Journal of Children and Media

ISSN: 1748-2798 (Print) 1748-2801 (Online) Journal homepage: http://www.tandfonline.com/loi/rchm20

What kind of adults will our children become? The impact of growing up in a media-saturated world

Ellen Wartella, Leanne Beaudoin-Ryan, Courtney K. Blackwell, Drew P. Cingel, Lisa B. Hurwitz & Alexis R. Lauricella

To cite this article: Ellen Wartella, Leanne Beaudoin-Ryan, Courtney K. Blackwell, Drew P. Cingel, Lisa B. Hurwitz & Alexis R. Lauricella (2016) What kind of adults will our children become? The impact of growing up in a media-saturated world, Journal of Children and Media, 10:1, 13-20, DOI: 10.1080/17482798.2015.1124796

To link to this article: http://dx.doi.org/10.1080/17482798.2015.1124796

Published online: 18 Jan 2016.

JOURNAL OF CHILDREN AND MEDIA, 2016
VOL. 10, NO. 1, 13–20
http://dx.doi.org/10.1080/17482798.2015.1124796

Routledge
Taylor & Francis Group

What kind of adults will our children become? The impact of growing up in a media-saturated world

Ellen Wartella, Leanne Beaudoin-Ryan, Courtney K. Blackwell, Drew P. Cingel, Lisa B. Hurwitz and Alexis R. Lauricella

Center on Media and Human Development, School of Communication, Northwestern University, Evanston, IL, USA

ABSTRACT

This article urges children and media scholars to consider the broader consequences of the ubiquitous media environment in which children live today. We consider, within a broader sociocultural context, the ways in which media and interactive technology serve as more knowledgeable others, scaffolding children's learning and development. Given this context, it is imperative for researchers to consider the consequences of living in the digital age and how broader developmental trajectories may be influenced. We call upon children and media researchers to contemplate more thoughtful research agendas that begin to assess the larger impact of media on children's learning and developmental trajectories.

ARTICLE HISTORY
Received 27 February 2015
Revised 27 August 2015
Accepted 28 August 2015

KEYWORDS
Children and media; developmental trajectories; Vygotsky; research agenda; scaffolds

When reviewing the extant literature on children and media, it is clear most research has focused primarily on the immediate impact of media use on development in areas such as cognition, executive functioning, social-emotional learning, and behavior (e.g. Anderson & Bushman, 2002; Krcmar & Cingel, 2014; Lillard & Peterson, 2011; Mares & Acosta, 2008). Indeed, these shorter term consequences of media use dominate the literature. When longer term studies are conducted, they tend to be outcome specific and relate the early use of a particular type of media content with later behavioral outcomes (e.g. Anderson, Huston, Schmitt, Linebarger, & Wright, 2001).

The purpose of this article is to consider the more indelible consequences of the ubiquitous media environment in which children live today. Throughout this article, we will reflect on the following question in an effort to spur new ideas for research on children and media: How might children's interactions with new technology and contemporary children's media content impact or shape the *types of adults* they will become? Considering a question of this scope will allow researchers to more fully recognize and understand the long-term consequences of pervasive media exposure during childhood by not only provoking new lines of research with novel designs, but also adding to our knowledge of how developmental trajectories are shaped by such experiences.

CONTACT Leanne Beaudoin-Ryan leanne.beaudoin-ryan@northwestern.edu

This bigger picture view of the implications of growing up in the early twenty-first century for today's children and youth has historical counterparts in the early twentieth century theorizing about human development. Of relevance is the work of Lev Vygotsky (1896–1934), a Soviet psychologist best known for his theories on the social underpinning of cognitive development. His goal was to help shape a socialist society by understanding how social contexts influence human development. We discuss the possibility of revisiting Vygotsky's Sociocultural Theory as a way to inspire new approaches to contemporary research into the long-term impact of media exposure during childhood.

Vygotsky's sociocultural theory

For Vygotsky (1930–1934/1978), social interactions with others form the foundation for cognitive development. Vygotsky (1930–1934/1978) argued that the structure of children's thinking and higher order mental processes are largely mediated by the nuances of a child's culture and the historical conditions of the society in which they are steeped. Out of necessity, humans have developed and relied upon various cultural tools (e.g. speech, writing, and number systems) to understand and navigate not only individual social interactions, but also how these patterns of interaction impact the broader sociocultural context (Vygotsky, 1930–1934/1978).

