Editor’s Comments:
We are delighted to share this thought provoking issue of the Journal of Youth Development which highlights Media and Youth Development. A special thank you is extended to our guest editors who provided insightful observation and direction throughout the project. In addition, we are most grateful for our guest authors who so willingly agreed to prepare the enclosed manuscripts as part of our examination of technology’s impact on youth program development. As a result, we are presented with an inspiring call for further youth development research as we continue to utilize technology in advancing our programs, one which I hope many of you will answer and then share in upcoming issues of the Journal of Youth Development.

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Manuscripts for the Winter and Spring 2015 issues are now being accepted in the following areas:

- **Feature Articles** ~ informational, explanatory, or critical analysis and interpretation of major trends in the field or comprehensive reviews. Include clear implications for youth development research, practice and programming. 2,000-5,000 words
- **Program Articles** ~ discuss programs and outcomes or describe promising programs and pilot projects that have clear implications for youth development research, practice and programming. 1,500-4,000 words
- **Research and Evaluation Strategies** ~ describe innovative methodologies and strategies in the collection and analysis of quantitative or qualitative research and evaluation data. 1,500-4,500 words
- **Resource Reviews** ~ present analyses of materials, such as books, curricula or videos. 300-800 words

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The homes of today’s youth are filled with a variety of media options, ranging from televisions (71%) and video game consoles (50%) in their bedrooms to portable handheld devices (e.g., iPods/mp3 players, 76%) and cell phones (71%) that can accompany youth wherever they go. Of course, youth also have access to centralized media found in homes, such as televisions (99% of homes) and computers with and without Internet access (93% and 84% of homes, respectively). Not surprisingly, youth consume media for about 7.5 hours per day, much of which involves using more than one media at the same time (i.e., multitasking), with adolescents consuming significantly more media than children (Lenhart, 2012; Rideout, Foehr, & Roberts, 2010).

Digital technology use is an integral part of children’s and adolescent’s lives. With the rapid evolution of technology, adult caregivers can easily feel overwhelmed by the daunting task of setting boundaries on technology use. Family systems theory offers a unique perspective for understanding how external factors (i.e., technology) can impede or enhance the family system, particularly when integrated into a developmental framework. Five clinical concepts are presented that weave together developmental tasks and family systems theory. This paper offers recommendations for clinicians to help parents understand the potentially harmful consequences of technology use across the developmental spectrum. We also provide recommendations for how to support parents in discussing technology use with their children and adolescents. Lastly, we offer suggestions for how the impact of technology use on development can be integrated into human service courses at the university level.

Using survey data collected from 260 children, adolescents, and young adults between the ages of 9 and 26, this paper offers evidence for a relationship between social networking site use and Imaginary Audience, a developmental variable in which adolescents believe others are thinking about them at all times. Specifically, after controlling for a number of variables, results
indicate a significant, positive relationship between social networking site use and Imaginary Audience ideation. Additionally, results indicate a positive relationship between Imaginary Audience ideation and Facebook customization practices. Together, these findings provide evidence, based on Vygotskian developmental theory, for a general consideration of the role that currently available tools, in this case social networking sites, can have on development. Thus, findings implicate both the role of development on social networking site use, as well as the role of social networking site use on development. Overall, these findings have important implications for the study of media and human development, which are discussed in detail.

Toward a Theory-Predicated Definition of Digital Literacy for Early Childhood
[Article 140901FA003] ................................................................. Page 41
Kazakoff, Elizabeth R.

Though young children are frequent users of digital technology, there is no comprehensive definition of early childhood digital literacy. Currently, digital literacy and related terms are defined with much older children and adults in mind. This paper aims to lay groundwork for redefining digital literacy in an early childhood context. Taking into account the unique developmental needs of early childhood when discussing digital literacy can provide a gateway to developing technological tools and curricula to prepare children in kindergarten through second grade to be more effective users of digital technologies throughout their lives.

Media Use and the Family
Youth Online Media Use: Associations with Youth Demographics, Parental Monitoring, and Parent-Child Relationships [Article 140901FA004] .................Page 59
Rudi, Jessie; Dworkin, Jodi

As online media has become an increasingly important part of youths’ daily lives, it is critical for the field to explore questions related to youth online media use in order to support youth workers, youth development practice and programming. Using a national sample of youth age 13-22 (N = 585), the current study explored demographic differences in youth online media use, and examined associations between youth demographics, parental monitoring, parent-child relationship quality, and likelihood of being a frequent user of online activities. Although youth reported being frequent users of online media, Internet use was not the same for all youth. Online media use differed significantly by youth age, gender, race, and family relationship quality. The findings remind the field to consider the young people we are working with and how they use online media in their daily lives.

Television and the Internet: The Role Digital Technologies Play in Adolescents’ Audio-Visual Media Consumption. Young Television Audiences in Catalonia (Spain)
[Article 140901FA005] .................................................................Page 71
Roca, Meritxell; Aranda, Daniel; Sánchez-Navarro, Jordi

The aim of this reported study was to investigate adolescents TV consumption habits and perceptions. Although there appears to be no general consensus on how the Internet affects TV consumption by teenagers, and data vary depending on the country, according to our study, Spanish adolescents perceive television as a habit “of the past” and find the computer a device more suited to their recreational and audio-visual consumption needs. The data obtained from eight focus groups of teenagers aged between 12 and 18 and an online survey sent to their parents show that watching TV is an activity usually linked to the home’s communal spaces. On the contrary, online audio-visual consumption (understood as a wider term not limited to just TV shows) is perceived by adolescents as a more convenient activity as it adapts to their own schedules and needs.
“Be Careful Who You Friend:” Early Adolescents’ Reports of Safety, Privacy, and Family Monitoring of Facebook Use [Article 140901FA006] ...........................................Page 86
Charmaraman, Linda; Grossman, Jennifer M.
With the growing popularity of social networking sites (SNS), parents, educators, youth development workers, researchers, and policymakers are increasingly concerned with Internet safety issues. In this paper we highlight a study designed to understand how young people describe how much (or how little) social network monitoring is happening in their home life, including who is doing the monitoring, when, why, and how. Participants included 33 middle school youth (aged 11-14) who were participating in a 9-week sexual health curriculum. Teens reported that their parents were most concerned about “friending” the wrong people and swearing on Facebook postings. In contrast, teens talked more about using Facebook to keep in touch with their known social circle and were not as preoccupied with adding people they didn’t know or wanting to meet strangers online. Teens also reported that female family and community members were the most frequent monitors of their Facebook pages. Implications for youth development programs and future research directions are discussed.

Without Television [Article 140901FA007] .................................................................Page 100
Schwab, Keri A.; Brock, Barbara
The purpose of this follow-up study was to learn more about the leisure choices, hobbies, and lifestyles of young adults who had grown up without a television. Study participants responded to an online questionnaire that asked about their health, physical activity habits, hobbies, and level of current television viewing. A mixed methods approach to gathering and analyzing data revealed a picture of young adults who live active lives, watch little television, and appear to have a strong sense of personal agency to direct their lives. Themes of agency, including forethought and intentionality, and self-regulation were evident in the qualitative responses, as well as creation and choosing challenging hobbies or activities. This study provided much information for future research to examine the influence of television on youth development, specifically agency, challenge and life-long habits.

Media Use and Youth Adjustment
Adolescent Perceptions of Animation Violence as an Indication of Aggressive Attitudes and Behaviors [Article 140901FA008] ......................................................Page 113
Barnett, Rosemary V.; Culen, Gerald R.; Jordan, Joy; Gibson, Heather; Hirsch, Joshua
This reported study was designed to examine the beliefs and perceptions of adolescents on whether or not viewing violence on television contributes to an increase in adolescents’ abilities to learn aggressive attitudes and behaviors. It also explored the effects humor and satire used in the animated television series The Simpsons has on adolescents’ abilities to learn aggressive attitudes and behaviors. Finally, it examined to what extent the violence portrayed in The Simpsons was believed to be realistic and justified by adolescents viewing the show. Results indicate that adolescents were not affected by the violence they observed in The Simpsons animation: Further, they did not feel that it was acceptable for their favorite characters to use violence to solve problems. Youth did not have reactions to viewing the series that were violent, nor did they report becoming aggressive in response to viewing the violence on the The Simpsons. While the majority of the youth also reported that they did not use violence to solve a problem, 3.3% reported that they did. Overall, the study concluded that adolescents’ exposure to violent content by viewing it in animation in The Simpsons did not affect adolescents’ perceptions of their abilities to learn aggressive attitudes and behaviors. Youth did not perceive that the violence portrayed was realistic.
The Changing Landscape of Peer Aggression: A Literature Review on Cyberbullying and Interventions  [Article 140901FA009] ................................................................. Page 129
Davis, Katie; Reich, Justin; James, Carrie
While traditional forms of bullying have been steadily decreasing over the course of the last two decades, cyberbullying has emerged as a major concern among parents, teachers, and other professionals working with young people. Because cyberbullying is a relatively new phenomenon, its research base is not as well developed as research on traditional bullying. In this literature review, the authors synthesize current knowledge on cyberbullying’s prevalence among youth; its relationship to offline bullying; which youth are most likely to be perpetrators and victims; the negative effects of cyberbullying on victims; and the landscape of intervention efforts currently employed in the United States. In the process, they highlight areas in need of future research.

A Longitudinal Examination of the Relationship Between Media Use and Self-Competence During Adolescence  [Article 140901FA010] .............................................Page 143
Ohannessian, Christine McCaulay
The primary goal of this longitudinal study was to examine whether media use predicts adolescent self-competence and/or whether adolescent self-competence predicts media use. The sample included 1,031 10th and 11th grade boys and girls from the United States. The adolescents completed a self-report questionnaire in 2007 and 2008 to assess their media use (talking and texting on the phone, listening to music, e-mailing/IMing, playing video games, and working on the computer) and self-competence (social competence, scholastic competence, athletic competence, and perceived physical appearance). Path analysis results revealed that media use had a minimal effect on adolescent self-competence. In contrast, adolescent self-competence consistently predicted media use. Results from this study highlight the need to examine both directions of influence between adolescent media use and adjustment.

At-Risk Youth in After-School Programs: How Does Their Use of Media for Learning About Community Issues Relate to Their Perceptions of Community Connectedness, Community Involvement, and Community Support?  [Article 140901FA011] .................................................................Page 157
Barnett, Rosemary V.; Payne-Purvis, Caroline; Culen, Gerald R.; Neely, Jeffrey C.
This paper highlights a study examining the impact of various media formats on at-risk youth to identify forms of media technology that might impact their community connectedness, community involvement, and community support. Over a three-year period, a sample of 133 youth enrolled in after-school programs in two communities completed a questionnaire annually consisting of the following areas: community support, community involvement, community connectedness, and media use for learning. Linear regression analysis indicated media use for learning about community issues was a predictor of student’s perceptions of community support, community connectedness, and community involvement. The media format most identified for gaining knowledge about community issues by the youth was the Internet, while the use of print media increased over the course of the study. The most significant relationships were found between media use and perceptions of community overall with the most significant gains in media use during Y2, where youth knowledge of community issues increased.
Resource Review

**Bers’s Theory of Positive Technological Development** [Article 140901RR001]..Page 170

*Worker, Steven*

This resource review provides an introduction to Mariana Bers’ new book, *Designing Digital Experiences for Positive Youth Development* (2012). Bers applies the Six C model of Positive Youth Development (PYD) to the digital domain with her theoretical model, Positive Technological Development. The model may be particularly valuable for practitioners seeking to design digital experiences for youth, as well as for evaluators who assess the PYD outcomes associated with youth participation in these spaces.
Media and Youth Development: An Overview of Issues, Theory, and Research

Guest Editor Commentary

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Introduction

The homes of today’s youth are filled with a variety of media options, ranging from televisions (71%) and video game consoles (50%) in their bedrooms to portable handheld devices (e.g., iPods/mp3 players, 76%) and cell phones (71%) that can accompany youth wherever they go. Of course, youth also have access to centralized media found in homes, such as televisions (99% of homes) and computers with and without Internet access (93% and 84% of homes, respectively). Not surprisingly, youth consume media for about 7.5 hours per day, much of which involves using more than one media at the same time (i.e., multitasking), with adolescents consuming significantly more media than children (Lenhart, 2012; Rideout, Foehr, & Roberts, 2010).

Theoretical Perspectives

Although research on youth media use has been increasing over the years, much of the research conducted to date has lacked a strong theoretical foundation. Importantly, many of the articles in this special issue are grounded in theory. For instance, Steven Baretto, Sue Adams, and Jennifer Daly approach technology use from a general theoretical and developmental perspective (see “Windows of Opportunity: Family Systems Theory and Developmental Considerations for Supporting Youth, Parents and Clinicians in the Digital Age”). Based on family-systems theory, Baretto, et al. provide developmentally appropriate guidelines and objectives related to technology use for practitioners working with children/adolescents and their families. Barreto and colleagues integrate concepts related to child and adolescent development, parental functioning, and family system dynamics to inform this clinically-focused commentary. In addition, the authors discuss how university programs can enhance the training
and education of human services professionals by providing instruction on the intersections of family systems theory, developmental theory, and technology use.

As part of their review of technology use among youth, Baretto, et al. briefly discuss the importance of Marina Bers’s concept of a constructive digital experience, whereby developmental outcomes are fostered though the production of digital content (i.e., programming), not simply its consumption. Steven Worker explores these concepts in much greater detail in his review of Marina Bers’ new book, *Designing Digital Experiences for Positive Youth Development* (2012). In the article, Worker systematically presents the tenets of Ber’s model of positive technological development (PTD). In addition, Worker discusses Bers’s concept of “technology mediated behaviors” (i.e., content creation, creativity, choices of conduct, communication, collaboration, community-building) in the context of Lerner’s (2004) model of positive youth development (i.e., competence, confidence, character, connection, caring, contribution). Moreover, Worker provides a theoretical basis for each of the aforementioned PTD constructs. Worker concludes by discussing the merits and limitations of PTD for both youth program development and research.

**Developmental Issues**

Considering its prevalence, youth media use is a primary contextual feature of interest (Calvert & Wilson, 2011; Roberts, Henriksen, & Foehr, 2009; Subrahmanyam, & Smahel, 2011). The contemporary media landscape is changing constantly and rapidly evolving, and the use of media and digital technologies is ever-increasing and varied. Thus, assessing how children’s and adolescents’ increasing use of various forms of media and technology affect their development is of theoretical and empirical importance.

A considerable amount of research on media and technology use has focused on potentially negative implications (e.g., violence and aggression, obesity and physical inactivity; Calvert, & Wilson, 2011; Roberts et al., 2009; Strasburger, 2009a, 2009b). To fully understand the influence of media and technology in the lives of young people, efforts should be made to understand the bases, development, and range of outcomes related to media and technology use. Furthermore, theory and research relating to media-related processes and effects across the life-span are enhanced by a developmental focus (e.g., Roberts, et al., 2009). The articles featured in this special issue contribute to our understanding of the links between media and technology use and human development by exploring a range of outcomes as well as using developmental theories to inform the work.

In “The Role of Adolescent Development in Social Networking Site Use: Theory and Evidence,” Drew Cingel, Ellen Wartella, and Marina Krcmar explore the intersections of media use and human development. Specifically, the authors assess the links between social media use (e.g., Facebook) and imaginary audience ideation or the belief that others are constantly thinking about and judging you (Elkind, 1967). Based on Vygotskian developmental theory, the authors argue that social media use is a key developmental tool for socialization due to its prevalence in the lives of contemporary children, adolescents, and young adults. Using data from individuals 9 to 26 years of age, Cingel and colleagues found that there are associations and predictive qualities between imaginary audience ideation and Facebook use and customization (i.e., modifying one’s profile page).

In her piece, "Toward a Theory-Predicated Definition of Digital Literacy for Early Childhood,” Elizabeth Kazakoff provides a framework for defining and conceptualizing digital literacy specifically for young children (age two to eight). The author outlines conceptual and theoretical
issues relevant to digital literacy for children – including cognitive, social-emotional, and social-cultural dimensions, as well as person-context relational processes. The article primarily focuses on the Positive Technological Development framework (e.g., Bers, 2007) and the Conceptual Model of Digital Literacy (e.g., Eshet-Alkalai, & Chajut, 2009), both of which provide a foundation for the proposed framework with an explanation of how key developmental issues in early childhood (i.e., motor, literacy, and self-regulation skills) can be taken into consideration to further develop the framework.

**Media Use and the Family**

For many reasons, adolescence is an important developmental stage within which to explore the associations between young people’s media use and their development and contexts in which they are embedded. For instance, the interpersonal relationships in a person’s life shift during this period. That is, during adolescence, youth spend relatively less time with their parents and caregivers and more time with peers (e.g., Laursen, & Collins, 2009). This increasing independence and autonomy allows for more opportunities for teenagers to make decisions about their media use, often without parental influence (i.e., supervision and/or enforced rules; e.g., Rideout, et al., 2010). Furthermore, relationships with peers become more significant and impactful during adolescence (e.g., Laursen, & Collins, 2009). Although peer influences can compete with that of parents, caregivers still have a socializing role in the lives of their adolescent children and can continue to influence their attitudes and behaviors throughout this period (e.g., Laursen, & Collins, 2009). Therefore, in assessing youth’s media use, it is important to consider the role of family dynamics, including relationships and interactions. Several authors featured in this special issue take the family system into consideration in their work.

In “Youth Online Media Use: Associations with Youth Demographics, Parental Monitoring, and Parent-Child Relationships,” Jessie Rudi and Jodi Dworkin discuss the variation in youth’s online media use. In their sample of 13 to 22 year-old youth, they analyzed the associations between online media use and youth demographics, parental monitoring, and parent-child relationship quality. The authors identified differences in usage by demographic variables and indicators of family dynamics and relationships. For instance, higher levels of parental monitoring and lower youth-mother relationship satisfaction significantly predicted higher use of online media for communication (e.g., using e-mail) and information-seeking (e.g., getting news) purposes. The authors describe the implications of the findings for youth development practice and programming.

In their contribution to this special issue, “Television and the Internet: The Role Digital Technologies Play in Adolescents’ Audio-Visual Media Consumption: Young Television Audiences in Catalonia (Spain),” Meritxell Roca, Daniel Aranda, and Jordi Sánchez-Navarro use quantitative and qualitative data to explore the television consumption behaviors and perceptions of Spanish youth. Their qualitative data was derived from focus groups with youth ages 12 to 18 and supplemented by survey data from parents. The authors describe how youth in their sample favor online media (over television) and perceive the medium as more adaptable to their personal preferences and needs. In addition, the data suggest that television viewing is associated with family dynamics and interactions as it is often a social activity among family members, taking place in communal spaces within a home (e.g., the living room).

Linda Charmaraman and Jennifer Grossman present a qualitative analysis assessing the monitoring of youth’s online media use in “Be Careful Who You Friend: Early Adolescents’ Reports of Safety, Privacy, and Family Monitoring of Facebook Use.” The article focuses on the
use of social networking sites, specifically Facebook, among a sample of 7th grade students. The authors were concerned with self-disclosure and peer-monitoring behaviors by youth, monitoring activities by parents and family members, and parental concerns and rules. A major activity for youth in this sample was to use Facebook to regularly communicate with their existing peer social network (versus, for instance, meeting new people). However, one key concern for parents (as reported by the adolescents) was that youth would befriend or associate with ill-intentioned or negatively influential people (including strangers) via Facebook. The authors conclude by discussing the implications of the findings for youth development, including practice and programming.

In “Without a Television” authors, Keri Schwab and Barbara Brock examine the influence of television on youth development and life-long habits. Results from their 10 year study suggest youth who grow up without television may have improved health outcomes, engage in creative hobbies and have a strong sense of agency.

**Media Use and Youth Adjustment**

Many studies have shown that media use is related to health and adjustment problems during adolescence. For example, research has shown that time spent watching television and playing video games is associated with physical inactivity and weight during adolescence (Koezuka, Koo, Allison, Adlaf, Dwyer, Faulkner, & Goodman, 2006). Playing video games, computer games, watching television, and talking on the phone have been linked to poor academic performance as well (Gentile, Lynch, Linder, & Walsh, 2004). Media use also has been shown to be related to aggressive behavior (Bushman & Huesmann, 2014; Krahe’, Busching, & Möller, 2012). However, the relationship between media use and adjustment is not straightforward. The articles in this special issue underscore the importance of examining this relationship through a magnified lens in order to capture important nuances that have been overlooked in prior research.

As noted, a number of studies have found media use to be linked to aggressive behavior in youth. However, this research has failed to consider the perspective of the target – the adolescent. Rosemary Barnett, Joshua Hirsch, Gerald Culen, Joy Jordan, and Heather Gibson extend the research on media use and aggressive behavior by asking adolescents themselves about their views on the effects of media. In their study of 245 13-17 year-old adolescents (see “Adolescent Perceptions of Animation Violence as an Indication of Aggressive Attitudes and Behaviors”), adolescents’ exposure to violent content in a popular TV show (The Simpsons) did not influence adolescents’ perceptions of their abilities to learn aggressive behaviors and attitudes. Importantly, youth in the study did not perceive that the violence on TV was realistic. This article suggests that the negative effects of media on youth in some instances may be exaggerated.

Consistent with research linking media use to negative youth outcomes, some of the papers in this special issue also suggest that media use may be associated with problem behaviors during adolescence. In their article, “The Changing Landscape of Peer Aggression: A Literature Review on Cyberbullying and Interventions,” Katie Davis, Justin Reich, and Carrie James discuss a media-related problem for youth today - cyberbullying. The authors note that while traditional bullying has been on the decline, cyberbullying via the Internet, mobile devices, and social media, has been increasing. In the article, Davis and colleagues define cyberbullying, discuss risk factors and negative outcomes, and distinguish cyberbullying from traditional bullying. The authors also highlight the need for the development of research-based interventions and discuss characteristics of effective intervention programs. The piece concludes with a section
detailing areas for future research, which ultimately may inform the development of successful anti-cyberbullying programs.

Much of the research on youth media use has focused on negative outcomes. However, some research has indicated that media use may be beneficial for youth. For example, Durkin and Barber (2002) found that youth who played computer games were better adjusted than those who did not play. Those who played games had higher levels of self-esteem, lower levels of substance use, were more involved with school, and had closer family relationships than those who did not play games. In a study conducted on Dutch youth (Valkenburg, & Peter, 2007), online communication was positively associated with reported closeness of friendships. Similarly, Ohannessian (2009) found that media use (playing video games and watching television) served as a protective factor for at-risk youth, decreasing levels of anxiety. Articles in this special issue are consistent with research suggesting that potential positive effects of youth media use should not be overlooked.

In contrast to many studies examining the relationship between media use and youth outcomes, Ohannessian examined media use in relation to a positive outcome – adolescent self-competence (see "A Longitudinal Examination of the Relationship between Media Use and Self-Competence during Adolescence"). This study extended the literature further by examining the direction of effect between media use and youth adjustment in a sample of 1,031 10th and 11th grade students. Results revealed that media use had a minimal effect on adolescent self-competence. More specifically media use did not influence how adolescents felt about themselves academically, socially, or in regard to their appearance. However, adolescent self-competence did predict media use, suggesting that socially well-adjusted youth may be more likely to use media. In addition to examining media in relationship to positive factors, results from this study emphasize the need to examine both directions of influence between media use and adjustment during adolescence.

Media use also has been found to have benefits at the community level. In their study detailed in the article, "At-Risk Youth in After-School Programs: How Does Their Use of Media for Learning About Community Issues Relate to Their Perceptions of Community Connectedness, Community Involvement, and Community Support?," Rosemary Barnett, Jeffrey Neely, Caroline Payne-Purvis, and Gerald Culin examined the influence of various forms of media that may provide information to youth to increase their community connectedness, community involvement, and community support. In their longitudinal sample of 133 at-risk adolescents, media used increased youth’s knowledge of community issues. Moreover, the association between media use and knowledge of community issues strengthened over time. Importantly, results from Barnett and colleagues’ study demonstrate that media may be used to positively connect at-risk youth to their communities. As noted by the authors, “Connecting them (at-risk youth) to community builds pride and attachment, which can help protect them from risk factors and increase their resiliency (Loughlin, et al., 2013).”

As illustrated in Steven Worker’s review of Mariana Bers’ new book, Designing Digital Experiences for Positive Youth Development (2012), some contemporary scholars are embracing ways in which technology may promote positive youth development. Worker describes how Bers applies the Six C model of Positive Youth Development (PYD; Lerner, 2004; Lerner, et al., 2012) to the digital arena with her theoretical model, Positive Technological Development (PTD). The PTD model provides guidance on the types of digital and media activities, programs, and experiences that may lead to positive technological development by linking the 6 C’s (competence, confidence, character, connection, caring, and contribution) to
specific technology-mediated behaviors. This model is especially useful for practitioners who are seeking to design digital experiences for youth.

Elizabeth Kazakoff also emphasizes the utility of the PTD framework and discusses how it may be used as a foundation for defining digital literacy in early childhood given that it considers multiple developmental dimensions, including the personal, social, and emotional. In her article, “Toward a Theory-Predicated Definition of Digital Literacy for Early Childhood,” Kazakoff notes that PTD provides a useful developmental framework; however, it does not directly address the age-specific issues of digital literacy in early childhood. Therefore, her paper focuses on merging PTD with digital literacy definitions relevant to early childhood.

Taken together, all of the articles in this special issue focusing on youth media use highlight the need to consider media and the digital world as a primary context in the life of contemporary youth. Moreover, the articles in this issue clearly underscore the importance of conducting theoretically grounded research that incorporates both the developmental stage of the young person and other contexts salient to childhood and adolescence, including the family.

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Abstract: Digital technology use is an integral part of children’s and adolescent’s lives. With the rapid evolution of technology, adult caregivers can easily feel overwhelmed by the daunting task of setting boundaries on technology use. Family systems theory offers a unique perspective for understanding how external factors (i.e., technology) can impede or enhance the family system, particularly when integrated into a developmental framework. Five clinical concepts are presented that weave together developmental tasks and family systems theory. This paper offers recommendations for clinicians to help parents understand the potentially harmful consequences of technology use across the developmental spectrum. We also provide recommendations for how to support parents in discussing technology use with their children and adolescents. Lastly, we offer suggestions for how the impact of technology use on development can be integrated into human service courses at the university level.

Introduction

Advances in digital technology have quickly become integral to children’s lives. The pace of technological innovation has surpassed the digital knowledge-base of many parents and educators while the advent of portable technology has made instant digital connection and immediate access available in any setting. Moreover, as technology plays an ever increasing role in youth’s social interactions, the focus of concern no longer rests solely on digital media consumption, and implications for development become more numerous and complex. It is
important for parents and caregivers to keep an open dialogue with their children about their digital technology habits and internet behavior. This dialogue should begin as soon as the child begins using technology, with the hope that children will become increasingly mindful of their technology use, with opportunities to revisit the discussion over time, using concepts appropriate to developmental stages. A developmentally informed approach could help clinicians to guide parents to maximize the benefits of digital media and avoid pitfalls such as digital dependence, an imbalance between virtual and actual worlds, reckless sharing of information in public forums, plagiarism, and cyber-bullying behavior.

**Rates of Technology Use in Children and Adolescents**
The statistics tell the story of an exponential increase in digital technology use among children and adolescents:

- In 2004, 39% of teens owned a cell phone. By 2011 the rate of ownership had risen to between 77% (Lenhart, 2012) and 86% (Englander, 2011).
- The average age a child receives a cell phone is between 9 and 10 years old and dropping (Nielsen, 2009). Now 18% to 20% of third graders and 25% to 26% percent of fourth graders have their own cell phone (Englander, 2011).
- By middle school cell phone ownership jumps to 83% to 84%, and 90% of middle schoolers can use their cell phone to text and go on the internet (Englander, 2011).
- Texting has become the number one form of communication for teens, with 63% texting daily (Lenhart, 2012). On average, teens send or receive 3,339 texts each month. When looking at only female teens, the rate rises to 4,050 texts per month (Nielsen, 2010).
- Seventy-five percent of teens use an on-line social network site such as Facebook® and 41% own a “smart” phone that lets them check their social network sites and access the internet while mobile (Rideout, 2012).
- In a 2012 study of teens’ social media use, 41% of teens described themselves as “addicted” to their cell phone (Rideout, 2012).
- When combining all forms of digital media (computer, TV, cell phone, portable digital audio device, computer games), children ages 9 – 18 are plugged-in for over 10 hours a day (Rideout, Foehr, & Roberts, 2010).

Technological advances continue to push the boundaries of access for this demographic, with smart phones linking youth to the world-wide web through text, photo, and video sharing and immediate sequential digital video transmission enabling them to transmit and interact through visual images of themselves on their portable devices from any location (e.g. ooVoo®). Understanding age-related trends in technology use and their unique implications for each stage of youth development is essential for helping children and families successfully navigate a world in which children’s frequent engagement with digital technology is increasingly the norm.

**Family Systems Theory: A model for understanding the role of technology in context**
It has been observed that there is little research on how families use or are influenced by the media because it is, quite simply, a moving target (Coyne, Bushman, & Nathanson, 2012). The rapid pace of technological innovation has outstripped the research and clinical community’s capacity to accurately identify and track the quality and quantity of usage. Consider the virtual transformation of pre-teen and teen communication that has occurred in a few years as cell phone verbal contact was eclipsed by smart phone digital contact (i.e. texting).
Scholars have only begun to identify theoretical conceptualizations that can inform research, public education and clinical practice, regarding children, families and digital media. We suggest that it is reasonable to assume that digital technology both reflects and shapes a broad range of family system dynamics. As such, family systems theory may be a useful conceptual tool for human service and clinical professionals caring for and working with children and their families. The family is a structure of related parts or subsystems with each action or change affecting every other person in the family. While individuals make up a family system the family system is a complex whole that cannot be understood by examining members separately. Family Roles are constructed through patterns of interaction and become ingrained habits that make change difficult. Each family has invisible rules, attitudes, and communication patterns that are self-regulating and peculiar to itself; thus defining the family’s boundaries. Despite resistance to change, each family system constantly adapts to maintain itself in response to its members and environment (Kerr, & Bowen, 1988).

We propose that the emergence of parental roles regarding children’s use of technology (invisible patterns of interactions, attitudes and beliefs) are strongly influential to the negotiation of these developmental challenges. This paper represents a clinically-minded effort toward the integration of family systems theory with specific tasks of child development and specific parental functions derived from the research of parental monitoring and parent-child media communication. Throughout this paper we will attempt to identify the following clinically useful concepts that represent the intersection of these theoretical conceptualizations:

1) parental roles,
2) active mediation between the child and the media content (formerly viewed as parental monitoring),
3) the assessment of boundaries, privacy and related attitudes, beliefs and system dynamics,
4) intimacy and relationship maintenance, and
5) Eriksonian developmental tasks of mastery, competence and identity exploration.

We believe these constructs lend themselves to assessment, education, and treatment across a wide range of modalities (Family Systems, Cognitive Behavioral, Social-Ecological). These constructs may have differential impact upon stages of child development, which can inform the choices of interventions made by therapists, as well as the mode of therapeutic communication.

**Technology use among school-age children**

If therapists can routinely assess parental roles regarding discipline and affection in school-age families, what would prevent them from assessing parental roles around digital communication? Along with asking themselves, who is responsible for discipline and who for meeting nurturance needs; they may ask themselves who in the family is responsible for purchasing, installing, operating and educating about the function of digital media? How are children introduced to digital media? Many families treat digital media with no more thought than another battery operated toy during the school-aged years and report no knowledge of tools designed to rate digital media for content or other parental monitoring tools (Mezsaros, 2004). Parents may be uncomfortable with the role of technology “educator” and family systems must shift allocation of time and resources. This may be an additional and unexpected burden requiring families to re-organize patterns of communication and sub-system boundaries.

We would suggest that digital media be viewed as an initiation into a digital world of interactions that will soon permeate the boundaries that separate the family from the outside community. Another concept related to parental roles that is crucial to this developmental period is that of
parental monitoring (Coyne, Bushman, & Nathanson, 2012). Recently, the small literature on
digital media and the family has contributed a number of studies on one aspect of parental
monitoring, which has been termed mediation (Dishion, & McMahon, 1998). Mediation refers to
a broad range of parental monitoring including

1. the extremes of restrictive mediation or strict rules on time and content without
discussion and,
2. co-watching without clear rules on time and content but also devoid of discussion.

The middle position is described as active mediation and has been conceptualized to include a
variety of discussion-based behaviors by parents, including evaluative statements about the
acceptability of behaviors portrayed on television, conversations about the technical aspects of
television, and promotion of critical viewing that discounts the reality of television (Ruh Linder,

Researchers suggest that mediation may serve as a buffer against the harmful effects of digital
media. Active mediation has been shown to be associated with the child’s increased skepticism
about TV content, reduced physical and relational aggression (through moderating against the
influence of exposure to media upon positive attitudes toward aggression), as well as increased
resistance to advertisements when compared with restrictive mediation and co-watching
(Nathanson, & Yang, 2003; Ruh, Linder, & Werner, 2012). The use, however, of parental
contracts/agreements may or may not be consistent with a family defined by an open system.
Individuals may find this level of engagement through discussion combined with limits on time
and content, to be intrusive or coercive and families may be resistant. It is reasonable to suspect
that communications and media exposure will be a factor in developing attitudes toward
aggression in relationships, emerging attitudes toward sexual behavior, as well as stimulate
consumer cravings that may shape a child’s career choice and life satisfaction (Brown, Keller, &
Stern, 2009; Coyne, et al., 2011; Shrum, Lee, Burroughs, & Rindfleisch, 2011).

In the recent text Designing Digital Experiences for Positive Youth Development: From Playpen
to Playground (2012), author Marina Umachi Bers introduces the concept of constructive digital
experience, where children are active producers of digital content. She argues that core
programming skills (i.e. computer literacy) are analogous to music reading skills acquired while
playing a musical instrument. Here children are engaged in the mastery of skills and the
development of competence, consistent with Erikson’s developmental stage of industry vs.
inferiority. The virtual world of gaming is presented as an opportunity to engage in goal
directed civic reasoning through virtual world simulation, shared spaces or digital “parks.” This
is contrasted with the more passive and consumerist experience of the digital “shopping mall,”
where the child learns to operate the game, but is not stimulated to engage in creating
interactive worlds that demand social interactive skills (e.g. conceiving of a shared space with
mutual goals and agreed-upon rules), or in acquiring core skills (e.g. programming) that can be
a foundation for digital learning and problem-solving in later years. In her book, Bers provides
educational rubrics for assessment and case examples of children developing these skills through
digital experience. She has also designed interactive digital curriculum for young children which
she presents in her book, Blocks to Robots: Learning With Technology in the Early Childhood
Classroom (2008).

Clinical objectives when working with school-aged children and their families
The developmental goal for the school-age child is to strengthen the emergence of real world
skills and sense of competence and to establish themselves in the social arena of peers through
play and games that involve planning and strategy, interest in collections or hobbies, habits for
self-regulation and learning (homework, chores, increasing responsibility for organizing school materials) (commonsensemedia.org). Therefore, when working with the parents of school-age children around digital and screen time management, the goal should be to strengthen the child’s capacity for self-regulation: attention, memory, behavioral inhibition, adaptability to change (e.g. transitions) and reading skills (Garon, Bryson, & Smith, 2008; Karreman, van Tuijl, van Aken, & Dekovic, 2006; Kopp, 1982; McLelland, et al., 2007). While closely managed digital technology presents opportunities for learning and recreational experiences, the risk is that excessive digital screen dependence can lead to overexposure, intense arousal, poor regulation, and less reading time. One area of concern for younger school-age child is that TV and other screen media may accompany a reduction in time co-reading or reading on one’s own, an activity critical to children’s cognitive, language and writing skill development (Thompson, Adair, & Bentley, 2013). Parents should avoid inconsistent screen time use and should keep to time limits.

The primary function of technology should not be to soothe or distract the child. When parents share the interest and the joy, and comment, they become co-participants and there are more opportunities for learning benefits, as well as strengthening the parent-child relationship (Linebarger, & Vaala, 2010). Additionally, parents can set in place early habits of screen time including use in only the public areas of house. Parents should begin to track all forms of screen time (TV, computer learning programs, handhelds, phone screens) to pre-determine just how much is enough. Parents can create opportunities for controlled transitions and cue children in advance. Like any preferred activity, digital time can be an effective response cost tool for discipline when used consistently.

Recently, in an on-line publication by Common Sense Media, titled “Power Up: Apps for Kids with Special Needs and Learning Differences,” many apps are reviewed and catalogued with descriptions suggesting cognitive and learning benefits (Bowser, n.d.). The empirical support for these descriptions is unclear. On-line position papers can be helpful in assessing such claims and guiding the selection of games for children (e.g., The National Association for the Education of Young Children and the Fred Rogers Center for Early Learning and Children’s Media, 2012). Shore (2008) points out that most research evidence in children concerns the impact of digital games on visual attention. She cites several studies suggest that game use is associated with greater capacity for rapid shifts in attention, faster reaction times, increased eye-hand coordinator and improved manual dexterity. There is also some evidence for improvements in mental rotation and spatial visualization. Clearly more research is needed to transfer to real-world settings and ecologically valid tasks. Shore points out, however, that the research findings were substantial enough that the American Medical Association concluded that, while some research suggested video game usage as risk factor for ADHD, there were other studies suggesting digital media may be useful treatment. She cites studies that propose some interesting questions about more complex cognitive functions. For example, do games with complex dynamics (such as SimCity), lead to more or less complex thinking? Are children exposed to digital media processing information qualitatively differently (e.g. the text now illuminates the graphics) when compared the non-digitally exposed children of the past. Shore also cited studies suggesting that digital media may increase Verbal and Performance IQ scores in adults with TBI and other impairments. The studies of children remain “small and inconclusive.” Another critical question that has yet to be answered is: Does digital media increase the motivation to learn?

Children can also become overly dependent upon video games as primary source of play, fantasy, leading to an avoidance of social interaction with peers and adults, the impulsive use of
technology without regard for safety risks (Gentile, 2009) as well as obesity and other health conditions associated with sedentary gaming. Active gaming represents an innovative use of digital technology to promote health and fitness through increasing the amount of time spent in physical activity, exercise and play. These include Exergames such as rhythmic dance games, virtual bicycles, virtual sport and balance board simulators (e.g. Wii). Interactive fitness activities include digital on-screen instruction, light pattern games and martial art simulators. These games are meant to be a compliment to traditional physical activity and may motivate children to be more active (Hanse, & Sanders, 2011).

**Introduction of the Family Media Agreement**

This is the optimal stage to introduce the family media agreement (commonsensemedia.org). The agreement is a written guide, which can be tailored to the unique preferences of the family and can help both the child and parent organize and prioritize shared expectations that lead to a common goal of personal safety and emotional health. Children at this stage are very aware of rules and respond well to clear expectations. Children can agree not to share passwords with anyone other than parents and to never give out personal information such as their birthday. Children should agree to tell their parents if anything on the internet seems inappropriate or makes them feel distressed. This is the time to introduce the concept that not everything they read or see on the internet is true. Clinicians can introduce parents to the concept of media ratings (commonsensemedia.org) as a shared family activity. Parents and children can together look up a movie or game, find the ratings for violence, sexual content, or even product placement, and discuss with their parents whether or not the content is appropriate. This type of activity increases their sense of competence and strengthens children’s commitment to self-control in media habits and reflection upon media. If children receive a cell phone during this period, parents should be encouraged to disengage the camera and purchase a phone without options for internet access. This will make it easier to keep digital media use in the public areas of the house. Parents and children can also engage in shared conversations about technology as email accounts are created, computer privacy settings and passwords are established, and portable game and cell phone technology are initiated.

