this evaluation. See Figure 4 for a timeline of Parenthetical and recruitment.

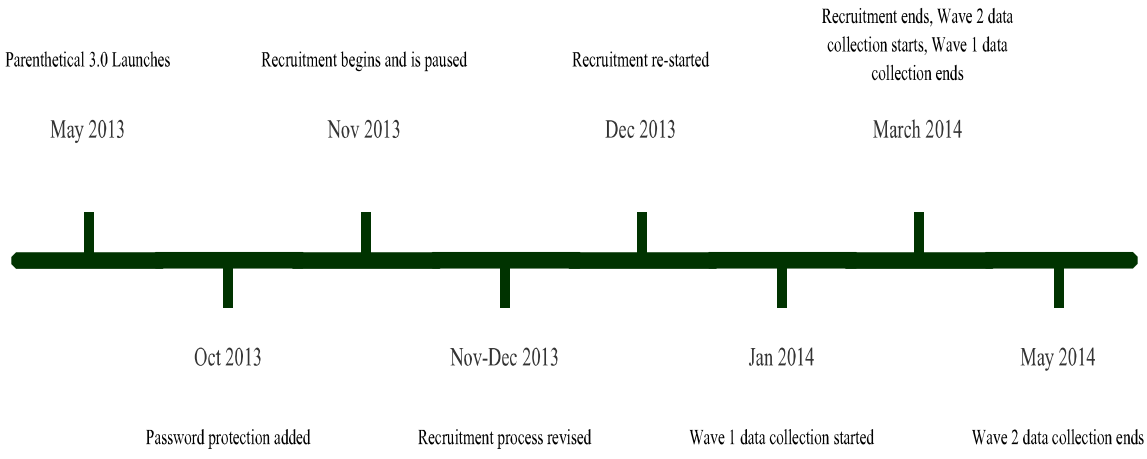

Figure 4. Timeline of Parenthetical 3.0 development and study recruitment.

Sixty-two participants completed study consent and were randomized into groups. The study response rate was 9.2%. Two of the 62 participants did not complete the baseline survey and, therefore, were not included in any analyses. Thus, respondents to the study invitation who also completed the first questionnaire comprised Sample 1 (n=60). Fifty Sample 1 participants also completed the follow-up survey, thus, the study had an attrition rate of 16.7%. Aggregate, observational data was also collected from another sample, Sample 2, which was composed of all remaining Parenthetical members (excluding any who joined on November 19th) (n=609). (See

Table 3.) The University of Wisconsin – Madison Institutional Review Board approved this study. (See Appendix B for the approval documentation.)

Table 3

Description of Samples 1 and 2

Sample	Description	Sample Size	Measures
Sample 1	Parents consented for more detailed data collection	n=60	• Baseline & Follow-up Surveys • RCT • Observational
Sample 2	Entire membership of Parenthetical minus Sample 1	n=609	• RCT • Observational

Sample 1 procedure. The Sample 1 study utilized baseline and follow-up surveys and a randomized control trial with 60 parents to evaluate parents' online participation. After consenting to participate in the study, participants were emailed a link to the online, baseline survey. For the duration of the study, participants were instructed to continue to access Parenthetical as they desired and to regularly check email. All participants had continuous access to the Parenthetical website, but during their ten week study period participants were randomized to receive different weekly email newsletters from Parenthetical. See Figure 5 for a timeline of participant involvement.

Also immediately after completing the online consent form, individuals were randomized into one of three treatment groups (Treatment Groups 2 (n=15), 3 (n=14), or 4 (n=16)) or a control group (n=15). The control group received no email newsletters for the ten-week duration of the study, while each of the three treatment groups received a different type of email

newsletter for the duration of the study. Treatment Group 2 (information only) received a weekly announcement of new content on the site. Treatment Group 3 (scaffolding only) received a weekly email intended to teach and scaffold more active behavior on the site. Finally, Treatment Group 4 (information plus scaffolding) received a weekly email including both a site content announcement and the scaffolding information. Examples of the email reminder content are provided in Appendix C. To evaluate whether baseline equivalency resulted from the random assignment of groups, the treatment groups were compared in terms of demographic characteristics. The groups did not significantly differ on any of the baseline demographic characteristics measured, including gender, age, and education.

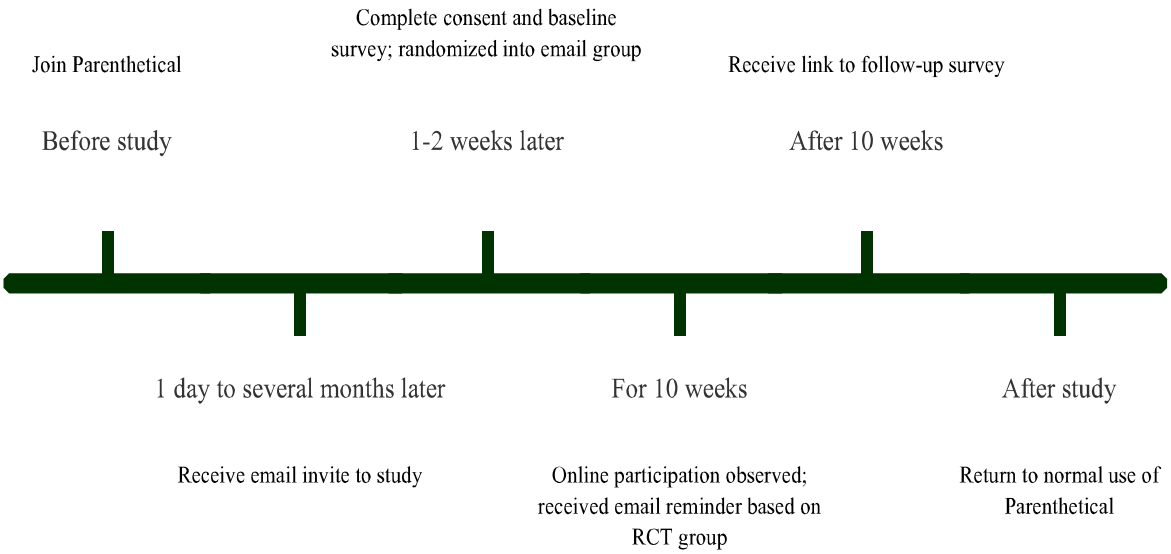

Figure 5. Timeline of an individual participant.

The post-test survey was emailed to participants after they completed the 10-week newsletter intervention. A total of 50 post-test surveys (83%) were returned (Treatment Groups

2 n=14, 3 n=10, 4 n=14; Control or Group 1 n=12). Attrition was lowest in Group 2, but did not differ significantly between conditions, X^2 (3) = 2.93, p = .419. As needed, email reminders were sent to participants to encourage survey completion. All participants received a $5 Amazon.com gift code for completing the pre-test and were entered into a drawing for a Kindle. For completing the post-test, all participants received a $5 Amazon.com gift code and were entered into a drawing for an iPad. Participants who completed their post-test survey within a week also received a copy of a popular parenting book. After completing the study, participants were reinstated in the regular Parenthetical newsletter schedule.

Sample 2 procedure. Due to lower than anticipated recruitment for Sample 1, a second sample (Sample 2) was added to assess participation by email newsletter group. Only observational participation data - no survey data - was collected from Sample 2. The Sample 2 study was a randomized control trial of the passive and active participation of the entire remaining Parenthetical membership not including Sample 1 (609 parents). All parents who registered for membership on Parenthetical on or before February 16, 2014 were randomized into two groups (Group 1 n = 305, Group 2 n = 304) and participation was observed. Over the course of the study 3 participants "unsubscribed" from the newsletter and 32 participants were untraceable (i.e., changed email address or username from that originally randomized); all 35 participants were removed from the study (Group 1 n = 290, Group 2 n = 283).

For a ten-week period participants in Sample 2 were randomized to receive one of two weekly email newsletters from Parenthetical. Treatment Group 1 (information only) continued to receive a weekly announcement of new content on the site. Treatment Group 2 (information

plus scaffolding) received a weekly email including both a site content announcement and information scaffolding more commenting on the site. To evaluate whether baseline equivalency resulted from the random assignment of groups, the participation of the two groups was recorded for three weeks prior to the ten-week intervention and compared. The groups did not significantly differ in baseline participation as measured by comments or logins per week.

Participants

Frequencies of Sample 1 participant characteristics are detailed in Table 4. All sixty Sample 1 participants were members of Parenthetical and the majority (91.7%) self-identified as the parent of at least one 10-16 year old child. Five participants identified as the stepparent (5.0%), grandparent (1.7%), or guardian (1.7%) of a 10-16 year old child. One parent/guardian per household was admitted into the study. Most participants (88.3%) identified as female. The higher proportion of females in the study sample is not surprising since mothers have been found to be more likely to engage in Internet-based parenting behaviors, such as reading emailed newsletters or blogs about parenting, than fathers (Connell, 2012). The majority of participants reported that their age ranged from 35-44 (51.7%) or 45-54 (36.7%). Over four-fifths (86.7%) of the participants identified as White-non-Hispanic and the remaining participants self-identified as the following race/ethnicities: American Indian or Alaska Native (1.7%), Black or African American (1.7%), Native Hawaiian or other Pacific Islander (1.7%), White-Hispanic (6.7%) or selected two or more races (1.7%). Participants primarily reported being married (81.7%). All participants reported at least some college or post-high school education and nearly half (48.3%) reported having completed a graduate degree. A skew toward higher education is not unusual

Table 4

Sample 1 Demographics by Group with Significance Tests n (%) (n = 60)

Characteristic	*All*	*Group 1*	*Group 2*	*Group 3*	*Group 4*	*df*, χ^2
Gender						
Female	53 (88.3)	13 (86.7)	14 (93.3)	11 (78.6)	15 (93.8)	3, 2.15
Male	7 (11.7)	3 (13.3)	1 (6.7)	3 (21.4)	1 (6.3)	
Age of parent (in years)						
25-34	5 (8.3)	1 (6.7)	1 (6.7)	1 (7.1)	2 (12.5)	9, 5.72
35-44	31 (51.7)	6 (40.0)	10 (66.7)	9 (64.3)	6 (37.5)	
45-54	22 (36.7)	7 (46.7)	4 (26.7)	4 (28.6)	7 (43.8)	
55 or older	2 (3.3)	1 (6.7)	0 (0.0)	0 (0.0)	1 (6.3)	
Race/Ethnicity						
American Indian or Alaska Native	1 (1.7)	0 (0.0)	0 (0.0)	1 (7.1)	0 (0.0)	15, 17.37
Black or African American	1 (1.7)	0 (0.0)	0 (0.0)	1 (7.1)	0 (0.0)	
Native Hawaiian or other Pacific Islander	1 (1.7)	1 (6.7)	0 (0.0)	0 (0.0)	0 (0.0)	
White, Hispanic	4 (6.7)	12 (80.0)	13 (86.7)	11 (78.6)	16 (100.0)	
White, non-Hispanic	52 (86.7)	2 (13.3)	2 (13.3)	0 (0.0)	0 (0.0)	
Two or more races	1 (1.7)	0 (0.0)	0 (0.0)	1 (7.1)	0 (0.0)	
Parent Role						
Parent	55 (91.7)	15 (100.0)	14 (93.3)	11 (78.6)	15 (93.8)	9, 10.47
Stepparent	3 (5.0)	0 (0.0)	1 (6.7)	2 (14.3)	0 (0.0)	
Grandparent	1 (1.7)	0 (0.0)	0 (0.0)	1 (7.1)	0 (0.0)	
Guardian	1 (1.7)	0 (0.0)	0 (0.0)	0 (0.0)	1 (6.3)	

Continued on next page.

Marital Status						
Married	49 (81.7)	13 (86.7)	11 (73.3)	13 (92.9)	12 (75.0)	
Living with a partner	2 (3.3)	0 (0.0)	2 (13.3)	0 (0.0)	0 (0.0)	
Divorced	3 (5.0)	1 (6.7)	0 (0.0)	0 (0.0)	2 (12.5)	15, 17.57
Separated	1 (1.7)	0 (0.0)	0 (0.0)	0 (0.0)	1 (6.3)	
Widowed	1 (1.7)	1 (6.7)	0 (0.0)	0 (0.0)	0 (0.0)	
Never married	4 (6.7)	0 (0.0)	2 (13.3)	1 (7.1)	1 (6.3)	
Education						
Business, tech, vocational or some school	12 (20.0)	1 (6.7)	4 (26.7)	4 (28.6)	3 (18.8)	
Bachelor's Degree	19 (31.7)	9 (60.0)	2 (13.3)	2 (14.3)	6 (37.5)	6, 10.51
Graduate Degree (Masters, PhD, JD, MD)	29 (48.3)	5 (33.3)	9 (60.0)	8 (57.1)	7 (43.8)	
Employment						
Full-time	43 (71.7)	11 (73.3)	10 (66.7)	10 (71.4)	12 (75.0)	
Part-time	14 (23.3)	4 (26.7)	2 (13.3)	4 (28.6)	4 (25.0)	6, 9.98
Not employed for pay	3 (5.0)	0 (0.0)	3 (20.0)	0 (0.0)	0 (0.0)	

NOTE: No significant differences by group.

among adults using the Internet. According to the Pew Internet Project's survey of American adults, adults with at least some college education were more likely to be Internet users (Pew Research Internet Project, 2014). Roughly three-quarters (71.7%) of the participants reported working at least 35 hours per week. No significant differences were found between groups by demographic characteristics.

Measures

Study outcome measures of *participation* were collected observationally for both Sample 1 and Sample 2 for ten weeks through weekly counts of logins to and comments on the website. Three weeks of baseline observational data were also collected for Sample 2 prior to the ten-week collection. Other study measures under the domains of *parenting*, *Internet*, and *perceptions of Parenthetical* were collected for Sample 1 only through emailed pre-test and post-test surveys administered using Qualtrics software for online surveys (Qualtrics, Provo, UT). Participants were instructed to think of their oldest child age 10-16 when answering questions related to their child.

Participation. The frequency of *passive participation* was measured by counting the number of days a participant logged into the website. These data were obtained through the WordPress "User Tracking" option under Tools and was recorded on a daily basis. The frequency of participants' *active participation* was measured by a count of the number of times a participant commented on the site in any of the following three ways: (1) posted a comment on Topic of the Week, (2) responded by commenting in Wise Talk, or (3) submitted a question or

comment via email. Comments and emails are associated with website usernames and emails and, therefore, were counted per participant.

Parenting domain. Three measures comprised the parenting domain and captured the parenting experience, perceptions of parents' competence and parental stress of Sample 1. *Parenting experience* was calculated based on parents' response to the question "How many children do you have in each of the following age groups" as described in Small, Eastman, and Cornelius (1988). Parents whose children were all 16 or younger were described as "inexperienced" parents, while parents who reported having children aged 17 or older were described as "experienced" parents. A 10-item scale based on the 13-item scale of *perceived parenting competence* used by Bogenschneider, Small, and Tsay (1997) was used to measure parenting competence. The measure asks parents to rate how well they do a number of tasks, including "earn my child's respect" and "discipline my child" on a 5-point Likert scale ranging from 1 (*poor*) to 5 (*excellent*); $\alpha = .84$. The measure has strong reliability for primarily white mothers and fathers of teens with a Cronbach's Alpha of .92 for mothers and .93 for fathers (Bogenschneider et al., 1997). Research also supports the validity of the measure. High reports of perceived parenting competence have been positively associated with children's reports of competent parenting behaviors, such as increased parental monitoring and responsiveness and low parent psychological control (Bogenschneider et al., 1997). *Parenting stress* was measured using a 9-item scale developed by Pearlin and Schooler (1978) and refined by Small et al. (1988); parents were asked to rate each item on a 4-point Likert scale ranging from 1 (*not at all*) to 4 (*very much*) how much they experienced certain emotional states (i.e., satisfied, worried) in relation to parenting; $\alpha = .86$. The measure has strong reliability with a Cronbach's Alpha of .89.