This notion contrasts sharply with those of other scholars of child development, such as Jean Piaget (1896–1980), who contended that children's interactions with the environment, rather than with others, are the driving force behind cognitive development and learning (Piaget, 1962). Within a Piagetian framework, learning and development are thought to occur in a regimented fashion that does not account for variability contributed by culture and the larger sociocultural context. Despite these claims, research has demonstrated that the sociocultural context does, in fact, have an influence on both learning and development (e.g. Cole & Gajdamaschko, 2010).

Recently, scholars have suggested that mass media and interactive technology be considered cultural tools for mediating social interactions (Means & Olson, 1997; Yelland & Masters, 2007), making Vygotsky's Sociocultural Theory (1930–1934/1978) particularly relevant to contemporary communication researchers—especially those interested in the impact of media on development and learning. Specifically, we argue that two tenants of Vygotsky's Sociocultural Theory (1930–1934/1978) should resonate deeply with children and media researchers: (1) dominant activity and (2) the zone of proximal development.

According to Vygotsky (1930–1934/1978), dominant activities are ubiquitous among children within a particular culture, since they provide pertinent information about that culture (e.g. social values and behaviors). We contend that engagement with screen media and interactive technology should be classified as dominant childhood activities for children around the world. For example, television watching has been considered a common activity of American childhood since the mid-1980s (Watkins, 1985). More recently, children in countries around the globe have begun to experience unprecedented exposure to mass media and increasing access to interactive technologies (e.g. Clarke, 2014 [UK]; GSM Association, & NTT DOCOMO, 2014 [Algeria, Egypt, Iraq, and Saudi Arabia]; Rideout, 2013 [US]; Viriyapong & Harfield, 2013 [Thailand]). Therefore, considering media use as a dominant childhood activity is crucial to not only understanding how children use these tools to make sense of

current cultural norms and values, but also anticipating the impact of these tools in shaping the larger cultural landscape.

A second tenant of Vygotsky's (1930–1934/1978) Sociocultural Theory is the notion of the zone of proximal development, whereby children's cognitive abilities grow when challenged by more knowledgeable others, such as caregivers, teachers, and older siblings. The zone of proximal development can be conceptualized as the gap between a child's current level of development and understanding and the more advanced experiences that contribute to learning. Using social interaction as a medium, more knowledgeable others provide support and structure for these tasks in ways that encourage a child's success. Within the child development community, this phenomenon is commonly referred to as scaffolding (e.g. Vygotsky, 1930–1934/1978; Wood, Bruner, & Ross, 1976). All interactions, supports, and structures are tailored to individual children.

Keeping this in mind, media-based tools can operate within a child's zone of proximal development to provide the structure and support necessary for learning. In younger children, scaffolding almost always is initiated by more informed others or can be provided by intelligently designed technology (Quintana, Shin, Norris, & Soloway, 2006). However, older children and adolescents have been found to self-direct more developmentally advanced information-seeking behaviors online (Wartella, Rideout, Zupancic, Beaudoin-Ryan, & Lauricella, 2015). For example, the internet and other technology allow adolescents to access adult-targeted health information sites, permitting them to increase their knowledge base about health by searching above and beyond what they have learned from parents or in school (Wartella et al., 2015).

Taken together, these findings strongly suggest that media can serve as proxies for more knowledgeable others that promote or scaffold children's learning. Essentially, media provide children and adolescents with the affordances necessary to learn information above and beyond their given developmental stages. As such, media become not only a sociocultural conduit through which children are exposed to the societal and cultural values that influence their learning and development, but also a tool to structure activities that lead to advancements in learning. By understanding the role of media and technology in the lives of children and society, researchers can begin to unpack the impact of living in the modern age, especially the long-term consequences of how living with ubiquitous media may potentially shape the adults of tomorrow.