**Technology use in Pre-Teens**

The Pre-Teen world is an exciting one of new opportunities and passionate need to be accepted and connected. Digital media can provide opportunities for creating and exploring identity (Bers, 2012) and social connection (Strayhorn, 2012; Valkenberg, & Peter, 2009). During the pre-teen years identity is fragile and subject to social comparison and peer group dynamics. Children at this stage define themselves by visible markers such as appearance, clothes, physical attributes, athletic competence, extracurricular activities such as performance arts, as well as digital media interests such as music, film or television celebrities, digital games and gaming. The developmental challenge of the pre-teen years is the uneven pattern of emerging abilities. At times pre-teens may appear to understand cause and effect reasoning and to have the ability to independently project consequences into the future and take the perspective of others. At other times they can demonstrate lapses in impulse control, judgment and communication skills that, when combined with rapid identity shifts, can place their social reputation at risk, threaten their personal safety or lead to behaviors that can be socially devastating to others (Spear, 2000). Parents may experience role conflict, particularly those in open family systems, and may find themselves drifting away from actively mediation and from managing digital technology, as they see their Pre-teen’s speed of navigation and “technology savvy” and conclude that this is a good time to leave their preteen alone to navigate the digital world, in the name of promoting independence (Yardi, & Bruckman, 2011).
As the pre-teen’s identity emerges, it can be closely connected to their digital experience. The rapid shifts and storms of this period, can impact the family system. The system can respond by over-constraining digital experimentation of identity or by little to no acknowledgement of this process. Pre-teens can move too rapidly away from identification with adult family members who may represent a closed family system that has engaged in more restrictive mediation during the school-age period. Pre-teens can quickly immerse themselves in developing digital personae that, if unmonitored, are more likely to lead to greater risk of digital harm through sharing of information, receiving unwelcome digital interactions or pre-teen harassment. Another problem is the concealment of identity or anonymity. While this can promote experimentation, it can also lead to disinhibition and digital aggression (Hertlein, 2012; Kowalski, Limber, & Agatston, 2012).

Bers (2012) suggests this is also a time of potential digital exploration of identity and developing the ability to “sustain loyalties despite value systems that might be confusing and contradictory.” She points out that social network sites or “wireless hangouts” and many of the popular interactive games do not, by themselves, facilitate the type of identity exploration that promotes positive development. She has designed digital platforms and games (e.g. Zora) with the specific intent of exploring different styles of character traits and values through virtual community-building, communication, collaboration, and content creation. However Bers also offers examples of students developing collaboration and communication skills through more conventional digital games (e.g. World of Warcraft).

**Clinical objectives when working with pre-teens**

This is the developmental stage where the concept of privacy and related attitudes and beliefs regarding boundaries emerge as useful clinical concepts. Here the access to the world outside the family can still be partially restricted, while there is still time for discussion of the Pre-Teens experience of digital worlds and digital relationships. If boundaries, however, are rigid between the family and the outside world, this can lead to role-strain, conflict and isolation for the Pre-Teen who wishes greater access or who is overly exposed to digital media through peers around the school or extracurricular environment.

This is the time for parents to use the foundation of the open dialogue and re-convey interest in their preteen’s activities, such as asking them to show them how to use online tools, guiding them through their favorite websites, etc. The clinician may encourage parents to remain calm, persistent and alert for opportune moments, which will help to weather the storms of protest and emerging adolescent prickliness about conversations. The concept of privacy may be helpful to explore with parents at this stage, as they may struggle with the tension between allowing for greater privacy while maintaining adequate safety protection. Parents may benefit from exploring how to determine if a review of their child’s emails, texts and posts is warranted. A practical discussion of the use of social media with a parent can help them sort out how to be involved in their children’s social networking sites as an adult participant, while maintaining parent-child boundaries and creating opportunities for mutual dialogue and discussion about digital citizenship. Parents may need to re-visit questions about the use of parental controls or monitoring programs and devices. Parents should be alert to their child’s obsessive behavior at this age with digital media and poor emotion regulation and self-care including a compulsion to stay digitally connected that may lead to sudden changes in mood (anxiety, depression), sleep loss, temper tantrums tied to media usage and transitions (King, Delfabbro, & Griffiths, 2012).

This is a time to stress the concept of self-control in conversations (e.g. “you control your media; it does not control you”) and the rule of thumb: “If you can’t say it in person, don’t post it.” Parents can ask their Pre-Teen questions that promote reflection on the importance of
impulse control (Can they agree never to enter a chat room where strangers may be communicating with them? Can they pause or “think before they press send”) and judgment (Do they understand that there is no internet privacy once information has been shared, that texts and posts last forever and can be replicated and taken out of context? Do they know about cyberbullying and harassment and know what to do about it when they see it happening to others or when they are the victims?) This is also a time for open dialogue about problem-solving strategies and scenarios that help the pre-teen to project information into an unforeseen digital future and reason-out what potential consequences may lay in wait for them. The digital media agreement can be upgraded, to include a conversation about the risk of nude or sexually explicit photos or pictures, blocking inappropriate messages, telling parents if something makes them feel uncomfortable and an emerging sophistication about the management of personal privacy controls including being wary of sites that ask them to disclose or share personal information.

The importance of monitoring technology use in the home
Despite the fact that many caregivers do their best to keep up with technology and create a safe technological environment for their children, the technological savvy of today’s youth can quickly outpace that of their parents. For example, parents are often shocked to learn that the access that is prohibited on the family computer is completely enabled by the WiFi and the IPOD in the bedroom. Ideally, clinicians should encourage parents to keep digital media in a centralized and public area of the home. This will allow the parents to better track the types of information that are being accessed by their children. Parents should also require that youth and adolescents “turn in” their phones and devices at the end of the night. It has been well documented that adolescents use technology well into the evening hours, which interferes with both their sleep onset and sleep maintenance (e.g., Van den Bulck, 2007; Munezawa, et al., 2011). Many adolescents sleep with the phones close to their bed or under their pillow and wake up after sleep onset to read and answer texts (Adams, & Kisler, 2013). These multiple nighttime awakenings can result in daytime symptoms such as inattention, difficulty concentrating, and mood dysregulation (Owens, 2005). Late night interactive gaming can also causes similar delays in sleep onset and daytime difficulties. Exposure to violent video games and movies also have the added risk of increasing physiological arousal, aggression-related thoughts and feelings, aggressive behavior, as well as decreasing overall prosocial behavior and academic performance (Anderson, & Bushman, 2001; Sharif, & Sargent, 2006). As such, a “turn in” policy will help parents to control unmonitored use at night.

Technology use in Young-adults
The teenage and young adult years are characterized by a need to foster independence across multiple domains, including social, health, academic, recreational and employment (Lloyd, Dean, & Cooper, 2007). For most teens, a strong desire for independence is coupled with the view that peer groups are more important and influential than parents. In the teenage and young-adult years, parents hope that their efforts to promote healthy digital citizenship have been internalized by their teens. Many parents may find themselves drifting further away from active mediation in an effort to encourage and support independence.

New clinical and developmental issues begin to emerge for teens who are developing intimacy and working to maintain relationships. Teens are also experimenting with a wider array of strategies (e.g., in-person connections, sexuality, etc.) as they attempt to foster friendships and intimate social connections (Lloyd, et al., 2007). Although “high-tech” strategies can enhance connection and decrease inhibitions among family members and romantic partners, the relational literature also suggests that technology-mediated intimacy can cause tension in
Consequences of adolescent technology use: Sexting and plagiarism

Although youth may technically be approaching adulthood, parents should continue to have ongoing conversations about the implications of technology use. Parents should actively encourage teens to create and manage their own privacy settings, being sure to regularly check that privacy settings have not been changed by the website administrator. When making new accounts or purchasing items online, teens should be wary of giving out personal information, and they should be wary of sites that ask them to disclose or share personal information. Additionally, certain online behaviors should be considered high-risk, especially if they are capable of damaging one’s reputation in both the short and long term. For instance, websites where individuals can post anonymous comments about their peers have the potential to cause psychological and social distress, particularly if these sites are used as weapons with the intent to bully, embarrass, and harass others in a public forum (Li, 2006).

Sexually-explicit photos or text messages can be particularly damaging, and parents should add “sexting” to an ongoing discussion of sexuality and general well-being. It is important for teens to understand that even if they send a sexually-explicit photo to a partner, or desired partner, once it is out of their hands it is public information (Whitaker, & Bushman, 2009). Some teens may argue that filtering apps, such as Snap chat® (which makes a photo “disappear” within a predetermined amount of seconds after being opened by the receiver), circumvent the possibility of the receiver sharing the photo without consent. However, what if the receiver allowed others to view the photo? What if the receiver took a screen shot of the photo (although Snap chat® will notify senders if this occurs)? And what if the sender’s phone is lost or stolen with the sexually-explicit photo saved on it? In recent years, many states, such as Rhode Island, have implemented new laws allowing adolescents over the age of 18 who are in possession of nude photos of someone under the age of 18 to be charged with a felony sex offense (Rhode Island General Assembly; § 11-9-1.3, 2011). It is questionable how many 18-year-old adolescents possess the ability to understand the gravity of this offense, particularly if they have been in a long-term relationship with a younger partner as they transition into adulthood.

Parents, clinicians and teachers should also explicitly discuss the temptation to use one’s phone to look up answers during exams. This should include the consequences of looking up answers during an exam (i.e., with a smartphone) or plagiarizing sources that may be difficult for teachers to track. Unfortunately, many students do not understand the concept that information is intellectual property, especially if they have unlimited access to it (Pichford, 2012). As with any form of cheating, these offenses can lead to expulsion if caught. Overall, both parents and teachers should have ongoing dialogue with their children emphasizing that the internet should always be used responsibly, with integrity and not be hurtful to anyone. Before every online interaction teens should ask themselves, “would I mind if my (parent, teacher, college admissions officer, future employer, etc.) saw what I was doing?” If the answer is yes, they should take a moment to reconsider their actions.

Implications for the training of human service workers

Technology can significantly impact the developmental trajectory of children and adolescents, particularly as it pertains to their social, emotional, academic and physical well-being. To our knowledge, many university-level human service programs do not have formal mechanisms for
training emerging professionals about integrating digital literacy and responsibility into their teaching and mentoring of students. Therefore, we offer suggestions for how family systems theory and developmental theory can inform our understanding of digital media use and curriculum development in higher education. First, it would be beneficial for educators to consider how to teach about digital citizenship within preexisting curricula. Issues related to responsible media use can be integrated as supplemental topics and readings throughout courses that focus on children, adolescent, or lifespan development. Assignments and projects could encourage students to explore websites that provide trends about technology use among youth, such as:

- Pew Internet Data
- Kaiser and Commonsense Media Data
- Foundation or national association “position papers” such as Shore’s (2008) review of developmental research on effects of digital media
- Technology and Interactive Media as Tools in Early Childhood Programs Serving Children from Birth through Age 8 (2012)
- The university-based institute analysis “The True Prevalence of Sexting” (Lounsbury, Mitchell, & Finkelhor, 2011)

Second, emerging professionals should also be made aware of pre-developed curricula that can be used as a future resource in their classrooms. For instance, commonsensemedia.org offers a wide range of programs that promote digital literacy and citizenship across the academic years. Teachers and human service workers are able to choose toolkits from a number of digital literacy domains (e.g., internet safety, cyberbullying, creative credit and copyright, etc.). There are also digital kits for parents that provide practical strategies and tools to engage in active mediation with children and teens, including interactive ratings of a wide range of digital media including film/television, music videos, and video games. Professionals can also stay abreast of new technological developments and issues through commonsense media’s active blog. Thinking more broadly, these tools can also be used to enhance communication about digital citizenship across a variety of other venues, including traditional family therapy, group prevention and education of parents and children in school settings, after-school childcare programs, and youth development organizations such as Boys and Girls Clubs and the YMCA. Finally, more technologically savvy human service instructors may choose to integrate the work Marina Umaschi Bers and her colleagues into their curriculum. Courses could include sections, laboratories or practica, where students are actively trained in models of digital environments to foster positive youth development.

**Conclusion**

The study of human development is a natural academic discipline for the intersection of family systems theory, child development, and empirically based communication concepts such as parental mediation. When combined, we believe that these concepts and constructs can provide a theoretical foundation for prevention and intervention human service delivery in the area of digital citizenship. Digital media is expanding rapidly and research models are struggling to maintain relevance and accuracy to the practical setting of the therapist, prevention educator, or human service worker. At the same time scholars have recently observed that there is relatively little research on how clinicians approach a child or family’s media use or how prevention educators and human service workers instruct in the area of digital citizenship (Coyne, Bushman, & Nathanson, 2012). However, there are concepts that can inform clinical practice and group or individual instruction. This review represents a small step in this direction.
References


The Role of Adolescent Development in Social Networking Site Use: Theory and Evidence

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The Role of Adolescent Development in Social Networking Site Use: Theory and Evidence

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Abstract: Using survey data collected from 260 children, adolescents, and young adults between the ages of 9 and 26, this paper offers evidence for a relationship between social networking site use and Imaginary Audience, a developmental variable in which adolescents believe others are thinking about them at all times. Specifically, after controlling for a number of variables, results indicate a significant, positive relationship between social networking site use and Imaginary Audience ideation. Additionally, results indicate a positive relationship between Imaginary Audience ideation and Facebook customization practices. Together, these findings provide evidence, based on Vygotskian developmental theory, for a general consideration of the role that currently available tools, in this case social networking sites, can have on development. Thus, findings implicate both the role of development on social networking site use, as well as the role of social networking site use on development. Overall, these findings have important implications for the study of media and human development, which are discussed in detail.

Introduction

There is little question that adolescents’ use of social networking sites has grown exponentially over the past few years, both in terms of the percentage of adolescents with online profiles as well as the amount of time they spend on such sites (Lenhart, Purcell, Smith, & Zickuhr, 2010). Given these high rates of use, a number of research studies have examined the relationships between social networking site use and a number of different outcome measures among adolescents, including impression formation (Antheunis, & Schouten, 2011), identity
experimentation (Valkenburg, & Peter, 2008), and social self-esteem (Valkenburg, Peter, & Schouten, 2006). While a number of these studies take a developmental perspective, as called for by Wartella, Caplovitz, and Lee (2004), in order to examine children’s and adolescents’ use of social networking sites, fewer have explicitly examined the interaction of social networking site use on the experience of certain development phases. Therefore, in the present paper, we have two overarching goals. First, we will use existing theory and previous findings to offer support for the study of the interaction between social networking site use and children and adolescent development. Second, we will present findings collected from a sample of 9-26 year-olds to provide evidence for a relationship between social networking site use and a developmental variable during adolescence, the Imaginary Audience (Elkind, 1967). This variable is particularly important to consider given its association with identity development during adolescence. Together, theory and data will illuminate the importance of understanding adolescents’ differential uses of social networking sites based on developmental stage, as well as the role that social networking site use has on development.

**Imaginary Audience**

First conceptualized by Elkind (1967), Imaginary Audience was seen as a sub-construct of adolescent egocentrism (Piaget, 1952), occurring between the ages of 13 and 15. By this age, adolescents have acquired formal-operational thought, which means that they can think about their thoughts as well as the thoughts of others. They cannot, however, always understand the direction of those thoughts; that is, they often assume that others’ thoughts are directed at them, given their own heightened egocentrism (Elkind, 1967). Taken together, since adolescents think about themselves often, and think that others are constantly thinking about them, they develop an Imaginary Audience, or an unseen other that is constantly thinking about and judging them. (Elkind, 1967).

This understanding of Imaginary Audience underwent a reconceptualization in the mid-1980’s by Lapsley and colleagues (see Lapsley, 1985; Lapsley, & Murphy, 1985; Lapsley, & Rice, 1988; Lapsley, FitzGerald, Rice, & Jackson, 1989 for a review). Here, Imaginary Audience ideation is seen as a byproduct of separation-individuation concerns, where the adolescent is interested in balancing their own needs and understanding of the self from that of their parents. What is important to note here is that under both conceptualizations, the developmental trajectory of Imaginary Audience ideation generally rose from age 13 before dropping off around age 15.

Although it is possible to argue that social media use should be related to a more stable trait variable such as self-consciousness, current data suggest that this may not be the case. Findings (see Lenhart, 2009a; Lenhart, 2009b; Lenhart, et al., 2010; Subrahmanyam, Reich, Waechter, & Espinoza, 2008) suggest that adolescents use social media in very different ways and with very different expectations than older adults. For example, adolescents generally use social networking sites more often than adults just out of college, but also engage in more customization practices while on social networking sites (Lenhart, et al., 2010). That is, they post more pictures, status updates, and comments. Given these findings in regards to age, it appears that one’s comfort and experience with technology does not necessarily influence the ways in which they use social media; rather, it may have something to do with the processes of development. Additionally, and while not extensively studied in current literature, some research has found an elongation in Imaginary Audience ideation across adolescence and into young adulthood (e.g. Schwartz, Maynard, & Uzelac, 2008), a departure from the findings of Elkind (1967) and Lapsley, et al. (1989). Taking these findings together, it is increasingly important to understand how media use might be related to changes in certain developmental trajectories. But how might this be the case?
**Vygotsky and Adolescents’ Inner Speech**

In his book, *Mind in Society*, Vygotsky (1978) shed light on the importance of adolescent’s “inner speech” as well as the ability of media and technological tools to socialize youth. This theory of development stands in contrast to Piagetian theory (Piaget, 1952), in that Vygotsky argued that development was both historically and culturally situated and the result of a child or adolescent’s specific socialization experiences based on how he/she represents those experiences in their inner life—what Vygotsky called their inner speech. Thus, development, to Vygotsky, is not necessarily bound by age, as is generally argued for in Piagetian theory. Inner speech refers to the tools by which youth make sense of their growing cognitive capacities and socialization experiences while gradually internalizing what are at first externally experienced skills. In this sense, both the Imaginary Audience of contemporary developmental theory and the “inner speech” of Vygotsky are important developmental activities by which individuals incorporate into their mental life their growing skills, understandings, and experiences. Moreover, in the Vygotskian sense, the specific external tools available to the developing child and adolescent are important in structuring development. In this sense, contemporary social media, almost universally engaged in by today’s adolescents, are dominant tools of child and adolescent development, certainly in our culture and at this time. Considering previous findings of an elongation of the developmental trajectory of Imaginary Audience ideation (e.g. Schwartz, et al., 2008), and the potential role of media in adolescent development, we ask:

**RQ1:** How do levels of Imaginary Audience ideation differ between the ages of 9 and 26?

**The Role of Adolescent Development on Social Networking Site Use**

Given this socio-historical framework for the study of media use and development, it makes sense to examine the role of social networking sites, a currently integral form of media in the lives of adolescents, on developmental trajectories. Therefore, we will first consider the importance of social networking sites in the lives of adolescents and provide a theoretical argument for the relationship between development and use of such sites.

While we have written generally about social networking sites to this point, it is important to specifically consider the affordances of Facebook, as this site currently has more than one billion individual users (Cohen, 2012). On Facebook, users can connect with others through a variety of means, from posting information about the self to sending messages to others. This is potentially of great importance to adolescents, as the creation and maintenance of friendships is given high priority (Nickerson, & Nagle, 2005; Sullivan, 1953; Vartanian, 1997). Additionally, Facebook can be used as a mechanism by which adolescents can maintain ties with their parents (see Kanter, Afifi, & Robbins, 2012), while experimenting with their identity online, thereby working to individuate themselves (Valkenburg, & Peter, 2008). Thus, it seems likely that Facebook is a tool that adolescents can use beneficially while engaging in the separation-individuation tasks inherent in Imaginary Audience ideation (see Lapsley, et al., 1989).

In addition, past research has begun to look at the role that social networking site use has on impression formation, finding generally that having attractive friends or attractive, positive wall posts is related to more positive ratings of the adolescent (Antheunis, & Schouten, 2011). Similarly, Walther, Van Der Heide, Kim, Westerman, and Tong (2008) found, among college-aged participants, that positive statements on an individual’s Facebook wall were related to increases in ratings of attractiveness for that individual. Relatedly, Burke, Marlow, and Lento (2009) found that social networking site users will post more information on their profiles if they perceive that their friends post a lot of information on their profiles. Taking these findings
together, it is clear that the information one puts out about oneself on Facebook has important implications for how one is seen by others, as well as how others behave on the site. This is an especially important consideration for an individual high in Imaginary Audience ideation. McLaughlin and Vitak (2012) found that users interpret the profiles of highly-regarded others, and use these interpretations to guide the information they use to customize their profiles. Given the customization options available on Facebook, it is relatively easy for users of all ages to control the information they post about themselves, and therefore to a degree, the way they will be seen by others. 

Overall then, previous research would seem to indicate that all users of Facebook, including adolescents, are able to perceive the social norms that operate in the Facebook community and then use that information to create a profile that accentuates positive aspects of the self (see McLaughlin, & Vitak, 2012). It makes sense then, that for individuals high in Imaginary Audience ideation, Facebook customization rates will also be higher, as users react to their perceived Imaginary Audience on the site by examining the norms operating in that space. Thus,

H1: Controlling for age, overall Facebook use, and self-consciousness, Imaginary Audience ideation will be positively related to Facebook customization.

The Role of Social Networking Site Use on Adolescent Development
To this point, we have used theory and previous findings to argue for the importance of considering developmental variables when studying social networking site use. Additionally, we have argued for a consideration of the role that development can have on differential uses of social networking media, especially in terms of customization practices. Finally, we will consider the reciprocal relationship to this previous argument: the role that social networking site use might have on development. As discussed earlier, in a Vygotskian sense, the tools available to the adolescent at a particular moment in time are crucial to their ways of making sense of the world, and thus, their general development. Therefore, while it is possible for development stage to drive adolescents’ use of given tools, in this case social media, it is also possible and indeed likely that these tools are also related to adolescents’ general development.

While not previously used in this context, the theoretical mechanism of behavioral rehearsal can be used to understand how Facebook use can be related to Imaginary Audience. Behavioral Rehearsal refers to a three part process that people go through when considering a particular behavior change, from comparing oneself to others, and thinking about how to engage in the desired change, before actually engaging in the changed behavior (Remondet, Hansson, Rule, & Winfrey, 1987). As discussed above, research indicates that social networking site users can and do understand the social norms that operate in their online community. This, however, is merely the first step of behavioral rehearsal. Previous research indicates that adolescents engage in the cognition and offline-action stages of this behavioral model online as well. For example, using qualitative interviews of adolescent Facebook users between the ages of 11 to 18, Moreno, Briner, Williams, Walker, and Christakis (2009) found that information posted on social networking sites about displays of alcohol use or attitudes about alcohol are interpreted as real thoughts and behaviors by others in this age group. Additionally, it has been argued that Facebook, as a form of media, may be particularly influential among adolescents due to its combination of interpersonal communication and mass media (Fogg, 2008). In fact, qualitative research complied by Moreno, et al. (2010) suggests that adolescents perceive alcohol-related pictures as an effort to appear “cool.” Thus, research seems to indicate that adolescent Facebook users think posted information is real, and may be persuaded by this information.
Therefore, it is possible that these representations may cause users to alter their beliefs, such that their beliefs come to match the beliefs that are seen as normative on social networking sites. This is a similar argument to that of Moreno and colleagues (2009). As these authors note, social networking sites provide a venue for the exploration of identity, with opportunities for maintenance, adaptation, and others’ feedback (Moreno, 2010). These findings illustrate how social networking sites can be used to shape identity; after comparing their social networking page to others, adolescents have the opportunity to tailor their profiles in such a way to accentuate or perhaps even manufacture the “cool” behaviors in which they engage, thereby changing a small facet of their identity. In total, adolescents’ sense of who they are and who they want to be plays an important role in the ways in which they select and engage with social networking sites (see Steele, & Brown, 1995). Overall, the affordances of Facebook allow for profiles to be customized quickly and easily, in an attempt to show off this constructed identity that is based on a comparison, cognition, and finally, actual behavioral change. The ability for Facebook users to quickly and easily assess the normative values of this online forum coupled with the customization option available to them makes it easy to compare one’s self to others and change one’s online identity when necessary. In doing so, users are acting toward a perceived online audience. This continual thinking about the self and how it relates to this other should then manifest itself in heightened Imaginary Audience ideation. Thus,

H2: Controlling for age, Facebook customization, and self-consciousness, overall Facebook use will be positively related to Imaginary Audience ideation.

Using Vygotskian developmental theory, we have argued for a consideration of the reciprocal relationships between media and human development. As exhibited in this review of literature, users of Facebook can, and do, act toward and react to a perceived, online Imaginary Audience. That is, they can post information about the self, see the responses they get from others, use these responses to inform later customization practices, before actually engaging in those customization practices. Thus, we argue that Facebook use can be cyclical in nature, in that developmental stage should be related to how users engage with the site through customization, and subsequent use of the site should be related development. Next, we seek to provide additional evidence for these arguments using data that are detailed below.

**Method**

**Participants.** 260 participants between the ages of 9 and 26 completed the survey instrument. Thus, participants ranged from fourth graders to young, working adults. Overall, females represented 57.7% ($n = 150$) of the final sample. 86.2% ($n = 224$) of the sample indicated their race as white, 7.7% ($n = 20$) indicated their race as African-American, 2.7% ($n = 7$) indicated their race as Hispanic/Latino, and 3.5% ($n = 9$) indicated their race as Asian.

**Procedure.** For student recruitment, the principal at the participating elementary and middle school was approached prior to data collection and asked to provide consent. One week prior to the researcher being in the school, a parental recruitment letter and consent form was sent home with each student in these grades. Teachers collected completed consent forms as they were returned, keeping track of which students had brought one back. On the day of data collection, participating students completed the survey in an unused classroom. After assenting and completing the survey, each participant handed in their survey and was thanked for their time.
Additionally, parents whose children were in the appropriate age range (10-17) were identified via a convenient snowball sample and given either a packet containing a recruitment letter, a parental consent form, a child assent form, and the survey instrument, or an online version of these documents was sent to their email address. Those whose children completed a paper and pencil version of the survey were given instructions for returning the survey and necessary consent materials to a member of the research team. Children and adolescents recruited via this method received a $5 gift card in exchange for their participation.

College-aged students, recruited from participating classrooms, were offered a nominal amount of extra credit upon completion of the survey materials. An email explaining the purpose of the research, along with a link to the online survey, was sent to the roster of participating classes. Participants could click on the embedded link and complete the online survey, which took approximately 20 minutes, at a time and place of their choosing. This same online survey was used for participants past college-age, who were identified via a convenient snowball sample.

**Measures**

**Self-consciousness.** An adaptation of the 23-item Fenigstein Self-Consciousness scale was used to measure private and public self-consciousness, different constructs from that of Imaginary Audience (Fenigstein, Scheier, & Buss, 1975). In an effort to keep the overall instrument concise and thereby usable with younger audiences, this measure was shortened to 8 items using data compiled during a pilot test of this instrument. This scale was reliable, with a Cronbach’s alpha of .83.

**Facebook Use.** Participants were asked to self-report on a number of questions aimed at understanding the extent to which each uses Facebook. Participants were asked to report the amount of time they spent on Facebook each day as well as the number of friends that they have on their Facebook profile. They were also asked to report how many times per day they log into Facebook as well as the length of time that they have had a Facebook profile.

**Facebook Customization.** A Facebook customization scale was used in order to understand the extent to which and how often each age group modifies their Facebook profile page. The scale individuated a number of Facebook customization techniques, such as the number of times users change their profile picture, change their status, add photos, and comment on others’ walls. For example, participants were asked how often they engage in these aforementioned behaviors on a 1 to 4 Likert-type scale anchored by never and often. This scale was reliable, with a Cronbach’s alpha of .93.

**Imaginary Audience.** The New Imaginary Audience Scale (NIAS) was used to determine the extent to which participants have a tendency to engage in Imaginary Audience ideation (Lapsley et al., 1989). This scale consists of 42 items measured on a Likert-type scale where an answer of 1 indicates that the participant never engages in the behavior and an answer of 4 indicates the participant engages in the behavior often. Participants are asked to respond to how often they think about certain notions or ideas. Sample questions include “being rejected by a girlfriend or boyfriend,” “imagining what everyone will think if you became famous,” and “imagining how others would feel if you were gone (Lapsley, et al., 1989).” This measure was reliable, with a Cronbach’s alpha of .95.
Results

First, RQ1, which asked about the relationship between age and Imaginary Audience ideation, was tested by using a univariate ANOVA. Age was split into five developmentally-meaningful groups: 9-12, 13-15, 16-18, 19-22, and 23-26 (Erikson, 1974). This ANOVA indicated that there was a significant difference between the age groups on their Imaginary Audience scores \((F(4, 244) = 5.32, p < .01)\). A post-hoc Bonferroni correction indicated that 9-12 year olds scored significantly lower on Imaginary Audience than 13-15 year olds and 19-22 year olds. Thirteen to fifteen year-olds and 19-22 year-olds differed significantly from 23-26 year-olds, while there were no differences between the 16-18 year-old age group and all other age groups on scores of Imaginary Audience (please see Table 1). Thus, Imaginary Audience ideation increases significantly from age 9 to 13 and then remains relatively stable before dropping around age 23.

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>9-12 year-olds</td>
<td>2.10a</td>
<td>0.60</td>
</tr>
<tr>
<td>13-15 year-olds</td>
<td>2.46b</td>
<td>0.62</td>
</tr>
<tr>
<td>16-18 year-olds</td>
<td>2.37ab</td>
<td>0.40</td>
</tr>
<tr>
<td>19-22 year-olds</td>
<td>2.42b</td>
<td>0.50</td>
</tr>
<tr>
<td>23-26 year-olds</td>
<td>2.04a</td>
<td>0.58</td>
</tr>
</tbody>
</table>

Note: Means that do not share a common subscript differ significantly at \(p < .05\).

To test H1, which asked about the relationship between Imaginary Audience ideation and Facebook customization while controlling for age, overall Facebook use, and self-consciousness, a hierarchical multiple regression was used. First, the three control variables were entered on step one and were significant \((R = .64, R^2 = .41, F(3, 209) = 49.11, p < .01)\). Specifically, age \((\beta = .35, p < .01)\), overall Facebook use \((\beta = .36, p < .01)\), and self-consciousness \((\beta = .15, p < .05)\) were all significantly related to increases in Facebook customization practices. Next, Imaginary Audience score was entered into the model on step two. This block was significant as well \((R = .65, F(4, 208) = 38.29, p < .01)\), with a significant change in \(R^2 \) \((R^2 \Delta = .01, F \Delta (1, 208) = 3.82, p < .05)\). Specifically, Imaginary Audience ideation was significantly related to increase Facebook customization \((\beta = .13, p < .05)\), whereas self-consciousness was no longer significant \((\beta = .09, p = \text{n.s.})\). Overall, H1 was supported, as Imaginary Audience ideation proved to be a better predictor of Facebook customization practices than one’s level of self-consciousness.

A hierarchical multiple regression was used to test H2, which predicted that, after controlling for age, Facebook customization, and self-consciousness, overall Facebook usage would be positively related to Imaginary Audience scores. Results supported this hypothesis. First, age, Facebook customization, and self-consciousness were entered on step one \((R = .57, R^2 = .32, F (3, 210) = 32.69, p < .01)\). Specifically, Facebook customization \((\beta = .21, p < .01)\) and self-
consciousness ($\beta = .48, p < .01$) were individually significant. Next, one’s overall time spent on Facebook was entered on step two. This was significant ($R = .58, F(4, 209) = 33.23, p < .01$) and the change in $R^2$ from step one to step two was significant as well ($R^2\Delta = .02, F\Delta (1, 208) = 4.95, p = < .01$). Individually, overall Facebook time was significantly related to Imaginary Audience score ($\beta = .15, p < .05$), while Facebook customization was no longer significant ($\beta = .14, p = \text{n.s.}$) thereby supporting the relationship proposed in H2.

Discussion

Summary of Findings. Similar to the findings of Schwartz, et al. (2008), the data presented here indicate a general elongation of the developmental trajectory of Imaginary Audience ideation well past how it has been seen historically (Elkind, 1967; Lapsley, et al., 1989). Specifically, there was no significant difference in Imaginary Audience score from age 13 to 22; it is important to note that this occurred using the same measure of Imaginary Audience as Lapsley, et al. (1989) and Vartanian (1997). Second, results indicate that there is a significant, positive relationship between Facebook use and Imaginary Audience ideation after controlling for age, Facebook customization, and self-consciousness. Finally, results indicated a significant positive relationship between Imaginary Audience ideation and Facebook customization, after controlling for overall Facebook use, and self-consciousness. After entering Imaginary Audience on the second step of the regression model, self-consciousness was no longer a significant predictor of Facebook customization, indicating a developmental variable is a better predictor of this relationship than a trait variable.

Practical and Theoretical Implications. Taken together while considering theory and previous findings, these preliminary results are illustrative of the role that media use can have on development, as well as the differential role that developmental stage can have on certain forms of media use. Overall, the findings of this study generally contrast the robust series of findings in the extant literature on the Imaginary Audience. For example, using the NIAS as a measure, Vartanian (1997) replicated the findings of Lapsley, et al. (1989). The NIAS is the same measure that was used in the present study; here, however, findings did not follow similar patterns. More so, however, Imaginary Audience scores were especially heightened for those high in Facebook use. Therefore, one possible explanation for the changes in the developmental trajectories of Imaginary Audience ideation may be heavy Facebook usage among children and adolescents. A host of other factors, including other tools and technologies currently available, not measured by this study are almost certainly at play, which together result in changes in the trajectories of these developmental variables. The results of this study, however, do shed light on one such variable by relating it to Imaginary Audience.

This is an important finding for a number of reasons. With the sheer number of children and adolescents on Facebook, as well as the vast amount of time that many of them spend using it, it is important to consider the role that Facebook might play in not only daily life, but developmentally as well. This may have serious implications for the future, as more and more children around the world begin to use social media in even higher quantities and at earlier ages. Therefore, it may be important to consider other forms of social media because the affordances of these technologies are similar to those of Facebook. Similar to Facebook, most other social media allow users to create some type of profile, control the information that they present to the world, and monitor the identity that they present on their account. As evidenced here, these affordances may change the way we think about ourselves and others.
Additionally, results indicate that heightened Imaginary Audience ideation is related to differentiate use patterns among Facebook users, such that those high in this developmental variable are also higher in rates of Facebook customization. This is an important finding to consider when studying general social networking site use. While various ages are generally lumped together in order to present descriptive statistics (e.g. Lenhart, et al., 2010), these data indicate that researchers must consider the developmental stage of the user. Furthermore, researchers must begin to think about the cyclical relationship from individuals’ social networking site use, to developmental variables and trajectories, and back to specific practices on the site. In sum, the findings presented in this paper provide contemporary evidence to Vygotsky’s (1978) assertion that the tools and technologies available to children and adolescents at a given place and time are important to consider when examining how they structure their inner speech and their development in general.

Limitations and Conclusion. The main limitations of the study arise from its sample. Although efforts were made to diversify the sample, especially in terms of geography, educational background and race, the majority of the sample was white. Among the sample older than 18, most participants were either college educated or currently in college. This could have implications for our findings, given that Facebook use is nearly ubiquitous across race and socioeconomic status in the United States. Additionally, we attempted to make longitudinal claims in regards to our data and findings although the survey design was cross-sectional. In examining the demographical data across all ages, we have no reason to believe that any age group differs significantly from one another on gender, race, and socioeconomic status; however, without truly longitudinal data or the ability to follow particular individuals over the course of a few years, it is impossible to tell if the age groups in our sample are truly equal in terms of their Facebook use and Imaginary Audience ideation. Longitudinal data would give researchers the ability to make truly causal claims in regard to the relationship between Facebook and Imaginary Audience and is an important direction for future research in addition to a consideration of different media use variables.

Taken together, however, the theory, previous findings, and current research presented in this paper argue toward a consideration of the role that developmental variables play on adolescents’ experiences on social networking sites. Considering the role of developmental variables such as Imaginary Audience ideation will provide researchers with a more nuanced and thus, more complete view of the relationship between the use of such sites and development. It is also important to consider the role that media use has on development. These views will be vitally important, as researchers continue to examine the relationships between development, children and adolescents’ engagement with social networking sites, and their media use in general.

References


Toward a Theory-Predicted Definition of Digital Literacy for Early Childhood

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Toward a Theory-Predicated Definition of Digital Literacy for Early Childhood

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Abstract: Though young children are frequent users of digital technology, there is no comprehensive definition of early childhood digital literacy. Currently, digital literacy and related terms are defined with much older children and adults in mind. This paper aims to lay groundwork for redefining digital literacy in an early childhood context. Taking into account the unique developmental needs of early childhood when discussing digital literacy can provide a gateway to developing technological tools and curricula to prepare children in kindergarten through second grade to be more effective users of digital technologies throughout their lives.

Introduction

Young children are frequent technology users. According to a Common Sense Media Study (2011), over half of two to four year olds and 90% of five to eight year olds have used a computer, and a-over quarter of children under age eight have used a mobile device (e.g., cell phone, tablet, etc.). Yet in the early grades, young children learn little in school about the digital tools that are part of their everyday lives (Bers, 2008). As such, the term digital literacy and related terms, such as new literacies, media literacy, and computer literacy (Coiro, Knobel, Lankshear, & Leu, 2008), tend to be defined and analyzed with older children in mind (Lankshear, & Knobel, 2003; Marsh, 2005).

According to the National Association for the Education of Young Children (NAEYC) Technology Policy Statement, “digital literacy is essential to guiding early childhood educators and parents in the selection, use, integration, and evaluation of technology and interactive media (NAEYC & Fred Rogers Center, 2012, p. 9).” This statement, while reflecting the importance of digital literacy for educators and parents, does not outline what digital literacy means for the young children in their care. This paper aims to consider early child development theory, and current digital literacy definitions and frameworks, in order to answer the question: what does digital literacy mean in early childhood?
Background

Digital Technology Use in Early Childhood
For many young children, digital devices are common. A majority of homes in the U.S.A. have a computer (81%). Daily, half of children (53%) under six use a computer at home and over half of children two to four years old (53%) have used a computer with average age of first computer use at three-and-a-half years old (Common Sense Media, 2011).

Digital technology use is not universal, however, and varies with income. Around 48% of families who earn less than $30,000 a year own a computer compared to 91% of families who earn over $75,000 per year (Common Sense Media, 2011). In addition, 10% of lower-income parents own a smart device versus 34% of upper-income families, and 2% of lower income families have a tablet computer versus 17% of upper-income families. Over a third (38%) of lower-income parents did not know what an "app" was (mobile application), compared with 3% of higher-income parents (Common Sense Media, 2011).

Research indicates that simply providing access to technology for children is not enough to generate an understanding of technology alone and it is important to understand the social context in which the technology is being used (Palfrey, & Gasser, 2008; Zillien, & Hargittai, 2009). Thus, schools likely play a key role as a place to learn about new technologies for children.

Educational Policy
For decades, early childhood curricula have focused primarily on literacy and math, especially with the educational reforms of No Child Left Behind (Zigler, & Bishop-Josef, 2006). However, there has been some recent attention to STEM disciplines in early childhood (Gelman, & Brenneman, 2004; Sesame Workshop, 2009; White House, 2013). Educational reform across organizations is now addressing technology frameworks for early childhood (see Barron, et. al., 2011; ISTE, 2007; NAEYC & Fred Rogers, 2012; U.S. DOE 2010).