Research also points to the validity of this measure. Higher levels of parenting stress were positively associated with potentially stressful teen behaviors, such as deviant activities and teen's reported desire for greater autonomy (Small et al., 1988).

Internet experience domain. The measures in the Internet experience domain were used to assess Sample 1 participants' experiences with Internet use and experiences commenting online. Two items, "How often do you go online?" and "How much time do you spend online on a typical weekday?" were used to assess parents' *Internet use* (Tracking Online Life Survey, 2000). Multiple choice responses, which ranged from "several times a day" to "once a month or less" for the first question and from "less than 15 minutes" to "4 hours or more" for the second. A 4-item measure of *Internet commenting experience* was created for this study and used to measure participants' previous web commenting experience. Participants responded "Yes" or "No" to the items "Have you ever posted an online comment on Facebook? Twitter? A blog? and/or A newspaper or magazine's website?" and scores were summed (Yes = 1; No = 0) to create a measure of *Internet commenting experience* ranging from 0 to 4 ($\alpha = .58$).

Perceptions of Parenthetical domain. Sample 1 participants' perceptions of Parenthetical were measured based on three aspects of Rogers' diffusion of innovation theory: *relative advantage*, *compatibility*, and *ease of use*. *Relative advantage* was measured with parents rating "Would you say Parenthetical is more or less useful than the parenting resource/person you selected as most useful?" on a 5-point Likert scale ranging from 1 (*much less*) to 5 (*much more*). Participants had the option to explain their rating in an open-ended question ("Why did you say Parenthetical was more, the same or less useful. . .?") The parenting

resource or person parents found most useful was identified in two previous items: "In the past year, how often (weekly, monthly, several times a year, never) have you used the following (parenting class, website other than Parenthetical, books, family, friends, or professionals) parenting resources to learn about raising teens and tweens?" and "Which of these resources (parenting class, website other than Parenthetical, books, family, friends, or professionals) do you consider to be the most useful to you and your parenting?" Participants with high *Internet commenting experience* (as described under the *Internet domain* section) were defined as having high *compatibility* for active participation on Parenthetical due to participants' existing skill and experience in commenting in online environments. *Ease of use* was measured using four-item scale based on the University of Maryland's criteria for evaluating websites (Evaluating Websites, 2012). Participants were asked to think of other websites and rate how "well designed," "well organized," "easy to read," and "easy to navigate" Parenthetical was by comparison on a 3-point Likert scale ranging from 1 (*less*) to 3 (*more*) ($\alpha = .78$).

Perceptions of email reminders. Sample 1 participants' perceptions of the email reminders were also recorded. Participants marked their agreement or disagreement with eight items created for this evaluation such as "I enjoyed receiving the email newsletters" and "I found the email newsletters encouraged me to become more active on Parenthetical" on a 4-point Likert scale ranging from 1 (*strongly disagree*) to 4 (*strongly agree*).

Coding of open-ended responses

Three open-ended questions were posed to Sample 1 participants on the study questionnaires for participants to expound on their *participation on Parenthetical*: 1) "Why did

you decide to join Parenthetical," 2) "Why do you continue to use Parenthetical," and 3) "What influenced your decision whether to comment or not on the site?" Two additional questions provided space for participants to explain why they said Parenthetical was more or less useful than 1) "the parenting resource you selected as most useful" and 2) "the person whose advice you consider most useful."

Written responses for the three questions on participation on Parenthetical were categorized and then quantitatively analyzed. To develop the coding scheme, emergent key themes were first identified in the responses for each question and then responses were grouped within these themes. For example, when asked why they joined Parenthetical two themes quickly emerged "research participation" and "parenting a tween/teen" as many parents mentioned a desire to either learn about their tween or teen or to participate in research. (See Appendix D for the full coding scheme with examples.) Qualitative data are also presented verbatim throughout this report to further illustrate other study findings.

Inter-rater reliability was tested using two independent coders. The author first developed the coding schemes and coded all open-ended responses. Then a graduate student in Human Development and Family Studies at the University of Wisconsin-Madison who was not involved with the study was given the coding instructions and independently coded all responses to the three open-ended questions. The researcher and the test coder compared coding categorization and reached greater than 85% agreement on all three coded questions. Cohen's Kappa was used to measure inter-rater reliability and agreement was found on all three questions ("Why join" $\kappa = .874$; "Why continue to use" $\kappa = .819$; "Why comment or not" $\kappa = .867$).

Handling of missing data

Among the questionnaires returned by Sample 1, there were 7 cases of unexpected missing data (less than 1% of all possible data). Given the low incidence of missing data, missing data was omitted and analyses were run on the remaining data. Further differences in sample size in the results are attributed to two reasons. First, the questions about perceptions of the email reminders were only asked if participants reported receiving email reminders; therefore, 5 participants were excluded from analysis of those questions since they had not received the email reminders. Secondly, 10 participants failed to complete the second questionnaire and, thus, are not included in analyses of Hypotheses 1-3, which utilized data from the follow-up questionnaire.

Results

To investigate the effect of email reminders on passive and active participation, data on utilization of a website of parenting advice were collected and analyzed. First, descriptive data regarding the parenting and Internet experiences of participants are shared. Additionally, parent reported reasons for joining Parenthetical are summarized. Next, parents' perceptions of Parenthetical are reported. Then, perceptions of the email reminders are described. Finally, the association of participant characteristics and intervention group with two outcome variables, passive (logins) and active (comments) participation, was calculated. Unless otherwise noted results describe Sample 1.

Parent Characteristics

Two domains of parent characteristics (parenting experience and Internet experience) are reported here, as well as a summary of participants' reported reasons for joining Parenthetical.

Parenting domain. Parents were asked to report the ages of all their children; parents with at least one child 17 or older (i.e., older than the target child age of the website) were categorized as "experienced" while parents with children only 16 or younger were categorized as "novice." Two-thirds of the parents in Sample 1 were novice parents while one-third were experienced. Parent experience was not significantly different across the four randomized groups. The results are shown in Table 5.

Participants reported a moderate level of stress in their parenting ($M = 2.19$, $SD = .58$, on a 4-point rating scale). For example, the majority of participants reported feeling the middle two

Table 5

Parenting Domain Measures by Group with Significance Test: Sample 1 (n = 60)

Measures	*All*	*Group 1*	*Group 2*	*Group 3*	*Group 4*	*df, F or* χ^2
Parenting Experience	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	
Experienced	21 (35.0)	7 (46.7)	4 (26.7)	5 (35.7)	5 (31.3)	3, 1.46
Novice	39 (65.0)	8 (53.3)	11 (73.3)	9 (64.3)	11 (68.8)	
Parenting Stress	*m (SD)*	*m (SD)*	*m (SD)*	*m (SD)*	*m (SD)*	
Range 1 - 4	2.19 (.58)	2.37 (.50)	1.99 (.48)	2.48 (.70)	1.96 (.51)	3, 3.43*
Perceived Parenting Competence	*m (SD)*	*m (SD)*	*m (SD)*	*m (SD)*	*m (SD)*	
Range 1 - 5	3.64 (.57)	3.49 (.45)	3.81 (.65)	3.44 (.65)	3.80 (.47)	3, 1.87

* Significant at p<.05

Table 6

Internet Experience Domain Measures by Group with Significance Tests: Sample 1 (n = 60)

Measure	*All* *n (%)*	*Group 1* *n (%)*	*Group 2* *n (%)*	*Group 3* *n (%)*	*Group 4* *n (%)*	*df,* χ^2
Daily Internet Use						
High (3+ hours/day)	29 (48.3)	8 (53.3)	3 (20.0)	8 (57.1)	10 (62.5)	3, 6.69
Low (-3 hours/day)	31 (51.7)	7 (46.7)	12 (80.0)	6 (42.9)	6 (37.5)	
Internet Commenting Experience						
High (3 or 4 locations)	26 (43.3)	8 (53.3)	6 (40.0)	4 (28.6)	8 (50.0)	3, 2.21
Low (2 or less locations)	34 (56.7)	7 (46.7)	9 (60.0)	10 (71.4)	8 (50.0)	

NOTE: No significant differences by group.

levels of stress, such as "a little" frustrated or "somewhat" emotionally worn out, in their current experience as the parent of a 10-16 year old. Parenting stress differed significantly ($p < .05$) between the groups with parents in the control (Group 1) and scaffolding only (Group 3) groups reporting greater stress than those in the information only (Group 2) and scaffolding plus information (Group 4) groups.

Overall, participants had positive perceptions of their parenting competence ($M = 3.64$, $SD = .57$, on a 5-point rating scale). For instance, the majority of parents thought they were better than average at earning their child's respect and helping their child with his/her personal problems.

Internet experience domain. As expected in a study of an Internet program, most parents were frequent Internet users. A total of 90% (n=54) of participants reported going online several times per day and all but one participant reported going online at least 3-5 days per week. Participants reported time online on a typical day ranged from less than an hour per day (15%) to more than four hours per day, which was the modal response (26.7%). The median response was about 3 hours of Internet activity per day. For use in later analyses, a measure of Daily Internet Use was then created by categorizing participants using the Internet for 3 hours or more per day as "high" daily Internet users (n=29) and those using the Internet for less than 3 hours per day as "low" daily Internet users (n=31). The majority of participants also reported experience commenting in at least one online setting, such as Facebook (90.0%, n=54), Twitter (48.3%, n=29), a blog (48.3%, n=29) or a newspaper or magazine's website (38.3%, n=23). A measure of Internet Comment Experience was created by summing participants' responses to the 4 categories of comment location (Facebook, Twitter, blog, website) to create a score ranging from

0-4, which was split at the median into two groups representing participants with "high" commenting experience (n=26) who had commented in 3 to 4 online locations and those with "low" commenting experience who had commented in 2 or fewer online locations (n=34). The randomized groups were found to be equivalent with no significant differences between groups for Internet commenting or daily Internet use. See Table 6 for results by randomized group.

Reasons for joining Parenthetical. Content analyses of written, open-ended answers showed that parents primarily gave three reasons for choosing to join Parenthetical (see Table 7). First, nearly half of the participants reported that they joined Parenthetical because they wanted information on parenting teens (e.g., "teen parenting advice"). Second, a quarter of participants said they joined Parenthetical because they are currently parenting teens or pre-teens (e.g., I have a fourteen year old son."). Some parents stated they joined because they are currently parenting teens and also want parenting information (e.g., "I have two teenagers and want to get tools to help with parenting them better."). Finally, a fifth of participants reported that they joined because Parenthetical was a useful professional resource (e.g., "I have teens and I am also the Director of a Family Resource Center."). Since participation in the evaluation was limited to parents of 10-16 year olds, this evaluation may only capture a small subset of the professionals actually joining Parenthetical for access to resources and professional development.

In summary, parents participating in this evaluation were primarily parenting their first 10 to 16 year old child and reported feeling moderately stressed by their parenting. Participants were regular Internet users with the majority of participants using the Internet daily and about half using the Internet for 3 or more hours per day. Furthermore, 90% of participants reported commenting on Facebook and slightly less than half of the participants reported commenting in 3

or 4 types of online settings (e.g., one person might have experience commenting on Facebook, Twitter, and a blog). Finally, the most common reasons parents explained that they joined Parenthetical were for parenting advice and resources, because they are parents of teens, or for professional development and resources.

Table 7

Reasons for Joining Parenthetical: Sample 1 (n = 60)

Reason	*Number of mentions*	*Percent of respondents* [a]
Advice/info/research	27	45.0
Professional development	13	21.7
Parent of a child/tween/teen	21	35.0
Interact with or help others [b]	10	16.7
Emotionally interested (i.e., curious, humor)	5	8.3
Referred to site/heard good resource	8	13.3
No response	2	3.3

[a] Percentages sum to greater than 100% as more than one response is possible.
[b] Included 4 participants who wanted to help with research.

Parent Perceptions of Parenthetical

Question 2.1. How do parents (1) perceive the ease of use of a parenting website, (2) show compatibility between their existing skills and web-based learning, and (3) consider a parenting website to be advantageous when compared to other parenting resources?

Three elements related to the perceived usefulness of Parenthetical are reported: the relative advantage of Parenthetical compared to other sources of parenting advice, the relationship between parents' existing needs and their perceptions of Parenthetical, and the perceived ease of use of Parenthetical. Recall that these questions regarding relative advantage, ease of use, and compatibility with current life experiences and skills were developed out of the

Diffusion of Innovation Theory to see why people use one resource over another. Since data for these analyses was drawn from the follow-up questionnaire, the sample represents the 50 participants who completed that questionnaire. Responses from open-ended questions are also reported to elaborate the findings.

Relative advantage. How do parents compare the value or relative advantage of Parenthetical to their other highly valued sources of mass media parenting information, such as books, other websites or classes? As is indicated in Table 8, parents reported that they used a parenting website (other than Parenthetical) more frequently than parenting classes or books to learn about parenting their teen or tween. Parenting classes were the least frequently used mass media resource with over two-thirds of participants responding that in the past year they "never" used a parenting class to learn more about parenting their teen or tween.

Table 8

Frequency Used Source of Parenting Advice: Sample 1

Parenting Advice Source	*N*	*Weekly* *n (%)*	*Monthly* *n (%)*	*Several times per year* *n (%)*	*Never* *n (%)*
Mass Media					
Class	49	2 (4.1)	4 (8.2)	10 (20.4)	33 (67.3)
Website (not Parenthetical)	50	7 (14.0)	13 (26.0)	16 (32.0)	14 (28.0)
Book	49	4 (8.2)	7 (14.2)	19 (38.8)	19 (38.8)
Interpersonal					
Friend	50	11 (22.0)	14 (28.0)	21 (42.0)	4 (8.0)
Family member	50	11 (22.0)	10 (20.0)	22 (44.0)	7 (14.0)
Professional	50	2 (4.0)	8 (16.0)	21 (42.0)	19 (38.0)

Parenting advice from interpersonal relationships also played an important role in parents' support and information seeking; parents reported asking friends or family members for parenting advice more frequently than they consulted more formal sources of parenting advice, such as professionals or classes. Among interpersonal sources of parenting advice, parents asked professionals for parenting advice least frequently with one-fifth of respondents reporting having asked for advice from professionals on a weekly or monthly basis in the past year compared to the near half of participants having asked a friend and over half having asked a family member for parenting advice on a weekly or monthly basis in the past year.