Considering the implications of childhood media and interactive technology use

Media that operate within a child's zone of proximal development can present children with rich experiences that further their learning and development. For example, Dayanim and Namy (2015) found that 15-month olds were able to learn American Sign Language from at-home viewing of commercially available educational videos. *Kilimani Sesame*, a Sesame Workshop initiative in Tanzania, has had great success in teaching preschoolers about health issues, like Malaria and HIV (Borzekowski & Macha, 2010). Furthermore, some preschool television shows have relied upon repetition to help children learn the problem-solving skills necessary to complete challenges (Anderson et al., 2000). For example, *Blue's Clues* is an American television program designed for preschool audiences. Each week, viewers are given increasingly challenging, yet developmentally appropriate, problems to solve (Anderson et

al., 2000). In each episode, learning is scaffolded through the presentation and repetition of key pieces of information requisite for problem solving. Lastly, newer interactive technologies, like LeapFrog's LeapReader electronic reading and writing system, shape content to fit the learner by providing specific feedback contingent upon a learner's actions (e.g. Druin, 2009). Given these examples, we can see the power of media to successfully scaffold learning.

Yet, media are not always successful in scaffolding children's learning. Elkind (2006) argues that some experiences may be too far beyond a child's current level of maturity and understanding. For example, children younger than 30-month-old do not learn as well from mediated content as from live presentations, known as the video deficit effect (Anderson & Pempek, 2005). Similarly, preschool children may comprehend more from traditional paper storybooks than from e-books (Krcmar & Cingel, 2014). For young children, the cognitive resources required to engage with these media may simply be too great, preventing the media from acting as a knowledgeable other in these instances.

Importantly, the research both supporting and opposing the use of media's role as a knowledgeable other has primarily examined immediate effects; few studies have explored how these early experiences may influence developmental trajectories over time. Using academic achievement as an example, children exposed to media at very early ages may be better prepared to enter and succeed in formal school environments. For instance, Anderson and colleagues (2001) found that preschool educational television programming had a positive impact on academic achievement through high school for American youth. They suggest that preschool educational media use provided children with a love of learning, ensuring a positive trajectory upon entry to formal schooling. Alternatively, educational television could scaffold the particular skills needed to succeed in a school environment. In a more recent study conducted over the course of a school year, Blackwell (2015) found that kindergarteners who shared iPads with classmates outscored their peers—those who either worked individually on an iPad or had no exposure to this technology—on early literacy tests by up to 30% points. Collaborative learning around interactive technology (i.e. sharing an iPad) may serve as a potential scaffold for learning.

Furthermore, research has yet to determine how the use of media should be balanced with real-world experiences for young children. The potential benefits reaped from engaging with educational, developmentally appropriate media at very early ages may be outweighed by the loss of time that could have been spent engaging in imaginative play with real-world manipulatives or bonding with and learning from family—experiences that transmit values or knowledge just as well—if not better—than media. While media is often used with the best of intentions—as a way to prepare even the youngest children for later success in life—an inadvertent consequence may be the loss of childhood (Meyrowitz, 2005). Therefore, it seems natural that, as a research community, we should be concerned that young children may become intently engaged with media before they are developmentally ready and before we have investigated the longer term consequences.

Unlike the research on younger children that has focused on narrow and primarily academic outcomes associated with media, the research on adolescents media use has focused on some of the developmental effects of social media. Adolescents continue to increase their access to and use of social media platforms, like Facebook and Twitter. The majority of online teens in many countries around the globe report some type of social media use (e.g. GSM Association, & NTT DOCOMO, 2014 [Iraq and Saudi Arabia]; Livingstone et al., 2014 [Europe, Australia, and Brazil]; Pew Research Center, 2015 [US]). Wartella, Lauricella,

Cingel, and Connell (2016) argue that adolescent use of such sites may be largely driven by developmental goals and, thus, normative in nature. Specifically, 12- to 18-year olds have been found to use social media because these outlets serve as cultural tools that can help scaffold development by providing a platform for youth to safely engage in identity exploration (Valkenburg & Peter, 2008), friendship building and maintenance (Valkenburg, Peter, & Schouten, 2006), and intimacy creation (Livingstone, 2008)—all goals of adolescent development (e.g. Erikson, 1968). Clearly a dominant activity, social media may actually be a way for youth to fulfill developmental goals in a safe space that also stretches the boundaries of their social understanding.