The U.S. government issued a series of reports, recommendations, and educational reforms around the use of technology in classrooms, with a focus on STEM education in grades K-12, based on increased attention to the United States lagging far behind other countries in STEM areas (Chiong, & Shuler, 2010; PISA, 2006). According to the National Education Technology Plan, a government report on technology and education, computer technology must be used in classrooms to provide relevant learning environments and assessment tools for children (U.S. DOE, 2010). Furthermore, citing the 2006 Programme for International Student Assessment results (PISA, 2006), the Educate to Innovate campaign encourages participation in STEM areas by establishing partnerships between the federal government, nonprofits, and corporations. PISA reported American students lag far behind other developed countries in math and science, ranking 25th out of 30 in math and 21st out of 30 in science (U.S. Congress Joint Economic Committee, 2012). While Educate to Innovate addresses K-12 education overall, one of several participating organizations specifically aimed at early childhood is Sesame Street, which adopted a STEM focus for its 40th and 41st seasons (Sesame Workshop, 2009).

Two early childhood focused organizations, the National Association for the Education of Young Children and the Fred Rogers Center, authored a technology policy statement which addresses several recommendations specifically related to the digital needs of children aged 3 to 8 years, including the need for educators to be able to understand, evaluate, and integrate
developmentally appropriate technological devices for their classrooms (Barron, et. al., 2011; NAEYC & Fred Rogers, 2012).

The Digital Age Teacher Preparation Council, a partnership between the Joan Ganz Cooney Center and Stanford Educational Leadership Institute, developed a blueprint for bringing developmentally appropriate educational technology tools and curricula into the classroom. Their report, *Taking a Giant Leap*, argues that implementing emergent technology tools, combined with ongoing professional development for teachers of children ages 3-8, may be a cost-effective way to implement new policies into schools, while addressing the new common core standards, improving assessments efficiency, keeping track of accountability of student achievement, creating incentives and plans for teacher and professional development, and providing access to public media (Barron, et. al, 2011).

The above sections briefly summarized the current state of policies related to young children and technology education. The next section will introduce key conceptual and theoretical issues for early childhood development as they relate to learning about new technologies. A section reviewing the current literature pertaining to digital literacy will follow that discussion.

**Conceptual and Theoretical Considerations**

The following sections discuss key theoretical and conceptual issues pertinent to early childhood development that inform the concept of digital literacy.

**Social-Cultural Dimensions**
Technology is created by the culture in which the child lives. Younger children do not provide themselves with the digital media in their lives; parents, families, and schools are the ones to make the purchases or hand the child the tools (Gutnick, Robb, Takeuchi, & Kotler, 2010).

Digital technology has the potential to make learning more social, collaborative, and networked (Gee, 2010a; Jenkins, 2006). Researchers have found that, when children work at a computer, they speak twice as many words per minute than when engaged in other non-technology related play activities such as play dough and building blocks (New, & Cochran, 2007) and they speak to their peers nine times more than when working on traditional puzzles (Muller, & Perlmutter, 1985). Children, when working on computers, are also more likely to ask other children for advice and help, even if an adult is present, thus increasing child-child socialization (Wartella, & Jennings, 2000). Even in situations where each child has an individual computer or his or her own piece of digital equipment to work with, children still choose to form groups (Druin, 1998).

In addition, literacy is a social-cultural phenomenon. Literacy, both traditional and digital, is a way in which people participate in their social and cultural groups (Gee, 2010b). New Literacy Studies (NLS) focuses on the study of literacy in a social, cultural, and historical context. It takes a holistic approach to understanding reading and writing as not just a cognitive achievement (Gee, 2010a). Gee (2008) also argues the disparity between tiers of language (e.g., everyday language vs. academic language) in traditional language is also found in digital literacy. Young children come to school with varying levels of both vocabulary, in the traditional view of early literacy (Hart, & Risley, 1995) and now also with varying levels of digital literacy skills. As such, digital literacy should be taught along with traditional literacy skills to help bridge the digital divide and digital participation gap.
**Social-Emotional Dimensions**

Technology is often used as a tool for self-expression. Computers can be programmed so they can be anything to anyone, taking on a “thousand forms” for a “thousand functions” and appealing to a “thousand tastes (Papert, 1980).” This view reflects the power of digital technology as an expressive tool. Even basic computer programs afford children the opportunity to draw and manipulate objects and pictures.

Information, communication, and digital technologies can elicit creativity (Berson, & Berson, 2010). Children may use digital still and video cameras to create or play movies, take and share photographs, and use any one of the myriad of online programs or smart phone apps to edit and play with these files (Diakopoulous, et al., 2007; Jenkins, 2006; Palfrey, & Gasser, 2008). With tablets, mp3 players, and traditional computers, children can make their own music or play music for dancing or singing. Furthermore, by combining recyclables and traditional art materials with technological components, young children can take a robotic base and turn it into anything they want, from a monster truck to a kitten to a flower for an interactive garden (Bers, 2008; Bers, et al., 2002; Rusk, et al., 2008).

Digital technologies, such as computers, can also be useful for social-emotional development. Computers allow for collaboration via email, Skype, and video conferencing with other classrooms; social interactions are enabled that were previously not possible due to physical location (NAEYC & Fred Rogers, 2012).

For young children who are in a developmental process of learning how to work with others, the design features of the technology might promote social development. The classic developmental theorists, such as Piaget (1928) and Vygotsky (1978), discussed the influence of children on one another in order to develop cognitive and social skills. Collaboration with other children while using technology might help to foster interactions between peers who may otherwise be focused on their own thoughts (egocentrism) and might also engage in partnerships that expand the child’s zone of proximal development (Vygotsky, 1978). Research shows that there is more spontaneous peer teaching and helping at a computer screen than during other classroom activities (Clements, & Nastasi, 1992). For example, a child who is better skilled at using the mouse or browsing the web might work together with a child who had less exposure to it. A child who has used a digital camera at home, might show another child which button to press. Children may show each other their favorite smartphone apps and instruct each other on initial play instructions or create their own off-screen games to mimic those found on-screen.

**Cognitive Dimensions**

Seymour Papert (1980) developed the theory of constructivism based on Piaget’s theory of constructivism. Papert replaced the “v” of “constructivism” with the “t” to stress the importance of constructions in the world. He focused on learning by making, most specifically on the computer screen, to support the construction of knowledge.

Both use of general computer applications and use of early computer programming languages has shown positive impact on cognitive abilities such as abstraction, problem solving, and structural knowledge (Clements, & Sarama, 2002; Haugland, 1992; Wang, & Ching, 2003). A review of early work in the field suggests that children who participated in computer programming activities typically scored around sixteen points higher on various cognitive-ability assessments compared to children who had not (Liao, & Bright, 1991). The computer programming language, Logo, in a supportive classroom environment, has been found to

More recently, computer programming in early childhood has also shown a positive impact on sequencing skills (Kazakoff, & Bers, 2012; Kazakoff, Sullivan, & Bers, 2013) and powerful computational ideas, such as understanding control flow, and loops and branches (Bers, et al., 2002; Bers, 2008; Bers, 2010; Bers, & Horn, 2010). New research on innovative computer programming environments supports the argument that children’s programming of animations, graphical models, games, and robots with age-appropriate materials allow children to learn and apply core computational thinking concepts such as abstraction, automation, analysis, decomposition, and iterative design (e.g., Lee, et al., 2011; Mioduser, & Levy 2010; Mioduser, Levy, & Talis, 2009; Resnick, 2006; Resnick, et al., 2009). Finally, research on newer technologies tools, such as cell phone apps, may have a positive impact on vocabulary and literacy skills in three to seven year olds (Chiong, & Shuler, 2010).

**Relational Developmental Systems**

As the above discussions of individual dimensions demonstrate, it is difficult to describe technology and child development within the context of one area of developmental theory alone. Every component of a child’s world is interconnected. Relational developmental systems theory takes these connections into account by rejecting all splits between person and context, and by addressing the child and his or her environment as an integrated whole, including all influences on developmental simultaneously - the biological, cultural, historical, etc. (Overton, 2010; Overton, & Mueller, 2012). As such, the individual-context relation is the primary unit of analysis when studying human development from the relational developmental systems perspective (Lerner, 2002).

Accordingly, there are five key, interrelated questions developmental scientists may ask themselves when studying development from the relational developmental systems perspective that are particularly applicable to studying childhood development with technology. They are (Jelicic, Theokas, Phelps, & Lerner, 2007): “(1) What attributes of (2) what individuals? In relation to (3) what contextual/ecological conditions?; at (4) what point in time?; may be integrated to promote (5) what instances of positive human development (p. 10)?” (emphasis added). These questions provide a relevant lens through which to view the intersection of children’s development and technology. In other words, what developmental and personal attributes of young children, in the context of both home and school, promote positive child development using new technology?

The following section will explore this question by introducing a theoretical framework, Positive Technological Development (PTD) (Bers, 2007; 2012), for understanding technology use from a relational developmental systems and Positive Technological Development (PTD) (Bers, 2007; 2012) perspective and then by linking PTD with a cognitive-focused digital literacy framework. Both frameworks will be merged and adapted for use in understanding digital literacy in early childhood.

**Positive Technological Development**

The Positive Technological Development framework (PTD) combined the Positive Youth Development (PYD) perspective (Lerner, et al., 2005) with Papert’s (1980) constructionism (Bers, 2007). The core questions of PTD ask “How can children use technology in positive ways
to help themselves and the world?” and “How can educators and researchers develop programs that help children use technology to learn new things, to express themselves in creative ways, to communicate effectively, to take care of themselves and each other, and to contribute in positive ways to the self and the world” (Bers, 2007; 2012).

PTD emphasizes the developmental aspects of PYD’ six “C’s” framework: caring, connection, contribution, competence, confidence, and character (Bers, 2012; Lerner, et al., 2005) and connects these “C’s” to corresponding action-oriented “C’s” that can be integrated into the use of new technologies: communication, collaboration, community-building, content-creation, creativity, and conduct (Bers, 2007; 2012).

The PTD framework forms a basis for defining digital literacy for early childhood, since it is a comprehensive description of how technology is used across childhood and adolescence, and takes into consideration multiple developmental dimensions, including the personal, social, and emotional. Although it provides a way to frame the discussion from a developmental systems theory perspective, PTD does not directly address the age-specific issues of digital literacy in early childhood. The core of this paper will focus on merging PTD with current definitions of digital literacy, described in the next section, and discussing the unique needs of early childhood.

**Current Discussion of Digital Literacy**

Digital literacy is a frequently used term, but it does not have a well-agreed upon definition. According to Aviram and Eshet-Alkalai (2006) “the discourse on this important subject has been practice-oriented, and lacks a sound integrative framework and theoretical foundation (n.p.).” In addition, the subject matter – digital technologies – are constantly changing.

The term digital literacy was, by many accounts, originally defined by Paul Gilster (1997) as “the ability to understand and use information in multiple formats from a wide range of sources when it is presented via computers (p. 1).” Of course, the technological world has changed dramatically since 1997, and we are no longer referring to only computers or the presentation of information when we discuss digital literacy. Content creation, would also have to be included in contemporary definition of digital literacy. Digital literacy more recently been defined as “a set of habits through which children use computer technology for learning, work, socializing, and fun (Ba, Tally, Tsikalas, 2002, p.1).” Again, this definition focuses on computer use, not the breathe of digital tools available, but moves towards integrating more child-oriented motivations for use. James Paul Gee (2010b) described digital literacy as “different ways of using digital tools within different sorts of sociocultural practicies (p. 172).” This definition encompasses more than just the computer as a tool and gives a social-cultural context to the behaviors children engage in when using digital technologies.

The term digital literacy occasionally appears under the umbrella of “New Literacies.” The term “new literacy studies” has been used to describe a discipline for studying new types of literacy, beyond reading and writing, in the context of popular culture (Gee, 2010a). New literacies, however, are defined in different ways by different people (Leu, 2010) and, similar to the term digital literacy, new literacies also lack concise and consistent definitions, which hold researchers back in their discussions and research around new literacies – what they are, what they mean, their impact, and the tools children need for success (Leu, 2010).
In cases where the terms are defined, the definitions and examples have little to no bearing on early childhood. *A New Literacies Sampler* begins by pointing out “typical” examples of new literacies: “video gaming, fan fiction writing, weblogging, using websites, and social practices involved in mobile computing” (Knobel, & Lankshear, 2007). These examples have limited applicability to early childhood.

At the national policy level, the National Broadband Plan (FCC, 2010) notes that the same definition of digital literacy does not apply to children and adults, and goes on to describes activities that are applicable mainly to adults, older children, and adolescents. A U.S. government website has been developed for digital literacy training (http://digitalliteracy.gov) and most resources are targeted at adults, with only five resources categorized for under the age of thirteen.

Internationally, there is also focus on developing a universal digital literacy for framework for all citizens. The Institute for Prospective Technological Studies (IPTS) of the European Commission’s Joint Research Centre (JRC) has embarked on a project to synthesis fifteen existing digital literacy frameworks, called DIGCOMP (Ferrari, 2012).

Eshet-Alkalai and colleagues (Aviram, & Eshet-Alkalai, 2006; Eshet-Alkalai, 2004; Eshet, 2005) created a model of digital literacy that encompasses cognitive in addition to functional skills. This model is based on six skills (Aviram, & Eshet-Alkalai, 2006):

- **Photo-Visual Literacy** – ability to understand graphically presented information such as symbols, icons, and graphical user interfaces;
- **Reproduction Literacy** – the combination of existing media to create new media;
- **Branching Literacy** – ability to navigate hypermedia; navigation of digital media is non-linear, branching requires good spatial skills to navigate information across many different pathways and not get “lost” in cyberspace;
- **Information Literacy** – the use of critical thinking skills to decipher false, biased, and/or irrelevant information;
- **Socio-Emotional Literacy** – communication and collaboration skills in an online environment;
- **Real-Time Thinking Skills** - ability to process and evaluate information in real-time (was later added to the framework and not present in the earlier literature (Eshet-Alkalai & Chajut, 2009)).

Eshet-Alkalai’s framework (Aviram, & Eshet-Alkalai, 2006; Eshet-Alkalai, 2004; Eshet-Alkalai, & Chajut, 2009) is also not, on its own, an ideal model for digital literacy for early childhood. Research studies grounding this framework were conducted on adolescents and adults (Eshet-Alkalai, & Chajut, 2010).

The following proposed framework is an initial step toward synthesizing an understanding a view of digital literacy in early childhood that is informed by the major theories of early childhood development theory. The six areas of the framework are intended to be technology-neutral, even when specific technologies are used as illustrative examples.
Proposed Digital Literacy Framework for Early Childhood

This framework of digital literacy for early childhood proposes a combination of Marina Bers’ Positive Technological Development framework (Bers, 2007; 2010; 2012) and Yoram Eshet-Alkalai and colleague’s Conceptual Model of Digital Literacy (Aviram, & Eshet-Alkalai, 2006; Eshet-Alkalai, 2004; Eshet-Alkalai, & Chajut, 2009), as viewed through an early childhood development lens. Although the Positive Technological Development framework has been applied across age groups, early childhood is not the specific focus of the framework. The two perspectives address themes that can be relevant to early childhood (i.e., understanding symbols, creativity, collaboration, building a sense of community, social-emotional development etc.). The proposed framework aims to unify these two perspectives while considering young children as producers, not only consumers, of digital technologies.

Bers’ Positive Technological Development perspective focuses primarily on the personal, social, ethical and cultural aspects of technology use and Eshet-Alkalai’s model focuses primarily on the cognitive aspects of technology use, thus, when combined, these two perspectives yield a relatively comprehensive view of technology use. Missing from these two perspectives are considerations specific to areas of interest for early childhood development namely motor, early literacy, and self-regulation skills. For example, Eshet-Alkali defines “Real-Time Thinking Skills” as processing large volumes of information in chat-rooms or computer games (Eshet-Alkalai, & Chajut, 2009). This concept must be redefined for early childhood, as children under eight will likely not be using chat-rooms with dozens of conversations, for example. Instead, “Real-Time Thinking Skills,” as previously mentioned, can be thought of in terms of children’s different levels of executive function and their ability to process multiple, simultaneous inputs (see Diamond, & Lee, 2011 for an overview).

Children aged two to eight have a wide range of abilities. Based on Bers’, Eshet-Alkali’s, and early childhood development perspectives, it can be proposed digital literacy in early childhood is about working towards building an understanding and fluency in the following areas:

- Interface Comprehension and Utilization
- Non-Linear Navigation
- Critical Thinking and Problem-Solving Skills involving Digital Domains
- Cooperative Learning and Play Afforded by Digital Tools
- Creative Design Afforded by Digital Tools
- Digitally Enhanced Communications

In addition, all six of these areas of understanding, and the child’s abilities within each domain, are moderated by their individual learning and development trajectories, particularly “real-time thinking skills” or, what early childhood educators would generally think of as executive function. The table below outlines how prior theory, models, and perspective informed the categorization and definition of these six categories.
**Table 1**
Proposed Facets of Digital Literacy in Early Childhood and Influencing Factors

<table>
<thead>
<tr>
<th>Digital Literacy in Early Childhood</th>
<th>Related Developmental Areas</th>
<th>Influencing Perspectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Understanding &amp; Utilizing Digital Interfaces</td>
<td>Symbol Understanding</td>
<td>Bers’s <em>Content Creation</em> – engage users in applications that work with text, video, audio, graphics, and animations</td>
</tr>
<tr>
<td></td>
<td>Fine Motor Skills</td>
<td>Eshet-Alkali’s <em>Photo-Visual Literacy</em> – ability to work effectively with digital environments, such as user interfaces, that employ graphical communication.</td>
</tr>
<tr>
<td></td>
<td>Hand-Eye Coordination</td>
<td></td>
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<td></td>
<td>Linguistic</td>
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<tr>
<td></td>
<td>Social-Emotional</td>
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<tr>
<td></td>
<td>Social-Cultural</td>
<td></td>
</tr>
<tr>
<td>Non-Linear Navigation</td>
<td>Cognitive</td>
<td>Eshet-Alkali’s <em>Branching Literacy</em> - ability to construct knowledge by nonlinear navigation of the Internet and other hypermedia</td>
</tr>
<tr>
<td></td>
<td>Symbol Understanding</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Linguistic</td>
<td></td>
</tr>
<tr>
<td>Critical-Thinking and Problem-Solving Skills in Digital Domains</td>
<td>Cognitive</td>
<td>Eshet-Alkali’s <em>Information Literacy</em> - ability to consume information critically and sort out false and biased information</td>
</tr>
<tr>
<td></td>
<td>Social-Emotional</td>
<td></td>
</tr>
<tr>
<td>Cooperative Learning and Play Afforded by Digital Tools in Early Childhood</td>
<td>Social-Emotional</td>
<td>Bers's <em>Collaboration</em> - working with others and willing to cooperate toward a shared task</td>
</tr>
<tr>
<td></td>
<td>Social-Cultural</td>
<td>Bers's <em>Community Building</em> - using technology to enhance the community and the quality of relationships among the people of that community; contribute to society by using and inventing new digital tools to solve social problems</td>
</tr>
<tr>
<td></td>
<td>Fine-Motor Skills</td>
<td>Bers’s <em>Communication</em> - exchanging thoughts, opinions, or information by using technologies</td>
</tr>
<tr>
<td></td>
<td><strong>Eshet-Alkali’s</strong> <em>Reproductive Literacy</em> - ability to create new artwork by reproducing and manipulating preexisting digital text, visual, or audio pieces</td>
<td>Bers's <em>Creativity</em> - ability to create and imagine original new ideas, forms, and methods for using new technologies</td>
</tr>
<tr>
<td>Creative Design Afforded by Digital Tools in Early Childhood</td>
<td>Social-Emotional</td>
<td>Bers's <em>Collaboration</em> - working with others and willing to cooperate toward a shared task</td>
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<td></td>
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<td>Bers’s <em>Communication</em> - exchanging thoughts, opinions, or information by using technologies</td>
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<td></td>
<td><strong>Eshet-Alkali’s</strong> <em>Social-Emotional Literacy</em> - ability to communicate effectively in online communication platforms</td>
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</tr>
<tr>
<td>Digitally Enhanced Communications in Early Childhood</td>
<td>Social-Emotional</td>
<td>Bers’s <em>Collaboration</em> - working with others and willing to cooperate toward a shared task</td>
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<td>Bers’s <em>Communication</em> - exchanging thoughts, opinions, or information by using technologies</td>
</tr>
</tbody>
</table>
The six areas are defined as follows:

**Understanding & utilizing digital interfaces.** Understanding and utilizing digital interfaces describes the ability to comprehend and use physical and graphical tools within digital devices, made possible by both hardware and software components. These would include touchscreen input, navigation with a mouse, and keyboard use as well as the recognition and use of symbols and icons corresponding to varying functions. For example, young children may be better able to use a touchscreen interface over a screen and mouse. Touching icons on a screen is a direct finger-to-action effect, compared to using a mouse, which involves looking at the screen, more advanced hand-eye coordination, and fine motor skills to control the mouse itself. This dimension of the digital literacy for early childhood framework is influenced by Bers’s *Content Creation* – engage use in applications that work with text, video, audio, graphics, and animations and Eshet-Alkali Photo-Visual Literacy – ability to work effectively with digital environments, such as user interfaces, that employ graphical communication.

**Non-Linear Navigation.** Non-linear navigation is making sense of, and navigating through, non-linear text, icons, and activities. For example, young children encounter non-linear stories in e-books embedded with graphics, during the use of software tools, and when navigating websites. Non-linear navigation expands upon Eshet-Alkali’s concept of branching literacy, the ability to navigate hypermedia and non-linear digital media. Eshet-Alkali expressed that non-linear navigation requires spatial skills, however, when considering this concept for early childhood limited working memory and self-regulation skills must also be taken into account. For example, young children may not be able to remember beyond four steps of navigation or resist clicking on available links. In terms of software development, features like “auto-save” may be useful so that children do not lose their work if they navigate away from their work without remembering the steps to save.

**Critical-thinking and problem-solving skills in digital domains.** Critical-thinking and problem-solving skills in digital domains involve the ability to navigate new information and evaluate what is true and false as well as what is real and make-believe. This builds on Eshet-Alkali’s idea of information literacy, the ability to consume information critically and sort out false and biased information.

For young children, who are not yet able to read information on the Internet, this concept is more relevant when understanding the difference between talking to relatives online versus in person, for example, or learning what to do if a “pop-up” add appears or if they are using a tablet app and are prompted for an in-app purchase. The ability to process information and decide what to do next becomes more important as children use digital tools independently. However, young children begin to recognize symbols as part of early literacy skills and, through digital technologies can also learn symbol navigation, such as an “X” or an “OK” button, and when these buttons should and should not be pressed. In addition, educational technology tools have recently been developed specifically for young children to aid in development of problem-solving and critical thinking skills, including computer programming languages (e.g., ScratchJr, CHERP, Daisy the Dinosaur) and robotics tools (e.g., Bee-Bot, Lego WeDo).

**Cooperative Learning and Play Afforded by Digital Tools in Early Childhood.**

Cooperative learning and play afforded by digital tools in early childhood builds on several aspects of Bers’s PTD and Eshet-Alkali’s frameworks. From Bers’s, *collaboration* – working with others on a shared task; *community-building* – using technology to enhance the community and the quality of relationships among the people of that community and contribute to society by
using and inventing new digital tools to solve social problems; \textit{communication} – exchanging thoughts, opinions, or information by using technologies; and, from Eshet-Alkali, \textit{social-emotional literacy} – ability to communicate effectively in online communication platforms.

For young children, cooperative learning and play is a foundational part of the PreK through second grade educational experience. Collaboration, community-building, and communication through technology can be an added layer to further enhance this key part of a young child’s classroom experience. In addition, Eshet-Alkali notes the important of social-emotional literacy in online platforms. In early childhood, social-emotional development is a foundational skill learned both in school and at home.

To focus on a specific example, children may collaborate by sharing limited technological resources in the classroom. At home, children may participate in virtual communities (e.g., Club Penguin). At both home and school, young children may use digital communication and photo-sharing tools such to communicate with classrooms and family members around the world.

**Creative Design Afforded by Digital Tools in Early Childhood.** Creative design afforded by digital tools in early childhood is influenced by \textit{content-creation} – users engaging with applications that use text, video, audio, graphics, animations, etc. and \textit{creativity} – ability to create and imagine original new ideas, forms, and methods for using new technologies from Bers’s framework with \textit{reproductive literacy} – ability to create new work by reproducing and manipulating existing digital text, audio, or visual pieces from Eshet-Alkali’s framework.

Creativity is also an essential part of early childhood. Digital technologies layer on another tool for creative design and self-expression. Young children may use digital tools to explore art tools and paint with not only color, but also patterns. They may also become users of digital and video cameras, bringing their own stories to life and documenting their experiences.

**Digitally Enhanced Communications in Early Childhood.** Digitally enhanced communications in early childhood refers to being able to use digital communication tools and understanding the affordances and potential disadvantages of digital-based communication methods. The digitally enhanced communications area is influenced by collaboration, community-building, and communication, from the PTD framework and social-emotional literacy, from Eshet-Alkali’s framework.

As mentioned in the collaboration section, classrooms may now have a Twitter feed they share with other classrooms or their parents. Children and teachers can document their daily activities through audio and video recordings, which can also be uploaded to YouTube accounts or Wikis to share. These are just two examples of the increased access digitally enhanced communications allow, but also a cause for concern around privacy issues. Most online tools allow users to set privacy settings, but it is impossible to fully control how data is shared once it is on the Internet.

**Conclusion and Future Directions**

The framework of digital literacy for early childhood outlined above intends to contribute to our understanding of young children as producers, not just consumers, of digital content. The outlined components of the framework aim to combine cognitive, physical, social-emotional, and social-cultural elements in order to promote positive uses of technology, while taking into
consideration the specific developmental needs of early childhood, such as fine motor skills, personal and social development, executive function skills and, emergent literacy.

With young children using digital technologies on a daily basis, existing definitions and frameworks of digital literacy - ones that assume digital technology users have fine motor skills, adequate reading ability, an understanding of cause and effect, and high levels of executive function - are not suitable definitions for young children. A clear definition of digital literacy for early childhood can provide a guideline for learning with and about digital technology for children ages two to eight. Many young children are using digital tools on a daily basis. Developmentally appropriate frameworks are necessary to ensure that children are taught what they need to know to be successful when they use these tools, and that new tools are developed with young children in mind.

References


Youth Online Media Use: Associations with Youth Demographics, Parental Monitoring, and Parent-Child Relationships

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Youth Online Media Use: Associations with Youth Demographics, Parental Monitoring, and Parent-Child Relationships

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Abstract: As online media has become an increasingly important part of youths’ daily lives, it is critical for the field to explore questions related to youth online media use in order to support youth workers, youth development practice and programming. Using a national sample of youth age 13-22 (N = 585), the current study explored demographic differences in youth online media use, and examined associations between youth demographics, parental monitoring, parent-child relationship quality, and likelihood of being a frequent user of online activities. Although youth reported being frequent users of online media, Internet use was not the same for all youth. Online media use differed significantly by youth age, gender, race, and family relationship quality. The findings remind the field to consider the young people we are working with and how they use online media in their daily lives.

Introduction

There is substantial evidence revealing youth as active users of media, particularly online media. However, we know little about how youth engage with online media in different ways (for communication, for entertainment, etc.) and how this engagement differs by youths’ characteristics, such as age, gender, and race. It is critical for the field to explore questions related to youth online media use in order to support youth workers, youth development practice and programming. The purpose of the current study is to provide an informational analysis of how youth are using online media, and specifically how youth demographics, parental monitoring, and parent-child relationships are associated with online media use.
Literature Review

Young people growing up today live in a technology-saturated society, as more people in the United States are using various technologies, including the Internet, more frequently than ever before (Lenhart, Purcell, Smith, & Zickuhr, 2010; Smith, 2010). This exponential increase in technology and Internet use in the United States over the past few decades is undoubtedly changing the way people are communicating with others, creating and interacting with information, and entertaining themselves (Shirkey, 2008). Thus it is not surprising that today’s youth are among the most digitally connected and technologically savvy members of society (Lenhart, et al., 2011).

Youth as active users of online media

Internet use is nearly universal among youth, with 95% of those ages 12-17 reporting using the Internet; similar rates have been found for young adults (Lenhart, et al., 2011). Previous research has found that youth go online to accomplish tasks that are important to them offline (O’Keeffe, & Clarke-Pearson, 2011): communicating with others, finding information, participating in discussions, creating and sharing content, connecting to social networks, and entertaining themselves.

More specifically, communicating with others online (for example via e-mail, instant messaging, etc.) may be particularly salient for youth, since establishing, maintaining, and strengthening interpersonal connections with peers and family are important development tasks of adolescence and young adulthood (Lerner, & Steinberg, 2009). The Internet also provides youth with instant access to an extensive amount of information about various topics; previous research has found that youth frequently use the Internet to find academic- and health-related information (Percheski, & Hargittai, 2011). Some youth participate in discussions about various topics with others online, and use blogs and discussion boards to share details of their daily life (Subrahmanyam, Garcia, Harsono, Li, & Lipana, 2009). Recent research also suggests that social networking sites (SNS) such as Facebook are becoming ubiquitous aspects of youth life (Subrahmanyam, & Greenfield, 2008), and that youth use SNS to keep in contact with friends they see often and friends they rarely see (Lenhart, & Madden, 2007). Additionally, youth frequently cite entertainment, such as playing interactive video games, as their main reason for going online (Jones, & Fox, 2009). However, while previous research reveals that youth go online for a variety of reasons that are important to their growth and learning, little is known about how demographic factors, such as age, gender, and race, are associated with the range of youth online media use.

Demographic differences

Recent reports on digital differences among adults find that Internet use is strongly related to age, education, and household income (Zickuhr, & Smith, 2012), however, much less is known about differences among youth. Research that does exist has provided preliminary evidence that similar to adult use, youth online media use varies by demographics. Specifically, female youth have been found to be more likely to use the Internet and other technology for communication (instant messaging (IM) specifically; Jennings, & Wartella, 2004) and SNS (Hargittai, 2007) than male youth. In a nationally representative sample of 12-17 year olds, African-American youth were more likely to use SNS compared to their White peers, even after controlling for other factors (Ahn, 2011). The current study was designed to expand our knowledge about how age, gender, race, and geographic area are associated with youth online media use.
**Family relationships**
Though little research exists on the associations between family relationships and online media use, it is reasonable to expect that family relationships would impact how youth use online media. For instance, research on youth motivations for using the Internet finds that youth are using the Internet to enhance communication with family (i.e., to make plans with and stay connected to family; Bryant, Sanders-Jackson, & Smallwood, 2006; Subrahmanyan, & Greenfield, 2008). Additionally, family access to the Internet, how other family members use the Internet in the home, and pre-existing values and norms within the family are theorized to influence why and how frequently youth go online (Hertlein, 2012). The current study expands research in this area by exploring the associations between family relationships and youth online media use.

**Aims**
To effectively use technology to meet the needs of young people, youth workers must better understand the factors associated with youth online media use. Building on previous literature that has developed typologies of youth Internet use (Eynon, & Malmberg, 2011; Livingstone, Bober, & Helsper, 2005), the present study has two primary aims. First, it extends existing literature by exploring demographic differences in youth online media use. Second, we considered the association between youth demographic variables, parental monitoring, parent-child relationship quality and likelihood of being a frequent (or high) user of online activities.

**Method**

**Participants**
A subsample of youth ($N = 585$) from a larger research project was used for the current study. The purpose of the larger project was to learn about the ways young people age 13-25 use technologies to communicate with their family. The current subsample includes respondents between 13 and 22 years of age ($M = 18.34$, $SD = 2.59$; 73.5% female). The majority of participants were White or Caucasian (86.5%).

**Procedures**
Data were collected from youth participants using a 15-minute online survey administered between July 2010 and January 2011. Participants were recruited nationwide in three ways: (1) using e-mail listservs of professionals who sent information to young people, (2) posting information about the study with a link to the project’s website on relevant Facebook group sites, and (3) contacting personal and professional networks requesting that recruitment materials be sent to potential participants. In addition, the online survey was available to students in one undergraduate course at a large public university through the undergraduate research subject pool. Upon survey completion, participants could choose to be entered into a drawing for one of 20 gift cards.

**Measures**

**Online media use.** Participants reported how frequently they do 19 online activities (e.g., send or read e-mail; go to websites about movies, television shows, music groups, or sports you are interested in; use an online social networking site like MySpace, Facebook, or LinkedIn) using a seven-point Likert-scale ($0 = \text{Never}$ to $6 = \text{Several times a day}$). Building on the work of other scholars (Eynon, & Malmberg, 2011; Livingstone et al., 2005), youth online media use was conceptualized into five groups, capturing the 12 activities most frequently used by youth: communication, information-seeking, participation, entertainment, and social networking (see Table 1). The communication, information-seeking, and participation groups were created by
computing the mean frequency of the online media activities, with higher values indicating more frequent online media use. Entertainment and social networking were each conceptualized with one item. Next, youth were classified as high (one standard deviation above the mean or higher), medium (mean), or low (one standard deviation below the mean or lower) users within each group.

Table 1
Mean Youth Online Media Use

<table>
<thead>
<tr>
<th>Activity</th>
<th>Full Sample (N=585)</th>
<th>User Groups</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Communication</td>
</tr>
<tr>
<td></td>
<td></td>
<td>High (n = 181)</td>
</tr>
<tr>
<td>Communication</td>
<td></td>
<td>4.76 (1.29)</td>
</tr>
<tr>
<td>E-mail</td>
<td></td>
<td>5.23 (1.27)</td>
</tr>
<tr>
<td>IM</td>
<td></td>
<td>4.29 (1.97)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Information-Seeking</td>
</tr>
<tr>
<td></td>
<td></td>
<td>High (n = 118)</td>
</tr>
<tr>
<td>Information-Seeking</td>
<td></td>
<td>3.43 (1.27)</td>
</tr>
<tr>
<td>Get news/current events</td>
<td></td>
<td>3.68 (1.73)</td>
</tr>
<tr>
<td>Go to websites about movies, TV, sports, etc.</td>
<td></td>
<td>3.74 (1.69)</td>
</tr>
<tr>
<td>Look for general information</td>
<td></td>
<td>3.37 (1.68)</td>
</tr>
<tr>
<td>Check what’s going on in your area</td>
<td></td>
<td>2.92 (1.53)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Participation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>High (n = 82)</td>
</tr>
<tr>
<td>Participation</td>
<td></td>
<td>1.33 (1.36)</td>
</tr>
<tr>
<td>Post on or read discussion boards</td>
<td></td>
<td>1.83 (2.00)</td>
</tr>
<tr>
<td>Create or work on an online journal or blog</td>
<td></td>
<td>0.80 (1.60)</td>
</tr>
<tr>
<td>Read online journals or blogs of others</td>
<td></td>
<td>1.75 (1.91)</td>
</tr>
<tr>
<td>Create or work on web pages</td>
<td></td>
<td>0.96 (1.64)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Entertainment</td>
</tr>
<tr>
<td></td>
<td></td>
<td>High (n = 133)</td>
</tr>
<tr>
<td>Entertainment</td>
<td></td>
<td>1.84 (2.01)</td>
</tr>
<tr>
<td>Social Networking</td>
<td></td>
<td>Social Networking</td>
</tr>
<tr>
<td></td>
<td></td>
<td>High (n = 404)</td>
</tr>
<tr>
<td>SNS</td>
<td></td>
<td>5.31 (1.40)</td>
</tr>
</tbody>
</table>

Note. 0 – Never, 6 = Several times a day.
**Parental monitoring.** Participants were asked the extent to which their parents try to know about five aspects of their lives ("Where you go at night," “What you do with your free time,” “Who your friends are,” “How things are going at school or work,” and “Who you are dating”). There were three response options for each item: Don’t try, Try a little, and Try a lot. Youth were also asked the extent to which their parents really know about these five aspects of their lives using three response options: Don’t know, Know a little, and Know a lot. Mean scores for both scales were computed to create two parental monitoring scales: parents try to know (α = 0.83) and parents actually know (α = 0.85).

**Parent-child relationship quality.** Participants provided information about the quality of the relationships they have with their mother and with their father by responding to 14 items for each parent or guardian (Jaccard, & Dittus, 1993; Noller, & Callan, 1988; Turrisi, Wiersma, & Hughes, 2000). These 14 items were used to create three parenting subscales for the mother-child relationship and the father-child relationship: Communication, Relationship Satisfaction, and Perceived Acceptance. **Communication** was assessed using a mean score of responses to six items (e.g., “How often do you enjoy talking things over with your mother/father?” and “How often do you rely on your mother/father for advice or guidance?”; α = .90 for mother communication, α = .92 for father communication). **Relationship Satisfaction** was assessed using four items (Landesman, & Jaccard, 1988; e.g., “I am satisfied with the emotional support my mother/father gives me” and “I am satisfied with the love and affection my mother/father shows me,” α = .94 for mother relationship satisfaction, α = .96 for father relationship satisfaction). **Perceived Acceptance** was assessed using four items (e.g., “My mother/father trusts me” and “My mother/father respects my privacy,” α = .87 for mother perceived acceptance, α = .86 for father perceived acceptance). Response options included: Almost never (1), Sometimes (2), Quite often (3), and Most of the time (4).

**Results**

Before conducting the primary analyses, to better understand the online media use of these youth, descriptive statistics were computed (see Table 1). Almost one-third (30.9%) of youth reported communicating online several times a day, and 69.1% of youth reported visiting social networking sites several times a day. Participation online was less frequent, with almost one-quarter (21.4%) reporting never posting on or reading discussion boards, reading or writing blogs, or working on websites. However, approximately 14.0% of youth did engage in these activities an average of 3-5 days per week. Almost one-quarter (22.7%) reported going online for entertainment (to play video games) once a day; 40.0% of youth reported never going online to play video games.

To investigate the first aim, to explore demographic differences in youth online media use, a series of correlations, independent-samples *t*-tests, and one-way analysis of variance (ANOVA) tests were computed. Correlation analyses revealed that youth who were older reported going online for communication, information seeking, and social networking more frequently than youth who were younger (*p < .001*), while younger youth reported going online for entertainment more frequently than older youth (*p < .001*). Female youth reported going online for social networking more frequently than male youth (*p < .05*); male youth reported going online for entertainment and participation more frequently than female youth (*p < .05*). Non-white youth reported more frequent participation than White youth (*p < .05*). Youth living in suburban and urban areas reported going online to seek information more frequently than
youth living in rural areas ($p < .05$). No other significant differences emerged. Table 3 provides a summary of the differences in youth online media use by demographics.

Next, to examine the associations between youth demographic variables, parental monitoring, parent-youth relationship quality and the likelihood of being in the high user group for each of the online media activity groups, five multinomial ordered logit models were computed (see Table 2). Ordered logistic regression determines the likelihood that an increase in a given independent variable (or in this study, membership in a particular demographic group, for example male or female) will increase the odds of youth being in a higher user group, after controlling for all other independent variables. Each of the five logit models demonstrated appropriate goodness-of-fit indices: the chi-square tests were significant at the .001 level, indicating that the slope coefficients were significantly different from zero. Further, in each model, the predictor variables accounted for a significant amount of variance in user group (see Table 2 for pseudo R-squared values).