When asked to choose their most useful mass media parenting resource, a majority of parents reported that a parenting website (other than Parenthetical) was their most useful of the three listed mass media sources of parenting advice. Among the three interpersonal sources of parenting advice, the majority of parents said that friends were their most useful interpersonal source of parenting advice. Of note, among those who rated a parenting website as their most useful mass media parenting resource, 63.4% said that Parenthetical was somewhat or much more useful than their most useful parenting website (see Table 9). In fact, 96.7% of the participants who said a website was their most useful mass media source of parenting advice said Parenthetical was at least as useful as another website they valued. In contrast, parents who reported a class or book as their most useful mass media parenting resource were more likely to say Parenthetical was about equally useful as their most useful resource. Many participants who reported that Parenthetical was the same or more useful than their most useful source of parenting advice highlighted that the topics on Parenthetical were relevant to their current parenting experience (e.g., "Topics are relevant. Advice is common sense and doable.").

Table 9

Parents' Top Mass Media Source and Interpersonal Source of Parenting Advice and Parenthetical's Use Compared to Top Sources: Sample 1

Parenting Advice Source	*Most useful resource n (%)*	*Much more useful n (%)*	*Somewhat more useful n (%)*	*About the same useful n (%)*	*Somewhat less useful n (%)*	*Much less useful n (%)*
Mass Media (n = 48)						
Class	10 (20.8)	0 (0.0)	3 (30.0)	6 (60.0)	1 (10.0)	0 (0.0)
Website (not Parenthetical)	30 (62.5)	6 (20.0)	13 (43.4)	10 (33.3)	1 (3.3)	0 (0.0)
Book	8 (16.7)	0 (0.0)	2 (25.0)	5 (62.5)	1 (12.5)	0 (0.0)
Interpersonal (n = 50)						
Friend	25 (50.0)	2 (8.0)	7 (28.0)	12 (48.0)	4 (16.0)	0 (0.0)
Family member	15 (30.0)	2 (13.4)	5 (33.3)	5 (33.3)	3 (20.0)	0 (0.0)
Professional	10 (20.0)	2 (20.0)	2 (20.0)	3 (30.0)	2 (20.0)	1 (10.0)

Additionally, several participants noted the easy weekly accessibility of Parenthetical, suggesting that they did not need to remember to access Parenthetical since they received email reminders (e.g., “It is sent to me weekly, so I take 5 minutes to read it. It's worth my time, is research-based and is relevant.”). Among parents who rated Parenthetical as less useful than their most useful resource, a few mentioned other resources that they preferred (e.g., “I would rather read a book than something online.”). Others explained that the content on Parenthetical was not broad enough to answer all their parenting questions (e.g., “It is very topical, and if I don't find my issue, I can't always find answers I am seeking.”).

Somewhat surprisingly, about four-fifths of participants also reported that Parenthetical was about the same or more useful than the interpersonal relationship in which they heard the most useful parenting advice. Parenthetical’s research base was most commonly given as the reason participants valued Parenthetical over other people’s parenting advice (e.g., “based on real data,” “Parenthetical is research-based.”). One participant stated that research-based information provided an important balance to parenting advice from family or friends saying “I have a lot of resources in my family; a counselor, nurse, teacher, social worker, etc. however sometimes it is helpful to get non biased, research based information from a non-relative.” However, many participants who reported that Parenthetical was less useful than interpersonal sources of parenting advice said this was because they value the emotional connection they have with people, which they cannot receive from a website (e.g., “A website can't give you empathy as a person can. The human inter-connection is essential to know I am not alone in the challenges, frustrations and success.”).

Ease of use. What is the perceived ease of use of Parenthetical? Overall, participants reported that Parenthetical was easy to use (M = 2.67, SD = .39, on a 3-point rating scale). As shown in Table 10, participants rated the organization and ease of reading Parenthetical most highly. Average ratings of how easy the site was to use and navigate were slightly lower. In responses about why participants return to the site, one participant explained that the easy to read format made checking the site a simple addition to the day (e.g., "I appreciate the easy to read website. I glance at the page, read what I am drawn to and move on with my day. Sometimes I dig in to an article but often I feel I have time for a quick read.").

Table 10

Ease of Using Parenthetical: Sample 1

Item	*M*	*SD*	*Range*	*N*
Easy to use	2.55	.62	(1-3)	49
Well organized	2.76	.43	(1-3)	49
Easy to read	2.80	.41	(1-3)	49
Easy to navigate	2.59	.54	(1-3)	49
Overall mean ease of use rating	2.67	.39	(1-3)	49

Note: Based on a 3 point rating scale (1 = not at all easy/well, 3 = very easy/well)

Although participants rated the website as easy to use, their qualitative comments across questions suggest that requiring a login to access the website was a barrier. For instance, one participant noted that the email reminders prompted the participant to go look for the information elsewhere saying, "I have trouble remembering my password and login. It is easier to go to a different website and get info after I read the teaser from the Parenthetical updates." Another participant sent an email after completing the final evaluation to provide the following feedback regarding login: "I think I would use MyParenthentical more often if I did not have to log in to read it. I had difficulty remembering my password and it was an extra step I just did not want to hassle with. I am sure there are reasons why you have people log in which I am not aware

of. For me, it seems it would be more effective if I could read the content without a password and then log in if I want to participate in comments and discussion."

Compatibility with existing needs and skills. Next, the relationships between participants' parenting experience, Internet experiences and their reported perceptions of the website were explored to see if different life experiences were more or less compatible with positive perceptions of the website.

No significant differences in perceptions of the relative advantage or ease of use of Parenthetical were found between the novice and experienced groups of participants (see Table 11). The majority of both experienced and novice parents reported websites to be the most useful source of mass media parenting advice they used in the previous year. Nearly half of experienced parents (42.1%) and slightly more than half of novice parents (54.8%) reported that, in terms of sources of interpersonal parenting advice, a friend had provided the most useful parenting advice in the past year. Both novice and experienced parents found Parenthetical to be the same or more useful than their most useful source of mass media parenting advice. Although not significantly different, novice parents were almost twice as likely to rate Parenthetical as more useful than their most useful source of mass media parenting advice (61% vs. 32%) as compared to experienced parents. When considering interpersonal parenting advice, more than three-quarters of both experienced and novice parents also reported that Parenthetical was about the same or more useful than the advice given by their most useful friend, family member or professional contact. Both experienced and novice parents reported that Parenthetical was very easy to use (Experienced M = 2.65, SD = .42, Range 1-3; Novice M = 2.69, SD = .38, Range 1-3).

Table 11

Relationship between Parenting Experience and Perceptions of Parenthetical: Sample 1

Perceptions	*Parenting Experience* *Experienced*	*Novice*	*df,* χ^2 or F
	n (%)	*n (%)*	
Most useful mass media advice *(n = 48)*			
Class	4 (22.2)	6 (20.0)	
Website	9 (50.0)	21 (70.0)	2, 2.88
Book	5 (27.8)	3 (10.0)	
Most useful interpersonal advice *(n = 50)*			
Friend	8 (42.1)	17 (54.8)	
Family member	6 (31.6)	9 (29.0)	2, 1.02
Professional	5 (26.3)	5 (16.1)	
Parenthetical vs. most useful *mass media (n = 49)*			
Much more useful	1 (5.6)	6 (19.4)	
Somewhat more useful	5 (27.8)	13 (41.9)	
About the same useful	11 (61.1)	10 (32.3)	3, 4.37
Somewhat less useful	1 (5.6)	2 (6.5)	
Much less useful	0 (0.0)	0 (0.0)	
Parenthetical vs. most useful *interpersonal (n = 50)*			
Much more useful	2 (10.5)	4 (12.9)	
Somewhat more useful	7 (36.8)	7 (22.6)	
About the same useful	6 (31.6)	14 (45.2)	4, 3.17
Somewhat less useful	3 (15.8)	6 (19.4)	
Much less useful	1 (5.3)	0 (0.0)	
Ease of Use *(n = 49)*	*m (SD)*	*m (SD)*	
(Range 1-3)	2.65 (.42)	2.69 (.38)	1, .08

NOTE: No significant differences by parenting experience.

Next, the relationship between participant perceptions and Internet experience was tested. Details are shown in Table 12. No significant differences were found between the perceptions of high versus low Internet commenters or high versus low Internet users. The majority of parents in all levels of Internet commenting experience and Internet use experience reported websites as the most useful mass media parenting resource they used in the previous year. Similarly, the majority of parents across all levels of Internet commenting experience and Internet use experience rated friends as their most useful interpersonal source of parenting advice in the past year. Over 90% of parents across all levels of Internet commenting experience and Internet use experience rated Parenthetical as about the same or more useful than their most useful mass media parenting resource. More than three-fourths of participants in either the low or high Internet use groups reported that Parenthetical was the same or more useful than the parenting advice provided by their most useful interpersonal connection, such as a friend, family member or professional contact. However, when grouped by Internet commenting experience, a larger proportion of low Internet commenters rated Parenthetical as the same (51.7%) or more (34.4%) useful as their most useful interpersonal source of parenting advice than those with in the high Internet comment experience group. Participants across all experience levels in Internet commenting and Internet use reported that Parenthetical was very easy to use (means provided in Table 12 by group).

Finally, differences in perceptions of usefulness and ease of use between randomized groups were tested. The randomized groups were found to be equivalent with no significant differences between groups for any measure. See Table 13 for differences in perception by randomized group. One item, however, closely approached significance at $p < .05$; participants'

Table 12

Relationship between Internet Experience and Perceptions of Parenthetical: Sample 1

Perceptions	*Internet Commenting*			*Internet Use*		
	Low	*High*	*df,* χ^2 or F	*Low*	*High*	*df,* χ^2 or F
	n (%)	*n (%)*		*n (%)*	*n (%)*	
Most useful mass media advice *(n = 48)*						
Class	5 (17.9)	5 (25.0)		4 (15.4)	6 (27.3)	
Website	19 (67.9)	11 (55.0)	2, .82	17 (65.4)	13 (59.1)	2, 1.11
Book	4 (14.3)	4 (22.0)		5 (19.2)	3 (13.6)	
Most useful interpersonal advice *(n = 50)*						
Friend	16 (55.2)	9 (42.9)		13 (50.0)	12 (50.0)	
Family member	7 (24.1)	8 (38.1)	2, 1.18	9 (34.6)	6 (25.0)	2, .96
Professional	6 (20.7)	4 (19.0)		4 (15.4)	6 (25.0)	
Parenthetical vs. most useful *mass media (n = 49)*						
Much more useful	5 (17.2)	2 (10.0)		5 (19.2)	2 (8.7)	
Somewhat more useful	9 (31.0)	9 (45.0)		9 (34.6)	9 (39.1)	
About the same useful	13 (44.8)	8 (40.0)	3, 1.20	10 (38.5)	11 (47.8)	3, 1.49
Somewhat less useful	2 (6.9)	1 (5.0)		2 (7.7)	1 (4.3)	
Much less useful	0 (0.0)	0 (0.0)		0 (0.0)	0 (0.0)	
Parenthetical vs. most useful *interpersonal (n = 50)*						
Much more useful	3 (10.3)	3 (14.3)		4 (15.4)	2 (8.3)	
Somewhat more useful	7 (24.1)	7 (33.3)		6 (23.1)	8 (33.3)	
About the same useful	15 (51.7)	5 (23.8)	4, 4.96	10 (38.5)	10 (41.7)	4, 1.99
Somewhat less useful	4 (13.8)	5 (23.8)		5 (19.2)	4 (16.7)	
Much less useful	1 (2.0)	1 (4.8)		1 (3.8)	0 (0.0)	
Ease of Use *(n = 49)*	*m (SD)*	*m (SD)*		*m (SD)*	*m (SD)*	
(Range 1-3)	2.73 (.36)	2.60 (.43)	1, 1.47	2.66 (.42)	2.68 (.37)	1, .04

NOTE: No significant differences by Internet experience.

Table 13

Parent Perceptions by Randomized Group with Significance Tests: Sample 1

Perceptions	*All*	*Group 1*	*Group 2*	*Group 3*	*Group 4*	*df,* χ^2 or F
	n (%)	*n (%)*	*n (%)*	*n (%)*	*n (%)*	
Most useful mass media advice *(n = 48)*						
Class	10 (20.8)	1 (8.3)	2 (14.3)	3 (37.5)	4 (28.6)	
Website	30 (62.5)	8 (66.7)	9 (64.3)	5 (62.5)	8 (57.1)	6, 4.83
Book	8 (16.7)	3 (25.0)	3 (21.4)	0 (0.0)	2 (14.3)	
Most useful interpersonal advice *(n = 50)*						
Friend	25 (50.0)	7 (58.3)	5 (35.7)	6 (60.0)	7 (50.0)	
Family member	15 (30.0)	4 (33.3)	5 (35.7)	1 (10.0)	5 (35.7)	6, 4.68
Professional	10 (20.0)	1 (8.3)	4 (28.6)	3 (30.0)	2 (14.3)	
Parenthetical vs. most useful *mass media (n = 49)*						
Much more useful	7 (14.3)	1 (8.3)	2 (14.3)	4 (44.4)	0 (0.0)	
Somewhat more useful	18 (36.7)	4 (33.3)	7 (50.0)	3 (33.3)	4 (28.6)	
About the same useful	21 (42.9)	5 (41.7)	4 (28.6)	2 (22.2)	10 (71.4)	9, 16.86*
Somewhat less useful	3 (6.1)	2 (16.7)	1 (7.1)	0 (0.0)	0 (0.0)	
Much less useful	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	
Parenthetical vs. most useful *interpersonal (n = 50)*						
Much more useful	6 (12.0)	1 (8.3)	1 (7.1)	3 (30.0)	1 (7.1)	
Somewhat more useful	14 (28.0)	3 (25.0)	2 (14.3)	4 (40.0)	5 (35.7)	
About the same useful	20 (40.0)	5 (41.7)	7 (50.0)	3 (30.0)	5 (35.7)	12, 10.73
Somewhat less useful	9 (18.0)	3 (25.0)	3 (21.4)	0 (0.0)	3 (21.4)	
Much less useful	1 (2.0)	1 (7.1)	1 (7.1)	0 (0.0)	0 (0.0)	
Ease of Use *(n = 49)*	*m (SD)*	*m (SD)*	*m (SD)*	*m (SD)*	*m (SD)*	
(Range 1-3)	2.67 (.39)	2.60 (.52)	2.70 (.30)	2.68 (.39)	2.71 (.39)	3, .172

* Significant at p =.10

rating of Parenthetical's usefulness when compared to the most useful mass media resource (book, website or class) was different across groups ($p = .051$). The majority of Group 4 (71.4%), which received emails with information about new content on the website plus ideas scaffolding their active participation on the website, reported lower levels of usefulness for Parenthetical as compared to their most useful mass media resource than did the other groups.

Overall, participants reported positive perceptions of Parenthetical. In fact, even when compared with their other most useful mass media and interpersonal sources of parenting information or support, most participants rated Parenthetical as being about the same or more useful. Participants found Parenthetical well organized and easy to use, read and navigate. In an addition of note, several participants took time to mention a barrier not discussed in the questionnaire – required login to the website, which made accessing the website difficult. Finally, participants' perceptions of Parenthetical were similar despite differences in life experience. Participant perceptions did not vary by levels of parenting experience, Internet use experience, or Internet commenting experience.

Website "Push" Characteristics

Email reminder perceptions. According to survey responses from Sample 1, participants had a moderately positive perception of the website "push" feature - the email reminders ($M = 3.01$, $SD = .42$, on a 4-point scale with 4 being high) (Table 14). There were no significant differences in satisfaction with the email reminder by randomized group ($F(3, 41) = 1.89$, $p = .146$) despite their having received different types of email reminders.

Table 14

Satisfaction with email reminder: Sample 1

Item	*M*	*SD*	*Range*	*N*
Enjoyed receiving email newsletters	3.27	.54	(1-4)	45
Read newsletter before deleting	3.23	.68	(1-4)	45
Tried to interact on Parenthetical as described in newsletter	2.36	.78	(1-4)	45
Did not find newsletter annoying	3.11	.81	(1-4)	45
Newsletters encouraged to be more active on Parenthetical	2.77	.64	(1-4)	45
Reading made aware of new site features	2.91	.68	(1-4)	45
More likely to visit Parenthetical when received newsletter	3.18	.66	(1-4)	45
Would check site when email newsletter topic of interest	3.27	.59	(1-4)	44
Overall mean satisfaction with email reminder	3.01	.42	(1-4)	44

Note: Based on a 4-point rating scale (1 = strongly disagree, 4 = strongly agree)

Passive and Active Participation: Logins and Comments

A brief descriptive picture of passive (logins) and active (comments) participation on Parenthetical is presented in this section to give the reader perspective about the overall levels of participation on the website during the course of the study. The relationships between weekly logins and comments and participant characteristics and perceptions are tested for significance. Then the login and commenting behavior of Samples 1 and 2, in particular, are described.

Passive participation. Passive participation on the website was measured by the number of times a person logged into the website. From January 20, 2014 to May 18, 2014, including multiple logins by individuals, weekly logins averaged 48.2 logins per week, totaling 820 logins over the course of the study. Most logins happened on the website early in the week with almost half (48.78%) of daily visits occurring on Mondays. Logins then decreased gradually over the course of the week with each day following Monday receiving, on average, fewer visitors (see Figure 6). Sunday is an exception to this pattern with a slight increase in visits compared to Saturday. The effect for day of the week upon logins was strong enough to approach statistical

significance ($t(6) = 2.37$, $p = .056$), with higher average passive participation on Mondays than other days of the week.

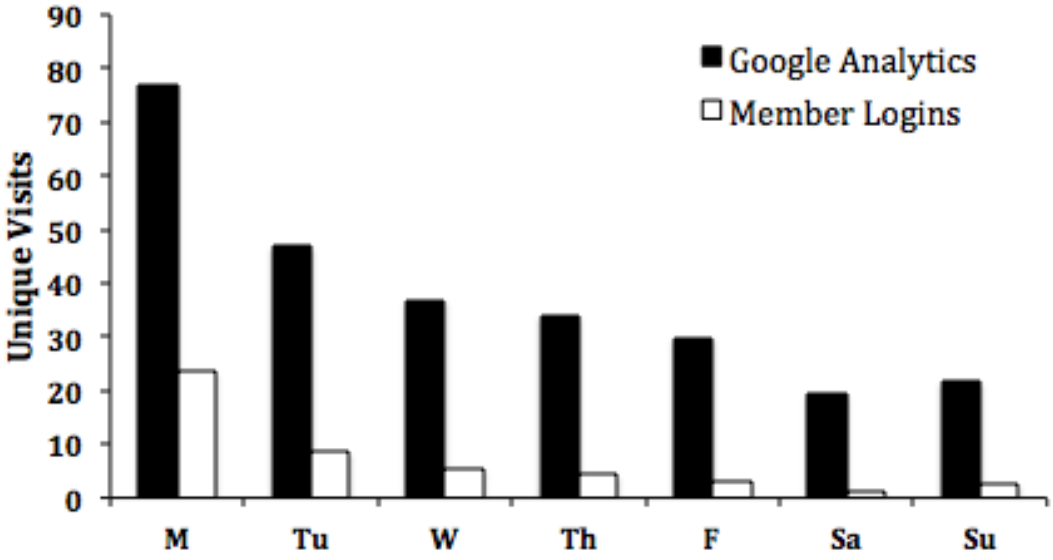

Figure 6: Average unique visits to Parenthetical by day of the week, January 20 – May 18, 2014

Since membership on Parenthetical was required and participants needed to remember their individual username and password to log into and be counted on the website, the Google Analytic count of unique visitors to Parenthetical is provided as a contrast in Table 15. Unique visitors is a Google Analytic count representing the number of individuals who accessed the login page but member logins counts those who actually logged into the site. Therefore, member logins represent those people who entered their login information and entered the site. Over the course of an average week, nearly five times more people accessed the login page (Google Analytics) than actually logged into the website (member login). These data are consistent with

the idea described earlier: although the website was easy to use, login procedures appear to have been a barrier to participation on the website.

Table 15

Average passive participation (via Google Analytics and member logins) per day of the week January 20, 2014 – May 18, 2014

	N	*M*	*SD*	*Range*
Google Analytics				
Monday	1312	77.18	14.22	(55-107)
Tuesday	796	46.82	8.18	(35-63)
Wednesday	626	36.82	8.68	(22-50)
Thursday	576	33.88	9.89	(22-62)
Friday	507	29.82	8.80	(21-52)
Saturday	328	19.29	5.76	(11-32)
Sunday	368	21.65	7.38	(10-45)
Member logins				
Monday	400	23.53*	5.27	(13-31)
Tuesday	144	8.47	3.43	(5-19)
Wednesday	92	5.41	3.41	(2-15)
Thursday	72	4.24	2.93	(1-13)
Friday	50	2.94	1.98	(0-7)
Saturday	20	1.18	1.55	(0-6)
Sunday	42	2.47	2.45	(0-8)

* $p < .10$

As is illustrated in Figure 7, one third of Sample 1 participants logged in for at least one of ten weeks during the course of the study with one participant logging in for eight of the ten weeks of the study. Slightly more than one-tenth of Sample 2 participants logged into the website over the course of the study. The majority of participants who logged into the website in Sample 1 and Sample 2 logged in one to two times. Total logins during the course of the study ranged from zero to eight logins for Sample 1 and zero to eleven logins for Sample 2 (see Table 16). Given the low login numbers over the course of the study, as a follow-up, the mechanism

for counting logins was double-checked and found to accurately count whenever participants accessed the site.

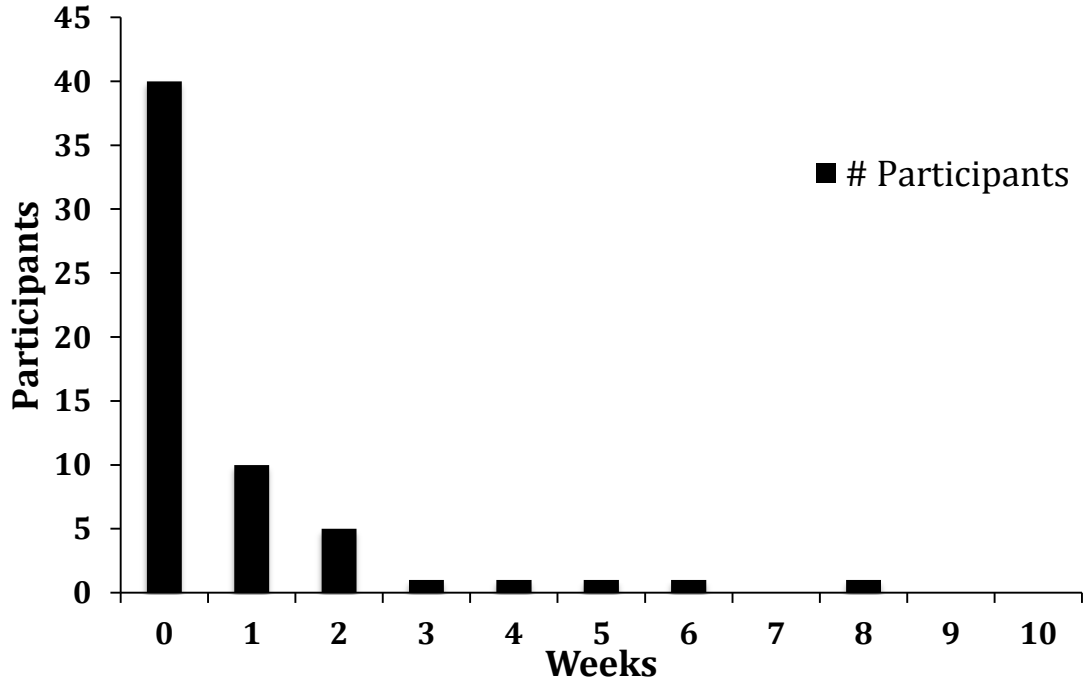

Figure 7: Total number of weeks logged in per participant: Sample 1. This figure depicts the number of weeks each participant logged in at least once over the study.

Participants also provided written explanations for why they continued to use the parenting website. Table 17 shows that the largest percentage of respondents replied that the reason they continued to use Parenthetical was because of the relevant, accessible content (e.g., "It's short, easy to read, pertinent topics."). Many participants also noted that the trustworthiness of the information from a research-based perspective was important to their continued use of the site (e.g., "I like the "no advertising/not for profit status." "I feel it is information that I can rely

Table 16

Total Number of Logins per Participant: Sample 1 (n = 60) and Sample 2 (n = 574)

Total Logins	*Sample 1*	*Sample 2*
	n (%)	*n (%)*
0	40 (66.7)	506 (88.2)
1	10 (16.7)	37 (6.4)
2	4 (6.7)	14 (2.4)
3	1 (1.7)	5 (0.9)
4	2 (3.3)	3 (0.5)
5	1 (1.7)	2 (0.3)
6	1 (1.7)	1 (0.2)
7	0 (0.0)	3 (0.5)
8	1 (1.7)	0 (0.0)
9	0 (0.0)	2 (0.3)
10	0 (0.0)	0 (0.0)
11	0 (0.0)	1 (0.2)
Ever logged in	20 (33.3)	68 (11.8)

Table 17

Reasons for Continuing to use Parenthetical: Sample 1 (n = 50)

Reason	*Number of mentions*	*Percent of respondents* [a]
Accessible site/information	7	14.0
Relevant topics/Quality content	21	42.0
Forgot about/Don't use	3	6.0
Unbiased source/Best source available	10	20.0
Email prompts	2	4.0
Feel supported or provide support	2	4.0
No response	15	30.0

[a] Percentages sum to greater than 100% as more than one response is possible.

on and not impacted by the advertising. Independent and unbiased."). Although two-thirds of Sample 1 participants did not log into the site during the course of the study, only 3 participants mentioned that they do not use the site, such as one participant who said, "I actually haven't been coming back. I kind of forgot about it."

Active participation. Active participation was measured by the number of times participants commented on the website. Table 18 shows average daily comments. From January 20, 2014 to May 18, 2014 a total of 21 comments were contributed to Parenthetical, or slightly more than one per week on average. Although more comments were left on Mondays than the rest of the days of the week combined, no significant effect was found ($t(6) = 1.752$, $p = .130$).

Table 18

Average active participation (comments) per day of the week January 20, 2014 – May 18, 2014

Comments	*N*	*M*	*SD*	*Range*
Monday	12	.17	.5	(1-2)
Tuesday	5	.07	.5	(1-2)
Wednesday	3	.04	.71	(1-2)
Thursday	1	.01	-	(1)
Friday	0	0	-	-
Saturday	0	0	-	-
Sunday	0	0	-	-

Nearly three-fourths (71.4%) of these comments were made on the *Topic of the Week* and the remaining quarter (28.6%) of comments were posted either as a comment or question on *Wise Talk*. As is shown in Figure 8, regardless of the location on the website the majority of comments were left on Monday and gradually tailed off to one comment ever left during the duration of the study on a Thursday and none on Friday, Saturday or Sunday.

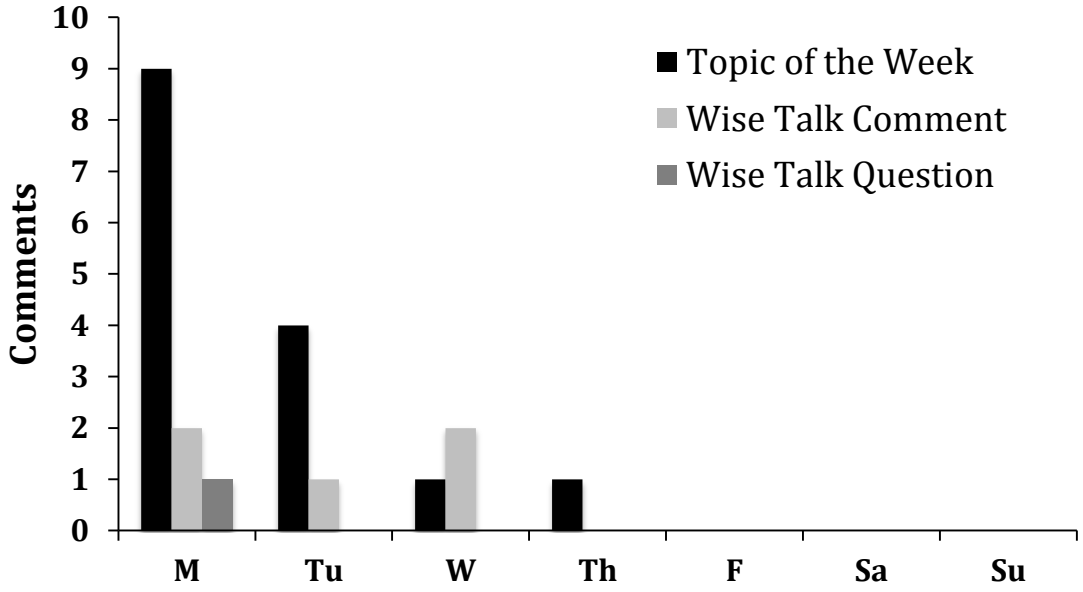

Figure 8: Total comments by location and day of the week, January 20 - May 18, 2014

Table 19 outlines how parents described why they decided to comment or not on Parenthetical. Participants who did not comment primarily explained that they did not want to (e.g., "I do not comment on the web.") or were too busy to take the time (e.g., "I feel like I'm too busy to take the time"). Among those participants who did comment, many explained that they commented when they felt especially connected to the content because of a recent parenting experience or if they felt confident in their ability to provide a useful response (e.g., "The topic was something I had dealt with recently with my own children. I thought I handle (sic) it well with creativity and flexibility and wanted to share my parenting tips.").

In summary, the majority of logins and comments happened early in the week with the most activity on Monday, the day of the weekly email prompt. Additionally, about one third of Sample 1 and one tenth of Sample 2 participants ever logged into the website during the course

of the study. The site content and trustworthiness were noted as key reasons participants continued to use the website. Most comments were left on Topic of the Week articles and participants noted that they were most likely to comment if they felt confident and interested in the material.

Table 19

Reasons for Commenting on Parenthetical: Sample 1 (n = 50)

Reason	*Number of mentions*	*Percent of respondents* [a]
Don't want to/Share another way	8	16.0
Time (busy or not)	8	16.0
Recent experience/Confident of advice value	6	12.0
Topic engaging	4	8.0
Don't know/No response	27	54.0

[a] Percentages sum to greater than 100% as more than one response is possible.

Participation levels and participant perceptions. Three hypotheses were tested to explore the relationship between parent perceptions of Parenthetical and their passive and active participation, as measured by logins and comments, on the resource. The relationships of passive and active participation with participant perceptions of ease of use, compatibility and superiority (Hypotheses 1-3) were examined in separate regression analyses.