### Table 2
Associations between youth demographics, parental monitoring, parent-youth relationship quality, and user group (high, medium, or low) for each online media activity

<table>
<thead>
<tr>
<th></th>
<th>Communication</th>
<th>Information-Seeking</th>
<th>Participation</th>
<th>Entertainment</th>
<th>Social Networking</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Independent Variables</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ordered Logit Estimates (Standard Error)</td>
<td>Ordered Logit Estimates (Standard Error)</td>
<td>Ordered Logit Estimates (Standard Error)</td>
<td>Ordered Logit Estimates (Standard Error)</td>
<td>Ordered Logit Estimates (Standard Error)</td>
<td></td>
</tr>
<tr>
<td><strong>Demographic Variables</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>0.26 (0.04)**</td>
<td>0.20 (0.04)**</td>
<td>0.02 (0.04)</td>
<td>-0.07 (0.03)*</td>
<td>0.28 (0.04)***</td>
</tr>
<tr>
<td>Male</td>
<td>0.16 (0.20)</td>
<td>0.24 (0.19)</td>
<td>0.43 (0.21)*</td>
<td>1.58 (0.20)**</td>
<td>-0.13 (0.21)</td>
</tr>
<tr>
<td>Rural</td>
<td>-0.18 (0.25)</td>
<td>-0.29 (0.24)</td>
<td>-0.58 (0.26)*</td>
<td>0.01 (0.24)</td>
<td>-0.15 (0.29)</td>
</tr>
<tr>
<td>Suburban</td>
<td>-0.33 (0.22)</td>
<td>-0.05 (0.21)</td>
<td>-0.17 (0.23)</td>
<td>-0.03 (0.21)</td>
<td>-0.33 (0.26)</td>
</tr>
<tr>
<td>White or Caucasian</td>
<td>0.31 (0.25)</td>
<td>-0.05 (0.24)</td>
<td>0.47 (0.26)</td>
<td>0.38 (0.24)</td>
<td>0.25 (0.29)</td>
</tr>
<tr>
<td><strong>Parental Monitoring</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parents try to know</td>
<td>0.55 (0.22)*</td>
<td>0.42 (0.21)*</td>
<td>-0.08 (0.22)</td>
<td>0.19 (0.21)</td>
<td>0.46 (0.25)</td>
</tr>
<tr>
<td>Parents actually know</td>
<td>-0.46 (0.22)*</td>
<td>-0.43 (0.22)*</td>
<td>-0.29 (0.23)</td>
<td>-0.04 (0.21)</td>
<td>-0.34 (0.26)</td>
</tr>
<tr>
<td><strong>Youth-Mother Relationship Quality</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Communication</td>
<td>0.53 (0.27)</td>
<td>0.48 (0.27)</td>
<td>0.51 (0.28)</td>
<td>0.22 (0.26)</td>
<td>0.40 (0.31)</td>
</tr>
<tr>
<td>Satisfaction</td>
<td>-0.52 (0.22)*</td>
<td>-0.61 (0.21)**</td>
<td>-0.40 (0.22)</td>
<td>-0.15 (0.21)</td>
<td>-0.39 (0.24)</td>
</tr>
<tr>
<td>Perceived Acceptance</td>
<td>0.04 (0.25)</td>
<td>0.10 (0.25)</td>
<td>-0.34 (0.26)</td>
<td>-0.10 (0.24)</td>
<td>0.09 (0.29)</td>
</tr>
<tr>
<td><strong>Youth-Father Relationship Quality</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Communication</td>
<td>0.06 (0.23)</td>
<td>0.33 (0.23)</td>
<td>-0.13 (0.24)</td>
<td>-0.03 (0.22)</td>
<td>-0.48 (0.27)</td>
</tr>
<tr>
<td>Satisfaction</td>
<td>0.28 (0.17)</td>
<td>0.21 (0.16)</td>
<td>0.17 (0.17)</td>
<td>-0.12 (0.16)</td>
<td>0.33 (0.19)</td>
</tr>
<tr>
<td>Perceived Acceptance</td>
<td>-0.31 (0.23)</td>
<td>-0.37 (0.23)</td>
<td>0.16 (0.24)</td>
<td>0.03 (0.22)</td>
<td>0.00 (0.26)</td>
</tr>
<tr>
<td><strong>Pseudo R²</strong></td>
<td>0.15***</td>
<td>0.13***</td>
<td>0.07**</td>
<td>0.16***</td>
<td>0.15***</td>
</tr>
</tbody>
</table>

Note. *** $p<.001$, ** $p<.01$, * $p<.05$

a Reference group is female youth

b Reference group is urban youth
c Reference group is non-White youth
Communication
Youth age, parental monitoring, and mother-child relationship satisfaction were significant predictors of communication user group (see Table 2). Older youth, youth whose parents try a lot to monitor their activities, and youth who reported lower relationship satisfaction with mother were more likely to be in the high user group than younger youth, youth whose parents try a little or not at all to monitor their activities, and youth who reported higher relationship satisfaction with their mother, respectively. In contrast, youth whose parents actually know a lot about their activities were significantly less likely to be in the high communication group compared to youth whose parents actually know a little about or do not know at all about their activities.

Information-Seeking
Similar to the model predicting communication user group, age, parental monitoring, and mother-child relationship satisfaction were significant predictors of information-seeking user group (see Table 2). Older youth, youth whose parents try a lot to monitor their activities, and youth who reported lower relationship satisfaction with their mother were more likely to be in the high information-seeking user group than younger youth, youth whose parents try a little or not at all to monitor their activities, and youth who reported higher relationship satisfaction with their mother, respectively. In contrast, youth whose parents actually know a lot about their activities were significantly less likely to be in the high communication group compared to youth whose parents actually know a little or do not know at all about their activities.

Participation
Gender and geographic area were significant predictors of participation user group (see Table 2). Male youth and youth living in an urban area were more likely to be in the high participation user group than female youth and youth living in a rural area, respectively. No other variables were significant predictors of participation user group.

Entertainment
Age and gender were significant predictors of entertainment user group (see Table 2). Younger youth and male youth were more likely to be in the high entertainment user group than older youth and female youth, respectively. No other variables were significant predictors of entertainment user group.

Social Networking
The sole significant predictor for social networking user group was age, such that older youth were more likely to be in the high social networking user group than younger youth.

Discussion
Effective youth work is contingent upon youth workers’ ability to target their practice and programming to meet the needs of the youth they are working with. The rapid increase in youth online media use, however, challenges youth workers to remain up-to-date about new online media and how youth are using them, as well as to understand how online media can be used to effectively reach the young people they work with. The current study is one essential step towards providing youth workers data to do this.

First, not surprisingly, young people in this study reported being active users of online media, in particular, communication, information-seeking, and social networking. Their use of the Internet
for participation and entertainment was notably less frequent. However, this study provides an 
external reminder that Internet use is not the same for all youth; important demographic 
differences were revealed (see Table 3 for a summary). For instance, although participation and 
entertainment were less frequent than other activities for the full sample, males, non-White 
youth, and younger youth were more likely to be engaged in these types of activities than 
females, White youth, and older youth. Older youth were more likely to be using the Internet 
for communication, information-seeking, and social networking than younger youth. Differences 
by youth age were also reinforced by the results of the logit models; age was a significant 
predictor in four out of five models. This suggests youth Internet use changes with age; older 
youth are using the Internet to be more engaged socially with their peers and family members 
as they expand their social networks and develop skills to maintain friendships and other 
relationships during adolescence and the transition to adulthood (Lerner, & Steinberg, 2009). 
Relationships that exist outside of parent and sibling relationships become more salient during 
adolescence and remain important into emerging adulthood (Lerner, & Steinberg, 2009); 
communication via online media may be one critical way that young people are growing and 
sustaining these important relationships.

Table 3
Summary of demographic differences in youth online media use

<table>
<thead>
<tr>
<th>Youth Demographics</th>
<th>Online Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (13-22 years; correlations)</td>
<td></td>
</tr>
<tr>
<td>Youth who are younger</td>
<td>More frequent gaming</td>
</tr>
<tr>
<td>Youth who are older</td>
<td>More frequent communication, information-seeking, and SNS</td>
</tr>
<tr>
<td>Gender (t-tests)</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>More frequent gaming and participation</td>
</tr>
<tr>
<td>Female</td>
<td>More frequent SNS</td>
</tr>
<tr>
<td>Geographic Area (ANOVA)</td>
<td></td>
</tr>
<tr>
<td>Urban</td>
<td>More frequent information-seeking than rural youth</td>
</tr>
<tr>
<td>Rural</td>
<td>Less frequent information-seeking than urban and suburban youth</td>
</tr>
<tr>
<td>Suburban</td>
<td>More frequent information seeking than rural youth</td>
</tr>
<tr>
<td>Race (t-tests)</td>
<td></td>
</tr>
<tr>
<td>White/Caucasian</td>
<td>Less frequent participation activities</td>
</tr>
<tr>
<td>Minority</td>
<td>More frequent participation activities</td>
</tr>
</tbody>
</table>

The finding that family relationships were related to youth online media use, specifically that 
parental monitoring and youth-mother relationship satisfaction were significant in the 
communication and information-seeking models, is of particular note. Youth whose parents try 
to know a lot about their activities were more likely to be in the high communication and 
information-seeking groups. This finding suggests that when parents are working to stay 
engaged in the lives of their youth, the youth is also engaged with the Internet more 
frequently; perhaps these online activities are one way youth and parents are staying 
connected, or perhaps parents feel the need to work particularly hard to stay connected to a 
young person who is online so frequently. In fact, this latter point may be more likely, as youth
who reported lower relationship satisfaction with their mother were more likely to be in the high user group for communication and information-seeking. In contrast, when parents actually know what is going on with their youth, the youth is less likely to be in the high user group. When parents are not only trying to stay connected but are actually successful at doing so, it may be because the young person is simply online less frequently and is more engaged in personal interactions with parents. Interestingly, youth-father relationship quality was not significant in any of these models. These data undoubtedly suggest additional research on the relationship between parent-child relationship quality and youth online media use is needed.

**Implications for youth development practice and programming**

As youth online media use continues to grow and diversify and new technologies are developed and disseminated, understanding use is essential to effectively engage and work with youth. For instance, older youth were more likely to be engaged with social networking, such that it may be an effective medium for reaching older youth, but perhaps gaming or more entertainment-oriented media is more appropriate for reaching younger youth. Table 3 summarizes the demographic differences that emerged.

More specifically, online media has the potential to more effectively engage young people in youth programs. As youth are generally technologically savvy and heavy users of the Internet for a multitude of reasons, youth may be more enticed to engage in programs that are supplemented with some kind of online media. Online media may also be one way to engage unengaged youth. For instance, youth may use the Internet to engage in online learning (such as learning new content for a STEM project), to engage with an adult leader, and/or to engage with their peers. Increasing youth engagement with positive youth development programs and opportunities may be significantly more important for unengaged youth than any potential negative outcomes as a result of too much technology use.

**Conclusion**

These data build on existing literature that seeks to move beyond simply describing youth online media use to understanding the implications of this behavior for supporting the growth and development of young people. As the field continues to move forward, these data remind us to consider the young people we are working with and how they use online media in their daily life: we must not assume that all youth online media use is the same – youth use varies by individual and family factors.

**References**


Television and the Internet: The Role Digital Technologies Play in Adolescents’ Audio-Visual Media Consumption. Young Television Audiences in Catalonia (Spain)

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Television and the Internet: The Role Digital Technologies Play in Adolescents’ Audio-Visual Media Consumption. Young Television Audiences in Catalonia (Spain)

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Universitat Oberta de Catalunya

Abstract: The aim of this reported study was to investigate adolescents TV consumption habits and perceptions. Although there appears to be no general consensus on how the Internet affects TV consumption by teenagers, and data vary depending on the country, according to our study, Spanish adolescents perceive television as a habit “of the past” and find the computer a device more suited to their recreational and audio-visual consumption needs. The data obtained from eight focus groups of teenagers aged between 12 and 18 and an online survey sent to their parents show that watching TV is an activity usually linked to the home’s communal spaces. On the contrary, online audio-visual consumption (understood as a wider term not limited to just TV shows) is perceived by adolescents as a more convenient activity as it adapts to their own schedules and needs.

Introduction

Technological changes have traditionally been a driving force behind the evolution of audio-visual media; the Internet is no exception. However, apart from popularising services such as television (content made available to anyone with access to the Internet), the World Wide Web has ignited an attitudinal shift, a reformulation of consumers’ routines. The Internet has enabled personalised à la carte content consumption: we can nowadays watch whatever we choose, not only wherever we want but also whenever we prefer.

There is no reason to believe that the television industry would remain unaffected by this change in consumer habits. According to the focus group discussions we conducted, statistics and previously published researches, all point in the same direction: television consumption, at least as we understood it until a few years ago, is over.
Information and Communication Technologies (ICT), particularly the Internet, have led to a new scenario in media consumption habits and consumers’ behaviour to which both the Entertainment industry and the Advertising industry are trying to respond. As a consequence, media business models are being transformed in order to be coherent with this new environment (sometimes referred to as Entertainment 2.0). The classic communication paradigm based on a broadcaster (the media) that created content that would subsequently be broadcast (distributed) to a vast and impersonal audience is currently subject to revision. Although there is a television model that is still based on these parameters (and we will later see that this model is proven to be very successful amongst Catalan and Spanish audiences), the Internet has also made it possible for anonymous people to distribute content, which sometimes may even be more popular than this created by traditional media corporations. If forced to choose between television and the Internet, 65% of young Spaniards would choose the Web. In addition, 48% of Spanish Internet users consume streaming audio-visual content an average of six and a half hours a week (Mediascope Europe, 2010), so it can be stated that conventional television is facing a powerful new rival.

**Purpose and objectives**

The purpose of this study was to examine how teenagers consume media, which are their preferences and their routines. The study was guided by the following objectives:

a) Describe which are teenagers’ audio-visual consumption habits and practices.

b) Determine which role technology plays in addressing these demands.

c) Analyse how the Internet has changed the way families consume media and television in particular? Do families still gather together to watch a TV program?

d) Characterize adolescents’ online practices regarding their social, cultural and psychological needs.

**Research methodology**

Since we wanted to engage teenagers in discussion about their audio-visual consumption habits and practices, the data for this study come from focus groups (Creswell, 1998; Fern, 2001; Lindlof & Taylor, 2002) and it is analyzed from a grounded theory perspective (Charmaz, 2005; Glaser & Strauss, 1967). However, that approach is complemented with an online survey sent to parents. This paper presents the results from both sources, being aware that the sample is not representative. However, it provides the reader with data and information that will give comprehensive understanding of the changes in teenagers’ media consumption and their consequences on family routines.

**Focus groups: subjects, site selection and process**

Eight focus groups were conducted with a total of 48 teenagers. Initial contacts were made with the Principals of four schools after the selection of the sample of secondary education centres was made. It was a random selection; the only condition was that each of Catalonia’s four provinces had to be represented.

Two groups were held at each school, one with *ESO* (Educació Secundària Obligatòria, *Compulsory Secondary Education*) students aged between 12 and 16 and the other with Batxillerat (*Baccalaureate*) students, aged 17 and 18. The focus groups took place from January to March 2012 and each consisted of six students of both sexes (3 boys and 3 girls), chosen by
the Centre following research group guidelines that the groups should reflect the school’s diversity in terms of cultural and socio-economic backgrounds.

The focus groups were, on average, one hour long. The three authors (and members of the research group) attended all of the sessions. One of them adopted a proactive role, leading the conversation by assuring all of the research questions were addressed throughout the discussion. A second member of the team adopted a secondary role, and merely brought to the table those topics or concerns that were on the conversation guide (Figure 1) but were not being discussed. The third member of the group, was in charge of recording the session.

**Figure 1**
Conversation guide used at the focus groups

| **EQUIPMENT:** number of television sets, computers and cell phones per household. Room hosting the set, main users, favourite shows and identification of those which are watched by the whole family at the same time. |
| **INTERNET - ACTIVITIES:** practices and content watched online (computer, cell phones, other devices...); when and where the activity takes place. |
| **INTERNET – CONTENT SHARING:** which content, what platform, with whom. |
| **LEISURE PREFERENCES:** ask participants to rank the following activities according to their preferences: hanging out with friends, watching TV and surfing the Internet. |
| **PARENTAL CONTROL (TV and Internet).** Description and perceptions. |
| **PARENTS and TECHNOLOGY:** different practices due to digital divide? Shared practices with computer and/or computer connected to the TV set. |
| **VIDEOGAMES:** individual/shared playing (parents, friends, brothers and sisters...). Online multiplayer games. Room hosting videogame practices at home. |
| **CINEMA** and other cultural activities that imply audio-visual consumption. |

All focus-groups interactions were transcribed. Analysis followed a coding template that was developed based on major data themes. Out of the approximately 25 nodes, this article focuses on the technology and TV related ones and particularly on two aspects: digital recreation and adolescents' psychological needs; and, adolescents' perception of the Internet and TV. Readers interested in accessing the entire research project and findings may consider reading the research report, [http://journals.uoc.edu/ojs/index.php/in3-working-paper-series/article/view/n12-roca](http://journals.uoc.edu/ojs/index.php/in3-working-paper-series/article/view/n12-roca). (Please not the full text is available only in Catalan.)

Regarding quotation of certain fragments of the discussions, in order to ensure that participants remain anonymous, this paper identifies the participant only by mentioning sex, educational level and School's location. Note that all quotes have been translated from the original speech and may contain some grammatical errors.

**Online survey**
In addition to the focus groups, we carried out an online survey with parents from the Educational Centres that participated in the study. The survey was launched in February and a second invitation email to complete the questionnaire (reminder) was sent in March. The survey remained active for a month.
No institutional invitation to complete it was sent from the Schools; AMPAs (parents’ associations) emailed their affiliates a brief description of the study and encouraged parents to answer the questions. There were no incentives.

Survey data were analysed using SPSS. The population was of 1054 persons, and for our study we used a random sample of n = 257 persons with a 95% confidence level (i.e., significance level = 0.05).

Findings

Digital recreation and adolescents’ psychosocial needs
Our focus groups and online survey show that television consumption is an activity driven by two different aspects: home’s communal spaces and broadcasters’ programming schedules. It is of particular interest that television consumption is influenced by the location of the TV sets. Accordingly, placement of television sets in communal spaces in the house is a measure that works well for parents who wish to monitor (and control) what contents are being watched. On the other hand, the fact that families depend on broadcasters’ programming schedules is nothing noteworthy in Catalonia and in Spain where devices like DVRs are not popular. Currently only cable and dish TV offer that feature (iPlus from Canal +, and TiVo from Ono) in a context where, broadly speaking, large audiences prefer to watch free programming instead of pay per view. According to CMT (Comisión del Mercado de las Telecomunicaciones - National Telecommunications Market Commission), pay TV penetration rate in Spain was of 9.8 subscribers every 100 inhabitants in 2011. Not surprisingly, online audio-visual consumption is considered by adolescents as a convenient practice that better fits their social, cultural and psychological needs.

Media, and television in particular, play a decisive role in children and adolescents’ everyday lives but they haven’t replaced peer relationships (Boyd, 2008; Cobo, 2010; Ito, 2008, 2009, 2010; Jenkins, 2008; Prensky, 2001; Rheingold, 2002; Sánchez, & Aranda, 2013; Tapscott, 1998; Valkenburg, & Peter, 2011; Valkenburg, Sumter, & Peter, 2011). Children usually prefer spending time with friends rather than watching a film on a TV set in the living-room or surfing the Web in their bedroom. Nevertheless, numerous studies have contributed to the understanding of how Internet usage provides a better fit for the needs of young people than other forms of media consumption. Of particular interest for this research are studies focusing on the relationship between digital recreation practices and activities and adolescence, and more specifically, how the Internet can be used to address teenagers’ psychosocial needs.

According to Valkenburg, Sumter and Peter (2011), proper psychosocial development in adolescence depends to a large extent on the quality of the development of the following aspects: identity, privacy and sexuality. Adolescents must develop strong self-awareness and need to be sure of who they are and what they want to be. Developing a certain sense of privacy also matters, and they need to acquire skills that are important in order to start, manage and eventually end relationships. Moreover, they also need to develop their sexuality. In the end, adolescents must (a) become accustomed to the feelings associated with sexual desire, (b) establish and accept their sexual orientation and (c) learn how to build healthy, consensual and honest sexual relationships. To ensure proper development of these psychosocial aspects, adolescents need to learn how to present themselves to others (self-presentation) and how to share intimate aspects with others (self-disclosure). Accordingly, other studies published by Boyd (2007), Ito (2010), and Valkenburg and Peter (2011), indicate...
that Social Networking Sites (SNSs) offer adolescents a space where they can work on their identity, status and understanding of social rules.

If we take a look at the online activities carried out by children and teenagers, and bearing in mind the nature of this study, studies such as Generación Interactiva (published by Fundación Telefónica) provide meaningful insight on which are the top main activities among Spanish youth (figure 2). Not surprisingly, MSN (Microsoft Messenger) and SNSs are two of the top three activities. Although the study does not include a specific variable regarding audio-visual consumption, “content sharing” and “downloading films and music,” which imply some sort of audio-visual interaction, also account for high rates.

Rheingold (2002) argues that as a result of using SNSs, adolescents obtain social capital. Individuals deposit part of their knowledge and state of mind in the Web and, in return, receive knowledge and opportunities to socialize. For many reasons one could argue that the exchange of information, online chats and gossiping are the basic tools that mobilise youth's social capital (Rheingold, 2002; Valenzuela, Park, & Kee, 2009). Gossiping or indulging in chitchat may seem unimportant activities, but they are essential to reaffirm relationships and show alliances or hierarchies (Tufekci, 2008). A quote from a teenager in Lleida describes quite accurately the role that SNSs such as Facebook have in everyday routine; it is particularly noteworthy the scale of priorities and how she balances time between homework and Facebook:

**Girl, Lleida, Baccalaureate:** When I arrive home I have lunch and after that I go to my computer to listen to music for a while and I also check Facebook. It depends on the amount of homework I have, but I am usually connected for half an hour or an hour. After that I do some homework but I connect intermittently to see what is going on. At night, if I am done with the homework, I connect and I stay logged in for a long time...
Another teenager from the same Institute commented further:

**Girl, Lleida, ESO:** Well... I usually get home and have a little snack, then I go to my computer... and well, once I have checked Facebook and these things (probably referring to other SNSs) I start working on my homework...

When we asked our participants what they did while on Facebook, all of them agreed that they mainly spent time chatting and digging into friends’ profiles just to know what were they doing. Thus, youngsters’ digital activities are directly related to the social, cultural and psychological needs inherent in their developmental stage. As a consequence, their perception of how important the Internet is to them has less to do with the amount of time spent online and more with the quality of that time. Gossiping can be viewed as an effect of our disposition towards sociability (Patchin, & Hinduja, 2010) which allows us to manage our position in relation with others (Denise, 2005). Also, the importance of online chats and “digital gossiping” lies in their ability to boost processes of empathy and atmospheres of trust. Sharing through SNSs creates secure spaces and trusted links that facilitate exchange. In general, social networks (both online and offline), provide secure spaces in which one can share experiences and this sharing process often rise to empathy or interpersonal intelligence, as revealed in the studies by Gardner (2004) and his theory of multiple intelligences.

**Adolescents’ perception of the Internet and television**

Specific studies focusing on youth confirm adolescents’ Internet affinity (Boyd, 2008; Denise, 2005; Ito, 2008, 2010; Valkenburg, & Peter, 2011; Valkenburg, Sumter, & Peter, 2011). According to Spain’s National Institute of Communications Technology (INTECO, 2008) 75.2% of kids (aged between 10 and 16) prefer the Internet to other media because they believe it is either very entertaining (20.9%) or somehow entertaining (54.3%). Only 21.1% mention that they like it “a little” and a mere 1.6% declared that they liked it “not much or not at all.”

Regarding Catalonia, FUNDACC (Communication and Culture Audiences' Foundation) periodically publishes a survey containing data about young population’s media preferences (14-25 years old). In 2010, it consisted of 3h 30m television, 1h 46m Internet, 1h 13m radio, 13m of newspapers and 4m magazines a day. Compared to adults, youngsters spent 1 hour more on the Internet each day and 32 minutes less watching television (FUNDACC, 2010). What can be learned from this data?

Even though teenagers spend more minutes of their entertaining time watching TV than surfing the Web, television is not considered the main recreational and socialising tool. Regardless of the time spent on it, according to our focus groups the Internet is their preferred medium. In that sense, we asked our participants to rank, according to their preferences, the following activities: hanging out with friends, watching TV and surfing the Internet. In all eight focus groups, the responses obtained were the same: television is the least preferred activity, their first option is meeting with friends and, if not possible, surfing the Web:

**Boy 1, Lleida, Baccalaureate:** Well, I don't really know... You can be with your friends and on the Internet at the same time, if you have a cell phone... I have a cell and you know, TV is the least thing I would do. Because even if I don't have a television, I can still watch the same programs on my computer. And I can't hang out with my friends every single day! So if weekdays I cannot go out with them, I choose to be online...

The evening has become almost the only time when families gather together to watch TV, although this depends a lot on each family. Sometimes, sharing time in front of the TV set
occurs because a family member says he or she follows a specific program. Other participants mentioned that they felt it was some sort of “family imposition,” with parents and children watching TV together while they are having dinner.

**Boy 1, Valls, Baccalaureate:** I almost spend more time, quite a lot more, in front of the computer than in front of the TV.
**Interviewer:** You all agree that you spend more time on the Internet than in front of the TV?
**All:** Yes, yes.
**Boy 2, Valls, Baccalaureate:** You go to watch TV at very specific times, such as lunch time and dinner time... There is no place for TV in the middle of the afternoon. You are with your computer, you talk with your friends... the computer gives you more!

But this may not be just an adolescents' perception. Although television consumption rates are higher across all age groups, 61.6% of the Spanish population aged over 16 considers that the Internet is a “very important” source of information (figure 3), and 67.7% believes it is a “very important entertainment source” (figure 4).

**Figure 3**
Importance of media as an information source.
Source: World Internet Project (Spain) - Unpublished raw data N=2100

![Figure 3](image-url)
A plausible explanation for why the Internet is so meaningful to children and teenagers can be found in the fact that it plays a key role in their lives. It is not only about measuring time spent in front of a computer screen, but rather on how and why the Internet is used as a source of information and entertainment, together with the social context and the psychosocial needs of adolescents. We suggest that further in-depth qualitative research focused on the growing importance that the Internet has acquired for teenagers should be done. This research should relate aspects such as how, what and when they go online with the social, cultural and psychological characteristics of adolescence.

Identifying when families gathered together to spend some time watching a television program was another of our major research interests. We wanted to know if such practice was common and which were teenagers' thoughts on that matter. We asked our participants to share some thoughts on that matter and we discovered that while television consumption is associated with spaces related to family socialising and interaction (living room, kitchen...), adolescents relate activities like accessing the Internet to private spaces such as the bedroom; online activities tend to be considered “individual activities” or “bedroom activities” (Baker, 2004; Livingstone, 2007).

**Boy, Lleida, Baccalaureate:** Well, in my case, we all have dinner together and watch TV at the same time. Sometimes we watch the news, but sometimes it is just like background music... and we keep on talking and then, after dinner, I leave and my parents, depending on the day, watch TV together or...

**Interviewer:** Isn't there a program you all watch together?

**Boy, Lleida, Baccalaureate:** No, my parents maybe... But I won’t, to an extent, watch TV with them during the week.
The social and family-related nature of television consumption is clearly conditioned by the location of the TV sets. According to our respondents, the television is usually at the centre of home’s main social spaces, such as the dining room, the living room and the kitchen. Thus, it is not surprising that time spent by parents watching television programs with their children mainly occurs after lunch or dinner and during the weekends (figure 5). This consumption usually takes place in the living room or in the kitchen (usually weekdays’ lunches).

**Figure 5**
Time spent watching television with children (parents)
Source: data extracted from online survey sent to parents. N=257

As it can be seen in the previous figure, families watch television together especially during weekends (61.5%) and in the evening/night (59.9%). It is also a common practice to watch it during mealtimes (47.5%). But when the family is altogether in front of the TV... what are they watching? According to our participants (survey) they are watching films (70%) and news (65%), followed by entertainment shows (63%) and sports (53%). Content from the Internet is the least mentioned option, regardless of who (parent, son, daughter...) has downloaded it.
Figure 6
TV programs watched together (parents and children) at the same place and time
Source: data extracted from online survey sent to parents. N=257

<table>
<thead>
<tr>
<th>Content</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Films (broadcast)</td>
<td>70.00%</td>
</tr>
<tr>
<td>Entertainment shows</td>
<td>63.40%</td>
</tr>
<tr>
<td>News</td>
<td>65.00%</td>
</tr>
<tr>
<td>Sports</td>
<td>52.90%</td>
</tr>
<tr>
<td>Documentaries</td>
<td>42.40%</td>
</tr>
<tr>
<td>DVD rentals (films)</td>
<td>30.40%</td>
</tr>
<tr>
<td>Content downloaded from the Internet (by parents)</td>
<td>12.50%</td>
</tr>
<tr>
<td>Content downloaded from the Internet (by teenager)</td>
<td>13.20%</td>
</tr>
<tr>
<td>Other</td>
<td>31.90%</td>
</tr>
</tbody>
</table>

Computers, located in individual and private areas such as bedrooms and study rooms, offer personalized consumption in accordance with adolescents’ needs and interests, which is why it is not common to find families that watch content together downloaded from the Internet. Accessing content that is available online may be a common practice for the youngsters but it is consumed in their private spaces (bedrooms) and on their own devices (mainly laptops). When parents and children sit in the couch, it is usually one of the parents who decide what to watch. The kid would just agree, knowing that once the show is over he/she will be free to go to the bedroom and make their own choices:

**Girl 1, Tarragona, ESO:** we try to reach an agreement, my brother, my sister and my parents... some days my parents decide, one day I decide... but usually we do not argue...

**Boy 1, Tarragona, ESO:** after dinner I usually stay with my parents half an hour watching something on TV and then I go to my bedroom, to my computer... after that I go to sleep.

**Girl 1, Tarragona, ESO:** I go to my room, I take the laptop to my bed and when it is late I turn it off...

**Boy 2, Tarragona, ESO:** sometimes I give the excuse that I’m tired and I say I go to sleep... and then I grab the computer...

In addition, watching television is socially and culturally determined by family dynamics, while the use of the Internet is mainly individual and private. However, we have also found some teenagers, usually ESO participants that make some appreciations regarding the idea that sharing a moment in front of the TV is something good because it is a “family bonding time:”

**Interviewer:** What type of program do you like to watch when you are with your parents, brothers and sisters?
Boy 1, Girona, ESO: Quiz shows, movies, funny stuff (they mention some popular Spanish programs)
Girl 1, Girona, ESO: Yes! sometimes we watch funny programs... When my parents laugh, I like it, you know? (Girl 2: Me too!). I don't know, they’re laughing and I’m happy!
Boy 2, Girona, ESO: they forget about their problems and other things...

Watching television means subrogating and compromising individual preferences and interests for the common or domestic good. Television content becomes the subject for family discussion and exchanges of values, opinions and shared recreational spaces. However, we have not found a single case in which participants in our focus groups mentioned that they usually argue or that they feel like their parents impose their choices.

Discussion and Conclusions

Although children and adolescents spend much more time watching television than on the Internet, TV is not regarded as their main recreational or entertainment tool. Regardless of the time spent, the Internet is their preferred medium and digital practices such as browsing SNSs (mainly Facebook) or listening to music online (usually via YouTube) are viewed by adolescents as a free activity that suits their social, cultural and psychological needs.

Watching television as a family activity is determined, socially and culturally, by family dynamics. On the contrary, the use of the Internet (individual and private) is socially and culturally determined by adolescents themselves, taking into consideration their private and recreational context, beyond family and/or adult influence.

Turning on the TV creates a common domestic context of discussion and entertainment (Morley, 1986). From this perspective, television is watched on the basis of family rules, interests and values. On the other hand, the Internet, consumed in private by the adolescents, is influenced by their own rules, values and interests and those of their social contexts, such as groups of friends, together with the psychosocial characteristics inherent in adolescence. All in all, Internet-related cultural and social consumption is viewed by adolescents as a more proper and fitted activity that suits their social, cultural and psychological needs, whilst television consumption is regarded as an activity linked to the home’s communal spaces and to a schedule established by the broadcasters. Nonetheless, this does not have to imply, by any means, that television will play a secondary role in the cultural life of adolescents, but rather aims to explain their preference for the Internet.

Peers, parents and media provide values that have deep influence teenagers' development (habits, values...). Parental controls are a useful tool that have proven to work efficiently. However adolescents belong to a generation of digital natives and the Internet is part of their lives, so any attempt to block access to the Web is perceived as an attack to their independence. Internet is the platform where most of the adolescent media youth interests are gathered together: television programming, movies, photographs, friends, video games...

Although television as a medium is still accepted, media consumption goes also inevitably through the Web so in the end, it is just a matter of figuring out how we merge traditional and upcoming consumption routines in a way that is satisfactory for all parties.

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References


**Additional References Intended for Readers Who Want to Learn More about the Topic**


“Be Careful Who You Friend:”
Early Adolescents’ Reports of Safety, Privacy, and Family Monitoring of Facebook Use

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“Be Careful Who You Friend:”
Early Adolescents’ Reports of Safety, Privacy, and Family Monitoring of Facebook Use

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Abstract: With the growing popularity of social networking sites (SNS), parents, educators, youth development workers, researchers, and policymakers are increasingly concerned with Internet safety issues. In this paper we highlight a study designed to understand how young people describe how much (or how little) social network monitoring is happening in their home life, including who is doing the monitoring, when, why, and how. Participants included 33 middle school youth (aged 11-14) who were participating in a 9-week sexual health curriculum. Teens reported that their parents were most concerned about “friending” the wrong people and swearing on Facebook postings. In contrast, teens talked more about using Facebook to keep in touch with their known social circle and were not as preoccupied with adding people they didn’t know or wanting to meet strangers online. Teens also reported that female family and community members were the most frequent monitors of their Facebook pages. Implications for youth development programs and future research directions are discussed.

Introduction

Research shows that the “net generation” (born between 1980 and 2001) spends much more time online than watching television (Tapscott, 2009), and young people’s most frequent use of the Internet centers on communicating with their peer networks through social media (Subrahmanym, & Greenfield, 2008). Adolescents spend time within online spaces to explore their identity (Livingstone, & Brake, 2010; Subrahmamyam, Smahel, & Greenfield, 2006) and sexuality (Suzuki, & Calzo, 2004), and to find romantic partners (Smahel, & Subrahmanyam, 2007). Among young adolescents the popularity of social networking sites (SNS) has been growing fast — from a 55% usage rate in 2006 to 73% in 2010 (Lenhart, et al., 2010). A
national poll showed that about one-fifth of teenagers log on to their favorite SNS more than 10 times a day (Common Sense Media, 2009). These SNS have different capabilities (e.g., for uploading audio and visual information) and different levels of anonymity that users can explore depending on their developmental needs for identity exploration, sense of autonomy, need for intimacy, or desire for a public audience (Christie, & Viner, 2005; Erikson, 1959; Subrahmanyam, & Smahel, 2011). As noted by Reich, Subrahmanyam and Espinoza (2012), overall, little is known about what adolescents actually do with SNS and with whom they interact.

**Early adolescent media risk-taking**
The transition from middle to high school is a critical period for risk-taking, increased peer influence, and potentially perilous online and social networking behaviors as adolescents seek autonomy and separation from their familial networks (Bearman, & Brückner, 1999; Kinsman, et al., 1997; Miller, et al., 1997; Stanton, et al., 2002). Livingstone (2008) theorizes that social networks offer teenagers positive peer subcultures and can act as alternatives to face-to-face social embarrassment; noncommittal, playful online transactions may make behaviors such as flirting and innuendo more controllable for teens. On the other hand, some peer subcultures may condone alcohol use, dating many partners, cyberbullying, or spreading risqué photos of compromising positions. For instance, one survey study found that about half of Facebook users have discovered unwanted pictures of themselves posted by other people, linked to their own profiles (Tufekci, & Spence, 2007).

**Parental media monitoring**
As with other adolescent social exploration, parents may have concerns about their children’s Internet safety, and may attempt to regulate or monitor their teens’ behavior by “friending” them on a SNS such as Facebook. Kanter, Afifi, & Robbins (2012) note that there has not been much research on how adolescents feel about their family members monitoring their SNS use, because this media-based form of tracking a child’s whereabouts and activities is relatively new. Parental monitoring in the new media context is thought of as a mediation process wherein parents attempt to regulate how their children’s media access, use, and perceptions will likely influence the adolescents’ attitudes and behaviors (Hoan, & Cheon, 2005). In the case of SNS, Mesch (2009) argues that this includes both restrictive mediation (limiting access to media) and evaluative mediation (open parent-child discussions regarding Internet use). Although studies about TV and Internet monitoring by parents is not new, research concerning parental knowledge about their child’s use of Facebook is scarce. To date, there have been no exploratory, in-depth qualitative interview studies about how young people describe how much (or how little) social network monitoring is happening in their home life, including who is doing the monitoring, when, why, and how.

**Research Questions**
- What self-disclosing and peer-monitoring activities do adolescents engage in on Facebook?
- How do adolescents describe the level of monitoring from their parents or family members?
- From the adolescents’ point of view, what are the main parental concerns and rules regarding Facebook usage?
Methods

Participants
The present research is from a larger qualitative interview study regarding family communication about sex, which obtained IRB approval from Wellesley College. We recruited a convenience sample of 7th grade students from 3 middle schools teaching *Get Real: Comprehensive Sex Education that Works*, a three-year comprehensive sex education program with 27 lessons developed by Planned Parenthood League of Massachusetts, which includes a unit on media literacy. Family homework activities accompany each lesson and were designed to enhance parent-teen communication about sex and relationships, some of which involved discussing media messages.

Each school determined how invitations and consent forms were distributed, ranging from handing out forms during class or afterschool programming to mailing invitations directly to home addresses. One hundred seventy-seven 7th graders were invited to participate in interviews. Thirty-eight consent forms were returned. All students who obtained parental consent were contacted; 94% of those completed interviews between March and May 2011. Face-to-face interviews were conducted in English and took approximately 30 minutes; they took place predominantly at school during the afterschool hours, although a few were conducted over the phone. All teens were compensated $15 in appreciation of their participation.

Within our sample of 33 (19 boys, 14 girls), teens ranged in age from 11-14, with a mean age of 12.88 (SD=.53). Participants’ self-reports for parental education had a mean of 2.81 (SD=1.14), representing having finished high school, without starting college. Thirty-six percent reported living in a two-parent household. Their racial/ethnic backgrounds were 37% Black, 33% Latino, 18% White, 9% Biracial, and 3% American Indian. Nine percent reported that they had had sex by 7th grade. Of the 33 participants, 25 described the role Facebook played in their communication about relationships with peers. Therefore, only these participants were included in the current analysis. We obtained permission to audio-tape interviews and these recordings were later transcribed.

Interview Protocol
The protocol contained a broad base of open-ended questions related to communicating about sexual health and relationships with one’s family members. Interview questions relevant to the present study addressed how adolescents generally used Facebook or other social networking websites in their social lives on a daily basis. These were followed up with questions about how their peers interacted with them on Facebook, and probed how much they were aware of any family members monitoring their Facebook activities, including what they thought their parents’ top concerns were.