The Ease of Use Hypothesis (Hypothesis 1): More positive perceptions of the ease of using a parenting website will be positively related to levels of both passive and active participation on the site, independently of participant characteristics. The results in Table 20 show that ease of use was not related to more passive or active participation levels.

The Compatibility Hypothesis (Hypothesis 2): Greater experience with Internet commenting will be positively related to levels of both passive and active participation on the site, independently of participant characteristics. The data also failed to support this hypothesis. Compatibility with the site through high Internet commenting experience was not related to passive or active participation levels (see Table 20).

The Perception of Superiority Hypothesis (Hypothesis 3): Perceptions of a parenting website as more useful than other parenting resources will be positively related to levels of both passive and active participation on the site, independently of participant characteristics. Logistic regression showed a relationship ($R^2 = .09$) between parents' perception of Parenthetical's superiority compared to their other most valued mass media source of parenting advice (i.e., class, book or website) and their level of active participation measured by number of comments, $\beta = .009$, SE = .004, $p < .05$. Unexpectedly, those who rated Parenthetical as "somewhat less" or "much less" useful than their most useful mass media parenting resource had higher average weekly active participation than those who rated Parenthetical as "about the same," "somewhat more" or "much more" useful than their most useful resource. Logistic regression also showed a relationship ($R^2 = .08$) between parents' perception of Parenthetical's superiority compared to their most valued interpersonal source of parenting advice (i.e., friend, family member or profession) and the level of passive participation measured by number of comments, $\beta = .051$, SE = .025, $p < .05$. Contrary to expectation, those participants who rated Parenthetical as "somewhat less" useful than their most useful source of interpersonal parenting advice logged onto the website the most frequently.

Table 20

Relationship Between Participation Levels and Participant Perceptions: Sample 1

Perceptions	β	*SE*	*p*	R^2
Ease of use (Hypothesis 1)				
Passive	-.068	.064	.294	.023
Active	-.006	.010	.561	.007
Compatibility (Hypothesis 2)				
Passive	.015	.042	.726	.002
Active	.006	.007	.441	.010
Superiority Mass Media (Hypothesis 3)				
Passive	-.021	.031	.513	.009
Active	.009	.004	.041*	.086
Superiority Interpersonal (Hypothesis 3)				
Passive	.051	.025	.047*	.080
Active	.000	.004	.916	.000

* Significant at $p < .05$

Thus the Superiority Hypothesis was partially supported and the Ease of Use and Compatibility Hypotheses were not. Parents who reported that Parenthetical was not as useful as their most useful mass media source of parenting advice commented on Parenthetical more frequently (had higher active participation) but were not significantly more likely to log onto the site. However, parents who reported that Parenthetical was not as useful as their most useful interpersonal source of parenting advice logged on more often on Parenthetical (had higher passive participation) but showed no significant difference in active participation. A follow-up analysis was also conducted to measure any differences between non-users (those who did not login or comment over the course of the study) and users those who did. No differences were found in perceptions of the site between groups.

Participation levels and website "push" characteristics. Three hypotheses were tested to evaluate the relationships between type of email reminder and levels of passive and active participation, as measured by logins and comments.

Hypothesis 4: Receiving the push email reminders will be positively associated with both passive and active participation on the website as compared to the control (no email). Preliminary analyses identified two variables on which the 4 groups differed, suggesting the need for statistical control during group comparisons. Thus, an analysis of variance with two covariates (Parental Stress and usefulness compared to resource) was conducted to test Hypothesis 4. All groups receiving email reminders were combined to assess Hypothesis 4 and determine if any email reminder would be positively associated with passive and/or active participation as compared to the control group that received no email. The ANCOVA comparing passive and active participation for no email versus any email reminder did not support Hypothesis 4. There was neither a significant effect of email reminders on passive participation levels ($F (5, 43) = 1.24$, $p = .273$, $n_p^2 = .035$) nor of email reminders on active participation levels ($F (5, 43) = 3.26$, $p = .081$, $n_p^2 = .098$).

Hypothesis 5: Receiving push emails that scaffold active participation skills (scaffold only or scaffold + information) will be positively associated with active (comments) and passive (logins) participation on the website more than receiving (a) no email (control) or (b) information only. Two analyses of variance with two covariates (Parental Stress and usefulness compared to resource) were conducted to test Hypothesis 5 in Sample 1. There was no significant effect of any type of email reminder on comment levels ($F (5, 43) = 1.59$, $p = .182$, $n_p^2 = .156$). There was a significant effect of email reminder group on average daily logins, $F (5, 43) = 2.93$, $p = .023$, $n_p^2 = .254$. However, contrary to the hypothesis, the information only group rather than the scaffolding groups had higher levels of logins. Post-hoc analyses using Tukay's HSD indicated that login levels were higher for participants in the information only email

reminder group than for participants in the control group (p = .002), scaffolding only group (p = .013), and the scaffolding plus information group (p = .014). See Table 21 for descriptive statistics regarding passive (login) and active (comments) use for Sample 1 by group.

Table 21

Average Weekly Participation by Group with Significance Tests: Sample 1 (n=60)

Sample 1	*Group 1*	*Group 2*	*Group 3*	*Group 4*
	M (SD)	*M (SD)*	*M (SD)*	*M (SD)*
Logins	.013 (.035)	.213 (.264)*	.043 (.065)	.050 (.089)
Comments	.000 (.000)	.007 (.026)	.014 (.036)	.013 (.034)

* Significantly different than Group 1 (p = .002), Group 3 (p = .013), Group 4 (p = .014)

Hypothesis 5 was also tested in the larger Sample 2. See Table 22. A one-way analysis of variance (ANOVA) was conducted to compare the effect of email reminder type on logins (Hypothesis 5) in Sample 2. There was not a significant effect of scaffolding emails on login levels (F (1, 572) = .381, p = .54). Instead, unexpectedly, there was a significant decrease in average weekly logins from the baseline period (3 weeks) to the study period (10 weeks) for both the information only group (Group 1: t(289) = 3.76, p < .001) and the scaffolding plus information group (Group 2: t(283) = 3.99, p < .001). However, the change in logins between the baseline period and the study period was not significantly different between the two groups (t(572) = -.788, p = .431).

A one-way analysis of variance (ANOVA) was also conducted to compare the effect of email reminder type on comments (Hypothesis 5) in Sample 2. There was a significant but small effect of email type on active participation levels (F (1, 572) = 5.06, p = .03, n^2 = .006). Comments among the scaffolding plus information group significantly increased from the baseline period to the study period (t(283) = -2.01, p = .05). Group 1 had a total of two

comments on the website during the three weeks of the baseline period and two comments during the ten weeks of the study period. Group 2 had zero comments on the website during the baseline period and a total of four comments on the website during the study period, an apparent rise in active participation. During baseline, both groups received the information only emails. During the study period, Group 1 continued to received information only emails and Group 2 received emails containing information plus scaffolding active participation.

Table 22

Average Weekly Participation by Group with Significance Tests: Sample 2 (n = 574)

	Baseline		*Study*	
Sample 2	*Group 1*	*Group 2*	*Group 1*	*Group 2*
	M (SD)	*M (SD)*	*M (SD)*	*M (SD)*
Logins	.030 (.133)	.038 (.157)	.004 (.020)**	.003 (.018)**
Comments	.002 (.028)	.000 (.000)	.001 (.008)	.001 (.012)*

*/** Significantly different from baseline * p <.05, **p < .001,

The hypothesis (Hypothesis 5) that email reminders with scaffolding content would be positively associated with active and passive participation more than other types of email reminders was not supported. Unexpectedly, information only email reminders instead of scaffolding email reminders were positively associated with more logins in Sample 1 than the other types of email reminders or the control. While Sample 2 showed no significant differences between email reminder group and level of logins, the information plus scaffolding group had a larger decrease in weekly logins from the baseline period to the study period than did the information only group suggesting that, similar to Sample 1, there was less attrition (from weekly logins) in the information only email group. No significant difference was found in comments between groups for Sample 1. In Sample 2, however, Group 2 showed significantly more active participation during the study period compared to the baseline period than did Group

1. This suggests that the addition of information scaffolding active participation had a small effect on active participation.

Hypothesis 6: Scaffolding content will be most effective at increasing active participation among individuals with the least Internet experience. An analysis of variance with two co-variants (Parental Stress and usefulness compared to resource) and Internet commenting experience as an interaction term was conducted to test Hypothesis 6 in Sample 1. The interaction between email group and Internet commenting experience was not significant, $F(3, 39) = .259$, $p = .86$, $n_p^2 < .001$.

In conclusion, the email reminders had different impacts than hypothesized. The information only email reminders in Sample 1 were related to significantly more passive participation (logins) than the control group or either treatment group. No difference was found in Sample 1 regarding active participation (comments) and the email content scaffolding more active behavior. In Sample 2, however, the group receiving the information and scaffolding content was significantly more commenting than the information only group.

Discussion

The major focus of this evaluation has been to explore participation in the form of logins and comments and factors related to participation on an online parenting resource. Thus, this discussion will start with a brief assessment of participation during the evaluation. Next, the first set of hypotheses regarding the influence of parent perceptions on login and commenting behavior will be discussed. This will be followed by an evaluation of the second set of hypotheses regarding the influence of push technologies on parent participation. Finally, the implications of this study for future directions in research and outreach will be discussed.

Passive and Active Participation.

Similar to other research on participation and push methods for encouraging participation, this evaluation showed that passive participation was more common behavior than active participation and that both types of participation were encouraged with push email reminders.

Consistent with other research, in the current study more participants participated through logging on than commenting (Nonnecke & Preece, 2000; Allen & Rainie, 2002; Van Uden-Kraan et al., 2008). However, both logging into the website (passive participation) and commenting (active participation) were fairly low frequency events with one-third of study respondents logging into the website at least once during the course of the study and 21 comments in total left on the site during the course of the study. A handful of studies have explored parents' passive participation through login or visit rates on parenting websites. For example, an assessment of one other parenting website showed a return rate (similar to login rate) of 25% (Steimle & Duncan, 2004). Different reports of parents' online behavior show that

94% of parents see parenting information on a weekly or monthly basis with only 1% seeing information on a daily basis (Allen & Rainie, 2002). Since parents access multiple resources to support their parenting, a login rate of two to ten logins over the course of a ten week study, such as our evaluation found, might be the top range of participation to anticipate from the majority of parents. Other parenting websites have not measured the number of comments left so comparative studies of active participation are not available. However, when asked if they primarily "read" websites or "read and also commented" on websites, fewer parents reported that they commented in addition to reading websites (Allen & Rainie, 2002). Therefore, lower commenting frequencies than logins are not surprising.

As was predicted and other studies showed, reminder emails were found to be effective in increasing return visits to the website (Abdolrasulnia, et al., 2004; Clarkson, et al., 2012; Houston, et al., 2010; Woodall, et al., 2007). In particular other studies found that participation was higher on days email was sent out (Houston et al, 2010; Woodall et al, 2007; Abdolrasuluia et al, 2004) and our findings support this effect for both logins and comments. In one study by Houston et al. (2010) participation was reported to be six times greater on days when an email was sent than on other days. Similarly, in the current evaluation there were 5.7 times more member logins on the day the email reminder was sent than the average number of member logins per day for the rest of the week. Some authors suggest that email newsletters can, at best, increase frequency of site visits for a short time. For instance, authors of one study noted that the frequency with which participants logged into their site decreased again within two days of sending the email (Woodall, et al., 2007). This effect was also seen in an unpublished evaluation of another online parenting resource, which found that when email reminders ceased for several

weeks visits to the site greatly decreased compared to when email reminders were sent (Clarkson & Huser, 2013). These findings suggest that reminder emails are key for maintaining use of a site and that the most effective dosage or frequency of these reminders should be studied. It is plausible that sending more email reminders could increase the frequency of visits to a parenting website and therefore increase exposure to the content. It is also plausible that increasing the frequency of emails would, at some point, begin to overwhelm parents and participation would decrease.

In summary, similar to other studies, passive participation (i.e., logging in, reading) was the most common form of participation recorded in this evaluation. Furthermore, the results of this study corroborate previous research showing that email reminders increase participation at least on the days on which they are sent. The rest of this discussion expands the current field on factors relating to participation in parenting websites by exploring how parent perceptions relate to participation levels and also studying if different types of email reminders have an effect on the type of participation in which parents engage.

Participant Perceptions and Participation.

First in this evaluation, characteristics and perceptions of parents were explored, including how they might relate to participation. Specifically, the first set of hypotheses were developed based on Diffusion of Innovation Theory and centered on the perceptions participants have of parenting websites and how these perceptions might influence participation. In these hypotheses I ask: Do more positive reports of ease of use, greater compatibility with existing experience, or perceptions of the parenting website as superior to other parenting resources relate

to higher participation levels? Analyses from this study show the answer to be no, participants' perceptions do not relate to participation as predicted.

Analyses showed that neither "ease of use" nor "compatibility with existing experiences" nor "superiority to other sources of parenting information or support" was significantly related to participation. Parents who reported that the website was easy to use did not show higher logins or comments on the site than parents with less positive reports of the website's ease of use. (It is interesting to note that most participants rated the website as easy to use. Perhaps study participants already have more positive perceptions and higher use of the site than their counterparts who did not elect to participate in the study.) Similarly, based on the importance of compatibility of existing experience, a higher level of previous Internet commenting experience was predicted to be linked to higher participation levels on Parenthetical. However, no significant difference in participation was found between parents with less Internet commenting experience when compared to parents with more commenting experience. Finally, contrary to the superiority to other resources hypothesis, analyses also showed that parents who perceived Parenthetical as more useful than another mass media or interpersonal source of parenting advice were not more participatory online than other parents. Instead, unexpectedly, it was participants who rated a mass media parenting advice source other than Parenthetical as superior in usefulness who had higher levels of active participation over the course of the study. Furthermore, participants who rated the interpersonal parenting advice they received from a friend, family member or professional as more useful than Parenthetical logged in more frequently to the site. In other words, although they rated another source of parenting

information or support as superior to Parenthetical, participants either commented on or logged into the website more often than participants who gave a higher rating of Parenthetical.

In Diffusion of Innovation Theory, Rogers posits that more positive perceptions of factors such as ease of use, compatibility with existing experiences and perceived superiority will lead to greater adoption or use of an innovation. Yet this evaluation found the opposite. Less positive perceptions of Parenthetical were associated with more participation. Additionally, theoretically, high ratings of ease of use or compatibility would be expected to relate to higher levels of participation; yet there was no relationship between these perceptions and participation levels on Parenthetical. It is possible that we see a discrepancy between perceptions of the site and use of the site because the questions regarding perceptions of Parenthetical may not fully capture users' experiences with the website. For instance, the majority of participants rated the ease of use and superiority of the website highly yet several participants took extra time to mention that the required login with a username and password was a barrier to their participation on the website. One participant described reading Parenthetical's weekly email reminder and then searching elsewhere on the Internet for more information on the topics of interest. Another study of an online smoking cessation program reported poor site design as a major barrier to use with participants reporting poor website design as the reason they failed to continue the study (Lenert, et al., 2003). Thus, during participants' initial view of the website when they joined, they may have had an impression that the site was well designed and contained valuable content, however, upon future opportunities to visit the site the need to remember and use their password may have presented too great a barrier for frequent participation.

Participants' high ratings of the ease of using Parenthetical suggest that participants can quickly scan the design of Parenthetical and see that it is accessible and user-friendly, but more complicated assessments such as comparing the relative value of Parenthetical to other sources of parenting support require more time and a deeper assessment. In fact, participants who spent more time on Parenthetical appeared to be more critical of the value of the website than those who spent less time on the site. Interestingly, the only relationship between higher participation and perceptions of Parenthetical was among those parents who said Parenthetical was not as useful as other sources of parenting information and support in their lives. Since the average length of time spent viewing a webpage to form a first impression is 19.2 seconds (Dahal, 2011), most participants may have reported their positive perceptions of Parenthetical based on an initial visit to the website of possibly less than 30 seconds. The less time participants have spent on and knew about the website the more likely they may be to converge on the average response regarding the superiority of Parenthetical. Therefore, participants who use the site more actively and frequently have more information to critically assess the superiority of this parenting website compared to their other sources of parenting information.

While a rating of the Parenthetical as "less useful" than other sources of parenting support or information may initially appear to devalue Parenthetical as a parenting resource, our evaluation shows that those participants with lower ratings of superiority actually continued to use Parenthetical, which suggests that parents value and use multiple sources of parenting information and support. For instance, parents who think a friend or family member is their most valuable source of parenting support may still use an online parenting resource to "fact check" the parenting advice they receive in their interpersonal relationships. As one parent said, "I have

a lot of resources in my family; a counselor, nurse, teacher, social worker, etc. however sometimes it is helpful to get non biased, research based information from a non-relative." Similarly, parents who highly value another parenting website or book or class may comment more often on other online resources because they want to share the parenting information they so highly value. The learning from one resource can be used in another setting (Haythornthwaite & Andrews, 2011). Furthermore, experiences from one setting are likely connected to a person's experience in another location: "in ecological research, the principal main effects are likely to be interactions" (Bronfenbrenner, 1979, p. 38). Parenthetical is part of a complex network of influences on the parent. It does not stand alone as an intervention but is integrated by the parent into the set of beliefs that balances many influences in the parent's life.

In summary, these evaluation findings do not point to Diffusion of Innovation Theory as best illuminating the processes of maintaining participation on a parenting website. The theory may better relate to the initial adoption of online resources. Instead, this evaluation suggests the need to take a more ecological approach in online intervention design and evaluation. Parents and children interact in complex, interrelated ecologies and may receive support and information from a gamut of close and more distant interactions, which may interact with each other.

"Push" Features and Participation.

Next, in this evaluation, I considered the role of website or program-based features to "push" parents to engage online. Therefore, a second set of hypotheses focused on the features of a parenting website that may actively promote participation on the site. In this section of the discussion I summarize the findings related to "push" features and participation asking: "Do participants who received email reminders of any type have higher participation than participants

who received no email reminder?" and "Are emails that scaffold active participation skills most effective at increasing participation among any participants and those with less Internet experience?" The answer to these questions in Sample 1 is no, neither simply receiving any email nor receiving a scaffolding email was related to more participation. The data from Sample 2, however, supported the second hypothesis finding that, yes, scaffolding emails were related to more commenting. Specifically, in Sample 2, participants receiving the scaffolding plus information emails commented more than those receiving the information only emails. Furthermore, there was an interesting unexpected finding in Sample 1; the information only group had the highest weekly logins of all the groups.

Contrary to predictions, Sample 1 findings showed that simply receiving any email reminder was not related to increased participation through logins or comments on the site compared to the control group, which received no email reminders. However, email reminders were not without effect. In Sample 2, the participants who received email reminders with information plus scaffolding of active participation commented on the site significantly more often than participants receiving the information only email reminders. Although not significant, trends from Sample 1 supported this finding; participants receiving scaffolding content in their email reminders commented twice as much per week as those receiving information content only. Finally, contrary to the hypothesis, the Sample 1 group receiving information only email reminders had significantly higher weekly logins than any of the other email reminder groups.

The current study saw more visits to the site on days when the email reminder was sent compared to other days of the week. Other research has also found push technologies, such as reminder emails, to be effective in increasing return visits to a website (Abdolrasulnia, et al.,

2004; Clarkson, et al., 2012; Houston, et al., 2010; Woodall, et al., 2007). Since email reminders are linked with increased website use on our site and others, a group receiving any email reminders was predicted to be significantly more participatory than the group receiving no email. Contrary to this expectation, however, in the current study email content mattered. Increases in specific types of participation were linked to receiving a particular email reminder rather than simply receiving any email reminder. For instance, a higher level of logins was seen among participants who received informational emails announcing new content on the website, while email reminders with scaffolding or information plus scaffolding were related to more comments.

This nuanced response to email reminder type has not been shown in other studies. A study by Houston et al (2010) found no significant difference in frequency of participation when different groups received email reminders with different content. However, at least one important difference exists between this study and our study. Previous studies have only compared different descriptive email content (as Houston et al. did). For instance, comparing descriptive content such as "new article on x posted today" versus "new article on y posted today." In the current study, emails differed in either descriptive or prescriptive content. Thus, one email group received *descriptive* emails ("new article on x posted today"), one email group received *prescriptive* emails ("go to the site and do y"), and one email group received both prescriptive and descriptive information in the same email. Therefore it is fitting that group differences in the type of participation would vary by the type of participation that was encouraged in that groups' email. Although it was surprising that when combined the email reminder groups as a whole did not participate significantly more than the control group,

combining groups may not have increased power significantly because the email content motivated such specific participatory behavior and did not trigger any other form of participation. In other words, information only emails may have only encouraged reading the website and thus increased the frequency of logins, while scaffolding emails may have only highlighted methods of active participation and thus increased commenting on the website.

One question that arises from this assessment is why both more logins and more comments were not seen in the group receiving both information and scaffolding content in their emails. One explanation is that the information plus scaffolding emails may have not been easily browse-able for participants since they had twice the text of either the information only or scaffolding only groups. Research on Internet use shows that people typically navigate rapidly between web pages – sometimes viewing several pages within seconds (Cockburn & McKenzie, 2001; Steimle & Duncan, 2004). If something is overwhelming or too complex, people are unlikely to spend time deciphering it and will rapidly move to another page. Rather than being motivated to participate passively and actively on Parenthetical, the majority of participants may have simply deleted these emails without fully reading them.

Correspondingly, the information only emails may have had the largest effect on participation of any of the email types because they were more easily scanned and they also contained content immediately relevant to parents' lives. Adult Learning Theory posits that adult learners are internally motivated to engage in education when a topic is relevant to their current life experiences (Merriam, 2001). Thus, when participants received an email announcing site content that they found especially relevant to their current life experiences they may have been highly motivated to click through and log into the website. However, a parent who only

received the scaffolding emails about how to comment on the website may not have connected personally with the content and, thus, had less interest. Parents' open-ended responses regarding why they continued to use the website corroborate this theory. Appreciating the relevant topics and quality content were the most frequently mentioned reason parents gave for continuing to use Parenthetical. For instance, one parent explained, "The weekly email prompts me. I enjoy the topics." Furthermore, when asked about their satisfaction with the email reminders one item which received the highest satisfaction was that parents "would check the site when email newsletter topic [was] of interest." Sharing content that connects to parents' immediate experience is a key tool for maintaining parents' long-term engagement.

The current evaluation findings suggest that scaffolding active online participation can lead to more commenting behavior but since active participation is a low frequency occurrence is likely to be observed only in large samples. However, both Adult Learning Theory and scaffolding research may be integral to increasing the efficacy of email reminders' impact on active participation. For instance, as with passive participation, scaffolding of active participation in an online adult learning setting may only work when participants are personally engaged with materials and content. Indeed, of all the items regarding satisfaction with the newsletters, participants reported the lowest agreement with statements suggesting that it was the newsletters that encouraged them to interact more actively on the website. Items such as "tried to interact on Parenthetical as described in newsletter" or "newsletters encouraged to be more active on Parenthetical" had the lowest mean agreement. Instead participants seemed to attribute their decision to comment with their own internal motivation linked to life experiences. The open-ended responses illustrate the role of life experience in participants' commenting behavior

because when asked why they commented on the site, participants who had commented consistently reported that they had experience with the topic or were interested in the topic. For instance, one parent explained, "had something that I thought would be helpful." While another parent said, "I felt confident in my suggestion," and another shared, "The topic was something I had dealt with recently with my own children." Therefore, although the scaffolding information encouraged more active participation, scaffolding may be more effective if, as Adult Learning Theory would support, it is provided when participants are already highly engaged and interested in materials relevant to their lives and parenting. One option may be to provide scaffolding of active participation skills not in a weekly email but on the learning community as a pop-up or hover over that was activated when a certain portion of the page is read or a part of the site has been visited several times. This method would scaffold learning "just in time" for a parent's readiness to actively participate and share his or her lived experiences (Hawthornthwaite & Andrews, 2011).

Furthermore, scaffolding research shows that in addition to being capable of learning a task, learners also need certain contextual supports, such as readily available information and timely interventions, to gain a higher level of functioning (Azar, 2002). Although written scaffolding was provided in the current study, the "how to" instructions may have been too distant from participants' actual practice of the skill. Parents may have read an email about how to leave a comment on the website, for instance, but not have been motivated to leave a comment immediately and, thus, not remembered or had easy access to the information when they were ready to actually leave a comment. Therefore, scaffolding of active participation might make a bigger impact if provided on the website at a point where participants are in their comfort zone

with the content they wish to share and are actively seeking to practice a new behavior, such as leaving a comment.

Key to scaffolding is the concept of a more skilled partner leading a less skilled partner (Azar, 2002). Therefore, person provided rather than computer provided scaffolding might also be more engaging to parents. In other words participants might need to see other people actively participating before joining the online conversation. In the current study, the majority of participants (90%) reported that they had experience commenting on Facebook, which is an established online community with very active participation and, therefore, daily examples from friends and acquaintances of what participation can look like. While scaffolding through written instructions can provide a model for people by describing a certain behavior, seeing other people model a novel behavior, such as commenting in an online community, may be key to greater behavior change. In many experimental situations based on social cognitive theory "confederates" play an essential role in instigating behavior adoption. It is possible that the practice of "confederate" parents or more experienced parent leaders modeling participatory behaviors online would be more motivating to novice participants than receiving text-based scaffolding instructions regarding active online participation. The addition of these commenter "confederates" could be a structural change in the community, such as a special invitation to parents to volunteer as guest contributors or community guardians. Alternatively, a tipping point may occur naturally when enough parents confident in online participation join the online community, participate actively, and model that type of participatory online community for others.

To summarize, although different than initially hypothesized, email reminders do have an effect on passive (login) and active (comment) participation in online settings. As has been previously shown, at a minimum email reminders encourage ongoing use of a resource. In addition, the findings of our current study suggest that descriptive email reminders are related to increases in login participation, while prescriptive email reminders are related to increases in commenting participation. Participatory behavior, however, is still a low frequency event. Therefore, in future studies, Adult Learning Theory and scaffolding research could be used to further tailor email content to be relevant to parents' lived experiences and immediate needs.

Limitations.

Sample. Several qualifications should be considered regarding these findings. First, the small sample size should be considered. It is possible that additional findings would have been significant with a larger sample size. Moreover, with a 10% study response rate the findings of this study should be generalized with caution to the larger population of members of Parenthetical. However, literature about online communities shows that typically about 9% of members are passive participants (i.e., regularly reading content), 1% of users are active participants (i.e., always reading, regularly commenting), and the remaining 90% are occasional or rare users (van Mierlo, 2014). Given these numbers, the sample recruited for this evaluation may actually represent Internet-using parents and results may be generalizable to the 10% of people who are typically more actively involved online.

Although the demographics of this study's sample are consistent with those of other online parenting resources and may be representative of Internet-using parents, the findings of this evaluation should not be generalized to all parents. First, the sample is likely skewed toward

parents who prefer searching for information on the Internet. The majority of participants in this evaluation reported high daily and weekly Internet usage and more parents identified a website as their most useful source of parenting information. While a bias toward Internet use is not unexpected in a sample recruited online, an evaluation of an online parenting resource within a general sample of parents would be a strong test of all (not just experienced, frequent Internet users) parents' adoption of a new form of information. Moreover, more highly educated people may be more likely to use University or well-researched websites because they feel they are more trustworthy, however, less educated parents may not use the same criteria to determine trustworthiness (Rothbaum et al., 2008). Less educated parents are absent from this evaluation and future research should make an effort to reach populations of parents less typically served with online resources. Not only might different delivery systems need to be explored in this effort but identifying how to gain the trust of different parent groups, such as less educated parents, may also needed.

Measurement. As has been described elsewhere in this discussion, many participants described logging into the website with a username and password as a significant barrier to their access of the website. This is a limitation of this study's measurement because password protection was implemented for this study to record passive participation on the website. Passive and active participation may have been inhibited because participants viewed logging into the website as too great a barrier. While it is a limitation to the current study, measuring individual participation is also currently a limitation of the field. Previous studies have relied on aggregate measures of participation, such as total visits to the site, to measure participation. There are strengths to linking participation to an individual as was done in the current study. For instance,

password protection makes a randomized control trial of the effect of push technologies on participation possible. In the next section, I provide several suggestions for alternative measures of participation.

Future Directions in Online Parenting Outreach and Research.

Since the conceptualization of this evaluation, "push" technology options and modes of active participation have grown exponentially through social media platforms. In addition to receiving email, large numbers of Americans have Facebook accounts, Pinterest boards, Twitter feeds, and YouTube channels, which they use to both receive and share information and ideas. Although social media such as Facebook and Twitter existed at the beginning of this evaluation, membership on and daily use of these social media tools continues to grow. The broad diversity of and growth in interactive social media tools offers at least two opportunities for future directions in the study and delivery of online parenting education and support. First, social media can be utilized to more seamlessly and regularly connect parents with parenting education content. Thus, in addition to email newsletters, numerous social media channels can now be used to provide "push" reminders. Secondly, the ever-expanding network of content creation and sharing necessitates the creation of and use of more comprehensive measures of interaction and participation to better capture participation and engagement behaviors. For instance, participants could actively engage with a website not only through posting comments or questions on the site but through re-tweeting something from a community's Twitter feed, "liking" the community's Facebook page, or pinning an idea from a post onto Pinterest.

Future projects should meet parents in their existing networks and incorporate methods beyond email to provide reminders and connect parents to website content. It is not enough for

family life educators to create online resources and wait for parents to access and use these materials. Parents are faced with "infoglut," an overwhelming abundance of information on a daily basis (Ebata & Dennis, 2011); by using email and social media as "push" technologies educators can cut through the noise and bring quality, relevant parenting information directly to parents. Online parenting programs may struggle to implement some of the key components of highly effective parenting interventions, such as practicing behavioral skills or forming a strong interpersonal relationship; however, with the use of reminders online parenting programs can change parents' social ecology. For instance, instead of having home visitors come to a home every week, websites "visit" parents on a regular basis via their digital and social media channels and prompt parents to repeatedly engage with and reflect upon parenting content. A next step in the research of parenting websites will be to contrast different delivery methods and dosages of parenting information and support. For instance, a study could explore if shorter pieces of parenting information provided more often are more effective at increasing parents' interaction with and integration of parenting support into their daily lives. Alternatively, delivery of "push" reminders via different social media platforms could be contrasted. Studies such as these would help define how parenting support and education can be delivered unobtrusively but frequently and effectively - allowing parents to easily dip in and out of parenting support every day.