Data Analysis
A content analysis approach was used to code narrative interview data for overarching themes (Patton, 2002). The first author conducted the analysis, coding the transcripts for emergent themes. She developed a codebook that listed the types and properties of the themes and sub-themes that emerged. Two themes (Facebook activities and parental concerns) were not mutually exclusive; therefore each participant could report more than one response, often yielding more than one code for each theme. The second author performed an inter-rater reliability check in order to protect against investigator bias, coding a random selection of one tenth of the data and compared the independent coding with the first author’s coding responses. In the cases where the authors disagreed, they met to resolve discrepancies in
thematic coding and to further clarify coding definitions. NVivo version 8 was used to facilitate the data analysis.

**Results**

We present our findings according to the following main themes:

1. Facebook activities of self and peers
2. Parental monitoring of Facebook activities
3. Parental concerns and rules regarding Facebook usage

In reporting direct quotations from the interviews we note the gender and race/ethnicity of the speakers.

**Facebook activities**

Participants reported a wide range of self-disclosing as well as peer monitoring activities on Facebook. The two most common types of behaviors were: (1) to be in constant communication and updated about what is happening in peers’ lives; and (2) to talk about relationship-status changes and who currently likes whom. For instance, one African American girl discussed how she uses Facebook to bring up potentially sensitive questions about boyfriends:

> Sometimes we talk about what are we doing like on weekends and sometimes like that. We really don't get into conversation about the boyfriends unless like—unless I usually start it, because my friend I like to tease her about it. Like, ‘He likes you and you know it.’ Because she didn’t say anything yet, and he’s been like hounding her for weeks saying, ‘Hey, remember what I said?’ And she’s like, ‘Yeah, I do.’ But no answer to it. So that’s the only time we’ve probably talked about that boyfriend/girlfriend thing.

Participants often talked about incorporating other aspects of Facebook, such as chatting and posting photos to their conversations about relationships:

> Sometimes it’s like you have a friend or something, or it’s just like chat on chat and catch up on peoples’ lives and look at their photos and what’s happening...well like sometimes people post things like, ‘Why is so-and-so mad at me just because like something.’ Stuff that has to do with a relationship. So that kind of stuff...And then when you’re on chat sometimes people will come on and they’ll tell you who they like, if they like someone. (Mexican/White boy)

The ability to look at a peer’s wall of comments from others allowed some an opportunity to see a relationship unfold over Facebook: “My friend is just now getting comments from this boy that has been in her class since the whole year and is just now asking her out when school is almost over” (African American girl). Many teens also enjoyed the “Relationship status” function of Facebook as a way to keep up-to-date with the fast changing nature of adolescent relationships, or used it as the attention-seeking “buzz” starter: “Because sometimes they just do it as a joke. Like, they marry people on Facebook as a joke” (Irish/French girl).

Less frequent responses about Facebook activity concerned top ten lists/polling, announcing parties or events, discussing current events like sports, and posting quotes for fun or “inspiration” — all activities that the teens considered normal and G-rated communication
among friends. Rarely did these teens report any personal inappropriate conduct on Facebook such as spreading lies or rumors, though some talked about hearing other people experiencing those behaviors:

Well, I know a lot of people on Facebook who like write a lot of stuff that I just don't understand what they're writing. People I know, they say a lot of swears. They reference sexual stuff...and they write on my friends' wall because they called them swears, and it just seems sort of wrong to me. (Irish/English girl)

Both boys and girls shared that they occasionally use foul language on Facebook: “I swear sometimes but not all the times. Most of the times I go to Facebook, I'm happy and say good things, but I swear sometimes.” A couple of teens talked about helping each other with homework answers: “Sometimes we cheat on the homework... Or like when somebody hasn't done their homework they just go online and go, “Yo yo, you do your homework? What's the answer for this?” (Dominican boy). Lastly, one respondent recounted a story about having his personal information compromised on Facebook:

Well there was this one thing where this person ... somebody hacked me. And they posted this really... I'm not going to go into details. This picture. And I was like “Oh.” It would be inappropriate for a thirty-year old. So I canceled that Facebook and started a new one with my alias, which everyone knew me by. Everyone that I knew, anyway. So after that, then no one hacked me and I had no problems after that. (Black/Puerto Rican boy)

**Parent and family member monitoring**

The majority of teens reported that their parents did some form of monitoring of their Facebook account and generally, mothers were reported as the main person taking on this function in their families. The type and level of reported monitoring ranged from parents telling their teens to watch out for certain inappropriate activities to having access to their teens’ Facebook accounts and actively monitoring and taking action when necessary:

I gave her the code to my Facebook, and she says she checks it at work sometimes just to see what my friends are saying ’cause if my friends are emailing me nasty stuff or talking about something about raunchy or putting weird statuses, she says that she's just going to delete it. So I need to approve friends that I know that wouldn't say that... And she actually never said anything about it. (Cape Verdean boy)

Sometimes I want to do something with my status, but I realize that if my mom sees it, she'll like grab me or something. Like if I disobeyed her. Like if she tells me not to be at the computer or something. You know, if I change my status, she's going to know I'm on the computer. (Irish/English girl)

Some students observed that their mothers were more firm with Facebook limits at certain times of the day, such as at bedtime: “My mom tells me like I can't bring my phone upstairs to my bed, and I use it like when I’m supposed to go to bed. But it’s because she wants me to go sleep and [not be on Facebook]” (Irish boy). A Dominican boy commented that he was grounded after he was caught using Facebook when he was supposed to go to bed: “My mom said, ‘Go to sleep,’ and I didn’t hear her. And I was in my room listening to music on their laptop when she walked in. She was like, ‘Give me the laptop. You’re grounded’.”
A recurring theme in at least half of the teens’ reports was other adult family members and even non-family members stepping in to share monitoring of their Facebook pages. Often this happened because the parents or mothers themselves were not on Facebook. Other times the extra monitoring was in addition to parental monitoring, when parents realized they could not always be aware of every incident: “My dad doesn’t have [a Facebook page], but my mom does. She doesn’t have me as a friend, but my friends’ moms who are friends with her, they check their kids’ Facebooks, and they usually go to my wall and stuff” (African American girl).

Most adolescents revealed that their female family members were checking Facebook pages (mothers, aunts, sisters, female co-workers, and peers’ moms):

I have my mom and my aunt and whole bunch of people. My aunt, when she goes on Facebook, she checks my page to make sure I’m not swearing or anything. And if I swear or something, she says in the comments, “Don’t do that.” or “Ok, get off of your Facebook” when it starts getting inappropriate because she has some of the people she works with to look up my Facebook just to make sure I’m not doing anything bad (Dominican girl).

**Parental concerns and rules regarding Facebook usage**

Teens reported that parents mainly expressed concerns about the addition of the wrong people to the teens’ friendship network, in particular strangers or “bad” friends. They would worry about the possibility of their teens meeting up with a stranger or being stalked or jumped by strangers: “That I’m going to add them and then start talking to them, and then I’m going to meet them somewhere and end up having sex” (Dominican female).

In the example below, an Italian-American boy talks about his parents discussing what they saw on his Facebook page and their unspoken desire to delay teen sexual relations, yet providing a reason that pertained to more sinister dangers beyond a school-age crush:

Isaiah (pseudonym): I was talking to [a girl at school], and she was talking about she wants to marry me and have sex.
Interviewer: SO SHE WAS TALKING ABOUT SEX WITH YOU? WHAT DID YOUR PARENTS DO?
Isaiah: Took it away for five days.
Interviewer: WHAT DID THEY SAY?
Isaiah: That if they see that again, they’re going to take it away for two months or a year.
Interviewer: DID THEY SAY WHY?
Isaiah: It could be a setup and there are like stalkers out there. They like might want to kill you, but that girl, she wasn't like that. She always came over, and hung out with my mom and my sister and stuff. And me and my family. So, we were all close and stuff.

The second most common theme was the rule about no swearing on Facebook: “They have our passwords and stuff, so if we do anything or write anything inappropriate or swear on it, we cannot use it for like two weeks or a month” (Italian-American boy). Although most teens did not openly express concerns about their parents monitoring Facebook activity, a few students expressed frustration over strict rules about swearing: “Sometimes, they can over exaggerate on things. Like if someone wrote a swear on my wall, then I get in trouble, but it’s like I can’t control what they wrote on my wall, and if I haven’t been on when I wrote it, then I can’t like delete it” (African American girl).
Parental concerns about trash-talking and spreading rumors were themes that were reported by both boys and girls, particularly when it came down to preventing cyberbullying:

‘Someone is talking trash about someone; they’re talking rude about someone on Facebook, so can you go see what they’re saying?’ My mom doesn’t know how to write on Facebook, and my sister does, so she’ll check it. She’ll make sure that nobody’s bullying me, and if someone is, I can go tell them. (African American girl)

Adolescents described cyberbullying scenarios where someone would hack into a personal account and post negative comments or pictures designed to spread rumors or humiliate. These incidents made the adolescents more cautious about Facebook, particularly about whom they allowed into their friendship network:

Yeah, be careful who you friend. Because she’s like, ‘I don’t want someone to hack your Facebook.’ Because it happened to my sister’s boyfriend. Someone hacked his Facebook account and they said a lot of bad things about my sister. And so yeah, that was bad. (Mexican/White boy)

The least frequent parental concerns, as reported by these teens, included the posting of offensive photos, revealing of personal contact information such as an address or phone number, and the possibility of their teens jeopardizing their future job prospects because of what is posted on their Facebook page:

My mom was saying that people when I’m looking for a job could go on my Facebook and look at my history... Because my cousin lost his job because of all the stuff he was posting on Facebook... My mom keeps checking on him. She signs on my Facebook and keeps looking on his profile to check him out. He had to cancel his account to get a job. (Irish/Italian boy)

Discussion

With the growing popularity of social networking sites (SNS), parents, teachers, youth development workers, researchers, and policymakers are increasingly concerned with Internet safety issues including knowing the identity of those with whom adolescents are interacting. In our study, teens reported that their parents were most preoccupied with being influenced by or meeting up with strangers who could do inappropriate things, as well as with using foul language in Facebook postings. These concerns have most likely been fueled by news stories about online sexual predators (Kreiser, 2006; Wortham, 2009) and cyberbullying incidents that have lead to suicide (Associated Press, 2008).

Most teens in our study used Facebook for keeping in constant communication with their peer networks and for getting inside information on dating relationships from friends. They talked more about using Facebook to keep in touch with their known social circle and were not as preoccupied with adding people they didn’t know or wanting to meet strangers online. This is consistent with a prior study, which demonstrated that adolescents aren’t particularly worried about being contacted by strangers on the Internet (Lenhart, & Madden, 2007). A minority of adolescents in the current study reported being worried about cyberbullying and hacking, which their parents and family members warned them about.
At this stage most students were fully aware that either a parent or a family member was closely monitoring their page and restricted their usage accordingly, in terms of amount of time spent on Facebook and content created for public consumption. Although the vast majority of research on SNS has been conducted on college-aged populations as opposed to young adolescents, researchers have speculated that high levels of parental monitoring during adolescence may be interpreted by the child that he/she is untrustworthy and teens may resent the monitoring (Mounts, 2000), as was the case in a few of the interviews when teens were punished for actions of others. Except for the few who asserted that their parents did not monitor their usage at all, many students acknowledged that this monitoring was for their own good, unless they were being punished for something that was not under their control, such as a friend’s posting. Since the lower age limit for Facebook is 13, many studies about social networking habits have not focused on early adolescents. The current study showcases that the majority of teens are carefully and frequently monitored on Facebook — even sharing passwords with parents to have easy access. The earliest stages of having a Facebook page may be the most crucial ones for parents to set appropriate online etiquette and privacy boundary setting. This may be a critical transition period before high school, as older adolescents may be less open to parental involvement, yet may feel distressed when they accidently post information that they do not want their parents to read (Child, Petronio, Agyeman-Budu, & Westermann, 2011). Other studies have shown that this trend of distancing from parents can reverse itself once adolescents enter college when Facebook offers a cost- and time-effective opportunity to maintain close ties with family members while living independently (Ellison, Steinfield, & Lampe, 2007; Kanter, Afifi, & Robbins, 2012; Vogl Bauer, 2003).

Prior studies on parental monitoring of teen Internet usage found that mothers were more likely to be aware of their adolescents’ Internet behavior, which is consistent with studies indicating that compared to fathers, mothers are generally more aware of their adolescents’ lives in general (Bumpus, et al., 2001; Liau, Khoo, & Ang, 2008; Waizenhofer, et al., 2004). To date, there have been no studies that examine which family members tend to monitor a teen’s Facebook page. In this study, most students reported being monitored by either mothers or female relatives. Often parents had a difficult time keeping pace with the ever-changing nature of Internet technology and enlisted the help of their families and communities to fill in the media-savvy gap. This is particularly the case among Black and Latino families where there is a higher extended-family involvement in childrearing (Collins, 2000; Jones, & Lindahl, 2011), as reported here also in the monitoring of Facebook use. This caretaking role extends to communication about sex and relationships, where studies identify older siblings, stepmothers, as well as aunts, sisters, and family friends as teen sources of sexual information (Crohn, 2010; Guerrero, & Afifi, 1995). These findings suggest that extended family can serve as a family resource to support teens’ safe and appropriate use of Facebook and other SNS. This stage for health educators and youth development professionals to provide additional guidance and programming that would complement the information learned at home. The role of trusted community adults in teens’ lives other than parents becomes critical in the transition between younger and older adolescents, when they have been found to skirt the preying eyes of their parents by setting up “hidden” pages (see boyd, 2007).

**Implications for youth development**

Parental monitoring, in general, has been associated with positive youth development (Eaton, Krueger, Johnson, McGue, & Iacono, 2009; Smetana, 2008), whereas adolescents who are not monitored closely are more prone to being antisocial or delinquent (Weintraub, & Gold, 1991). Adolescents with a higher level of parental monitoring demonstrate lower sexual risk, lower
alcohol consumption, marijuana use, and cigarette smoking, and lower rates of gang involvement and arrest (Huang, Murphy, & Hser, 2011). The majority of the types of monitoring reported by teens in this study fell into the category of restrictive mediation (i.e., limiting access to Facebook) rather than evaluative mediation (i.e., open communication about Internet safety issues). Parents, health teachers, and youth development staff could create opportunities for more family discussions about online privacy issues and appropriate content for posting, emphasizing healthy behavior rather than being punitive without being warranted (O'Keeffe, et al., 2011).

Limited opportunities during the school day to discuss media literacy, cyberbullying, online predators, and other Internet safety issues suggest the importance of tools that are easily accessible and useful for a broad range of youth development workers, who can receive training in these topics as a part of their professional development. Several websites have ready-made conversation-starter material for educators and youth development staff to use, such as the NetSmartz Workshop, which is a program of the National Center for Missing & Exploited Children (http://www.netsmartz.org/Educators). They offer a middle school kit designed for those with limited time to develop these tools, including teachers, youth program coordinators, counselors, law-enforcement officers, social service providers, and religious leaders. The kit contains a resource manual, safety presentations, animated videos, lesson plans, and posters in English and Spanish. Other web-based guidelines and tips for keeping young people safe from social networking include the U.S. Department of State's website (http://www.onguardonline.gov/articles/0012-kids-and-socializing-online), the American Academy of Pediatrics (http://www.aap.org/), and the Girl Scouts (http://forgirls.girlscouts.org/wp-content/uploads/2012/08/STCResourceforKids.pdf).

Suggested activities and youth program elements:

- Train youth development workers and health educators to understand the need to discuss Internet safety issues since online activities may become precursors to offline activities
- Conduct focus groups with youth to understand their online peer networking culture
- Post posters throughout programs and create a physical environment that would increase engagement in healthy social networking habits
- Create a Facebook network for the youth development program so that youth workers can “friend” their youths, keeping tabs on their online activities but also creating a shared online space to build community
- Develop lessons on adjusting privacy settings on Facebook as well as on how to invite healthy engagement in Facebook activities that do not include bullying, trash-talking, and spreading rumors
- Conduct parent workshops or generate brochures on how to manage social networking monitoring and opening up a dialogue with teens about usage rules
- Review youths’ Facebook pages during workforce development programs as a critical element to supporting future employability

Conclusions and Future Research Directions

This qualitative interview study advances our understanding of youths’ online social networking activities, perceived monitoring from family members, and perceived worries of their parents about their Internet use. Findings highlight the importance of beginning the conversations
about Internet safety in middle school, setting privacy limits, and supporting adolescents’
competence at managing their own boundary setting even without constant monitoring from
parents, family members, or other caring members of their communities.

While the present study provides crucial insights into how to enhance positive development and
protect our young people from harm, more research is needed to understand the impact of
monitoring from family members versus a caring adult mentor. This study explored the
experiences of purposefully sampled youth who volunteered to participate and were enrolled in
a sex education program. While the curriculum did not directly address Internet concerns, the
sample may not be representative of the general youth population. More research with a larger
sample, particularly with adolescents who are not monitored at home regarding their Facebook
usage, is needed. Since this study focused exclusively on adolescent perceptions about their
monitoring and messages received from parents about Facebook, it is limited by the fact that
we cannot account for the parents’ perspectives, which may be different. Studies that explore
family communication about Internet use from both parents’ and teens’ perspectives could help
to clarify these interactions and develop interventions to enhance how parents talk with teens
about SNS. Future research may also explore how and when do early adolescents begin to
restrict access to their Facebook pages from family members, other adults, or peers. Perhaps
that need to have an “undercover” life away from their parents’ eyes develops at an older age
than during early adolescence. Future studies should also assess the prevalence of social
networking safety guidelines discussed at youth development programs or during professional
development of youth workers. Finally, studies should consider the effectiveness of partnering
up with local community organizations that may provide the needed materials and lessons to
youth programs, health educators, and parenting groups.

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supporting this work.

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Without Television

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“At this point in my life, the trail goes where I make it go – or perhaps where I let it run”
An exploratory follow-up study of the leisure choices of youth who grew up without television.

Abstract: The purpose of this follow-up study was to learn more about the leisure choices, hobbies, and lifestyles of young adults who had grown up without a television. Study participants responded to an online questionnaire that asked about their health, physical activity habits, hobbies, and level of current television viewing. A mixed methods approach to gathering and analyzing data revealed a picture of young adults who live active lives, watch little television, and appear to have a strong sense of personal agency to direct their lives. Themes of agency, including forethought and intentionality, and self-regulation were evident in the qualitative responses, as well as creation and choosing challenging hobbies or activities. This study provided much information for future research to examine the influence of television on youth development, specifically agency, challenge and life-long habits.

Introduction

Television viewing among American children has steadily increased during the first decade of the 21st Century with youth ages two to 18 watching as much as 4.5 hours per day, or a high of almost 32 hours per week in 2009 (Child Trends Data Bank, 2009; Nielsen 2009). Among this group, researchers have also noted various health or academic trends such as an increased sedentary behaviors, consumption of unhealthy snack foods, and body fat, (Carson, & Janssen, 2012; Gorley, Marshal, & Biddle, 2004). While not causal indicators, the correlational data indicating negative outcomes among those who spend much time in front of the television is
certainly compelling. What then, might life look like for youth who spent little to no time in front of the television?

In the late 1990s, author, researcher and leisure studies professor Barbara Brock sought to answer this question. Having raised her own children without a television in the home, she was interested in learning more about the choices and lifestyles of families who lived without television. Between 2000 and 2001, Brock conducted a survey asking about the lifestyles, social interactions, community involvement, and decision to go TV-free of some 500 families, with more than 1,200 individual responses from parents and children. The 100-item questionnaire generated enough data for Brock to publish a book, Living Outside the Box: TV Free Families Share their Secrets, in 2006. The results indicated that families without television were more involved in their communities, had stronger bonds with one another, lived active lifestyles, had a variety of unique hobbies, and did not feel they were missing anything by disconnecting from modern media outlets (Brock, 2007).

A decade later, Brock realized that youth in the initial study would now be college or young adult age. Knowing the purported harmful effects of television viewing on youth, Brock decided to inquire as to the longer term impacts of not having a television. She wanted to know more about the attitudes, leisure activities, and health and academic outcomes of youth who grew up without television, now that they were young adults. And if this group reported anything notable as related to important youth outcomes, different than the average television-viewing young adult, future research could examine to what extent television played a role.

The purpose of the current study, then, was to find and follow up with youth from the initial study to gather a picture of their lifestyles, hobbies, and choices after having grown up without television.

Study Aims
The purpose of this preliminary follow up study was to learn about, in a mixed-methods format, the choices, lifestyles, habits, and attitudes of youth who grew up without television, and use that information to develop further questions on this topic. The young adults who participated in this follow up study were those who had grown up in homes without a television, per their parents’ decision. Data gathered in the quantitative portion of the study included information about overall health, smoking or alcoholic beverage consumption, level of physical activity, body weight estimation, and hours spent outside, volunteering, and reading. Qualitative or open-ended questions asked participants if they still limit television viewing now, and if so, why, and to describe their hobbies and plans for the future.

Sample
For the 2001 study, Brock interviewed families who either did not own a television, or if they did, watched it a minimum of one hour per week. The purpose of the initial study was to learn more about parents’ decision to limit viewing, and to learn about the lifestyles, habits, and hobbies of this group. To find an initial group of respondents, Brock placed ads in three magazines or similar publications targeted at families. More than 500 families responded, and were invited to complete a 100-item web-based questionnaire. Brock ultimately collected data from 1,500 individuals, and ultimately published her book. After the books’ publication, however, Brock lost direct contact with many of the family members.
To conduct this follow up survey, Brock took several steps. First, she mailed a letter explaining the 10-year follow up study to each of the original participating families, using the addresses she had for them from 2001. She asked the parents to forward the letter to their now-grown children, who were then invited to participate in a web-based survey. After many returned envelopes, the final sample resulted in 53 respondents. The majority of young adults ranged in age from 15-24 years old, lived in 23 states, and indicated they had either completed college (26%) or had a Master’s degree (15%). Selected demographics are presented in Table 1.

**Methods**

An online questionnaire consisting of 80 closed and opened ended questions was available to respondents for three months. Questions were closed ended (multiple choice), and opened-ended, to which participants could type as much as they chose. Some open-ended questions were as follow-up to closed-ended questions, others were unique questions on their own. To complete the online questionnaire, participants received by email or paper mail the address of an electronic link, and once accessed, the initial page contained an introduction and instructions, followed by several pages of questions separated into five categories including demographics, lifestyle, technology use and habits, community life, and aspirations and advice.

**Table 1**

Selected demographic data of respondents in follow-up study

<table>
<thead>
<tr>
<th>Age Range</th>
<th>15-19 years old</th>
<th>38%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>20-24 years old</td>
<td>21%</td>
</tr>
<tr>
<td></td>
<td>25-29 years old</td>
<td>19%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Level of Education</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Some High School</td>
<td>24%</td>
</tr>
<tr>
<td>GED</td>
<td>10%</td>
</tr>
<tr>
<td>Some College</td>
<td>19.6%</td>
</tr>
<tr>
<td>Bachelor’s Degree</td>
<td>26%</td>
</tr>
<tr>
<td>Master’s Degree</td>
<td>15%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Race</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>85%</td>
</tr>
<tr>
<td>Asian American</td>
<td>4%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sex</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Male/Female</td>
<td>43%/57%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Marital Status</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Single</td>
<td>78%</td>
</tr>
<tr>
<td>Married</td>
<td>15%</td>
</tr>
<tr>
<td>Cohabitating</td>
<td>4%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Job Status</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Student</td>
<td>53%</td>
</tr>
<tr>
<td>Full-time employment</td>
<td>34%</td>
</tr>
<tr>
<td>Part time employment</td>
<td>8.5%</td>
</tr>
</tbody>
</table>

All responses were anonymous, however if participants wanted to receive a free copy of Brock’s first book, they were asked to provide a mailing address. Once the survey period closed, the data were downloaded and compiled in an electronic format for analysis by the researchers.
Data Analysis
For this mixed methods study, data were separated into quantitative and qualitative results and analyzed separately. Quantitative data consisted of descriptive statistics only and are reported as such in tables 1, 2 and 3.

The qualitative portion of this study was analyzed using a grounded theory approach. Grounded theory, according to Charmez (2006), is an “inductive, comparative, iterative, and interactive method” (p. 347). In this data analysis process, researchers move from looking at the concrete stories or realities expressed in the data to more conceptual understandings of the data. The analysis is an ongoing, iterative process in which researchers move back and forth between the data and relevant literature to look for plausible connections (p. 347).

In addition, while conducting the qualitative data analysis, the researchers engaged in memoing, or the process of writing notes and connecting ideas as they read and re-read the data. The researchers worked separately at first, then together, to memo as they read the data, noted ideas, themes, and connections, and then compared memos. Then, as is part of grounded theory development, the researchers looked for conceptual relationships among themes, especially noting relationships linked by participants themselves. Finally, the researchers examined the data for thematic patterns in participant responses, and noted how the patterns related to the process under question (Strauss, & Corbin, n.d.).

Results
The results are separated into quantitative and qualitative, with the quantitative further describing the population, and the qualitative describing themes that emerged from participant responses to open-ended questions.

Quantitative Results
The quantitative results are reported in the form of tables separated by the topics of health and leisure time activities. Only descriptive statistics are reported, and no further data analyses were conducted. A discussion of the quantitative results follows in the next section.

Table 2
Selected Health Data

<table>
<thead>
<tr>
<th>Smoker</th>
<th>Yes/No</th>
<th>0%/100%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drink alcohol?</td>
<td>Yes/No</td>
<td>40%/60%</td>
</tr>
<tr>
<td>Time Spent Outside Daily</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 hours or more</td>
<td>21%</td>
<td></td>
</tr>
<tr>
<td>1-2 hours</td>
<td>21%</td>
<td></td>
</tr>
<tr>
<td>30-60 minutes</td>
<td>30%</td>
<td></td>
</tr>
<tr>
<td>15-30 minutes</td>
<td>17%</td>
<td></td>
</tr>
<tr>
<td>Time in Physical Activity (daily)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1-2 hours</td>
<td>28%</td>
<td></td>
</tr>
<tr>
<td>30-60 minutes</td>
<td>45%</td>
<td></td>
</tr>
<tr>
<td>15-30 minutes</td>
<td>13%</td>
<td></td>
</tr>
<tr>
<td>Less than 15 minutes</td>
<td>4%</td>
<td></td>
</tr>
</tbody>
</table>
Qualitative Results
The main theme that emerged from memoing and the grounded theory analysis process was respondents’ sense of personal agency, or desire and ability to control, direct, and choose a course of action in their lives. One subcategory that emerged from that theme described what the young adults enjoyed doing, mainly creating, designing, or making things. These themes are explained further and linked to relevant literature.

### Table 3
Leisure Time-Use Data

<table>
<thead>
<tr>
<th>Current Television Viewing</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1-2 hours each day</td>
<td>8.5%</td>
</tr>
<tr>
<td>Less than one hour daily</td>
<td>42%</td>
</tr>
<tr>
<td>None</td>
<td>44%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Leisure Time Use-Computers</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1-2 hours each day</td>
<td>36%</td>
</tr>
<tr>
<td>30-60 minutes</td>
<td>25%</td>
</tr>
<tr>
<td>15-30 minutes</td>
<td>6%</td>
</tr>
<tr>
<td>Less than 15 minutes</td>
<td>8.5%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Leisure Time Use-Phones</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2-4 hours</td>
<td>11%</td>
</tr>
<tr>
<td>1-2 hours</td>
<td>6%</td>
</tr>
<tr>
<td>30-60 minutes</td>
<td>15%</td>
</tr>
<tr>
<td>15-30 minutes</td>
<td>21%</td>
</tr>
<tr>
<td>Less than 15 minutes</td>
<td>25%</td>
</tr>
<tr>
<td>None</td>
<td>17%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Time spent reading each day</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>More than 2 hours</td>
<td>13%</td>
</tr>
<tr>
<td>1-2 hours</td>
<td>34%</td>
</tr>
<tr>
<td>30-60 minutes</td>
<td>30%</td>
</tr>
<tr>
<td>15-30 minutes</td>
<td>17%</td>
</tr>
<tr>
<td>Less than 15 minutes</td>
<td>6%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Time spent on hobbies</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2 hours or more</td>
<td>31%</td>
</tr>
<tr>
<td>1-2 hours</td>
<td>36%</td>
</tr>
<tr>
<td>30-60 minutes</td>
<td>18%</td>
</tr>
<tr>
<td>15-30 minutes</td>
<td>9%</td>
</tr>
</tbody>
</table>

Personal Agency
This theme emerged largely from the question “what motivates you to continue to limit your television viewing today,” and a common response was that participants desired to spend their time engaged in more interesting and self-directed activities. A response that best illustrates this theme is the person who limits television viewing because, “I am out of the house most of the time for teaching, and building my creative career takes time when I am at home.” In linking this theme to the literature, there is a similarity with Bandura’s idea of personal agency, or the idea that an individual can influence their behavior and outcomes. Respondent comments
that further articulate this theme are included below, but first, the idea of agency as suggested in this study, is explored.

Bandura (2006) wrote that humans are “self-organizing, proactive, self-regulating, and self-reflecting. They are not simply onlookers of their behavior. They are contributors to their life circumstances, not just products of them,” (p. 164). In defining personal agency, Bandura suggests four main properties, all of which are further represented in the experiences described by study respondents. The properties include intentionality, forethought, self-reactiveness, and self-reflectiveness. Briefly, intentionality is the ability to make plans and turn them into reality, forethought is planning or thinking about the future, often by setting goals and anticipating desired outcomes, and self-reactiveness is when one can motivate or regulate behavior in pursuit of goals. Finally, self-reflectiveness, or self-awareness, is the ability to reflect on one’s own thoughts, actions, and direction, and change course if necessary (Bandura, 2006). These four properties can be heard in the young adults’ responses, as their stories suggest that many have desired goals and outcomes, a plan to achieve them, and an ability to regulate and reflect on their behavior in order to reach their goals.

**Intentionality and forethought.** Creating and acting on an action plan characterizes intentionality and forethought as two properties of personal agency. Respondents in this study were asked about their leisure time and television viewing choices, thus their examples of agency relate to those behaviors.

When discussing if they did watch television, and what they watched, the comments well illustrate properties of forethought and intentionality. For example, several respondents indicated that when they watched television, it was on their terms – they chose when, how, and why. For example, one said, “I can watch all the shows that I like on Netflix without being constrained by schedules,” and another wrote, “I don’t like trying to arrange my schedule around when new episodes will be showing.” Other respondents said they only watched select shows – either on TV or online; “The Internet gives me my Daily Show and the like,” wrote one, and another, “I will watch TV for events, like the Olympics or the World Cup.” Another young woman wrote that she and her ex-boyfriend used to “always use Netflix or Hulu to watch TV shows and movies because we didn’t have the time or patience to watch so many commercials.” Knowing what they want to watch, and creating and following through with a plan to watch those shows demonstrates intentionality and forethought, components of a sense of personal agency.

**Self-Reactiveness and self-reflectiveness.** Self-reactiveness is the ability to regulate or control behavior in order to better achieve goals, while self-reflectiveness is metacognition – or the ability to think about the thinking. Self-reactiveness (or regulation) was evident among the respondents as many wrote about adjusting television viewing habits in order to facilitate goal achievement. Put simply, one person wrote, “TV takes up time and is a distraction from the work I have to get done on a daily basis.” Other respondents were more specific in their reasons for self-regulating television viewing to prevent interference with goal attainment. One person wrote that television viewing was a “distraction between God and other close relationships that I hold.” In this ability to control behavior, the young adults demonstrated an additional property of agency. Finally, self-reflectiveness is a metacognitive skill – or thinking about one’s thinking process – and was not specifically asked of participants in this study.
Creation

In this study, a subtheme of agency emerged - that of creation. When the young adults were asked about their leisure-time activities, the hobbies they listed and described included unique and diverse activities, and most involved creation or design. For example, specific hobbies listed included; “the French language,” “I make my own props,” “making weapons out of Legos,” “raising chickens,” “extra (advanced) math program as hobbies... (this list) grows as I learn about and try new things,” “jewelry making,” “self-propelled band,” “sewing clothes, stuffed animals, and costumes,” and finally, a few people wrote “making things” and “being creative.”

The majority hobbies listed were not cognitively simple tasks or sedentary activities, but rather most required the person to create, think, design, or learn something new in order to sustain the hobby. Creation is often listed as an indicator of a cognitive higher order thinking skill under synthesis in the original *Bloom’s Taxonomy of Educational Objectives* (Bloom, 1956). When a person creates, or synthesizes information, they bring together multiple ideas or materials to form something new. In recent years, Bloom’s taxonomy underwent an update to better reflect current ideas and research on educational objectives. Several changes were made to a 2001 revised version, and most relevant to this study was the change of synthesis to *create*, and its relocation to the very top of the pyramid. In this revised taxonomy, creation is defined as when a person puts “elements together to form a novel, coherent whole or make an original product,” and can be described with verbs such as plan, generate, or produce (Krathwohl, 2002, p. 215). Its placement at the top indicates the importance of creation as the most desirable outcome of an education. Creation also appears in the psychomotor and affective domains of Bloom’s taxonomy, examples of which might include operating a self-propelled band (as one respondent does), or an affective creation, such as creating a personal values system. To create is a goal of education and, in general, an important thinking skill.

To sum up a sense of personal agency and creation for her family, one mother offered this statement; “I’d rather my kids, my spouse and I to be doing things than sitting around watching all the time. I want our family to be active and engaged with each other.” What is notable is that, presumably, while the young adults are not watching television they have had more time to pursue a variety of creative activities. Depending on how they use their ability to synthesize and create, or depending on their own metacognitive abilities, the ability to create may or may not have impact in other areas of their lives, such as school, work, or solving other real-world problems.

Discussion

The purpose of this ten-year follow-up study was to find out about the lives, habits, and choices of young adults who had grown up without television. Questions for the young adults included if they still limited their television viewing, why, and what other leisure time activities they engaged in. Overall, study results paint a picture of people who watch less television than their peers, have better health habits, and who expressed a sense of personal agency to plan, direct, and take action to achieve their life goals, often by self-limiting television viewing.

These results are interesting for a number of reasons and provide avenues of exploration for future research into the impact of media on youth development. The discussion section is divided into two parts; a consideration of health outcomes and a discussion of personal agency and what these may mean for youth development.
Television Viewing and Health Indicators
The young adults in this study indicated healthier lifestyles and habits than their average American counterparts. There could be several reasons that may relate to not watching television as youth, or could relate to their general household environment, parenting style, or influence of peers. This discussion will focus on the potential link between television viewing and health outcomes.

In looking at the quantitative data, some general comparisons can be made between this responding group and national averages. Comparisons can be made between hours of television viewing, body weight, and data provide indicators of time spent outside, and physical activity. Comparisons made are between data from this study and that reported by the Centers for Disease Control (CDC, 2010) National Center for Health Statistics, with data reported for several two and three year time frames. Because the age groupings used in this study are not the same as the CDC, direct comparisons cannot be made for the descriptive statistics reported here, however, enough similarities exist to be of interest for future research.

**Health indicators.** These are several health-related statistics reported in the results section, and this section will look at comparisons and correlations among between television viewing and physical activity, obesity, and smoking.

First, young adults in this study reported much less television viewing than the average American in their age range. According to Nielsen (2009), young adults age 18-24 spend 21 hours and 59 minutes each week watching television – or an average of 3.08 hours per day. In contrast, 44% of respondents in this study reported watching no television, or less than one hour per day (42%). As noted in the literature review, increased television viewing is often correlated with a decline in health and academic outcomes. By not watching much television, this study’s respondents may be on a path to improved health outcomes.

Second, respondents indicated lower weight and more physically active time, and time outside than the average American in a similar age range. In the study of TV-free young adults, the only question related to weight asked if respondents were more than ten pounds overweight. Only 13% reported they were, indicating that this group likely has a lower BMI or risk for overweight or obesity than the general population. In comparison, the CDC reported that during 2007-2010, 18% of youth ages 12-19 had a BMI in the 95th percentile, qualifying them as obese. While this is not a direct comparison, the percent of overweight or obese youth is higher in the national sample. In another health indicator, 40% of youth in the current study reported spending 30-60 minutes engaged in physical activity each day, or anywhere from 210-240 minutes per week. Again, direct comparison cannot be drawn, but to glimpse the national average, the CDC reports that about 55% of 18-24 year olds participate in at least 150 minutes of moderate to vigorous activity each week. Finally, 21% of the non-television viewing respondents spend 2 or more hours outside each day, and 21% spend 1-2 hours. Comparable national data is not available, but overall these data paint a picture of youth with physically active lifestyles and may be in better health than their average American counterpart.

Future research on television-free youth could collect data to compare to national averages, as well as ask why TV-free youth may have healthier lifestyles, if that is indeed the case. Here, we suggest a few reasons why television-free youth may have healthier lifestyles, and provide avenues for future research. One obvious connection is that youth who do not watch television are less likely to be sedentary. Young adults in this study expressed participation in hobbies that were physically active or at least required more movement than the act of sitting to watch
television. Youth who grew up not watching television may have developed from an early age a lifestyle of leisure time physical activity. This could perhaps be a reason for their lower reported body weight and increased time spent outside or in physical activity.

Another reason respondents in this study might report healthier weight could be because they were not influenced by food and drink advertisements. Commercials for fast food and sugary snacks or drinks are prevalent on television, especially during shows targeted at children. A report on children’s television viewing stated that children ages 8-12 years old view 21 food advertisements each day, and one-third of those are for candy and snacks, a quarter for cereal, and one-tenth for fast food (Gantz, Schwartz, Angelini, & Rideout, 2007). Further, researchers have noted positive correlations between fast food consumption and television/video viewing time among preschool children (Taveras, Sandora, Shih, Rosss-Degnan, Goldmann, & Gillman, 2006), and among older children and adolescents (Boynton-Jarrett, Thomas, Peterson, Wiecha, Sobol, & Gortmaker, 2003). Other researchers have suggested that “reducing television viewing could affect energy (calorie) intake by minimizing cues to eat and by decreasing exposure to television advertising.” (Epstein, Roemmich, Robinson, Paluch, Winiewicz, Fuerch, & Robinson, 2008). Future research could further investigate the health attitudes and habits of children who grew up without the influence of television advertisements.

What the health-related responses from this study suggest is that, perhaps in the absence of television, youth or young adults develop physically active hobbies, and are not influenced by marketing and media images, which could lead to healthier lifestyle choices. Coupled with the sense of personal agency also suggested among this group, we see a group of people who have grown up and developed a healthy, active, self-directed lifestyle. Rather than passively view television or accept what it presents as an activity or hobby, young adults may have taken other avenues to develop and form lifelong creative and healthier habits. This is not to say that those who watch television are not capable of doing this, they may be, but among youth without television, the idea of personal agency and creation were certainly dominant in their narratives.

The idea that perhaps television viewing leads to a more passive lifestyle, and the consideration that without television one might have a more engaged or active lifestyle, is also suggested in the literature by Kubey and Csikszentmihalyi (1990), and is discussed in the next section.

Television Viewing, Order, and Pleasure
The idea that individuals who do not watch television may live a more active or engaged lifestyle is also suggested by research on people who do watch television. In a book about daily life experience and television viewing, researchers Kubey and Csikszentmihalyi (1990) gathered hundreds of reports via the experience sampling method from American television viewers. In short, they found that television viewers had often felt unsatisfied by their viewing, and reported low affect and cognitive activation. The researchers offer an explanation as to why television viewing is less satisfying, and then suggest activities that are more satisfying. Interestingly, the hobbies engaged in by television-free young adults have the same properties as activities Kubey and Csikszentmihalyi report as satisfying. Those properties include a human need to have order in, or make sense of experiences, and a human urge to seek pleasure in everyday life.