Moreover, pushing content for consumption and interaction to social media platforms may be especially important for reaching more diverse parenting audiences. Parents in the current evaluation were primarily white, highly educated, mothers. People in minority groups have historically been harder to reach with family outreach programs (Kumpfer et al., 2002). Current research shows, however, that adults typically without access now have increasing

access to online resources primarily through mobile and smart phones (Rainie & Wellman, 2012). Since social media platforms are typically designed for consumption on smart phones through applications or "apps," utilizing social media to push parenting content and information may increase accessibility to more marginalized parenting groups. Future research should explore how social media broadens the reach of online parenting programs.

A second future direction centers on developing better measures and definitions of interaction and passive and active participation. Previous literature about online parenting resources showed that the design of online parenting resources has primarily been passive with text for parents to read but no space for parents to actively interact with the resource (Hughes et al., 2012). Based on this literature interaction was intentionally built into Parenthetical to fully benefit from the interactive capabilities of Web 2.0 technology and also build upon research showing that actively processing material by talking or writing about it heightens retention of material (Hill, 2001). Therefore, measuring active participation in addition to passive participation was a key expansion of this evaluation compared to previous research because active engagement on Parenthetical was encouraged as a key to increased learning and behavior change. Surprisingly and discouragingly, the frequency of active participation measured in this evaluation was low. However, this may be due to inadequate measures and conceptualizations of engagement rather than such low participation. For future research it is important to note that less interactive engagement on a *website* does not necessarily mean that participants have less active engagement with the *content*. Furthermore, active participation an mean much more than "commenting." For instance, liking posts or completing polls are all active behaviors.

Parents may be highly engaged with and reflecting upon the content provided by an parenting website in other settings that current measures of participation do not capture. For instance, participants may be pushing content from Parenthetical to discuss in other online spaces, such as Facebook, or in face-to-face interaction because they are more comfortable commenting in familiar communities and relationships. Members of the larger blogging community described 2013 (the year Parenthetical launched) as the year that everything they knew about blogging changed (Bonney, 2014; Simone, 2014). In particular, bloggers observed that people stopped commenting on individual blogs - conversations on their websites slowed down. Many online commenters attribute the decrease in blog comments to an increase of sharing on other social networks.

Consequently, broader definitions and measures of interaction need to be built into studies of online parenting education and support. These measures should incorporate both self-reports of interpersonal sharing or personal reflection and web-based metrics of interaction and participation. For instance, participants could be asked if they discussed the web content with others. Walker and Riley (2001) studied the effect of a mailed, parenting newsletter and found significantly greater self-reported behavior change when mothers said they had discussed the newsletter content with a member of their family or social network. Similarly, parents could report if they had tried a specific suggestion from the website or thought about how an idea on the website was consistent with specific behaviors or actions by their teen or in their parenting (i.e. linking the content to life experiences). The design of websites should be directed to such interactive and reflective processes, not to simply being an information exchange, which does not require critical thinking and reflection.

Expanding web-based metrics may require more cross-disciplinary teamwork between marketing specialists, social scientists and computer scientists. Web-based measures should track sharing of content across social media in addition to active participation on the program website. While tracking participants' interaction with content across all social media tools is too complicated for most evaluations, counts of shares on social media tools that are linked to a parenting resource would be an important start. For instance, if a website provides a "share on Facebook" option with each post or article, participants' activity related to that post on Facebook should be measured. Due to privacy issues, tracking sharing on an individual level could be difficult, but the total number of "likes" of an article on Facebook or "pins" of a link on Pinterest should be seen as valuable metrics of interaction. Additionally, counts of traffic on a parenting website's social media pages, such as the community's Twitter feed or Facebook page should be analyzed.

Social media channels reach not only the network of users registered as members of a parenting resource but they also reach the personal networks of registered users who are then linked to another web of networks (Rainie & Wellman, 2002). One social media aggregator, Buffer, calculates the potential reach of a post on social media by first counting how many direct followers a site or user has (i.e., you have 100 Facebook followers) and then adding the followers of anyone who shares your content (i.e., someone who shares your post has 200 followers so your potential reach is 300) with the assumption that content is being shared not just with one person but interconnected networks (Buffer FAQ, 2014). Thus, even one "share" via a social media channel could have exponential reach.

To summarize, while the eventual goal of an intervention evaluation should be an efficacy trial, more research regarding processes of engagement with online parenting resources is likely to benefit such efforts. The study of participation on parenting websites should not be limited to activity directly happening on the community's webpage. The networked and interconnected nature of online interactions should be considered both in designing "push" interventions and in measuring interaction with site content. With the expansion of social media in the daily lives of American adults, sharing via multiple networked communities should be explored as a form of active interaction with content. Additionally, relational measures, such as talking to a friend or family member, should not be overlooked.

Conclusion.

In conclusion, at least for some parents, an online parenting resource can become a natural part of parents' daily social ecology. Additionally, parents' online engagement can be influenced by something as simple as an email reminder. Researchers studying parents' online information use can build upon the findings of this evaluation to expand the impact and reach of quality online resources for parents. In particular, the findings of this evaluation can be applied to future online interventions to maximize program reach and help maintain participation, which would support better efficacy trials. For those delivering parenting education and support, these findings suggest that educators can have daily or weekly interactions with parents regarding parenting education and support through digital technologies. The conversation does not need to stop after parents leave the classroom. Instead, face-to-face workshops and classes can be supplemented and supported by ongoing digital connections with parents. Furthermore, the findings from this study can be applied to boost access to and use of existing online websites for

parents. In conclusion, when online parenting education and support providers regularly connect with parents via digital technology they can enrich parents' social ecology by linking parents to quality parenting information and networks of parents and educators on a regular basis.

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Appendix A: Recruitment Materials, Consent and Questionnaires

Recruitment Materials

Recruitment announcement posted on the site:

The University of Wisconsin is recruiting parents of 10-16 year olds who are members of Parenthetical for a study about parents' use of online resources. For more information, click here. (Hyperlink to the description of the study from Informed Consent). To participate, join Parenthetical.

Recruitment email sent to new Parenthetical members:

Subject Line: Participate in a study to improve online parenting resources

Content:

Help us understand how to improve online parenting materials like Parenthetical!

As a registered member of Parenthetical with a 10-16 year old child, you are invited to participate in a research study about how parents use online parenting materials. You would be asked to complete two online surveys, provide your email address for study communications, and allow the study to collect information about how you use Parenthetical (for instance, how many times you comment or visit the site).

To thank you for your participation, you will receive a parenting book, "Getting to Calm," for your completion of the first survey; and you will receive a $10 Amazon gift code and a chance to win an iPad for your completion of the second survey. Your decision to participate or not will not change your membership on Parenthetical.

The study is being conducted Dr. Stephen Small, a professor at the University of Wisconsin, Rebecca Mather, a University of Wisconsin Cooperative Extension Specialist, and Anne Clarkson, a doctoral student in Human Development & Family Studies at the University of Wisconsin. If you have any questions, you can contact the study team via email at myparenthetical@gmail.com or by phone at 608-263-5688.

If you would like to participate, click the following link to agree to participate in the study and complete the first survey:

INSERT CONSENT AND SURVEY LINK

Thank you for your interest!

Steve Small, Rebecca Mather & Anne Clarkson

Informed Consent

UNIVERSITY OF WISCONSIN-MADISON

Research Participant Information and Consent Form

Title of the Study: Use of Online Parenting Materials

Principal Investigator: Dr. Stephen Small, (phone: 608-263-5688) (email: sasmall@wisc.edu)

DESCRIPTION OF THE RESEARCH

You are invited to participate in a research study about how parents view and use online parenting materials in order to improve the design and communications of future parenting websites or other online resources. You have been asked to participate because you are a member of the parenting website, Parenthetical, and a parent of a 10-16 year old. Since this study is about parenting websites, the research will take place online. As a participant, you could participate from any location where you have Internet access.

WHAT WILL MY PARTICIPATION INVOLVE?

If you decide to participate in this research you will be asked to complete two questionnaires, each taking about 20 minutes to complete. You may also receive up to five emails suggesting activities you can do on the Parenthetical website. These activities are voluntary and would last approximately 10 minutes per week. By agreeing to participate in the study, you would also be agreeing to allow the study team to record when you log into and off of the Parenthetical website.

ARE THERE ANY RISKS TO ME?

We don't anticipate any risks to you from participation in this study.

ARE THERE ANY BENEFITS TO ME?

There are no guaranteed direct benefits to you for participating in this program.

WILL I BE COMPENSATED FOR MY PARTICIPATION?

You will receive a copy of a parenting book for completing the first survey, and you will receive a $10 Amazon gift card and a chance to win an iPad for completing the second survey.

HOW WILL MY CONFIDENTIALITY BE PROTECTED?

While there may be publications from this study, your name will not be used. Only group characteristics will be published. Only the research team will ever see your name and data. By agreeing to participate, you are also agreeing to allow us to quote you in publications without using your name.

WHO IS DOING THIS PROJECT AND WHY?

This project is being conducted by Dr. Stephen Small, Professor of Human Development and Family Studies at the University of Wisconsin-Madison; Rebecca Mather, M.S., Outreach Specialist for UW Madison/Extension and Anne Clarkson, MPH, Human Development and Family Studies Ph.D. Candidate. The information gathered will be used to further the

development of online parenting education and support programs. We hope that what we learn can someday be used to improve online resources for parents and other adults.

WHOM SHOULD I CONTACT IF I HAVE QUESTIONS?

You may ask any questions about the research at any time. If you have questions about the research at any time, you should contact Becky Mather at rmather@wisc.edu or 608-862-3180, Anne Clarkson at asamuelson@wisc.edu, or Principal Investigator Stephen Small at sasmall@wisc.edu.

If you are not satisfied with response of research team, have more questions, or want to talk with someone about your rights as a research participant, you should contact the Education Research and Social & Behavioral Science IRB Office at 608-263-2320.

Your participation is completely voluntary. If you decide not to participate or to withdraw from the study it will have no effect on your ability to continue participating on Parenthetical. All information you provide will be treated confidentially.

IF I WANT TO PARTICIPATE IN THIS STUDY, WHAT DO I DO NEXT?

Enter your first and last name and *click* on the "I Agree" button below to show that you agree to participate in this study. You may print out a copy of the above information to keep. After clicking on the link below to agree to participate in this study, you will be taken directly to the initial survey. We will also email you further instructions on how to participate.

First and Last Name _____

Email Address _____

"I Agree"

"No thank you"

Thank you for your interest. We look forward to working with you.

Baseline Survey

Username

Please enter your Parenthetical username. (This is the same username you enter to comment on the site.)

- ◯ My username is
- ◯ I don't remember by username.

Why join?

Why did you decide to join Parenthetical?

Internet Use

How often do you go online?

- ◯ Several times a Day
- ◯ About once a Day
- ◯ 3-5 days a Week
- ◯ 1-2 days a Week
- ◯ Every few Weeks
- ◯ Once a Month or less

How much time do you spend online on a typical weekday? Count all of your online sessions on any device (include computers, laptops, tablets, and smart phones).

- ◯ Do not go online on a typical weekday
- ◯ Less than 15 minutes
- ◯ 15 - 29 minutes
- ◯ 30 - 59 minutes
- ◯ More than 1 hour but less than 2 hours
- ◯ More than 2 hours but less than 3 hours
- ◯ More than 3 hours but less than 4 hours
- ◯ 4 hours or more

Internet Commenting Experience

Have you ever posted an online comment on . . .

	Yes	No

Facebook?	○	○
Twitter?	○	○
A blog?	○	○
A newspaper or magazine's website?	○	○

Parenting Experience

How many children do you have in each of the following age groups? Enter a zero if you do not have any children of that age.

0-9 years old

10-13 years old

14-16 years old

17 or older

Thinking about the OLDEST of the 10-16 year old children in your home, what is your relationship with this child?

- ○ Parent
- ○ Stepparent
- ○ Grandparent
- ○ Foster Parent
- ○ Guardian
- ○ Other

Parenting Stress

When you think of your current experiences as the parent of a 10-16 year old, do you feel . . .

	Not at all	A little	Somewhat	Very much
Satisfied?	○	○	○	○
Worried?	○	○	○	○
Contented?	○	○	○	○
Emotionally worn out?	○	○	○	○
Bothered or upset?	○	○	○	○
Unsure of yourself?	○	○	○	○
Frustrated?	○	○	○	○
Tense?	○	○	○	○

Successful?	○	○	○	○

Perceived Parenting Competence

Thinking of your oldest 10-16 year old child, please rate how well you think you do the following things.

	Poor	Fair	Average	Good	Excellent
Earn your child's respect.	○	○	○	○	○
Supervise your child.	○	○	○	○	○
Spend time with your child.	○	○	○	○	○
Understand your child and his/her moods.	○	○	○	○	○
Discipline your child.	○	○	○	○	○
Help your child with his/her personal problems.	○	○	○	○	○
Are understanding of your child.	○	○	○	○	○
Know when to set limits and when to let go.	○	○	○	○	○
Help your child deal with negative peer pressure.	○	○	○	○	○
Prepare your child for future success.	○	○	○	○	○

Demographics

Is your ethnicity Hispanic/Latino?

- ○ Yes
- ○ No

Please identify yourself as one or more of the following races.

- ☐ American Indian or Alaska Native
- ☐ Asian
- ☐ Black or African American
- ☐ Native Hawaiian or other Pacific Islander
- ☐ White

Are you married, living with a partner, divorced, separated, widowed, or never been married?

- ○ Married
- ○ Living with a partner

- ◯ Divorced
- ◯ Separated
- ◯ Widowed
- ◯ Never been married

What is the last grade or class you completed in school?

- ◯ None or Grades 1-8
- ◯ Grades 9-11
- ◯ Grade 12 or GED Certificate
- ◯ Business, Technical or Vocational School or some college
- ◯ B.S., B.A., or other 4-year degree
- ◯ Master's degree/PhD, Law or Medical School

Are you employed new full-time, part-time, retired, or not employed for pay?

- ◯ Employed full-time
- ◯ Employed part-time
- ◯ Retired
- ◯ Not employed for pay
- ◯ Other

Last year, in 2012, what was your total family income from all sources, before taxes?

- ◯ Less than $10,000
- ◯ $10,000 to under $20,000
- ◯ $20,000 to under $30,000
- ◯ $30,000 to under $40,000
- ◯ $40,000 to under $50,000
- ◯ $50,000 to under $75,000
- ◯ $75,000 to under $100,000
- ◯ $100,000 or more

Thank you!

By clicking "finish" in the lower right hand corner, you will submit your survey.

On the next page you will be asked to enter your name and mailing address so that we can mail you a thank you parenting book. Your

name and mailing address will not be connected with your survey answers.

Thank you for completing this survey!

Follow-up Survey

Username

Please enter your Parenthetical username. (This is the same username you enter to comment on the site.)

- ◯ My username is
- ◯ I don't remember by username.

Why participate?

Why did you use Parenthetical?

What influenced your decision to comment or not on the site?

Ease of Use

Compared to other websites you have used, is the Parenthetical website . . .

	Not at all	Somewhat	Very
Easy to use?	◯	◯	◯
Well organized?	◯	◯	◯
Easy to read?	◯	◯	◯
Easy to navigate?	◯	◯	◯

Other Parenting Resources and Advice

In the past year, how often have you used the following parenting resources to learn about raising teens and tweens?