In the case of television viewers, structured, organized television programs give order to the information without much effort on the part of the viewer, meeting the first need. Then, the visual medium provides a low-challenge environment in which to relax physically and cognitively, thus meeting the human need for pleasure. As these needs are met with relative
ease, the viewer may be drawn to watch more television in a habitual or almost addictive manner to continue to find relaxation or pleasure, and satisfy human needs.

In contrast, when we look at hobbies engaged in by non-television viewers, the same human needs for order and pleasure are met, but in very different ways. When engaged in creative hobbies or challenging tasks, humans in general often report being in a state of flow, characterized by a balance of challenge and skill in an activity, and often described as a sense of heightened awareness, deep involvement, increased mental effort and focus (Kubey & Csikszentmihalyi, 1990, p. 141). Because challenge and skill are balanced, the hobby or activity requires mental ordering or organization, thus meeting this human need. Then, when the task is completed or the person feels success, they experience pleasure in their accomplishment, meeting another human need. These feelings, organization and pleasure, are continuous human needs, but in order to be met via hobby or activity, challenge and skill must increase in order for flow to occur. In this way, those constantly seeking flow are also working toward a life of “personal growth and learning because to keep experiencing it, one needs to continue to challenge oneself and to do this, one must keep developing greater skills.” (Kubey, & Csikszentmihalyi, 1990, p. 142).

Overall, then, the question to consider is of what importance is agency and creativity in youth development in the modern society, and to what extent does television viewing impact agency, creativity, or the desire to seek flow by increasing challenge and skills? While there are certainly other social and environmental influences on youth agency, from the experiences shared in this study, one plausible connection may be that the absence of television in a child’s life can impact health habits, pursuit of creative hobbies, and development of personal agency.

**Future Research and Limitations**

This purpose of this study was to gain insight into the lives, habits, and choices of young adults who grew up without television, to then generate questions for future research. Overall, results suggest that youth who grew up without television may have improved health outcomes, engage in creative hobbies, and have a strong sense of agency. From this information, there are myriad questions to investigate regarding the influence of television or lack of television on youth development. Several questions were noted throughout this paper, including more detailed research comparing health and perhaps academic outcomes of television and non-television viewing youth. Similar comparisons could be made regarding academic achievements and job status.

A limitation of the current study can also provide questions for future research. The current study does not address the influence of external factors on tv-free youths’ lives, such as parenting style, peers, school and community climate, religious views, or other factors that may have impacted childhood development, and later lifestyle choices. Knowing more about who and what influenced youth, specifically sense of agency, creation, and perhaps sense of self, social comparison, or personal dreams, could help researchers better understand the role of television and other influences in youth development.

Specifically, additional questions should be asked about parenting style. It could be that parents who chose not to have a television in their home also made other intentional child-rearing choices. Perhaps these parents were very supportive or even directive of the child’s free time activities, or perhaps they left the child alone to develop or create on his or her own. Parenting style is certainly indicated in the literature as having an impact on child personality and
behaviors, and this needs to be further investigated, and in relation with the choice to remove television from the home.

Another interesting question is around social comparison or development of social norms. Much research indicates that media has a strong influence on youth standards of beauty, body image, and social status. Further, the media is frequently criticized for promoting or glamorizing risk-taking behaviors, or engaging in sex, smoking, alcohol consumption, and violence, and influencing youth attitudes to potentially engage in these behaviors (Fischer, Greitemeyer, Gastenmuller, Vogrincic, & Sauer, 2011; Grube & Wallack, 1994; Sargent, Dalton, & Beach, 2000). As the youth in this group did not watch television, might their image of self, social comparisons, or ideas about social norms be different? Certain behaviors or lack thereof, could be explained by social learning or cultivation theories, among others, and could be avenues for further investigation.

**Conclusion**

In sum, this study has provided a glimpse into the lives of youth who grew up without television, and shared a picture of their habits and hobbies as young adults. Additional research is needed to investigate further the source or other major influence on behavior, and to compare their outcomes to those of youth who watch television. With television viewing blamed for so many negative outcomes, this is important research that could help parents, teachers, and leisure providers consider they role television does or should play in youths lives.

**References**


Adolescent Perceptions of Animation Violence as an Indication of Aggressive Attitudes and Behaviors

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Adolescent Perceptions of Animation Violence as an Indication of Aggressive Attitudes and Behaviors

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Abstract: This reported study was designed to examine the beliefs and perceptions of adolescents on whether or not viewing violence on television contributes to an increase in adolescents’ abilities to learn aggressive attitudes and behaviors. It also explored the effects humor and satire used in the animated television series *The Simpsons* has on adolescents’ abilities to learn aggressive attitudes and behaviors. Finally, it examined to what extent the violence portrayed in *The Simpsons* was believed to be realistic and justified by adolescents viewing the show. Results indicate that adolescents were not affected by the violence they observed in *The Simpsons* animation: Further, they did not feel that it was acceptable for their favorite characters to use violence to solve problems. Youth did not have reactions to viewing the series that were violent, nor did they report becoming aggressive in response to viewing the violence on the *The Simpsons*. While the majority of the youth also reported that they did not use violence to solve a problem, 3.3% reported that they did. Overall, the study concluded that adolescents’ exposure to violent content by viewing it in animation in *The Simpsons* did not affect adolescents’ perceptions of their abilities to learn aggressive attitudes and behaviors. Youth did not perceive that the violence portrayed was realistic.
Introduction

Adolescence is often characterized as a time of challenge and turbulence (Roth & Brooks-Gunn, 2000). This is a time in which adolescents experience many changes in their life. They undergo many physical, as well as psychological, changes with the onset of puberty and throughout this stage. Exposure to media has an impact on development that is not fully understood, yet is part of these changes that take place. On average, youth report watching TV for an average of 2 to 3 hours a day (Kaiser Family Foundation, 2010).

In 1950, however, only 10% of American homes had a television while today, a television can be found in 99% of homes (Nielsen Media Research, 1995). Television interferes with the development of intelligence, thinking skills and imagination (Kinderstart, 2000). A crucial element of thinking is being able to extrapolate from what you know and determine how it applies in a new situation. School requires this method of thinking, while television does not. Habitual television viewing denies opportunities for adolescents’ imagination to develop (Kinderstart, 2000).

Television violence is “Any overt depiction of the use of physical force or credible threat of physical force intended to physically harm an animate being or group of beings. Violence also includes certain depictions of physically harmful consequences against an animate being or group that occur as a result of unseen violent means” (National Television Violence Study, Executive Summary, 1996). Possibly one of the most influential factors on adolescent violence is violent content in the media (Mental Health, 2004), yet research is still being conducted to investigate its real effect. Aggression is defined as behavior designed to harm or injure another person. Violence is the exertion of physical force so as to injure or abuse (Dictionary.com, 2005). Violence is a more serious form of aggression that causes serious harm.

Children and adolescents are influenced and affected by media that they observe and interests them. As they develop, they learn by observing, imitating, and making these observed behaviors their own. Adolescents learn aggressive attitudes and behaviors by imitating observed models of violence and aggression (DuRant, Treiber, Goodman, & Woods, 1996). Repeated exposure to violent content in the media can, therefore, lead to increased feelings of hostility, expectations that others will behave aggressively, desensitization to the pain of others, and increased likelihood of interacting and responding to others with violence (Rich, 2000).

When children and adolescents are exposed to violent content in the media, they have a greater chance of exhibiting violent and aggressive behavior later in life, than children who have not been exposed to violent content in the media (Congressional Public Health Summit, 2000). Despite the substantial body of knowledge on the general link between television and violence, there is a lack of research on the effects of violence in humorous situations on television programming. In order to better understand the effects of cartoon violence on youth, there is a need for more studies (Hapkiewicz, 1979; Wilson, Smith, Potter, Kunkel, Linz, Colvin, & Donnerstein, 2002). The highest proportion of violence in television has been found in children’s shows (Wilson, et al., 2002). Roughly seven out of ten children’s shows contained some violence, as opposed to non-children’s shows containing six out of ten incidents (Wilson, et al., 2002).

Seven contextual features of violence were identified that affect the likelihood that a viewer will learn aggressive attitudes and behaviors from a portrayal (Wilson, Kunkel, Linz, Potter, Donnerstein, Smith, Blumenthal, & Gray, 1997). The first contextual feature of violence is that
an attractive perpetrator, or good-looking character, increases the risk of learning aggression. According to Bandura's (1994) social learning theory, children as well as adults are more likely to attend to, identify with, and learn from attractive role models than unattractive ones.

Motive or reason for violence is the second contextual feature. Violent actions that seem justified or morally defensible can facilitate viewer aggression, whereas unjustified violence can actually diminish the risk of learning aggression (Geen, 1981). When a character has a good reason to justify the use of violence, it can lead to the learning of aggressive behaviors. The third feature of violence is the presence of weapons in a portrayal and conventional weapons such as guns and knives can enhance aggressive responding among viewers. Weapons are assumed to function as a violent cue that can prime aggressive thoughts in a viewer (Berkowitz, 1990).

Violence that seems realistic can promote the learning of aggressive attitudes and behaviors among viewers (Atkin, 1983). An example of this fourth feature of violence would be a brother trying to defend his sister from bullies by using karate moves to beat them up. An adolescent can associate the use of violence as an appropriate means to solve a problem and justify their behavior accordingly. The fifth feature refers to Bandura's (1965) social learning theory and how violence that is explicitly rewarded or that simply goes unpunished increases the risk of imitative aggression, whereas violence that is condemned decreases the risk. The viewing by an adolescent of a perpetrator on television committing a violent act and not getting caught and/or punished can lead to the justification by the adolescent of committing violent acts themselves, since the perpetrator was not punished.

Consequences of violence for the victim are an important contextual cue; the sixth feature of violence displays explicit portrayals of a victim’s physical injury and pain and can actually decrease or inhibit the learning of aggression among viewers (Wotring, & Greenberg, 1973). For example, the cartoon Itchy & Scratchy seen on The Simpsons is a horrific cartoon depicting a cat (Scratchy) and mouse (Itchy) continually attacking and mutilating each other with a variety of deadly weapons. Both Itchy and Scratchy are fine by the next episode, no matter how mutilated they were in the previous episode. Since the actual consequences of the injuries sustained by both Itchy and Scratchy are not portrayed, this can lead to the learning of aggressive behaviors.

Violence that is portrayed as humorous can increase aggression in viewers (Baron, 1978). This is the final feature of violence. Humor has the ability to trivialize the seriousness of violence (Gunter, & Furnham, 1984) and that humor also may serve as a positive reinforcement or reward for violence (Berkowitz, 1970). The study of humor’s association with violence has continued over the years. When violent scenes involve humor either directed at the violence or used by characters involved with the violence, positive values can be assigned to viewing acts of violence and lead to acceptance of these (U.S. Department of Health and Human Services, 2001).

Through prolonged use of the media, adolescents can become desensitized to the point where they lose their ability to empathize with both the victim and the aggressor. One study found that both children and adults were less physiologically aroused by a scene of real-life aggression if they had previously watched a violent drama on television than if they had watched a nonviolent program (Thomas, Horton, Lippincott, & Drabman, 1977). Thomas and Drabman (1975) exposed first and third graders to either a violent or a nonviolent television program. After viewing the programs, they were placed in charge of monitoring the behavior of two
preschoolers at play. Older children who had seen the violent television program were significantly slower in seeking help when the preschoolers broke into a fight than were those who had seen the nonviolent show (Thomas, & Drabman, 1975).

This study explored the effects that violent television content has on adolescents’ beliefs and perceptions. It also examines the effects humor and satire used on the animated television series *The Simpsons* has on adolescent abilities to learn aggressive attitudes and behaviors. The first objective was to determine whether viewing violence on television contributes to an increase in adolescents’ abilities to learn aggressive attitudes and behaviors. The second objective explored the effects that humor and satire used on the animated television series *The Simpsons* have on adolescents’ abilities to learn aggressive attitudes and behaviors. The final objective explored to what extent the violence portrayed in the show is believed to be realistic and justified by adolescents viewing the show. Several key factors contribute to, or predict, desensitization to violence and the learning of aggressive behavior.

**Methods**

**Sample and Procedures**
The population was adolescents who were in Florida in 4-H, ages 13-17, attending the State 4-H Congress at the University of Florida. 4-H is the youth education branch of the Cooperative Extension Service, a program of the United States Department of Agriculture (National 4-H Web, 2005). The sample group of 245 individuals were those youth who elected to participate after the purpose of the study was introduced and explained. The study was conducted in the dormitories at a large southeastern university where participants were housed for 4-H Congress. The participants were briefed on the topic, benefits/risks, expected length of completion, and who to contact with questions or concerns. Prior to attending, blanket consent forms were sent to participants’ homes in informational packets. Confidentiality was ensured through the anonymous format of the survey, which was handed in face down when completed. Identification numbers were later assigned for data analysis after the surveys had been randomly mixed.

**Research Design and Instrumentation**
This cross-sectional study observed a defined population at a single point in time. The unit of analysis, or the major entity was the individual (Social Research Methods, 2002). Recruitment of subjects was on a voluntary basis. Potential participants were given the option of whether they would like to be informed of the results of the study. The survey instrument measured exposure and outcome simultaneously (Bandolier, 2005).

This study included an examination of the perceived effects of one television show containing animated violence. The show selected for this study was *The Simpsons* because it frames violence with humor and satire and contains imbedded violence. The animated violence in *The Simpsons* is often portrayed in a humorous manner. Satire is defined as trenchant wit, irony, or sarcasm used to expose and discredit vice or folly (Dictionary.com, 2005). *The Simpsons* uses satire, in relation to violence, as a means to both convey a message and evoke thought.

*The Simpsons* are your typical nuclear family living in Springfield, USA. Homer is a father who gives bad advice and works as the safety inspector at the Springfield Nuclear Power Plant; Marge is a loving, nurturing mother and wife who tries to keep peace in the family; Bart is a rambunctious 10-year-old; Lisa is a smart, philosophical 8-year-old, who loves to play the saxophone; and Maggie is the baby, who communicates by sucking her pacifier (Simpson Crazy,
The cartoon is filled with political satire and topical commentary, written by Harvard and Yale graduates, marketed towards youth, and enjoyed by adults. Over the 16 seasons in the town of Springfield, USA, *The Simpsons* have not aged a day. It is this agelessness that allows for *The Simpsons* to be enjoyed by fans of any age (Simpson Crazy, 2001).

The survey instrument consisted of eighty-four items and was comprised of a general information section and four content sections using the Likert scalar response style and fill-in questions. The four content sections were: Television Viewing, Beliefs and Perceptions, Cartoon Viewing, and *The Simpsons*. The instrument was pilot-tested by a group of four local high school students. A second revision of the instrument was pilot tested by four local high school students and a team of adolescent experts. A scale considered to have good internal consistency has a Cronbach alpha coefficient reported of 0.85. In the current study the Cronbach alpha coefficient was 0.825. This scale can be considered to have good internal consistency for use in future studies. The instrument focused on the seven contextual features of violence and adolescents’ beliefs and perceptions. Analyses of the results of these items were useful in determining adolescents’ beliefs and perceptions and their relationship to aggressive attitudes and behaviors. Items were scored on a one, Strongly Disagree, to five, Strongly Agree, Likert scale. In those instances where reverse coding was needed, it was done prior to data analysis.

In order to investigate the primary research questions about adolescents’ beliefs and perceptions and aggressive behavior and attitudes through exposure to violence by viewing it on television/cartoons/*The Simpsons*, chi-square analysis, along with Kendall’s Tau-b, was conducted. All of these statistical analyses were completed utilizing SPSS. In order to examine adolescents’ perceptions of violence portrayed on television and in *The Simpsons* and what effects it had on their unrealistic views of violence in the real world chi-square analysis was conducted. Chi-square analysis, along with Kendall’s Tau-b, was conducted to examine the next secondary research question, which addressed adolescents’ perceptions of the justification of violence portrayed in *The Simpsons*. All of these statistical analyses were completed utilizing SPSS.

**Results**

**The Sample**

Girls made up more than three-fourths of the sample (82.2%), or 199 of the 245 participants, and boys composed less than a fourth of the sample (17.8%), or 43 of the 245 participants. Due to data collection occurring at the State 4-H Congress, a majority-female gender breakdown was expected, however, the higher than expected female response rate is also accounted for by an overall higher willingness by females to participate in the study, as an approximately equal opportunity for all youth participants was made available. The ages of participants in the study ranged from thirteen years old to nineteen years old, with the bulk of participants between the ages of fifteen and sixteen years old. All of the study participants were members of 4-H and attended either public school (55.9%), private school (8.2%) or were home schooled (33.1%).

**Television Viewing**

The first content section examined television-viewing habits of the participants and the relative importance placed upon television in the home. The first question, used as a screening question, asked participants whether or not they watch television of the participants, 218 of the 239 (91.2%) reported that they watch television while 21 (8.8%) answered that they do not
When asked for their approximate amount of television viewing each day, the highest frequency hours of television watched in an average day was two, reported by 49 out of the 206 (23.8%) participants. The second highest frequency of television watched, reported by 41 out of the 206 (19.9%) participants was one hour, followed by three hours a day, reported by 29 out of the 245 (14.1%) participants. Twenty out of the 206 (9.7%) participants answered they watched four hours of television on an average day and 18 out of the 206 (8.7%) participants answered they watched five hours of television on an average day. When participants were asked if they have a television in their bedroom, 50% reported that they did and 50% reported that they did not have a television in their bedroom.

When the 217 participants were asked whether their favorite type of television program is funny, a little more than one-third of participants, 81 (37.3%) strongly agreed, more than one-fourth of participants, 60 (27.6%) were neutral, 57 (26.3%) participants agreed, 11 (5.1%) participants disagreed, and eight out of 217 (3.7%) strongly disagreed. Participants were also asked if they believed their favorite type of television program is violent. The majority of participants either strongly disagreed or disagreed, 66 out of 214 (30.8%) and 61 out of 214 (28.5%) respectively, while 44 out of 214 (20.6%) participants were neutral, 32 out of 214 (15%) participants agreed, and 11 out of 214 (5.1%) participants strongly agreed. Analyses of the results helped in determining participants’ beliefs and perceptions on the consequences of television violence.

**Cartoon Viewing**

As a screening question, participants were asked whether or not they watch cartoons. If they answered "No" to this question, they were instructed to go to a general group of questions and were not asked the questions about cartoon violence in *The Simpsons*. Of the 214-person sample, 108 (50.5%) participants watched cartoons and 106 (49.5%) participants did not watch cartoons.

**The Simpsons**

Participants who watched cartoons were next examined for their viewing habits and perceptions of *The Simpsons*. It also asked participants about their beliefs and perceptions about *Itchy and Scratchy*, a cartoon show the Simpsons family watches often on television. As in the Television and Cartoon Viewing sections, the first question was used for screening. Of this sample, 73 out of 116 (62.9%) participants reported that they watched *The Simpsons* and 43 out of 116 (37.1%) participants did not watch *The Simpsons*. Another item in this section asked participants about their approximate amount of hours of *The Simpsons* they view in an average week. The highest frequency hours of *The Simpsons* watched in an average week was one, with 19 out of 68 (27.9%) participants. The second highest frequency hours of *The Simpsons* watched in an average week was one-half, with 11 out of the 68 (16.2%) participants, followed by three hours a week, with nine out of the 68 (13.2%) participants. Six out of the 68 (8.8%) participants answered they watched two hours of *The Simpsons* in an average week and two out of 68 (2.9%) participants answered they watched five hours of *The Simpsons* in an average week.

**Statistical Analysis of Research Questions**

**Relationship Between Beliefs & Perceptions and Exposure to Television Violence**

To what extent are adolescents’ beliefs and perceptions affected regarding the learning of aggressive attitudes and behaviors through exposure to violence by viewing it on television? The purpose of this question was to determine if there is a relationship between participants’ beliefs and perceptions and exposure to television violence.
Conducting chi-square analysis on the dependent variable *The older one gets, the more used to they are seeing violence on television* and two independent variables indicated the presence of some significant relationships. A significant relationship was found between the independent variable, which states *After watching violence on television, it bothers me*, and the dependent variable \( n=214 \). About one-third of the participants, \( 70 \), Strongly Agreed/Agreed with the item *After watching violence on television, it bothers me* (32.71%); close to one-third of participants, \( 71 \), were Neutral about this item (33.18%); and 73 participants Strongly Disagreed/Disagreed (34.11%). Kendall’s tau-b was determined to have a value of -0.207 with a \( p \geq 0.000 \). This indicates there was a statistical correlation with the dependent variable *The older one gets, the more used to they are seeing violence on television*. Participants who Strongly Disagree/Disagree with this item will have linear concordance in their answers in relation to the dependent variable. Since the value for Kendall’s tau-b was relatively low, -0.207, the relationship between the dependent variable and this item was weak.

The chi-square value for this item was 34.087 with a \( p \geq 0.005 \) and 16 DF. The chi-square value at the 95th percentile with 16 DF was 26.30. Since the computed chi-square value was greater than the chi-square value in the table of distribution, the research hypothesis, adolescents’ exposure to violent content by viewing it on television has effects on the beliefs and perceptions of adolescents’ abilities to learn aggressive attitudes and behaviors, was rejected.

The final independent variable determined to be of significance by conducting chi-square analysis was *After watching violence on television, it makes me angry* \( n=209 \). (See Table 1) Close to half of the participants \( 100 \) Strongly Disagreed/Disagreed with the item *After watching violence on television, it makes me angry* (47.85%); 80 participants were Neutral about this item (38.28%); and 29 participants Strongly Agreed/Agreed (13.88%). Kendall’s tau-b was determined to have a value of -0.188 with a \( p \geq 0.001 \). This indicates there was a statistical correlation with the dependent variable *The older one gets, the more used to they are seeing violence on television*. Participants who Strongly Disagree/Disagree with this item will have linear concordance in their answers in relation to the dependent variable. Since the value for Kendall’s tau-b was relatively low, -0.188, the relationship between the dependent variable and this item was weak.

**Table 1**
Comparison of the older I get, the more I get used to seeing violence on television and after watching violence on television, it makes me angry Cross tabulation.

<table>
<thead>
<tr>
<th>Older TV</th>
<th>TV Angry</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Strongly Disagree</td>
</tr>
<tr>
<td>Strongly Disagree</td>
<td>.48%</td>
</tr>
<tr>
<td>Disagree</td>
<td>.97%</td>
</tr>
<tr>
<td>Neutral</td>
<td>3.83%</td>
</tr>
<tr>
<td>Agree</td>
<td>8.1%</td>
</tr>
<tr>
<td>Strongly Agree</td>
<td>10.05%</td>
</tr>
</tbody>
</table>

*Note: \( \chi^2=31.445 \) DF=16 \( p>.012 \) Kendall’s tau-b=.188 \( p>.001 \)*
The chi-square value for this item was 31.445 with a $p \geq 0.012$ and 16 DF. The chi-square value at the 95th percentile with 16 DF was 26.30. Since the computed chi-square value was greater than the chi-square value in the table of distribution, the research hypothesis, adolescents’ exposure to violent content by viewing it on television has effects on the beliefs and perceptions of adolescents’ abilities to learn aggressive attitudes and behaviors, was rejected.

**Relationship Between Beliefs & Perceptions and Exposure to Animated Violence**

To what extent are adolescents’ beliefs and perceptions affected regarding the learning of aggressive attitudes and behaviors through exposure to violence in animation on television? The purpose of this question was to determine if there is a relationship between participants’ beliefs and perceptions and exposure to animated violence. Conducting chi-square analysis on the dependent variable *The older one gets, the more used to they are seeing violence in cartoons* and two independent variables indicated the presence of some significant relationships.

The first independent variable indicating a significant relationship with the dependent variable was *My favorite type of television program is funny* (n=212) About two-thirds of the participants (135) Strongly Agreed/Agreed with the item *My favorite type of television program is funny* (63.68%); more than one-fourth of the participants, 59, were Neutral about this item (27.83%); and 18 participants Strongly Disagreed/Disagreed (8.49%). Kendall’s tau-b was determined to have a value of 0.180 with a $p \geq 0.002$. This indicates there was a statistical correlation with the dependent variable *The older one gets, the more used to they are seeing violence in cartoons*. Participants who Strongly Agree/Agree with this item have linear concordance in their answers with relation to the dependent variable. Since the value for Kendall’s tau-b was relatively low, 0.180, the relationship between the dependent variable and this item was weak.

The chi-square value for this item was 45.383 with a $p \geq 0.000$ and 16 DF. The chi-square value at the 95th percentile with 16 DF was 26.30. Since the computed chi-square value was greater than the chi-square value in the table of distribution, the research hypothesis, adolescents’ exposure to violent content by viewing it in animation had effects on the beliefs and perceptions of adolescents’ abilities to learn aggressive attitudes and behaviors, was rejected.

The final independent variable indicating a significant relationship with the dependent variable was *Violence goes unpunished in my favorite cartoon show* (n=106). Only 11 participants Strongly Agreed/Agreed with the item *Violence goes unpunished in my favorite cartoon show* (10.38%); about one-third of participants (32) were Neutral about this item (30.19%); and more than half of the participants (63) Strongly Disagreed/Disagreed (59.43%). Kendall’s tau-b was determined to have a value of 0.290 with a $p \geq 0.000$. This indicates there was a statistical correlation with the dependent variable *The older one gets, the more used to they are seeing violence in cartoons*. Participants who Strongly Disagree/Disagree with this item will have linear concordance in their answers with relation to the dependent variable. Since the value for Kendall’s tau-b was relatively low, 0.290, the relationship between the dependent variable and this item was weak.

The chi-square value for this item was 30.696 with a $p \geq 0.015$ and 16 DF. The chi-square value at the 95th percentile with 16 DF was 26.30. Since the computed chi-square value was
greater than the chi-square value in the table of distribution, the research hypothesis, adolescents' exposure to violent content by viewing it in animation had effects on the beliefs and perceptions of adolescents' abilities to learn aggressive attitudes and behaviors, was rejected.

**Relationship Between Beliefs & Perceptions and Exposure to Violence on *The Simpsons***

To what extent are adolescents’ beliefs and perceptions affected regarding the learning of aggressive attitudes and behaviors through exposure to violence by viewing it in animation in *The Simpsons*? The purpose of this question was to determine if there is a relationship between participants’ beliefs and perceptions and exposure to animated violence in *The Simpsons*.

By conducting chi-square analysis on the dependent variable *After I watch violence on The Simpsons, I become aggressive* and two independent variables indicated the presence of some significant relationships. The first independent variable indicating a very significant relationship with the dependent variable was *Shortly after I see violence on The Simpsons, I become violent* (n=70). More than three-fourths of participants (60) Strongly Disagreed/Disagreed with the item *Shortly after I see violence on The Simpsons I become violent* (85.71%); nine participants were Neutral on this item (12.86%); and one respondent Strongly Agreed/Agreed (1.43%). Kendall’s tau-b was determined to have a value of 0.846 with a p ≥ 0.000. This indicates there was a statistical correlation with the dependent variable *After I watch violence on The Simpsons, I become aggressive*. Participants who Strongly Disagree/Disagree with this item will have linear concordance in their answers with relation to the dependent variable. Since the value for Kendall’s tau-b was extremely high, 0.846, the relationship between the dependent variable and this item was very strong.

The chi-square value for this item was 161.034 with a p ≥ 0.000 and 9 DF. The chi-square value at the 95th percentile with 9 DF was 16.92. Since the computed chi-square value was greater than the chi-square value in the table of distribution, the research hypothesis, adolescents’ exposure to violent content by viewing it in animation in *The Simpsons* had effects on the beliefs and perceptions of adolescents’ abilities to learn aggressive attitudes and behaviors, was rejected.

The final independent variable with significant relationship with the dependent variable was *Violence on The Simpsons is realistic* (n=70). (See Table 2) More than three-fourths of participants (54) Strongly Disagreed/Disagreed with the item *Violence on The Simpsons is realistic* (77.14%); 12 participants were Neutral on this item (17.14%); and four participants Strongly Agreed/Agreed (5.41%). Kendall’s tau-b was determined to have a value of 0.387 with a p ≥ 0.000. This indicates there was a statistical correlation with the dependent variable *After I watch violence on The Simpsons, I become aggressive*. Participants who Strongly Disagree/Disagree with this item will have linear concordance in their answers with relation to the dependent variable. Since the value for Kendall’s tau-b was moderate, 0.387, the relationship between the dependent variable and this item was slightly strong.
Table 2
Comparison of after I watch violence on *The Simpsons* I become aggressive and violence on The Simpsons is realistic Cross Tabulation.

<table>
<thead>
<tr>
<th>Simpson Aggressive</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Disagree</td>
<td>41.43%</td>
<td>17.14%</td>
<td>7.14%</td>
<td>1.43%</td>
<td>0%</td>
</tr>
<tr>
<td>Disagree</td>
<td>2.86%</td>
<td>7.14%</td>
<td>2.86%</td>
<td>1.43%</td>
<td>0%</td>
</tr>
<tr>
<td>Neutral</td>
<td>4.29%</td>
<td>4.29%</td>
<td>5.71%</td>
<td>0%</td>
<td>2.86%</td>
</tr>
<tr>
<td>Agree</td>
<td>0%</td>
<td>0%</td>
<td>1.43%</td>
<td>0%</td>
<td>0%</td>
</tr>
</tbody>
</table>

Note: \( \chi^2 = 26.264 \)  DF=12  \( p \geq .010 \)  Kendall’s \( \tau_b = .387 \)  \( p \geq .000 \)

The chi-square value for this item was 26.264 with a \( p \geq 0.010 \) and 12 DF. The chi-square value at the 95th percentile with 12 DF was 21.03. Since the computed chi-square value was greater than the chi-square value in the table of distribution, the research hypothesis, adolescents’ exposure to violent content by viewing it in animation in *The Simpsons* had effects on the beliefs and perceptions of adolescents’ abilities to learn aggressive attitudes and behaviors, was rejected.

**Perceptions of Television Violence as an Unrealistic View of the Real World**

Do adolescents perceive that violence portrayed on television produces an unrealistic view of violence in the real world? The purpose of this question is to determine participants’ perceptions of violence in the real world. By conducting chi-square analysis on the dependent variable *The older I get, the more I get used to seeing violence in real-life* and two independent variables indicated the presence of some significant relationships.

The first independent variable indicating a relationship with the dependent variable was *When I get mad at someone, I use violence to solve a problem* (n=213). Only seven participants Strongly Agreed/Agreed with the item *When I get mad at someone, I use violence to solve a problem* (3.29%); 29 participants were Neutral about this item (13.62%); and more than three-fourths of the participants (177) participants Strongly Disagreed/Disagreed (83.09%). Kendall’s \( \tau_b \) was determined to have a value of 0.266 with a \( p \geq 0.000 \). This indicates there was a statistical correlation with the dependent variable *The older I get, the more I get used to seeing violence in real-life*. Participants who Strongly Disagree/Disagree with this item will have linear concordance in their answers with relation to the dependent variable. Since the value for Kendall’s \( \tau_b \) was relatively low, 0.266, the relationship between the dependent variable and this item was weak.

The chi-square value for this item was 51.038 with a \( p \geq 0.000 \) and 16 DF. The chi-square value at the 95th percentile with 16 DF was 26.30. Since the computed chi-square value was greater than the chi-square value in the table of distribution, the research hypothesis, adolescents’ beliefs and perceptions of the violence portrayed on television produces an unrealistic view of violence in the real world, was rejected.

The final independent variable indicating a significant relationship with the dependent variable was *I have used aggressive actions seen on television as a way to deal with some of my problems* (n=216). Only eight participants Strongly Agreed/Agreed with the item *I have used
aggressive actions seen on television as a way to deal with some of my problems (3.7%); 24 participants were Neutral on this item (11.11%); and more than three-fourths of the participants (184) Strongly Disagreed/Disagreed (85.19%). Kendall's tau-b was determined to have a value of 0.217 with a $p \geq 0.000$. This indicates there was a statistical correlation with the dependent variable *The older I get, the more I get used to seeing violence in real-life*. Participants who Strongly Disagree/Disagree with this item will have linear concordance in their answers with relation to the dependent variable. Since the value for Kendall's tau-b was low, 0.217, the relationship between the dependent variable and this item was weak.

The chi-square value for this item was 52.270 with a $p \geq 0.000$ and 16 DF. The chi-square value at the 95th percentile with 16 DF was 26.30. Since the computed chi-square value was greater than the chi-square value in the table of distribution, the research hypothesis, adolescents’ beliefs and perceptions of the violence portrayed on television produces an unrealistic view of violence in the real world, was rejected.

**Perceptions of Animated Television Violence as an Unrealistic View of the Real World**

Do adolescents perceive that the violence portrayed in animation/*The Simpsons* produces an unrealistic view of violence in the real world? The purpose of this question was to determine participants’ beliefs and perceptions on their view of violence in the real world. By conducting chi-square analysis on the dependent variable *Violence on The Simpsons is realistic*, two independent variables indicated the presence of some significant relationships.

By conducting chi-square analysis an independent variable indicating a significant relationship with the dependent variable was *After I watch violence on The Simpsons, I become aggressive* (n=70). More than three-fourths of participants (57) Strongly Disagreed/Disagreed with the item *After I watch violence on The Simpsons, I become aggressive* (81.43%); 12 participants were Neutral about this item (17.14%); and one participant Strongly Agreed/Agreed (1.43%). Kendall’s tau-b was determined to have a value of 0.387 with a $p \geq 0.000$. This indicates there was a statistical correlation with the dependent variable *Violence on The Simpsons is realistic*. Participants who Strongly Disagree/Disagree with this item will have linear concordance in their answers with relation to the dependent variable. Since the value for Kendall’s tau-b was moderate, 0.387, the relationship between the dependent variable and this item was slightly strong.

The chi-square value for this item was 26.264 with a $p \geq 0.010$ and 12 DF. The chi-square value at the 95th percentile with 12 DF was 21.03. Since the computed chi-square value was greater than the chi-square value in the table of distribution, the research hypothesis, adolescents’ beliefs and perceptions of the violence portrayed in animation/*The Simpsons* produces an unrealistic view of violence in the real world, was rejected.

The final independent variable indicating a significant relationship with the dependent variable was *Shortly after I see violence on The Simpsons I become violent* (n=71). (See Table 3) More than three-fourths of participants (61) Strongly Disagreed/Disagreed with the item *Shortly after I see violence on The Simpsons I become violent* (85.92%); nine participants were Neutral on this item (12.68%); and one participant Strongly Agreed/Agreed (1.41%). Kendall’s tau-b was determined to have a value of 0.455 with a $p \geq 0.000$. This indicates there was a statistical correlation with the dependent variable *Violence on The Simpsons is realistic*. Participants who Strongly Disagree/Disagree with this item will have linear concordance in their answers with
relation to the dependent variable. Since the value for Kendall’s tau-b was moderately high, 0.455, the relationship between the dependent variable and this item was strong.

**Table 3**

Comparison of violence on *The Simpsons* is realistic and shortly after I see violence on *The Simpsons* I become violent Cross Tabulation.

<table>
<thead>
<tr>
<th>Simpson Realistic</th>
<th>Simpson Violent</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Strongly Disagree</td>
</tr>
<tr>
<td>Strongly Disagree</td>
<td>46.48%</td>
</tr>
<tr>
<td>Disagree</td>
<td>18.31%</td>
</tr>
<tr>
<td>Neutral</td>
<td>8.45%</td>
</tr>
<tr>
<td>Agree</td>
<td>1.41%</td>
</tr>
<tr>
<td>Strongly Agree</td>
<td>0%</td>
</tr>
</tbody>
</table>

*Note: χ²=41.351  DF=12  p≥ .000  Kendall’s τ-b=.455  p≥ .000*

The chi-square value for this item was 41.351 with a p ≥ 0.000 and 12 DF. The chi-square value at the 95th percentile with 12 DF was 21.03. Since the computed chi-square value was greater than the chi-square value in the table of distribution, the research hypothesis, adolescents’ beliefs and perceptions of the violence portrayed in animation/ *The Simpsons* produces an unrealistic view of violence in the real world, was rejected.

**Perceptions of Violence Justification on *The Simpsons***

Do adolescents perceive that the violence portrayed on *The Simpsons* is justified? The purpose of this question was to determine participants’ beliefs and perceptions on the justification of violence on *The Simpsons*. By conducting chi-square analysis on the dependent variable *I think violence is justified on The Simpsons*, an independent variable indicated the presence of some significant relationships.

The independent variable indicating a significant relationship with the dependent variable was *I think it is acceptable for my favorite character on The Simpsons to use violence to solve his/her problems* (n=69). More than half of the participants (41) Strongly Disagreed/ Disagreed with the item *I think it is acceptable for my favorite character on The Simpsons to use violence to solve his/her problems* (59.42%); about one-third of the participants (22) were Neutral on this item (31.88%); and six participants Strongly Agreed/Agreed (8.69%). Kendall’s tau-b was determined to have a value of 0.594 with a p ≥ 0.000. This indicates there was a statistical correlation with the dependent variable *I think violence is justified on The Simpsons*. Participants who Strongly Disagree/Disagree with this item will have linear concordance in their answers with relation to the dependent variable. Since the value for Kendall’s tau-b was high, 0.594, the relationship between the dependent variable and this item was strong.

The chi-square value for this item was 55.210 with a p ≥ 0.000 and 16 DF. The chi-square value at the 95th percentile with 16 DF was 26.30. Since the computed chi-square value was greater than the chi-square value in the table of distribution, the research hypothesis, adolescents’ perceive the violence portrayed in *The Simpsons* to be justified, was rejected.
Summary and Implications for Practice

The findings from this study provide valuable information regarding adolescents and their perceptions of animation violence as an indication of aggressive attitudes of behaviors. It is important to emphasize the main findings of this study regarding participants’ beliefs and perceptions of adolescents on whether or not viewing violence on television contributes to an increase in adolescents’ abilities to learn aggressive attitudes and behaviors, as well as the effects humor and satire used on the animated television series *The Simpsons*. In addition, this study has provided insight into participants’ beliefs and perceptions about television violence, unrealistic views of violence in the real world, and the justification of violence.

Results found their exposure to violent content by viewing it on television, animation and *The Simpsons* does not have effects on the beliefs and perceptions of adolescents’ abilities to learn aggressive attitudes and behaviors. Results also found that adolescents’ beliefs and perceptions of the violence portrayed on television, animation and *The Simpsons* do not produce an unrealistic view of violence in the real world. The study has implications for understanding adolescents’ beliefs and perceptions of television violence, animation violence and violence on *The Simpsons*. Recommendations for future research include exploring the effects of school environment on adolescents’ beliefs and perceptions of television violence, animation violence and violence on *The Simpsons*.

In order to properly curb adolescent violence, the behaviors associated with violence need to be identified before they can escalate. These warning signs are: intense anger, frequent loss of temper or blow-ups, extreme irritability, extreme impulsiveness, and becoming easily frustrated (American Academy of Child and Adolescent Psychiatry, 2004). Parents and teachers have the ability to identify these behaviors early on. If a parent or other adult becomes concerned about their child’s behaviors, they should arrange for a comprehensive evaluation by a qualified mental health professional.

Physicians should make parents and schools knowledgeable about media. They should understand the risks of exposure to violence and teach adolescents how to interpret what they see on television and in the movies, including the intent and content of commercials. By doing so, adolescents may be increasingly able to discern which media messages are suitable.