	Weekly	Monthly	Several times a year	Never
Parenting class	◯	◯	◯	◯
Parenting website (other than Parenthetical)	◯	◯	◯	◯
Parenting book	◯	◯	◯	◯

Which of these resources do you consider to be the most useful to you and your parenting?

- ◯ Parenting class
- ◯ Parenting website (other than Parenthetical)
- ◯ Parenting book

Parenting book

Would you say Parenthetical is more or less useful in your parenting than the parenting resource that you selected as the most useful?

- Much more useful
- Somewhat more useful
- About the same
- Somewhat less useful
- Much less useful

Why do you say Parenthetical is more or less useful than this resource?

In the past year, how often have you asked the following people for advice about raising tweens and teens?

	Weekly	Monthly	Several times per year	Never
Friend	○	○	○	○
Family member	○	○	○	○
Professional (doctor, counselor, or clergy person)	○	○	○	○

Whose advice do you consider to be the most useful to you and your parenting?

- Friend
- Family member
- Professional (doctor, counselor or clergy person)

Compared to the person you said provided the most useful advice, would you say Parenthetical is more or less useful in your parenting?

- Much more useful
- Somewhat more useful
- About the same
- Somewhat less useful
- Much less useful

Why do you say Parenthetical is more or less useful than this person?

Parenting Stress

When you think of your current experiences as the parent of a 10-16 year old, do you feel . . .

	Not at all	A little	Somewhat	Very much
Satisfied?	○	○	○	○
Worried?	○	○	○	○
Contented?	○	○	○	○
Emotionally worn out?	○	○	○	○
Bothered or upset?	○	○	○	○
Unsure of yourself?	○	○	○	○
Frustrated?	○	○	○	○
Tense?	○	○	○	○
Successful?	○	○	○	○

Perceived Parenting Competence

Thinking of your oldest 10-16 year old child, please rate how well you think you do the following things.

	Poor	Fair	Average	Good	Excellent
Earn your child's respect.	○	○	○	○	○
Supervise your child.	○	○	○	○	○
Spend time with your child.	○	○	○	○	○
Understand your child and his/her moods.	○	○	○	○	○
Discipline your child.	○	○	○	○	○
Help your child with his/her personal problems.	○	○	○	○	○
Are understanding of your child.	○	○	○	○	○
Know when to set limits and when to let go.	○	○	○	○	○
Help your child deal with negative peer pressure.	○	○	○	○	○
Prepare your child for future success.	○	○	○	○	○

Thank you!

By clicking "finish" in the lower right hand corner, you will submit your survey.

On the next page you will be asked to enter your name and email address so that we can email you a thank you Amazon gift code and enter your name in our drawing. Your name and email will not be connected with your survey answers.

Thank you for completing this survey!

Thank you for completing this survey!

Appendix B: Social and Behavioral Sciences IRB Approval

Social and Behavioral Sciences IRB
6/13/2013

Submission ID number:	2013-0698
Title:	Participation on a Parenting Website: Testing Predictors of Parents' Passive and Active Site Participation
Principal Investigator:	STEPHEN SMALL
Point-of-contact:	REBECCA MATHER, STEPHEN SMALL, ANNE SAMUELSON
IRB Staff Reviewer:	LILLIAN LARSON

A designated SBS IRB member conducted an expedited review of the above-referenced initial application. The study was approved by the IRB member for the period of 12 months with the expiration date of 6/12/2014. The study qualified for expedited review pursuant to 45 CFR 46.110 and, if applicable, 21 CFR 56.110 and 38 CFR 16.110 in that the study presents no more than minimal risk and involves:

Category 7: Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, or quality assurance methodologies

To access the materials approved by the IRB, including any stamped consent forms, recruitment materials and the approved protocol, if applicable, please log in to your ARROW account and view the documents tab in the submission's workspace.

If you requested a HIPAA waiver of authorization, altered authorization and/or partial authorization, please log in to your ARROW account and view the history tab in the submission's workspace for approval details.

Prior to starting research activities, please review the Investigator Responsibilities guidance (http://go.wisc.edu/m0lovn.), which includes a description of IRB requirements for submitting continuing review progress reports, changes of protocol and reportable events.

Please contact the appropriate IRB office with general questions: Health Sciences IRBs

at 608-263-2362 or Education Research and Social & Behavioral Science IRBs at 608-263-2320. For questions related to this submission, contact the assigned staff reviewer.

Appendix C: Email Reminder Content

Treatment 1: Informational Only Example Email Content

Subject: What's new on Parenthetical? Forgetfulness, values, and bathing.

Body: Here's some of what's happening at Parenthetical this week.

TOPIC OF THE WEEK

The Absent Minded Teen: "Someone stole part of my kid's brain"

You may notice that your child seems to be getting more forgetful and less organized as he or she enters adolescence . . . Why is this such a common scenario for parents and kids of this age?

Treatment 2: Scaffolding Only Email Content

Email 1:

Subject: Take a look around Parenthetical!

Body: Parenthetical is a little different than other sites you might visit. We designed it as a blog, website and social network for parents of tweens and teens. What you contribute to the site through questions, comments and advice is the most important part of Parenthetical. So we hope you'll share your parenting thoughts and questions, connect with other parents who are experiencing similar issues, and receive trustworthy information on parenting and teen development.

This week take the time to explore the site.

From the Parenthetical home page:

- Click the Topic of the Week title to read the full article and comment.
- Select either Wise Talk question to read the full question and comment.
- Play the video on InSight.
- Follow the In the News links to outside articles.

We hope you enjoy exploring!

Email 2:

Subject: Two thumbs up! How to rate articles and comments on Parenthetical.

Body: Love a comment in Wise Talk? Just read a great Topic of the Week?

Take time this week to rate an article or comment on Parenthetical**.**

To rate an article or comment with a "thumbs up," scroll to the bottom of the comment or article that you want to rate and simply click on the "thumbs up" to say you like it or the "thumbs down" to say you disagree.

Want to see people's favorite comments? Click on the blue "*i*" to the right of the thumbs in the comment section and you'll see a list of the top rated comments on Parenthetical.

We look forward to receiving your reviews!

Email 3:

Subject: "Can you believe my kid?" How to ask other parents for advice on Parenthetical.

Body: Kids and teens do the darndest things and sometimes parents don't have the darndest idea of how to respond. On Parenthetical we have a place for you to pose and answer those perplexing parenting questions.

Take time this week to ask one of your parenting questions in WiseTalk.

To share your question, click the "submit a question" button on the homepage and type in your question. We'll post at least two questions a week for other parents to answer.

Thanks for sharing your questions. Your question can help other parents facing a similar challenge.

Email 4:

Subject: Pass it on! How to share an article on Parenthetical.

Body: Sometimes you read something and just have to share it with a friend. We hope you feel that way about Parenthetical so we've added lots of ways for you to share articles from Parenthetical or spread the news about the whole site!

Take time this week to tell one person about Parenthetical.

Here are three ways you can spread the news:

1) Like our Facebook page.

2) Follow our Twitter feed.

3) Share a Topic of the Week that you like by clicking one of the "Share and Enjoy" icons at the bottom of each post (under the author's smiling face). You decide if you want to email the article, share it Facebook, tweet about it or tell your Google Plus network.

The more the merrier! Thanks for telling others about Parenthetical!

Email 5:

Subject: “Thanks, man!” How to post supportive comments on Parenthetical.

Body: We all know how good it feels when other people take the time to thank us or support something we say or do. Spread the love on Parenthetical, after you read the stories of other parents or use this information in your life post a quick “Thanks” or “This was great” as encouragement.

Take time this week to tell another Parenthetical parent that you appreciate what they said.

To write “thanks for this” or “I agree”:

1) From the homepage, click on the Topic of the Week or Wise Talk to see the whole article.
2) Scroll to the comment section at the bottom of the Topic of the Week or Wise Talk that you liked or scroll to the individual comment.
3) Click “Log in to reply” if you are not already logged in and enter you username and password.
4) Click “Reply” on an individual comment that you found helpful to reply to a specific comment.
5) Enter your “thanks” and “likes” in the “Leave a Reply” box.
6) Click “Post Comment” to send your encouragement.

Your thoughtful comments deserve two thumbs up. Thanks to you for recognizing useful comments and replies.

Email 6:

Subject: “Help a friend out.” How to share your parenting wisdom on Wise Talk.

Body: As the parent of a young teen to say you have a lot of parenting experience is an understatement. Share the wealth with other parents by suggesting your solutions to a question posed by another parent in Wise Talk.

Take time this week to reply in Wise Talk and help another parent.

To post your thoughts in Wise Talk:

1) From the homepage, click on the Wise Talk question you want to answer. (If you hover over it with your cursor, it will turn blue.)
2) Scroll to the comment section at the bottom of the Wise Talk that you selected.
3) Click “Log in to reply” if you are not already logged in and enter you username and password.
4) Type your suggestions into the “Leave a Reply” box.
5) Click “Post Comment” to send your answers.

Your wise suggestions can help other parents through a challenging time. Thanks for helping out!

Email 7:

Subject: "In my opinion." How to post a comment on the Topic of the Week.

Body: You probably get plenty of experience debating the merits of schoolwork, curfew, and boy/girl friendships with your teen. As we all know, many parenting choices can go many directions. Take the chance to talk with other parents by joining a friendly discussion about the Topic of the Week.

Take time this week to comment on the Topic of the Week.

To comment in the Topic of the Week:

1) From the homepage, click on "read more" in the Topic of the Week.
2) Scroll to the comment section at the bottom of the Topic of the Week that you selected.
3) Click "Log in to reply" if you are not already logged in and enter you username and password.
4) Type your comment into the "Leave a Reply" box.
5) Click "Post Comment" to send your thoughts.

Your comment on Topic of the Week helps to broaden the information available on Parenthetical. Thanks for joining the conversation!

Email 8:

Subject: "I see the connection." Respond to a recent comment on Parenthetical.

Body: Sometimes when we are reading an article or another person's story, serendipity strikes and we see the many connections to our life and our experiences. Other times, the "ah-ha" moment is a little slower to strike. Either way, the connections between our lives and musings of others are a special kind of wisdom.

Take time this week to respond to another person's comment on Parenthetical.

To reply to a comment:

- From the homepage, scroll to the comment section at the bottom of the Topic of the Week or click on Wise Talk to see a whole question.
- Find a comment that caused you to think.
- Click "Reply" from the top middle of the individual comment that you liked.
- Enter you thoughts in the "Leave a Reply" box.
- Click "Post comment" to continue the conversation.

Thanks for helping other parents make the connection this week by sharing the way you think about parenting and Parenthetical.

Email 9:

Subject: "How do I . . .?" How to ask technical questions about Parenthetical.

Body: Since we're a new website, we are always evolving and changing. Your feedback is essential to improving Parenthetical.

This week take the time to contact us with a question about or suggestion for Parenthetical.

To contact us, send a message from the "contact us" tab in the site's header bar. We'll get back to you as soon as possible.

Your suggestions and questions can help us improve Parenthetical for other parents like you. Thanks for telling us about your experiences on the site.

Email 10:

Subject: "What's that you say?" Continue sharing on Parenthetical

Body: What you say matters. Keep on sharing your thoughts, ideas and suggestions on Parenthetical. You have wisdom from parenting your child and from your other life experiences that is unique to you and is valuable to other parents on Parenthetical.

Take time every week to share what you know on Parenthetical.

Use one of the following ways to share on Parenthetical:

- Comment on the Topic of the Week.
- Respond to a Wise Talk question.
- Submit a question, article or video to share.
- Like an article or share it with a friend.

Thanks for what you do to make Parenthetical a supportive and useful website for parents.

Treatment 3: Information + Scaffolding Example Email Content

Subject: Take a look around Parenthetical and Forgetfulness, values, and bathing.

Body:

(Scaffolding Section)

Parenthetical is a little different than other sites you might visit. We designed it as a blog, website and social network for parents of tweens and teens. What you contribute to the site through questions, comments and advice is the most important part of Parenthetical. So we hope you'll share your parenting thoughts and questions, connect with other parents who are experiencing similar issues, and receive trustworthy information on parenting and teen development.

This week take the time to explore the site.

From the Parenthetical home page:

- Click the Topic of the Week title to read the full article and comment.
- Select either Wise Talk question to read the full question and comment.
- Play the video on InSight.
- Follow the In the News links to outside articles.

We hope you enjoy exploring!

(Information Section)

The Absent Minded Teen: "Someone stole part of my kid's brain"

You may notice that your child seems to be getting more forgetful and less organized as he or she enters adolescence . . . Why is this such a common scenario for parents and kids of this age?

Appendix D: Content Analysis Coding Scheme

Reasons for Joining Parenthetical			
Label	Definition	Percent	Example statements
Advice/info/research	Quality information or advice provided	45.0%	"It was recommended as a source of solid information especially relevant for parents of tweens and teens." "teen parenting advice"
Professional development	Useful resource for work or professional growth	21.7%	"as an on-line resource for my job" "I'm a professional counselor"
Parent of child/tween/teen	Mentioned parenting child, tween or teen	35.0%	"I have children who are 14, 12, and 10." "I have teens"
Interact with or help others	Relationship with another person or commitment to help	16.7%	"friend asked me" "To be part of the research study"
Emotionally interested (i.e., curious, humor)	Shared an emotional or curiosity-based interest	8.3%	"sounds interesting" "to keep a positive perspective when parenting seems difficult"
Referred to site/heard good resource	Recommended by another person	13.3%	"friend recommended" "principal referral"

Reasons for Continuing to Use Parenthetical			
Label	Definition	Percent	Example statements
Accessible site/information	Easy to use, access, read and comprehend	14.0%	"Also very easy to access, read, and understand." "It's short, easy to read, pertinent topics"
Relevant topics/Quality content	Quality content related to parenting	42.0%	"I have found the information to be reliable and helpful." "Good usable information."
Forgot about/Don't use	Any reason for not using the site	6.0%	"I'm starting to give up on the site" "I'm not using it at this time."
Unbiased source/Best source available	Source described as trustworthy, unbiased or reliable.	20.0%	"Because it's produced by professionals from the Extension office it's information I can trust." "Reliable and trustworthy information"
Email prompts	Mention of weekly email reminders.	4.0%	"The weekly email prompts me." "It pops into my in box."
Feel supported or provide support	Relationship to other parents	4.0%	"help out other parents if I can." "don't feel alone and do feel as though someone is listening"

Reasons for Commenting on Parenthetical			
Label	Definition	Percent	Example statements
Don't want to/Share another way	Do not comment for personal or other reasons	16.0%	"I do not comment on the web" "I just mainly have used the site as a resource for myself. I did not want to get more involved."
Time (busy or not)	Mention time or being too busy	16.0%	"I feel like I'm too busy to take the time." "Time"
Recent experience/Confident of advice value	Have something of value to share or recent experience	12.0%	"Had something that I felt would be helpful" "The topic was something I had dealt with recently with my own children. I thought I handle it well with creativity and flexibility and wanted to share my parenting tips."
Topic engaging	Enticing or memorable topic	8.0%	"It was some particular information that I enjoyed getting." "I added a comment to someone who posted about smelly sports shoes!"
Don't know/no response	Blank, ambiguous or don't know	54.0%	"good share" "Not certain why I haven't yet."