References


The Changing Landscape of Peer Aggression: A Literature Review on Cyberbullying and Interventions

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The Changing Landscape of Peer Aggression: A Literature Review on Cyberbullying and Interventions

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Abstract: While traditional forms of bullying have been steadily decreasing over the course of the last two decades, cyberbullying has emerged as a major concern among parents, teachers, and other professionals working with young people. Because cyberbullying is a relatively new phenomenon, its research base is not as well developed as research on traditional bullying. In this literature review, the authors synthesize current knowledge on cyberbullying’s prevalence among youth; its relationship to offline bullying; which youth are most likely to be perpetrators and victims; the negative effects of cyberbullying on victims; and the landscape of intervention efforts currently employed in the United States. In the process, they highlight areas in need of future research.

Introduction

In recent years, a number of high-profile teen suicides have drawn public attention to a new, high-tech form of an age-old problem: bullying. While traditional forms of bullying have been steadily decreasing over the course of the last two decades (Finkelhor, 2013; Molcho, et al., 2009; Rigby, & Smith, 2011), cyberbullying has emerged as a major concern among parents, teachers, and other professionals working with young people (Willard, 2007). Indeed, 16 states have passed cyberbullying laws in recent years, and 47 states have laws that address
“electronic harassment” (Hinduja, & Patchin, 2011). This article reviews existing research and school-based interventions around cyberbullying in an effort to document both the scope of the problem and current efforts to address it. Through this review, we aim to identify areas for future research that will inform the development of successful anti-cyberbullying initiatives.

**Bullying, then and now**
Bullying has been around as long as recess, lunch, and the bus ride to school, and has been the subject of empirical study and active intervention for several decades (Olweus, 1978, 1993, 1994; Smith, Madsen, & Moody, 1999; Smith, Talamelli, Cowie, Naylor, & Chauhan, 2004. In recent years, the landscape of bullying has started to change. With respect to traditional forms of bullying, there is cause for some optimism. One study of international time trends in rates of bullying among 11-, 13-, and 15-year-old school-children found decreases in reported rates of bullying and victimization between 1993/4 and 2005/6 in the majority of the 27 participating countries, including the United States (Molcho, et al., 2009). Here, bullying refers to the perpetration of bullying behaviors, whereas victimization refers to individuals who are on the receiving end of bullying behaviors. Another study found similar downward trends in bullying among adolescents in a variety of countries, including England, Wales, Spain, Australia, and the United States (Rigby, & Smith, 2011).

In the U.S. specifically, the annual National Crime Victimization Survey (NCVS) showed a 74% decline between 1992 and 2010 in school-related violent victimizations among 12-18-year-olds, and an 84% decline in school-related thefts (Finkelhor, 2013). The NCVS also showed a decline of 29% from 2001 to 2009 in the number of youth who reported being the target of hate-related words at school.

It appears that bullying and victimization have dropped more steeply for U.S. boys than U.S. girls. Between 1997/98 and 2005/06, bullying dropped by 15.5% (occasional) and 37.4% (chronic) for boys, and 4.1% (occasional) and 16.7% (chronic) for girls (Molcho, et al., 2009). Similarly, victimization dropped by 24.7% (occasional) and 27.0% (chronic) for boys, but only 0.7% (occasional) and 3.6% (chronic) for girls.

Despite these welcome declines, bullying is still far too prevalent among young people living in the United States. In a nationally representative sample of 11-15 year-olds, nearly three out of every ten youth (29.9% of boys, 29.2% of girls) reported experiencing occasional victimization in 2005/6, and approximately one out of ten youth (11.9% of boys, 10.9% of girls) reported experiencing chronic victimization (Molcho, et al., 2009). In another national study of 6-17 year-olds, an average of 25% of youth respondents said they were bullied at least monthly (Ybarra, boyd, Korchmaros, & Oppenheim, 2012a).

**The emergence of cyberbullying**
While traditional bullying has been declining, a new form of bullying has emerged as broadband internet access, mobile devices, and social media platforms have swept across the developed world. Though rates of cyberbullying are still generally lower than traditional forms of bullying (Wang, Iannotti, & Nansel, 2009; Ybarra, et al., 2012a; Ybarra, Mitchell, & Espelage, 2012b), the limited available data suggest they are on the rise. Among nationally representative samples of U.S. internet users aged 10-17 years, rates of reported online harassment increased by 83% over the course of the preceding decade, from 6% in 2000 to 9% in 2005 to 11% in 2010 (Finkelhor, 2013; Jones, Mitchell, & Finkelhor, 2012). Another national study of 6-17 year-olds found that an average of 10% said they were bullied at least monthly online (Ybarra, et al., 2012a).
The rates are higher when researchers look more broadly at meanness online (Levy, et al., 2012). For instance, a national survey conducted in 2011 by MTV showed that more than half (56%) of young people aged 14-24 years have experienced verbal abuse through social media, and the majority of them (53%) said that the experience was deeply upsetting (AP-MTV, 2011). In another 2011 survey, conducted by the Pew Research Center, 88% of teens aged 12-17 years who use social media said that they had witnessed other people being mean or cruel on a social networking site (Lenhart, et al., 2011).

**What is cyberbullying?**
Traditional bullying is characterized by three key features:

1) intentionally hurtful actions that are
2) repeated over time and

Bullying involves either physical or psychological harm, and it can be direct or indirect (Smith, 2009). In contrast, peer aggression does not always involve a power imbalance, and it is not necessarily repeated over time.

Because cyberbullying is still a relatively new phenomenon, its definition is less fixed (Levy, et al., 2012). Indeed, even the term “cyberbullying” is not set in stone, with some scholars opting to use alternative terms such as internet bullying (Williams, & Guerra, 2007), social media meanness (Lenhart, et al., 2011), digital abuse (AP-MTV, 2011), or drama (Marwick, & boyd, 2011). In their definition of drama, Marwick and boyd (2011) note that drama does not always overlap with bullying, and it is usually but not always carried out in networked publics.

Extant definitions of cyberbullying generally draw on definitions of traditional bullying (Levy, et al., 2012; Tokunaga, 2010). At the same time, digital media introduce new dynamics that make cyberbullying distinct from traditional bullying (Dooley, Pyzalksi, & Cross, 2009; Willard, 2007). Consider one of the standard features of traditional bullying: repetition. On the one hand, the round-the-clock nature of networked communication offers unprecedented opportunities for repeated acts of bullying (Tokunaga, 2010). At the same time, just one embarrassing picture posted on the internet may feel like a repetitive act of bullying as it persists online and circulates among ever-wider audiences (Dooley, et al., 2009).

The power imbalance that is characteristic of traditional bullying is also complicated in online settings. For instance, both the inability to find respite from cyberbullying and the inability to identify one's tormentor may each contribute to the victim's sense of powerlessness (Dooley, et al., 2009). Even when bullies are recognized by their victims—as research suggests they often are (Juvonen, & Gross, 2008; Ybarra, et al., 2012b)—the arm's-length nature of asynchronous, screen-based communication may embolden perpetrators and increase the severity of their hurtful comments. Indeed, MTV's 2011 survey showed that 71% of youth say that people are more likely to use racist or sexist slurs online or through text messaging than in person (AP-MTV, 2011).

Another distinguishing characteristic of cyberbullying is the relative lack of adult supervision in online settings (Tokunaga, 2010). Whereas school administrators and teachers are generally the ones to keep an eye out for and intervene in instances of schoolyard bullying, mediated settings are not so visible to these parties. Much of what youth do online takes place across geographic
spaces and outside the view of adults. Moreover, our professional development work with educators suggests that they find it difficult to keep track of the popular online spaces that youth frequent as they migrate from MySpace to Facebook to Twitter, Tumblr, and Snapchat. Even when adults know about these sites, young people’s use of privacy settings and their expectations of privacy from teachers and parents online pose distinct challenges for adult supervision (boyd, & Marwick, 2011; Davis, & James, 2013). Indeed, youth perceptions of certain online spaces as “youth only” spaces may help to explain why most youth do not seek adult assistance when they experience cyberbullying (Holfeld, & Grabe, 2012; Juvonen, & Gross, 2008; Levy, et al., 2012; Tokunaga, 2010). Within the context of this supervision vacuum, perpetrators’ power increases along with their freedom to commit repeated acts of bullying.

Youth’s conceptions of cyberbullying
While scholars negotiate the meaning, purview, and distinct characteristics of cyberbullying, young people may be developing a somewhat different understanding. Yet, Agatston, Kowalski, and Limber (2012) observe that there has been relatively little qualitative research exploring youth’s perspectives about cyberbullying. A notable exception involves five years of ethnographic work with youth between the ages of 13 and 19 years (Marwick, & boyd, 2011). Through their interviews with youth participants, the researchers discovered that many young people actively distance themselves from terms like “bullying” and “cyberbullying.” They view these as adult labels used to identify perpetrators and victims, and they are resistant to viewing themselves as either. As a result, behaviors that researchers and educators would classify as cyberbullying are instead referred to as “drama” by young people. This semantic turn allows youth to distance themselves from the gravity that adults attach to cyberbullying and to maintain their sense of themselves as neither a bully nor a victim.

More generally, there is evidence that youth norms around online conduct are more lax and playful than in offline contexts (AP-MTV, 2011; Davis, 2012c). The MTV survey discussed earlier found that while youth report encountering more derogatory language online, most write it off as simply joking (AP-MTV, 2011). Our own research uncovered a similar dynamic. When we presented our youth participants with a hypothetical scenario that involved inflammatory language, most of them discounted it as a joke (Davis, 2012c). This stance may disincline youth from interpreting their own and others’ online actions as bullying behavior, even if they are interpreted as such by those on the receiving end (Vandebosch, & van Cleemput, 2009).

These insights from existing research underscore the importance of seeking youth perspectives in any subsequent research on cyberbullying and associated school-based interventions. For an anti-cyberbullying initiative to succeed, it must resonate with students’ lived experiences and the meanings they ascribe to them.

Who is involved in cyberbullying, and how?
From the prevalence rates reported above, cyberbullying clearly does not involve all young people. Efforts to address cyberbullying will thus benefit from insight into which youth are most at risk of being perpetrators and victims. First, there is evidence that instances of cyberbullying are often grounded in offline peer dynamics (Marwick, & boyd, 2011; Tokunaga, 2010), and that victims often know their online bullies from offline contexts like school (Juvonen, & Gross, 2008; Ybarra, et al., 2012b). Indeed, Vandebosch and van Cleemput (2009) found that online bullies are more likely to be offline bullies, and online victims are more likely to be offline victims.
In one study of 1,454 youth aged 12-17 years living in Colorado, fully 85% of those who had reported at least one instance of being bullied online in the last year said they had also been bullied in school (Juvonen, & Gross, 2008). Another study involving a nationally representative sample of 10-15 year-olds found that 36% reported experiencing both traditional and cyberbullying simultaneously (Ybarra, Diener-West, & Leaf, 2007). Though that leaves nearly two-thirds of youth who did not experience both forms of bullying, the findings nevertheless indicate that a sizable number of youth are victims both online and offline.

It is not always the case that the victim and bully roles are played by the same individuals online as offline. In some cases, online perpetrators report being the victims of offline bullying, explaining that their aggressive behavior was motivated by a desire to seek revenge on their offline tormentors (Vandebosch, & van Cleemput, 2008) or simply people who have annoyed them (Raskauskas, & Stoltz, 2007). In light of this finding, it may be that the role of “bully-victim”—where youth are both bullies and victims—is particularly prominent online (Levy, et al., 2012). It also suggests that youth who would not otherwise engage in bullying behavior offline feel emboldened to engage in such behavior online (Vandebosch, & van Cleemput, 2008).

Beyond the roles of bully, victim, and bully-victim, there is evidence to suggest that many youth act as bystanders to cyberbullying (Lenhart, et al., 2011; Vandebosch, & van Cleemput, 2009). As bystanders, they avoid involving themselves directly in the bullying situation (Twemlow, Fonagy, & Sacco, 2004). This role stands in contrast to the upstander, who actively intervenes in a bullying situation, for example, by publicly expressing disapproval of the bullying behavior (Diazgranados Ferrans, Selman, & Feigenberg, 2012). In offline situations, research suggests that youth are more likely to act as bystanders, even when they express a desire to be an upstander (Diazgranados Ferrans, et al., 2012; O’Connell, Pepler, & Craig, 1999). The same seems to be true in online contexts. In one study of Flemish youth aged 10-18 years, 76.3% who had experienced at least one instance of potentially offensive internet or mobile phone practice (POP) during the previous three months reported being bystanders. Among American youth, a 2011 survey found that fully 90% of youth using social media said they ignore meanness when they witness it online (Lenhart, et al., 2011).

These high rates of bystanding may relate to youth’s tendency to discount much of what they encounter online as simply a joke (AP-MTV, 2011; Davis, 2012c). Bystanding behavior may also relate to the arm’s-length nature of computer-mediated communication; research shows that when youth are not emotionally affected by bullying, they are less likely to intervene (Barhight, Hubbard, & Hyde, 2013). Similarly, Diazgranados Ferrans, Selman, & Feigenberg (2012) found that students were more likely to bystand when their universe of moral responsibility did not extend to “nonfriends,” and when they believed that their power in the peer group was not sufficiently high to be able to challenge the perpetrator. It is possible that certain online environments foster perceptions of other participants as “nonfriends” while simultaneously diminishing one’s own sense of agency to intervene in a bullying situation. Future research is needed to determine whether these offline dynamics of bystanding behavior apply to online contexts, as well as the particular circumstances that promote bystanding versus upstanding behavior online.

**Demographic predictors of cyberbullying**

Traditional bullying typically peaks during the transition to middle school and then declines during high school (Pellegrini, 2002; Pellegrini, & Long, 2002; Smith, Madsen, & Moody, 1999). Though most studies show no connection between age and cyberbullying, Tokunaga (2010) suggests that the lack of correlation may in fact be due to the presence of a curvilinear
relationship. According to his meta-synthesis of quantitative studies on cyberbullying, Tokunaga points to seventh and eighth grades as the period of greatest risk for cyberbullying. Providing empirical support for this claim, one study of 3,339 youth in Grades 5, 8, and 11 in Colorado found that both offline and online forms of bullying perpetration were highest among eighth graders (Williams, & Guerra, 2007). With respect to online bullying, fifth graders were least likely to report bullying perpetration (4.5%), eighth graders were most likely (12.9%), and eleventh graders fell in between (9.9%). This research suggests that middle school is an important time to investigate and intervene in youth cyberbullying.

In addition to age, gender is also a common predictor of traditional bullying, with boys more likely than girls to be both bullies and victims (Cook, et al., 2010). Though evidence relating to the role of gender in cyberbullying is inconsistent (Levy, et al., 2012; Pedersen, 2013), a number of studies show that girls are somewhat more likely than boys to report being bullied online (Davis, 2012a; Holfeld, & Grabe, 2012; Snell, & Englander, 2010; Tokunaga, 2010).

With respect to other demographic predictors of cyberbullying, the research is sparse. An early study of cyberbullying found no statistically significant differences in rates of cyberbullying across race, though the researchers noted that their sample was relatively homogeneous (Patchin, & Hinduja, 2006). A more recent study found that African-American adolescents were more likely to be involved in bullying perpetration (physical, verbal, and cyber) than Caucasian adolescents, but less likely to be involved in verbal and relational victimization (Wang, et al., 2009). The researchers also found that Hispanic adolescents were more likely to be physical bullies or cyber bully-victims than Caucasian adolescents. Adolescents in the "other" race/ethnicity category were less likely than Caucasian adolescents to be relational bullies or verbal bully-victims, but more likely to be the targets of cyberbullying.

Other studies have found that youth with intellectual and developmental disabilities are at greater risk of cyberbullying victimization (Didden, et al., 2009; Kowalski, & Fedina, 2011). There is also evidence that youth who experience offline harassment based on their sexuality experience such harassment online, too (Pascoe, 2011). One study of 11-18 year-olds in a large public school district in the U.S. found that almost twice as many LGBT students reported experiencing cyberbullying compared to heterosexual students (Hinduja, & Patchin, 2011). In order to target cyberbullying efforts effectively, considerably more research is needed to identify which youth are most at risk and under what circumstances.

**Effects of cyberbullying**

Like traditional bullying, cyberbullying is associated with a variety of negative outcomes for youth, including depression, social anxiety, substance use, lowered academic performance, and diminished quality of family relationships (Bonanno, & Hymel, 2013; Tokunaga, 2010; Wolke, Copeland, Angold, & Costello, 2013). In a national study of 1,501 internet users aged 10-17 years, for instance, researchers found that online and offline victimization were independently related to depressive symptomatology, delinquent behavior, and substance use (Mitchell, Ybarra, & Finkelhor, 2007). In another study of U.S. teens aged 12-17 years, offline victimization and cyberbullying victimization each independently contributed to elevated levels of social anxiety (Juvonen, & Gross, 2008). Other studies have found a relationship between cyberbullying and a range of academic problems, such as declining grades and increased absences and truancy (Beran, & Li, 2005; Katzer, Fetchenhauer, & Belschak, 2009).
School-based bullying interventions
The many years of research on traditional bullying and bullying interventions have resulted in a set of well-supported strategies and practices for preventing and addressing bullying in schools. Successful strategies generally adopt a whole-school approach, target school climate and peer influences, and seek to change peer norms around bullying (Swearngin, Espelage, Vaillancourt, & Hymel, 2010). Specific practices include classroom rules, classroom management, school conferences, playground supervision, disciplinary methods, parent meetings, and information for parents (Farrington, & Ttofi, 2009). Programs that incorporate several of these practices, and do so with a longer duration and higher intensity, are the most effective at decreasing bullying in schools. In their meta-analysis of the effectiveness of anti-bullying programs in schools, Ttofi and Farrington (2011) found that anti-bullying programs have generally met with success at decreasing bullying.

A foundational and extensively researched anti-bullying program is the Olweus Bullying Prevention Program (Limber, 2011; Olweus, 1994). A pioneer in the research on school bullying, Dan Olweus and his colleagues developed the program in the mid-1980s around four core, research-based principles. These principles focus on creating a school environment that is marked by: “warmth, positive interest, and involvement from adults; firm limits on unacceptable behavior; consistent application of nonpunitive, nonphysical sanctions for unacceptable behavior or violations of rules; and adults who act as authorities and positive role models” (Olweus, 2003, p.15). To achieve success, the program relies on teachers, administrators, students, and parents to work together to strengthen the school climate.

Such evidence-based programs are not fool-proof, however. Swearngin, et al. (2010) observe that some schools that employ well-established bullying programs still struggle with bullying among students. They attribute the persistence of bullying in part to schools’ failure to take a social-ecological approach to bullying prevention. Swearngin et al. suggest that schools would be well advised to take into account the various social contexts and dynamics that youth experience beyond school that may sustain bullying. In the year 2013, this requires paying attention to the social contexts that youth experience online.

Cyberbullying interventions
In recent years, there have emerged interventions geared specifically to cyberbullying, for example, i-SAFE, Netsmartz, WebWiseKids, and Common Sense Media’s Digital Literacy and Citizenship Curriculum. These programs encourage youth to focus on positive uses of technology; recognize and exercise their own agency online; empathize with would-be cyber-victims; upstand rather than bystand when they witness cyberbullying; and maintain open lines of communication with adults about their online experiences (Walker, 2012).

Just how widespread these anti-cyberbullying efforts are and whether or not they are meeting with success remain unclear (Walker, 2012). In their literature review on bullying in a networked era, Levy, et al. (2012) note that literature addressing school policies around cyberbullying generally states what these policies should include rather than what they actually include. This state of affairs suggests a need to document systematically what U.S. schools are doing to address cyberbullying, as well as how their efforts are being received by youth.

From the above discussion, it is evident that adult intervention plays an important role in traditional anti-bullying efforts, as does creating school and peer norms that undercut bullying behavior. Yet, each of these prevention strategies faces specific challenges when it comes to cyberbullying. First, it is difficult for adults to intervene when 90% of youth never tell an adult
that they have experienced cyberbullying (Juvonen, & Gross, 2008). Reasons for this silence include a fear of losing internet privileges and the perception that only “kids” tell adults about problems online (Tokunaga, 2010). Another challenge to adult intervention is the fact that cyberbullying may not take place on school grounds, raising questions about the degree to which school personnel can and should intervene in such situations (Couvillon, & Ilieva, 2011).

Second, as noted earlier, the youth norms that have emerged around online conduct are such that young people may be resistant to seeing their actions as bullying behavior (Marwick & boyd, 2011; Vandebosch, & van Cleemput, 2009). The challenge, therefore, is to find a way to bridge the gulf between adult-defined “cyberbullying” and youth-defined “drama” and “joking.”

The distinct properties of online environments—such as asynchronous communication, round-the-clock connectivity, the ease of anonymity, and an ill-defined, potentially large audience—pose further challenges to intervention efforts. It is unclear how well strategies designed to address offline situations apply to online contexts. For instance, StopBullying.Gov has a page of advice about “Supporting Bystanders who Witness Bullying” (http://www.stopbullying.gov/respond/support-kids-involved/index.html#bystanders).

Suggestions include:
- Help the person being bullied get away from the situation.
- Take away the audience by choosing not to watch and walk away.
- Tell the child doing the bullying that you don’t like it and to stop doing it (but only if it feels safe to do so).

While these guidelines may be informed by research on effective approaches for addressing bullying offline, it is not clear that they translate as effectively to an online context. For instance, what does it mean to help a person being bullied online to “get away from the situation?” Does it mean encouraging youth to power down? Giving them alternative conversation streams to participate in? This may be hard for youth, for whom social media have become a focal point of their social lives (Davis, 2012b; Slonje, & Smith, 2008).

Similar questions arise for the other suggestions in the list. What does it mean to “take the audience away” when the audience is a more abstract concept? How does “upstanding” and confronting bullying or cruel behavior make sense in an online context? Should children confront cyberbullies online? Or should they confront them later in the physical world? What assumptions do youth have about the efficacy and risks of online upstanding? Do educators share those assumptions? The dissonance between research-based advice generated for a pre-networked world and the experiences of children who move fluidly between online and physical social settings represents a central tension that is worth exploring in future research.

**Conclusion**

This review points to several gaps in the existing literature on cyberbullying among today’s young people. In particular, we need a better understanding of which youth are most at risk of being bullies, victims, and bystanders online, as well as the circumstances under which youth are most likely to upstand against cyberbullying behavior. An important component of this research must involve documenting the characteristics of existing anti-cyberbullying efforts currently employed in U.S. schools and youth’s reception of these initiatives. This insight will help determine which interventions are worth strengthening and expanding and which should be replaced.
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A Longitudinal Examination of the Relationship Between Media Use and Self-Competence During Adolescence

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Abstract: The primary goal of this longitudinal study was to examine whether media use predicts adolescent self-competence and/or whether adolescent self-competence predicts media use. The sample included 1,031 10th and 11th grade boys and girls from the United States. The adolescents completed a self-report questionnaire in 2007 and 2008 to assess their media use (talking and texting on the phone, listening to music, e-mailing/IMing, playing video games, and working on the computer) and self-competence (social competence, scholastic competence, athletic competence, and perceived physical appearance). Path analysis results revealed that media use had a minimal effect on adolescent self-competence. In contrast, adolescent self-competence consistently predicted media use. Results from this study highlight the need to examine both directions of influence between adolescent media use and adjustment.

Introduction

Current theories of human development (e.g., developmental systems theory; Lerner et al., 2011) purport that the individual and the context influence one another in order to produce development. One context that is becoming increasingly salient in the lives of adolescents is the world of media that surrounds them. Recent research indicates that adolescents are engaged in media use more than 7.5 hours a day (Rideout, Foehr, & Roberts, 2010). Moreover, approximately 25% of the time that adolescents are engaged in media is spent using multiple forms of media simultaneously or “media multi-tasking” (Brown, & Bobkowski, 2011). Because the use of media has become so central to the daily lives of adolescents, it is imperative that the manner in which this context is related to adolescent development be examined.
There is a growing literature that suggests that media use may negatively influence adolescents. For example, playing video games has been found to be related to aggressive behavior (Anderson, Gentile, & Buckley, 2007; Gentile, Lynch, Linder, & Walsh, 2004). Playing video games, computer games, watching television, and talking on the phone also have been negatively associated with academic performance (Durkin, & Barber, 2002; Gentile, et al., 2004). In addition, time spent watching television and playing video games has been linked to physical inactivity, weight, and body fat during adolescence (Koezuka, Koo, Allison, Adlaf, Dwyer, Faulkner, & Goodman, 2006; Marshall, Biddle, Gorely, Cameron, & Murdey, 2004). The use of the Internet has been found to be related to adolescent psychological problems (loneliness, depression, anxiety) as well (Kraut, Patterson, Lundmark, Kiesler, Mukopadhyay, & Scherlis, 1998) and recent research indicates that more frequent media use (watching television, text messaging, and e-mailing) is associated with earlier and heavier substance use during adolescence (Ohannessian, 2009).

Relatively few studies have focused on positive effects that media use may have on adolescents. However, results from some investigations suggest that the influence of media on adolescents may not be uniformly negative. In a novel study conducted by Durkin and Barber (2002), both negative and positive correlates of computer game playing were examined in 10th grade students. Results indicated that adolescents who played computer games actually were better adjusted than those who did not. Game players were found to have higher levels of self-esteem, lower levels of substance use, to be more attached to and involved with school, and to have closer family relationships than those who did not play computer games. Little support for the premise that game playing is related to negative outcomes was found. Although the Durkin and Barber study made an important contribution to the literature, the data are dated (data collection took place in 1988) and only computer game use was examined (video games and other types of media were not assessed). This is a critical limitation because the type of media available and adolescents’ use of media are changing at a rapid pace. Therefore, a goal of the present study was to extend the Durkin and Barber study to adolescents today and to examine the relations between various types of media and adolescent adjustment.

Recent work also suggests that media use may serve as a protective factor for troubled youth. In a community sample of 14-16 year-olds, boys who spent relatively more time playing video games and watching television reported the lowest levels of anxiety (Ohannessian, 2009). This pattern was especially pronounced in boys with an alcoholic parent. Perhaps certain types of media (e.g., video games, watching television) provide adolescents with a means to psychologically disengage from their problems. This type of disengagement may be psychologically adaptive according to coping and motivational theories (e.g., Klinger, 1975).

In sum, most research to date has focused on the negative effects that media use may have on adolescent adjustment. Moreover, most studies have examined negative indicators of adjustment (e.g., psychological problems, substance use). The present study adopted a more optimistic outlook by assessing positive indicators of adjustment. It also is important to note that the majority of research examining associations between media use and adolescent adjustment to date has been cross-sectional or has examined only one direction of effect, that is whether media use influences adolescent adjustment. However, according to developmental systems theoretical models of human development (Lerner, et al., 2011; Overton, 2010), characteristics of the individual and the context influence one another in order to produce development. As such, the goal of this study was to examine bidirectional relations between media use and positive adjustment (as indicated by self-competence) in a large, diverse...
community sample of adolescents. More specifically, the following research questions were addressed:

1) Does media use predict adolescent self-competence? and/or
2) Does adolescent self-competence predict media use?

Method

Participants
The sample included 1,031 10th and 11th grade students (53% female) from the Mid-Atlantic region of the United States (Delaware, Maryland, and Pennsylvania). During the spring of 2007 (Time 1) and the spring of 2008 (Time 2), students completed surveys in school. The mean age of the adolescents was 16.15 (SD=.75). Most (58%) of the adolescents were Caucasian. However, 23% were African-American, 12% were Hispanic, and 2% were Asian (the rest responded “other”). These percentages reflect the area from which the sample was drawn (71% Caucasian, 23% African American, 4% Asian, 7% Hispanic; U.S. Census Bureau, 2008). Most of the adolescents (72%) lived with both of their biological parents (96% of the adolescents lived with their biological mother, 73% lived with their biological father). In addition, the majority of mothers (96%) and fathers (95%) were high school graduates. Some of the parents (26% of mothers and 24% of fathers) had graduated from a four-year college. A minority of the parents (10% of mothers and 7% of fathers) had attended graduate school.

Procedure
Of note, the study protocol was approved by the University of Delaware’s Institutional Review Board. Seven U.S. public high schools located within approximately 60 miles of the study site participated. In the spring of 2007, 10th and 11th grade students from these high schools, who provided assent and had parental consent, were administered a survey in school by trained research personnel (all of whom were certified with human subjects training). Seventy-one percent of the students attending the study schools participated. Most of the students that did not participate were absent on the day of data collection. Only three percent of the adolescents present during data collection did not participate.

The adolescents were told that participation was voluntary, that the data collected were confidential, and that they could withdraw from the study at any time. They also were informed that a Certificate of Confidentiality from the U.S. government would further protect their privacy. The survey took approximately 40 minutes to complete. At the completion of the survey, the adolescents were given a movie pass. All participating adolescents were invited to participate again the following spring (Time 2). The same protocol was used at Time 2.

Measures
The survey included a demographic questionnaire. This questionnaire included questions relating to the age of the adolescent and their parents’ highest education level completed (1 = elementary school to 6 = graduate or medical school). The survey also included measures of media use and self-competence.

Media Use. The adolescents were asked how much time they spent talking on the phone, listening to music (radio), text messaging, e-mailing/IMing, playing video games (PlayStation, Nintendo, Game Boy, Xbox, etc.), using an iPod/MP3 player, and working on the computer “on an average/typical day.” The response scale was 1 = none, 2 = less than one hour, 3 = about one hour, 4 = about 2 hours, 5 = about three hours, and 6 = 4 or more hours.
**Self-Competence.** The participants also completed the Self-Perception Profile for Adolescents (SPPA; Harter, 1988), which included the following five-item scales: self-perceived social competence, scholastic competence, athletic competence, and physical appearance. The response scale for the SPPA is presented in a four-point structured alternative format that translates to $1 = \text{low perceived competence}$ to $4 = \text{high perceived competence}$. Prior research has supported the validity of the SPPA (Harter, 1988). In the present sample, Cronbach alpha coefficients ranged from .77 to .88.

**Results**

**Bivariate Analyses**

Pearson product-moment correlations for the study variables are presented in Table 1. As shown, social competence was positively associated with talking on the phone, text messaging, listening to music, and e-mailing/IMing, and negatively associated with playing video games. In contrast, academic competence was negatively related to text messaging and athletic competence was positively related to playing video games. Physical appearance was positively related to talking on the phone; however, it was unrelated to all of the other types of media use assessed.

**Table 1**  
Means, Standard Deviations, and Correlations between the Study Variables

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<th>Variable</th>
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<td>.37***</td>
<td>.43***</td>
<td>.19***</td>
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<td>.20***</td>
<td>.02</td>
<td>-.10*</td>
<td>.06</td>
<td>-.06</td>
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<td>—</td>
<td>.25***</td>
<td>.34***</td>
<td>-.07</td>
<td>-.11**</td>
<td>-.09*</td>
<td>-.03</td>
<td>-.04</td>
<td>.00</td>
<td>.08*</td>
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<td>3. Athletic Competence</td>
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<td>-.10*</td>
<td>-.02</td>
<td>.04</td>
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<td>.23***</td>
</tr>
<tr>
<td>6. Listening to Music</td>
<td>.05</td>
<td>-.11*</td>
<td>-.05</td>
<td>-.01</td>
<td>.35***</td>
<td>—</td>
<td>.31***</td>
<td>.30***</td>
<td>.09**</td>
<td>.43***</td>
<td>.23***</td>
</tr>
<tr>
<td>7. Text Messaging</td>
<td>.14**</td>
<td>-.09*</td>
<td>-.03</td>
<td>-.06</td>
<td>.34***</td>
<td>.26***</td>
<td>—</td>
<td>.32***</td>
<td>-.02</td>
<td>.24***</td>
<td>.16***</td>
</tr>
<tr>
<td>8. E-Mailing/IMing</td>
<td>.09*</td>
<td>-.08</td>
<td>-.01</td>
<td>-.06</td>
<td>.27***</td>
<td>.24***</td>
<td>.40***</td>
<td>—</td>
<td>.16***</td>
<td>.28***</td>
<td>.45***</td>
</tr>
<tr>
<td>9. Playing Video Games</td>
<td>-.10*</td>
<td>-.03</td>
<td>.14***</td>
<td>.00</td>
<td>.02</td>
<td>.03</td>
<td>.08*</td>
<td>—</td>
<td>.27***</td>
<td>.26***</td>
<td></td>
</tr>
<tr>
<td>10. Using iPod/MP3</td>
<td>.12**</td>
<td>-.02</td>
<td>.09*</td>
<td>.04</td>
<td>.24***</td>
<td>.20***</td>
<td>.29***</td>
<td>.31***</td>
<td>.14***</td>
<td>—</td>
<td>.35***</td>
</tr>
<tr>
<td>11. Working on Computer</td>
<td>-.02</td>
<td>-.02</td>
<td>-.02</td>
<td>-.02</td>
<td>.22***</td>
<td>.19***</td>
<td>.21***</td>
<td>.47***</td>
<td>.18***</td>
<td>.33***</td>
<td>—</td>
</tr>
<tr>
<td>Mean</td>
<td>16.09</td>
<td>15.14</td>
<td>13.52</td>
<td>14.12</td>
<td>3.40</td>
<td>4.00</td>
<td>2052</td>
<td>3.02</td>
<td>2.46</td>
<td>3.13</td>
<td>3.19</td>
</tr>
<tr>
<td>SD</td>
<td>2.99</td>
<td>3.24</td>
<td>3.94</td>
<td>3.94</td>
<td>1.55</td>
<td>1.55</td>
<td>1.70</td>
<td>1.71</td>
<td>1.62</td>
<td>1.75</td>
<td>1.58</td>
</tr>
</tbody>
</table>

*Note: Correlations between the media use measures at Time 1 and the self-competence measures at Time 2 are presented under the diagonal. Correlations between the self-competence measures at Time 1 and the media use measures at Time 2 are presented above the diagonal. Means and SDs are from Time 1. *$p<.05$; **$p<.01$; ***$p<.001$.**
**Longitudinal Analyses**
Path analysis was employed to examine whether media use (at Time 1) predicted self-competence one year later (Time 2) and/or whether self-competence (at Time 1) predicted media use one year later (Time 2). The endogenous variables assessed at Time 1, adolescent age, and parental education were included as covariates. Full information maximum likelihood (FIML) was used to handle missing data. FIML utilizes all available data (the covariance matrix and a vector of the means) to produce maximum likelihood-based sufficient statistics. Notably, FIML has been observed to yield unbiased parameter estimates (Wothke, 2000).

**Multiple Group Analyses**
Multiple group comparison analyses were conducted to determine whether separate analyses should be conducted for boys and girls. Consistent with the recommendations of Vandenberg and Lance (2000) for testing invariance across groups, for each direction of effect, an unconstrained model with freely estimated parameters was compared to a model constraining path coefficients to be equal for boys and girls. The $\chi^2$ difference test comparing the constrained model to the unconstrained model was not significant for either direction ($\Delta \chi^2 (7) = 8.35, p = .30$ when self-competence was predicted from media use, and $\Delta \chi^2 (16) = 23.21, p = .11$ when media use was predicted from self-competence). These results indicated that for both directions of effect, the constrained model did not provide a worse fit to the data than the unconstrained model. Therefore, the subsequent models were not conducted separately by gender.

**Does Media Use Predict Adolescent Self-Competence?**
The model predicting self-competence from media use provided a good fit to the data ($\chi^2 (96) = 286.10, p = .00; \text{CMIN/DF} = 2.98; \text{CFI} = .94; \text{RMSEA} = .04$). However, only two paths were significant (see Figure 1). As shown in Figure 1, listening to music frequently predicted lower perceived athletic competence ($\beta = -.05, p<.05$), whereas playing video games frequently predicted higher perceived athletic competence ($\beta = .07, p<.01$). 

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Figure 1
Model predicting self-competence from technology use. Standardized regression coefficients are presented. Only significant paths are shown. Control variables, covariances, and error terms are not displayed. *p<.05; **p<.01; ***p<.001.

Does Adolescent Self-Competence Predict Media Use?
The model predicting media use from self-competence also fit the data well ($X^2(126) = 420.16$, $p = .00$; CMIN/DF = 3.34; CFI = .92; RMSEA = .05). In contrast to the previous model, self-competence consistently predicted media use (see Figure 2). More specifically, higher perceived athletic competence predicted more frequent video game playing ($\beta = .09$, $p<.01$). In addition, higher perceived social competence predicted more frequent phone use ($\beta = .14$, $p<.001$), more frequent listening to music on the radio ($\beta = .11$, $p<.01$), and more frequent text messaging ($\beta = .18$, $p<.001$). In contrast, higher perceived scholastic competence predicted less frequent phone use ($\beta = -.08$, $p<.05$), less frequent listening to music on the radio ($\beta = -.11$, $p<.01$), less frequent text messaging ($\beta = -.13$, $p<.001$), and more frequent computer use ($\beta = .09$, $p<.05$).
**Figure 2**

Model predicting technology use from self-competence. Standardized regression coefficients are presented. Only significant paths are shown. Control variables, covariances, and error terms are not displayed. *p<.05; **p<.01; ***p<.001.

**Discussion**

The majority of research conducted on adolescent media use to date has focused on negative aspects of media use. However, consistent with the work of Durkin and Barber (2002) and Ohannessian (2009), results from this study suggest that media use also may be associated with positive adolescent adjustment. In the present study, more frequent phone use (talking and texting), listening to music, and e-mailing/IMing were associated with higher levels of social competence. More frequent video game playing similarly was linked to higher levels of athletic competence. Not surprisingly, more frequent computer use was related to higher levels of scholastic competence. These results are encouraging given that adolescents now are spending so much time interacting with media (an average of 7.5 hours a day; Rideout, et al., 2010).

Although many positive associations between media use and adolescent adjustment were found in this study, a few negative associations also were observed. More specifically, more frequent video game playing was related to lower levels of social competence and more frequent texting was associated with lower levels of scholastic competence. It is interesting to note that the pattern of results in this study were dependent on the indicator of self-
competence. For example, the frequent use of social types of media (talking on the phone, texting, e-mailing) was linked to higher levels of social competence. In contrast, the frequent use of social media was related to lower levels of academic competence. Taken together, these findings underscore the importance of considering both negative and positive effects of media use on adolescent adjustment and the need to examine multiple indicators of adjustment.

A primary goal of this study was to examine the direction of effect between media use and adolescent self-competence. The longitudinal results suggest that although media use may influence adolescents’ athletic competence (e.g., more frequent video game playing predicted more athletic competence over time), media use does not appear to influence how adolescents feel about themselves academically, socially, or in regard to their appearance. However, the findings do indicate that how adolescents feel about themselves academically, socially, and athletically influences their media use. These findings are important because they demonstrate different patterns of results depending on the direction of effect examined. The extant literature on adolescent media use has focused on the influence that media use has on adolescent adjustment. However, results from this study indicate that the influence that adolescent adjustment may have on media use should not be overlooked.

The results from this study suggest that socially well-adjusted youth may be relatively more likely to use media. These findings mirror results from a recent study examining social networking in youth (Mikami, Szwedo, Allen, Evans, & Hare, 2010). In their study, Mikami and colleagues found that better adjusted youth (as indicated by more positive peer relations and fewer depressive symptoms) were more likely to have a social networking page than less well-adjusted youth. Importantly, the present study extends these findings beyond online social communication. In the present study, more socially adjusted youth similarly reported more frequent social media use such as talking and texting on the phone. Of note, these findings are consistent with and extend the “rich-get-richer” hypothesis, which suggests that Internet use (e.g., Facebook) is most beneficial for youth with strong social skills (Valkenburg, & Peter, 2011).

Although the present study clearly contributes to the literature by examining the direction of effect between media use and adolescent adjustment in a large diverse sample, caveats should be noted. Adolescents provided the reports of their media use and self-competence. However, it is important to note that research has shown that youth are accurate reporters of their own behaviors (Dekovic, et al., 2006). Nonetheless, it would be informative for future research to replicate the findings from this study using other types of methodology (e.g., parent reports). Also, of note, the present study focused on the entire range of media use. Different findings might have emerged if only high end users of media (e.g., those who may be “addicted” to playing video games or to other types of media) were included. It also should be noted that the research project was designed in 2006 and data for this study were collected in 2007 and 2008. At that time, social network sites such as Facebook were not commonly used by high school students (Lerer, 2007). As such, social networking was not included in the current study. Finally, it should be noted that the sample only included adolescents from the Mid-Atlantic United States. Therefore, caution should be taken in regard to generalizing the findings.

Notwithstanding, results from this study are important because they indicate that media use reflects adolescent behavior in a contemporary context. That is, there appears to be continuity in adolescent media and non-media behavior. For instance, youth who have high
levels of social competence are likely to behave socially with or without the use of media. Prior research has shown that social competence is linked to social behavior and having positive friendships during adolescence (Keefe, & Berndt, 1995). In this study, more socially competent youth talked on the phone more, e-mailed more, and texted more frequently than less socially competent youth. These findings suggest that media use essentially is a vehicle for adolescents to do what they would do otherwise. Simply put, media use appears to extend, but not alter, adolescent behavior.

References


We would like for you to tell us how much you use technology. Please indicate how much time you spend doing each activity on an average/typical day by circling the appropriate number.

*For each activity, please circle one of the following:*

<table>
<thead>
<tr>
<th></th>
<th>None</th>
<th>Less Than 1 Hour</th>
<th>About 1 Hour</th>
<th>About 2 Hours</th>
<th>About 3 Hours</th>
<th>4 or More Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Watch T.V.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>2. Talk on the phone</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>3. Listen to music on a stereo or radio</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>4. Text message</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>5. E-mail or IM</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>6. Play video games (PlayStation, Nintendo, Game Boy, Xbox, etc.) or computer games</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>7. Listen to an IPOD or MP3 player</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>8. Work on the computer</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>9. Surf the Web</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>
Self-Competence Survey

Directions:
First, we would like you to decide whether you are more like the teenagers on the left side who would rather go to the movies, or whether you are more like the teenagers on the right side who would rather go to sporting events. Don’t mark anything down yet, but first decide which kind of teenager is most like you, and go to that side of the page. Now, decide whether that is only sort of true for you or really true for you and mark your answer box with an “X”. Be sure to only check one of the four boxes for each pair of sentences!

Sample Sentence

<table>
<thead>
<tr>
<th>Really True for Me</th>
<th>Sort of True for Me</th>
<th>Some teenagers feel that they are just as smart as others their age</th>
<th>BUT</th>
<th>Other teenagers aren’t so sure and wonder if they are as smart</th>
<th>Sort of True for Me</th>
<th>Really True for Me</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td>Some teenagers find it hard to make friends</td>
<td>BUT</td>
<td>For other teenagers, it’s pretty easy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td>Some teenagers do very well at all kinds of sports</td>
<td>BUT</td>
<td>Other teenagers don’t feel that they are very good when it comes to sports</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td>Some teenagers are not happy with the way they look</td>
<td>BUT</td>
<td>Other teenagers are happy with the way they look</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td>Some teenagers are often disappointed with themselves</td>
<td>BUT</td>
<td>Other teenagers are pretty pleased with themselves</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td></td>
<td>Some teenagers are pretty slow in finishing their school work</td>
<td>BUT</td>
<td>Other teenagers can do their school work more quickly</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td></td>
<td>Some teenagers have a lot of friends</td>
<td>BUT</td>
<td>Other teenagers don’t have very many friends</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td></td>
<td>Some teenagers think they could do well at just about any new athletic activity</td>
<td>BUT</td>
<td>Other teenagers are afraid they might not do well at a new athletic activity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td></td>
<td>Some teenagers wish their body was different</td>
<td>BUT</td>
<td>Other teenagers like their body the way it is</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td></td>
<td>Some teenagers don’t like the way they are leading their life</td>
<td>BUT</td>
<td>Other teenagers do like the way they are leading their life</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td></td>
<td>Some teenagers do very well at their classwork</td>
<td>BUT</td>
<td>Other teenagers don’t do very well at their classwork</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td></td>
<td>Some teenagers are very hard to like</td>
<td>BUT</td>
<td>Other teenagers are really easy to like</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12.</td>
<td></td>
<td>Some teenagers feel that they are better than others their age at sports</td>
<td>BUT</td>
<td>Other teenagers don’t feel they can play as well</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13.</td>
<td></td>
<td>Some teenagers are not happy with the way they look</td>
<td>BUT</td>
<td>Other teenagers are happy with the way they look</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Really True for Me</td>
<td>Sort of True for Me</td>
<td></td>
<td>Really True for Me</td>
<td>Sort of True for Me</td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>-------------------</td>
<td>-------------------</td>
<td>---</td>
<td>-------------------</td>
<td>-------------------</td>
<td></td>
</tr>
<tr>
<td>14.</td>
<td>☐</td>
<td>☐</td>
<td>Some teenagers wish their physical appearance was different</td>
<td>BUT</td>
<td>Other teenagers like their physical appearance the way it is</td>
<td>☐</td>
</tr>
<tr>
<td>15.</td>
<td>☐</td>
<td>☐</td>
<td>Some teenagers are happy with themselves most of the time</td>
<td>BUT</td>
<td>For other teenagers are often not happy with themselves</td>
<td>☐</td>
</tr>
<tr>
<td>16.</td>
<td>☐</td>
<td>☐</td>
<td>Some teenagers have trouble figuring out the answers in school</td>
<td>BUT</td>
<td>Other teenagers almost always can figure out the answers</td>
<td>☐</td>
</tr>
<tr>
<td>17.</td>
<td>☐</td>
<td>☐</td>
<td>Some teenagers are popular with others their age</td>
<td>BUT</td>
<td>Other teenagers are not very popular</td>
<td>☐</td>
</tr>
<tr>
<td>18.</td>
<td>☐</td>
<td>☐</td>
<td>Some teenagers don’t do very well at new outdoor games</td>
<td>BUT</td>
<td>Other teenagers are good at new games right away</td>
<td>☐</td>
</tr>
<tr>
<td>19.</td>
<td>☐</td>
<td>☐</td>
<td>Some teenagers think that they are good looking</td>
<td>BUT</td>
<td>Other teenagers think that they are not very good looking</td>
<td>☐</td>
</tr>
<tr>
<td>20.</td>
<td>☐</td>
<td>☐</td>
<td>Some teenagers like the kind of person they are</td>
<td>BUT</td>
<td>Other teenagers often wish they were someone else</td>
<td>☐</td>
</tr>
<tr>
<td>21.</td>
<td>☐</td>
<td>☐</td>
<td>Some teenagers feel that they are pretty intelligent</td>
<td>BUT</td>
<td>Other teenagers question whether they are intelligent</td>
<td>☐</td>
</tr>
<tr>
<td>22.</td>
<td>☐</td>
<td>☐</td>
<td>Some teenagers feel that they are socially accepted</td>
<td>BUT</td>
<td>Other teenagers wished that more people they age accepted them</td>
<td>☐</td>
</tr>
<tr>
<td>23.</td>
<td>☐</td>
<td>☐</td>
<td>Some teenagers do not feel that they are very athletic</td>
<td>BUT</td>
<td>Other teenagers feel that they are very athletic</td>
<td>☐</td>
</tr>
<tr>
<td>24.</td>
<td>☐</td>
<td>☐</td>
<td>Some teenagers really like the way they look</td>
<td>BUT</td>
<td>Other teenagers wish they looked different</td>
<td>☐</td>
</tr>
<tr>
<td>25.</td>
<td>☐</td>
<td>☐</td>
<td>Some teenagers are very happy being the way they are</td>
<td>BUT</td>
<td>Other teenagers wish they were different</td>
<td>☐</td>
</tr>
</tbody>
</table>
At-Risk Youth in After-School Programs: How Does Their Use of Media for Learning About Community Issues Relate to Their Perceptions of Community Connectedness, Community Involvement, and Community Support?

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At-Risk Youth in After-School Programs: How Does Their Use of Media for Learning About Community Issues Relate to Their Perceptions of Community Connectedness, Community Involvement, and Community Support?

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Abstract: This paper highlights a study examining the impact of various media formats on at-risk youth to identify forms of media technology that might impact their community connectedness, community involvement, and community support. Over a three-year period, a sample of 133 youth enrolled in after-school programs in two communities completed a questionnaire annually consisting of the following areas: community support, community involvement, community connectedness, and media use for learning. Linear regression analysis indicated media use for learning about community issues was a predictor of student’s perceptions of community support, community connectedness, and community involvement. The media format most identified for gaining knowledge about community issues by the youth was the Internet, while the use of print media increased over the course of the study. The most significant relationships were found between media use and perceptions of community overall with the most significant gains in media use during Y2, where youth knowledge of community issues increased.

Introduction

Educating and involving youth in discussions about the issues facing their communities is important, not only for the long-term sustainability of the community, but also for effective, inclusive community-building efforts in the here and now. Historically in America, youth were integrally involved in their communities from the time of early settlement through the late 19th
century (Zeldin, Camino, & Calvert, 2003). Young people worked side-by-side with their parents and other adults on farms and in mills and regularly interacted with adults at community celebrations and rituals. But with the advent of the industrial revolution and new labor laws, young people were soon shuffled into more formal educational paths and lost meaningful interaction that had previously come naturally with their communities. In turn, youth lost access to the social roles and networks essential to promoting their integration in the community.

In our contemporary society, developing effective youth-adult partnerships does not come without challenges (Camino, 2000). Envisioning youth as contributors and valuable assets in a community goes against the norms and trends that have developed over more than a hundred years. Bringing youth and adults together in the process of community-building defies the notion that youth need to be either protected or controlled. Many adults may find it difficult to accept youth as equal players in the community (Barnett, & Brennan, 2006). Likewise, youth who desire to be involved in their communities may feel a lack of guidance and encouragement from adults and thus powerless to effect real change (Otis, 2006). However, the collective action of community members of all ages and backgrounds, where individuals are allowed to “participate in the creation, articulation, and implementation of efforts to support local change” creates a civic whole greater than the sum of its’ parts (Barnett, & Brennan, 2006). Including youth in positive community activities contributes to the development of the community, as well as to the social and psychological development of these young people. Moreover, when youth and adults work together, they develop greater mutual understanding and a shared sense of norms and values.

At-risk youth, those who are at increased risk for adversity, are presented with their own challenges in regard to connecting to their communities (Loughlin, Barnett, Culen, Stedman, & Payne-Purvis, 2013). Often fraught with disorganization, youth residing in these communities are faced with the disjointedness of their ecology. Positive environmental supports may be scarce and, consequently, neighborhoods, typically safe places to grow up in, may not exist in their minds (Zeldin, & Topitzes, 2002). It is an ironic aspect of life in the sense that those who need strong communities the most, experience them the least. Already faced with adversity, these youth are struggling to find the strength, security, and safety features normally found in local communities. Therefore, it is becoming increasingly more important to examine ways to improve their connections to their communities. Applying rigorous, scientific evidence-based practices to positive youth development efforts are essential for constructively connecting youth to their communities (Allison, Edmonds, Wilson, Pope, & Farrell, 2011).

Media formats, including newspapers/magazines, Internet, books, TV, music, Social Networking, are one such way for youth to interact with their local community. When the infrastructure of community integration – the existing social networks and community ties – do not extend to certain people (e.g., youth), media can provide an alternative route for information and motivation (McLeod, Scheufele, & Moy, 1999). Today’s world provides many opportunities to use media, even for those in low SES areas. Local community centers, schools, and libraries provide access to the Internet and computers, TV, and movies. With respect to digital media, specifically, moderate Internet use is positively associated with maintaining real-world social ties (Wellman, Quan Haase, Witte, & Hampton, 2001). Social networking sites such as Facebook, MySpace, and Twitter, which are particularly popular among youth, also offer opportunities to cross borders into areas outside of the immediate environment, opening up the world to those who seek it. At the same time, local libraries provide access to newspapers, magazines, books, movies, and music that can be free for those who cannot afford it.
**Background to the Study**

When considering which factors make up a vibrant, thriving community and which factors contribute to positive community development, scholars have appealed to theoretical constructs such as: community attachment, community integration, community-building, resource mobilization, and civic engagement. While these perspectives tend to have significant overlap, the concept of community attachment carries with it a distinct and unique focus on the internal psychological process of individuals as they experience feelings of connectedness to their community. Specifically, this study explores youth and their relationship to community support, community involvement, and community connectedness.

In contrast, concepts like community integration, community-building, and civic engagement carry with them a dimension of active physical involvement in community processes and events. According to Weil (1996), “community building refers to activities, practices and policies that support and foster positive connections among individuals, groups, organizations, neighborhoods, and geographic and functional communities” (p. 482). In order to build community, it is not enough to simply care about or feel connected to the people that share local life experiences. Action is required for an individual (youth) to strengthen interpersonal community bonds along with places, events, and cultural products in which shared life experiences exist. However, one of the most powerful and effective ways for individuals to become motivated to take voluntary action in building their community is for them to have a personal emotional investment in it.

When individuals are connected or attached to their community, they will be more likely to become involved in building it. Attachment and a sense of community manifest themselves behaviorally through participation (Manzo, & Perkins, 2006). Positive personal bonds of attachment and a sense of community among residents can be an important means of strengthening efforts to improve both the physical environments and social relationships in a community (Brown, Perkins, & Brown, 2003). Beggs, Hurlbert and Haines (1996) proposed, “understanding the mechanisms of community attachment may be a step toward building a base of citizens who will work to foster community development” (p. 424).

The health of any functioning society or community is dependent upon successfully transmitting collective values from one generation to the next (John Dewey, 1916/2005). It is through communication that a community’s ideals, hopes, expectations, standards, and opinions are passed from generation to generation. Communication ties generations together and ties individuals to the community.

The purpose of this study was to examine data from the United States Department of Agriculture (USDA) Children, Youth, and Families at Risk (CYFAR) *Youth Involved in Community Issues* project in order to understand how various formats of media provide knowledge to youth that may link them to community supports, community involvement, and community connectedness. By examining youth perceptions of where their knowledge comes from in regard to community issues (such as crime, recycling, unemployment, safety, drugs, etc.), we can consider the use of specific media formats to further connect youth who may be very disconnected from their communities.

**Research questions included:**
- Which forms of media do youth report most of their knowledge about community issues comes from?
• Does the relationship between media use for knowledge of community issues and community variables (involvement, support and connectedness) change by program year?
• Are youth perceptions of community connectedness, involvement, and/or support related to the type of media format used for knowledge gains?

Method

Data Collection
The sample population for this study consisted of 133 at-risk youth enrolled in free after-school programs within their community that were provided by the USDA CYFAR project Youth Involved in Community Issues. Project sites were located in two counties in Florida – Seminole and Volusia. The project has been ongoing since 2009 and will be completed in summer 2014. The data were collected over a three year period in two rural communities where the project delivered free after school programs.

Prior to data collection, parents signed consent forms for all students participating in the CYFAR afterschool program. Data collection took place at the end of each academic school year (May/June) over multiple days. A total of 163 surveys were completed by the 133 participants during the three-year data collection period. Table 1 indicates the number of participants per county enrolled in after school programs during each year, as well as the number of retained participants from previous years as indicated in parentheses.

<table>
<thead>
<tr>
<th>Year</th>
<th>Seminole County</th>
<th>Volusia County</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (2009)</td>
<td>18 (24)</td>
<td>9</td>
<td>27</td>
</tr>
<tr>
<td>2 (2010)</td>
<td>49 (8)</td>
<td>16 (4)</td>
<td>65 (12)</td>
</tr>
<tr>
<td>3 (2011)</td>
<td>58 (16)</td>
<td>13 (8)</td>
<td>71 (24)</td>
</tr>
<tr>
<td>Total</td>
<td>125 (24)</td>
<td>38 (12)</td>
<td>163 (36)*</td>
</tr>
</tbody>
</table>

*36 participants were retained from Y1 to Y3. As a result these 36 individuals were only counted once in the total sample size to prevent participants being counted multiple times.

Informed consents, to explain the survey procedures, were presented to each participant and read aloud prior to data collection. Paper copies of the surveys were provided to students in small groups to allow for privacy while completing the surveys. Each survey contained an identification number and student’s names were collected separate from the surveys to ensure parental consent had been obtained. No identifying information was placed on the surveys. For students with difficulty reading, survey administrators were available to assist. Students were encouraged to ask questions regarding the survey in order to respond as honestly as possible. The afterschool staff members were not present for the data collection and students were assured that the staff would not see individual responses to ensure confidentiality. Survey administrators reviewed each survey upon completion to ensure all items had been answered or initially omitted. Of the 165 completed questionnaires, 163 were used in the data analysis. Two individuals completed surveys in Y3 and were excluded because they were no
longer within the desired school age range (i.e. they were in college and no longer in high school). Both participants previously completed the surveys in Y2, these data were retained. All other participants were included in the data analysis for a total of 163 surveys completed.

**Instrumentation**

Using the instrument, *Youth Involvement in Community Issues (YICI)*, subscales of larger indices were used to examine youth’s perception of community support, community involvement, and community connectedness. Each subscale consists of five individual items. The subscale of *Community Support* includes the items: *I feel supported by my community; My community cares about me; Adult leaders in my community are concerned about my needs; Adults in my community are my role models; and There are adults I can talk to in my community.*

The subscale of *Community Involvement* includes the items: *Youth are very involved in the local community; I am very involved in my community; I would like to be more involved in my community; I am very motivated to be involved in my community; and I feel valued by my community as a result of my community involvement.*

Finally, the subscale of *Community Connectedness* includes the items: *Youth in my community have a voice; I feel connected to my community; I am not interested in what goes on in my community; I am able to influence decisions that affect my community; and I do not feel I have a positive impact on my community.*

The YICI instrument also examines what types of media format youth perceive that they gain knowledge from relating to community issues. One additional YICI subscale examines possible media formats used by youth to learn about community issues. Youth were asked to indicate on a scale of strongly disagree (1) to strongly agree (5) in regard to which media formats *I learn about community issues from: (Newspapers/Magazines, Books, TV, Movies, Music, Social Networking Websites, and the Internet).*

Data were collected annually at the end of every school year and entered into individual spreadsheets for each year and each county. Data were then combined into one spreadsheet for all previous years for both counties. Because of the large amount of turnover in the after-school program enrollment each year, this research examines responses for total project enrollment by year. Some students may have returned from one year to the next, however, this was more often not the case. Therefore, the analysis does not attempt to match individual responses; rather, it is considering whether there were changes in group responses for those youth participants in the annual after-school programs included in the project.

**Analysis**

Data were analyzed to examine the relationship between media formats as a means of gaining youth community knowledge and individual perceptions of community connectedness, community involvement, and community support. Descriptive statistics were conducted to examine demographic data (sex, race/ethnicity, age, grade in school). One-Way ANOVA, bivariate correlations and linear regressions were conducted to examine the mean differences, relationship between the independent (formats of media for knowledge regarding community issues) and dependent variables (community support, community connectedness, and community support), and the predictor variable of media use.
Results

Participants
Participants ranged in age from 11 to 19 years, with a mean age of 13.26 (1.851). Of the participants, 50.3% (82) are females, 49.7% (81) are males; 73.0% indicated that their race is African American, 16% are Hispanic, 8.6% are White and 2.4% indicated Other. All participants were in middle or high school (6th-12th grade) with a majority of participants reporting that they are in middle school (65.6%). County 1 students made up a majority of the sample population 76.1 % (124); County 2 had 39 participants (23.9%).

Media and Community Variables
Mean scores were computed using the scale of strongly disagree (1) to strongly agree (5). The mean scores indicate the extent to which students agree they learn about community issues from the various forms of media. Year one, two, and three mean scores for each of the subscales are indicated in Table 2. Overall media includes all seven forms of media examined within the index. Mean scores for overall media increased from Y1-Y2 (3.0476 to 3.5288) but decreased Y2-Y3 (3.5288 to 3.4391). Mean scores for overall media from Y1-Y3 saw an increase (3.0476 to 3.4391). Mean scores for each individual item by year can be found in Table 3. Significant differences in mean scores were found from Y1 to Y2 within TV (F=6.526, p=.012). From Y2 to Y3 there were not significant differences in mean scores. Significant mean scores differences from Y1 to Y3 were found between Newspaper (F=4.503, p=.036) and TV (F=4.493, p=.037). During all three years, participants agreed most frequently that they learned about community issues from the Internet, Y1 62.9%, Y2 76.2% Y3 76.4%.

Table 2
Mean Scores - Overall Totals for Media and Community Variables

<table>
<thead>
<tr>
<th></th>
<th>Media</th>
<th>Connectedness</th>
<th>Involvement</th>
<th>Support</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y1 n=27</td>
<td>3.0476 (1.24)</td>
<td>2.9519 (.93)</td>
<td>3.0370 (1.12)</td>
<td>3.10 (.97)</td>
</tr>
<tr>
<td>Y2 n=65</td>
<td>3.5288 (1.01)</td>
<td>3.4627 (.69)</td>
<td>3.6273 (.93)</td>
<td>3.8182 (.85)</td>
</tr>
<tr>
<td>Y3 n=71</td>
<td>3.4391 (1.03)</td>
<td>3.4240 (.73)</td>
<td>3.2588 (.91)</td>
<td>3.4794 (.92)</td>
</tr>
</tbody>
</table>

Table 3
Mean Scores - Overall Totals for Media and Community Variables

<table>
<thead>
<tr>
<th></th>
<th>Newspaper/ Magazines</th>
<th>Books</th>
<th>TV</th>
<th>Movies</th>
<th>Music</th>
<th>Social Networking</th>
<th>Internet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y1 n=27</td>
<td>2.78 (1.476)</td>
<td>2.70  (1.436)</td>
<td>3.11   (1.502)</td>
<td>3.00 (1.359)</td>
<td>3.00 (1.414)</td>
<td>3.22 (1.528)</td>
<td>3.52 (1.451)</td>
</tr>
<tr>
<td>Y2 n=65</td>
<td>3.28 (1.475)</td>
<td>3.33 (1.491)</td>
<td>3.90 (1.281)</td>
<td>3.27 (1.483)</td>
<td>3.48 (1.386)</td>
<td>3.46 (1.428)</td>
<td>3.99 (1.273)</td>
</tr>
<tr>
<td>Y3 n=71</td>
<td>3.46 (1.376)</td>
<td>3.21 (1.322)</td>
<td>3.76 (1.294)</td>
<td>3.15 (1.509)</td>
<td>3.09 (1.494)</td>
<td>3.37 (1.475)</td>
<td>4.04 (1.227)</td>
</tr>
<tr>
<td>Overall</td>
<td>3.27 (1.445)</td>
<td>3.17 (1.421)</td>
<td>3.71 (1.345)</td>
<td>3.17 (1.468)</td>
<td>3.23 (1.443)</td>
<td>3.38 (1.458)</td>
<td>3.93 (1.291)</td>
</tr>
</tbody>
</table>

Using the three community subscales, mean scores for overall media impact on youth perceptions of community connectedness, community involvement, and community support,
were analyzed using One-Way ANOVA (Table 4). In Y1 there were no significant findings for mean score differences between media use and community involvement, support or connectedness. In Y2, the relationship between media and community involvement was positive with a p-value of .04 using a One-Way ANOVA. In Y3, statistically significant mean differences between media use and connectedness existed with a p-value of .003 using a One-Way ANOVA.

**Table 4**
One-Way ANOVA-Media Use and At-Risk Youth Perceptions of Community

<table>
<thead>
<tr>
<th></th>
<th>Media/Connectedness</th>
<th>Media/Involvement</th>
<th>Media/Support</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y1 n=27</td>
<td>1.564</td>
<td>.697</td>
<td>1.674</td>
</tr>
<tr>
<td></td>
<td>.222</td>
<td>.743</td>
<td>.210</td>
</tr>
<tr>
<td>Y2 n=65</td>
<td>1.650</td>
<td>1.882*</td>
<td>1.256</td>
</tr>
<tr>
<td></td>
<td>.081</td>
<td>.040</td>
<td>.257</td>
</tr>
<tr>
<td>Y3 n=71</td>
<td>2.643**</td>
<td>1.758</td>
<td>1.307</td>
</tr>
<tr>
<td></td>
<td>.003</td>
<td>.053</td>
<td>.218</td>
</tr>
</tbody>
</table>

* P < .05, * P < .001

In addition, bivariate correlations were conducted between overall media scores and the community subscales (Table 5). In Y1, there was a positive statistically significant relationship between media and community connectedness, media and community involvement, and media and community support when conducting bivariate correlations. In Y2, there were no statistically significant relationships between media and community connectedness, involvement, or support. In Y3, there was a positive relationship between media and community connectedness with a p-value of .028.

**Table 5**
Bivariate Correlations – Overall Media Use and At-Risk Youth Perceptions of Community

<table>
<thead>
<tr>
<th></th>
<th>Media/Connectedness</th>
<th>Media/Involvement</th>
<th>Media/Support</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y1 n=27</td>
<td>.412*</td>
<td>.432*</td>
<td>.530**</td>
</tr>
<tr>
<td></td>
<td>.033</td>
<td>.024</td>
<td>.008</td>
</tr>
<tr>
<td>Y2 n=65</td>
<td>-.066</td>
<td>-.171</td>
<td>-.046</td>
</tr>
<tr>
<td></td>
<td>.596</td>
<td>.169</td>
<td>.713</td>
</tr>
<tr>
<td>Y3 n=71</td>
<td>.267*</td>
<td>.064</td>
<td>.213</td>
</tr>
<tr>
<td></td>
<td>.028</td>
<td>.604</td>
<td>.081</td>
</tr>
</tbody>
</table>

* P < .05, * P < .001

Based on the correlation results, linear regression analysis (Table 6) was conducted to examine whether the use of media formats to use for learning about community issues was predictive of community support, community involvement, or community connectedness. As shown in Table 6, linear regression analysis indicated that learning about community issues from media formats overall was predictive of student’s perceived community support β=.214 t (156) = 2.73, p=.007 and community connectedness β=.211 t (160) = 2.729, p=.007. Individual years were also examined. In Y1, all three community variables were predicted by learning about community issues from media formats: community connectedness β=.412 t (25) = 2.261, p=.033;
community involvement $\beta = .432 \ t(25) = 2.346, p = .024$; community support $\beta = .530 \ t(22) = 2.931, p = .008$. In Y2, no community variables were predicted by learning about community issues from media formats. During Y3, community connectedness was predicted by learning about issues from media formats $\beta = .267 \ t(66) = 2.251, p = .028$.

**Table 6**

Linear Regression – Media Use Predictive of Community Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>SE B</th>
<th>$\beta$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connectedness (Y1)</td>
<td>.039</td>
<td>.137</td>
<td>.412*</td>
</tr>
<tr>
<td>Involvement (Y1)</td>
<td>.389</td>
<td>.162</td>
<td>.432*</td>
</tr>
<tr>
<td>Support (Y1)</td>
<td>.407</td>
<td>.139</td>
<td>.530**</td>
</tr>
<tr>
<td>Connectedness (Y3)</td>
<td>.188</td>
<td>.083</td>
<td>.267*</td>
</tr>
<tr>
<td>Total Connectedness</td>
<td>.151</td>
<td>.055</td>
<td>.211**</td>
</tr>
<tr>
<td>Total Support (Y1-Y3)</td>
<td>.188</td>
<td>.069</td>
<td>.214**</td>
</tr>
</tbody>
</table>

*P<.05 **P<.01

Based on the correlation results, linear regression analysis was conducted to examine whether the use of media formats to use for learning about community issues was predictive of community support, community involvement, or community connectedness. Linear regression analysis indicated that learning about community issues from media formats overall was predictive of student's perceived community support $\beta = .214 \ t(156) = 2.73, p = .007$ and community connectedness $\beta = .211 \ t(160) = 2.729, p = .007$. Individual years were also examined. In Y1, all three community variables were predicted by learning about community issues from media formats: community connectedness $\beta = .412 \ t(25) = 2.261, p = .033$; community involvement $\beta = .432 \ t(25) = 2.346, p = .024$; community support $\beta = .530 \ t(22) = 2.931, p = .008$. In Y2, no community variables were predicted by learning about community issues from media formats. During Y3, community connectedness was predicted by learning about community issues from media formats $\beta = .267 \ t(66) = 2.251, p = .028$.

**Discussion**

The purpose of this study was to explore the at-risk youth perceptions of media use as a means to gain knowledge about community issues. Specifically, the variables of community connectedness, community involvement, and community support were examined. Media use included various formats of media that were examined individually and overall to examine the relationship between media and learning about community for these youth. Questions included: Which forms of media do youth report most of their knowledge about community issues comes from? Does the relationship between media use for knowledge of community issues and community variables change by program year? Are youth perceptions of connectedness, involvement, and/or support related to the type of media format used for knowledge gains?

An examination of individual media formats indicates that Internet use increased over time during the three-years of data collection (Table 3). It was also found to be the most often used
format related to knowledge gains. This aligns with project goals to increase media use as a means to increase community involvement and connectedness. Youth were provided computers to use at the program sites and were provided designated time each week to access websites in order to increase knowledge regarding community issues. Specific projects were provided to youth to investigate their individual communities in an attempt to increase knowledge regarding issues present within their communities.

In response to the research question RQ1, the results suggest that the increase in overall Internet use among participants was due in large part to a specific increase in the use of online social networking. A Facebook group was established for each site and participants were informed of local leaders and agencies that had their own Facebook pages or Internet websites. The increased use of Internet as a media format is a positive indication that youth involved in this program gained technology skills over time. Since it is reported as the most used format to gain knowledge of community issues, this can be woven into curriculum lessons and activities for the project as well as for others working with at-risk participants in after-school programs. Y2 had significant increases in the use of media for community knowledge that also align with youth reports of increase positive perceptions of each of the community variables. Significant increases in five of the seven media formats between Y1 and Y2 indicate youth were using media formats of various types at increasing rates to learn about community through the program. Interestingly, the use of print media, such as newspapers and magazines, increased from Y1-Y3 and was significant in Y3, indicating that youth were reading more print media or had access to these types of materials through the program.

In response to RQ2, several statistically significant results emerged from the data analysis of at-risk youth perceptions of media formats and knowledge gains related to community connectedness, community involvement, and community support. First, from Y1 to Y2, there were gains in both media use for knowledge of community issues and youth’s perception of all three community variables (Table 2). Throughout the program, youth were involved in community service projects in the local area which could possibly account for the increase in perceptions relating to community involvement. In addition, through the daily interaction with adult staff members, youth’s perceptions of support from the community may have increased. Connectedness increased during this time, possibly as a result of this relationship that they had not experienced in other ways. Youth use of media formats and perceptions of community remained fairly stable between Y2 and Y3 with a slight decrease in all four variables, indicating that as the program continued, youth had settled in to the topics of community issues and their use of media likewise remained consistent. Further, there were staff changes during Y2 that may account for the changes in media use during the transition.

With each year of the after-school program, the relationship between media use and knowledge of community issues increased. There was not a significant relationship in Y1. In Y2, it became a positive relationship, and in Y3 it became a strong positive relationship (Table 4). This supports project staff efforts to utilize media to increase knowledge of community, increase participant perceptions of community support and involvement, as well as, have important community connections made. This is very important for these youth, who are in low SES neighborhoods, and that may not have opportunities to see other parts of their local area. Connectedness came out the strongest of the three community variables in regard to explaining the variation of means, indicating that important connections were being made by youth. Connecting them to community builds pride and attachment, which can help protect them from risk factors and increase their resiliency (Loughlin, et al., 2013).
There was an overall relationship between media use for knowledge gains of community issues that was found to be positive across all three community variables in Y1; not found in Y2; and found again to be positive in Y3 with community connectedness (See Table 5). It is uncertain why it was not found in Y2 as other analysis seemed to indicate that media use during Y2 was significant; however, as previously discussed, it was more significant with some media formats than others. This indicates that even though media use overall was not always found to be positively related to the community variables, certain types of media were perceived by youth to be instrumental in learning about community.

Last, media use for knowledge gains was found to be a predictor of all community variables in Y1. This is explained by their recent exposure to media through the after-school program that may have provided access to certain forms of media for the first time. Youth reported in Y1 that they did not have Internet access at home (0%), therefore, they were eager to utilize the media formats made available to them. Further, it was predictive of community connectedness in Y3 showing indications that youth were learning via media how to connect to community. Media use was also a predictor for total support across all three years. During this time, youth were engaged in using social networking sites to explore community groups, leaders, agencies and organizations. Finally, total connectedness to community was predicted by media use over all three years. These results indicate that there is a strong predictive relationship between media use and the community variables examined.

The overall analysis enlightened our understanding of the media formats shaping learning behaviors for community issues. Respondents across the three years reported that media played an important role in their learning process. This allows project staff to consider further how to integrate media use into project activities, lessons, and communication. It also helps staff identify which technology youth perceive as most related to their perceptions of community supports, involvement and connectedness.

**Conclusion**

While the results of this study provide interesting insights into the relationship between at-risk youth, media, and community, further research should build from these results to more clearly examine these relationships. In particular, research is essential to determine the media formats that students identify for the most knowledge gains relating to community issues. Based on their media preferences, project staff could redirect them toward the media formats to increase learning in the informal setting of an after-school program.

The relationship between media format and learning about community issues exists and is strong. Further, these results indicate the importance of media use to educate youth regarding issues within communities, as this is predictive of their perception of community support, involvement and connectedness. These three variables are fundamental to the growth and development of adolescents and the communities in which they reside. A further understanding of media and how it can be used specifically for at-risk youth to maximize learning about specific community topics is important, as well as determining how the more abstract concepts and perceptions of community attachment of youth may relate to media use as a means for strengthening it.
References


Bers’s Theory of Positive Technological Development

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Bers’s Theory of Positive Technological Development

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University of California

Abstract: This resource review provides an introduction to Mariana Bers’ new book, Designing Digital Experiences for Positive Youth Development (2012). Bers applies the Six C model of Positive Youth Development (PYD) to the digital domain with her theoretical model, Positive Technological Development. The model may be particularly valuable for practitioners seeking to design digital experiences for youth, as well as for evaluators who assess the PYD outcomes associated with youth participation in these spaces.

Introduction

This article is a review and overview of Bers, M. (2012). Designing Digital Experiences for Positive Youth Development. New York: Oxford University Press, Inc.

Youth in the United States spend substantial amounts of time participating in activities that involve digital technologies. In her recent book, Mariana Bers advocates for the design of digital opportunities that promote positive youth development. Using the metaphor of landscape design, she argues that designers of digital programs should strive to provide:

- young children with a digital playground, not a virtual playpen. The “playground promotes, while the playpen hinders, a sense of mastery, creativity, self-confidence, and open exploration” (p. 23).
- elementary youth a multimedia park, not a virtual mall. Parks are places of creation while malls are venues of consumption.
- high school adolescents with a palace in time, not simple wireless hangouts. Online environments should support purposeful explorations of identity, self-reflection, creativity, and community participation.

For designers of digital environments, the question becomes: how do we best promote playgrounds, parks, and a palace in time, referred to more broadly as positive youth development, in these online spaces?
Bers embraces the Six C Model of Positive Youth Development (PYD) (Lerner, 2004) and extends the C’s to the domain of digital technologies with her theoretical model, Positive Technological Development (PTD). The PTD framework incorporates three aspects: individual assets defined by the 6 C’s of PYD, technology-mediated activities that link with the individual assets, and situated practice in various contexts. The value of PTD is in its linkage to the 6 C’s model of PYD, a model developed through empirical research (e.g., Lerner, et al., 2012). The PTD framework provides guidance on the types of digital and media activities, experiences, and programs that promote positive technological development by linking the 6 C’s to specific technology-mediated behaviors. A brief overview and synthesis of PTD is provided below in Table 1.

**Table 1**

Connections between the 6 C’s of Positive Youth Development (PYD) and Positive Technological Development (PTD)

<table>
<thead>
<tr>
<th>6 C’s of PYD Individual Assets (Lerner, 2004)</th>
<th>PTD Technology-Mediated Behavior</th>
<th>Description of the PTD Construct</th>
<th>Theoretical Underpinning of the PTD Construct</th>
</tr>
</thead>
<tbody>
<tr>
<td>Competence</td>
<td>Content Creation</td>
<td>Creation of personally meaningful projects; youth become producers, not consumers; youth develop competency in participatory online culture.</td>
<td>Constructionism (Papert, 1980) and new digital literacies (e.g., Jenkins, 2009)</td>
</tr>
<tr>
<td>Confidence</td>
<td>Creativity</td>
<td>Development of self-efficacy through experiences supportive of creative expression, sharing, and reflecting.</td>
<td>Creativity (Resnick, 2007; Sawyer, 2006) and Flow (Csikszentmihalyi, 2000)</td>
</tr>
<tr>
<td>Character</td>
<td>Choices of Conduct</td>
<td>A bounded playground with freedom for youth to make choices, take risks, experience consequences, and reflect; experiment with moral and ethical issues and community norms.</td>
<td>Moral development (e.g., Kohlberg, 1976)</td>
</tr>
<tr>
<td>Connection</td>
<td>Communication</td>
<td>Synchronous and asynchronous communication through multimedia (text, voice, sound, video, etc.); development of language and literacy; promotion of connections between youth and adults.</td>
<td>Communication and computer-mediated communication (e.g., Herring, 2002)</td>
</tr>
<tr>
<td>Caring</td>
<td>Collaboration</td>
<td>Common tasks require that youth depend and respond to each other; experience includes technical and social supports from peers and adults; youth use technology to help others.</td>
<td>Computer-supported collaborative learning (e.g., Stahl, Koschmann, &amp; Suthers, 2006); Communities of Practice (Lave &amp;Wenger, 1991)</td>
</tr>
<tr>
<td>Contribution</td>
<td>Community-Building</td>
<td>Shared sense of community responsibility; mechanisms for contributions to the common good; experiencing democratic participation.</td>
<td>Youth civic engagement (e.g., Middaugh, 2012)</td>
</tr>
</tbody>
</table>
The application of Bers’s framework provides program developers and researchers with criteria in designing and/or evaluating digital experiences. The PTD framework moves forward the digital/media literacy discussion, often framed as youth-as-consumers of media instead of youth as contributors in a participatory culture. In other words, PTD responds to the question of how we use technology to help youth become not only technological fluent, but become thriving people that contribute to their communities.

The C’s (in both PYD and PTD) interact and impact each other, but are artificially separated for ease of understanding. Since the PTD framework extends the 6 C model of PYD, it experiences similar limitations, namely that the 6 C model is one among many theoretical models attempting to explain the process and programs of youth development (Lerner, et al., 2011). The 6 C’s do not represent a broad consensus across practitioners, let alone researchers, in being the factors universally contributing to youth thriving (King, et al., 2005). While Bers broadly applies her framework to a wide variety of technologies, from educational robotics to online communities, PTD is by no means an exhaustive list of everything designers will encounter or should consider in developing digital experiences for youth.

Readers interested in the Positive Technological Development framework, including empirical research, may find additional information from Bers and colleagues (2008, 2010, 2012).

References