As stated, older youth frequently engage with social media. Moreover, this engagement is often occurring on children's own internet-connected devices (GSM Association, & NTT DOCOMO, 2014), and social media use is extending to even younger children. For example, more than half of European 11–12-year olds use social media and, within the US, *more* 11- to 13-year olds use social media (71%) than do 14- to 17-year olds (65%) (Livingstone et al., 2014). Such trends raise interesting considerations for the study of children's social media use into the next decade. While there is a sizeable and growing body of social media effects literature focused on teenagers, research has yet to examine the impact that social media use among even younger children (e.g. ages 8–12) might have on the fulfillment of developmental goals. It could be that social media use encourages children to begin working toward achieving developmental goals earlier than did youth in previous generations.

Future questions

Today's children have lived in a technology-mediated world their entire lives; therefore they will, more than likely, view digital interactivity as normal and be more accepting of a world that has become increasingly mediated by technology. We have some understanding of how media may influence learning; however, academic achievement is but one developmental trajectory that may be impacted by technology use. Within the realm of cognitive development, we would also like to consider the impact that developmentally appropriate media and interactive technology have on outcomes like career choice, problem solving, and higher order reasoning. In extending this line of thinking, we should also consider the impact that media and interactive technology have on interpersonal relationships and the very nature of interpersonal interactions.

There are several ways that the children's media research community might begin to address the unanswered questions raised over the course of this paper. First, scholars in our field can strive to engage in more regular dialogue with researchers who focus specifically on populations within each developmental stage (i.e. infants, children, adolescents, adults) across the broader time course. If researchers work together to coordinate their efforts—through similar questions and measures—it may be easier to speculate about media's longer term impacts. Second, researchers can design longitudinal studies of media interventions in an effort to make causal inferences about the power of media and interactive technology to scaffold children's cognitive and social development over time. Historically, longitudinal studies rarely occur and, when they do, typically are conducted within one year of the initial intervention (e.g. Neuman, Newman, & Dwyer, 2011). By increasing the time lapse, researchers will be better able to understand longer term outcomes of media use and human development. Third, researchers working with large data-sets (e.g. Early Childhood Longitudinal

Survey [US]; Cape Area Panel Study [South Africa]) might consider incorporating more questions about media use into longitudinal correlational studies tracking cohorts over extended periods of time. These data could then be used to develop rich structural equation models connecting media use to a host of outcomes. Finally, research should have a cross-cultural component, whereby media effects are consistently considered in cultures outside of the US and Western Europe.

These are certainly not easy directions for future research; however, as a field, we stand at a time where the study of children, adolescents, and media is of greater consequence than ever before. Considering these more difficult questions by employing newer, more novel designs will allow our field to make more accurate predictions about the *types of adults* our children will become, with implications for the study of media and media effects on children and adolescents. We strongly believe this to be a research agenda worth continued pursuit.

Conclusions

Mass media and interactive technologies have become ubiquitous, providing unique platforms for learning about modern sociocultural contexts (Vygotsky, 1930–1934/1978). They should be considered dominant activities of childhood that can scaffold learning—potentially structuring and shaping developmental trajectories. We contend that media and interactive technology have pervasive influence on development and learning and may have the power to influence our values and conceptions of adulthood; namely, priorities, expectations around relationships with others, and definitions of success. We urge children and media researchers to think about the implications of media and interactive technology use during childhood in a way that will help increase our understanding of future adults. Ideally, media and interactive technology will be used as tools to help children become intelligent, successful, healthy, and sociable adults with strong core values. Our field is uniquely positioned to thoughtfully consider, through a Vygotskian lens, how these lived experiences may impact broader developmental trajectories, influencing the types of adults that our children might become.

Disclosure statement

No potential conflict of interest was reported by the authors.

Notes on contributors

Ellen Wartella is the director of the Center on Media and Human Development and the Al-Thani Professor of Communication, Professor of Psychology and Human Development & Social Policy at Northwestern University.

Leanne Beaudoin-Ryan is a postdoctoral fellow in the Center on Media and Human Development at Northwestern University.

Courtney K. Blackwell is an associate at Outlier Research & Evaluation in Chicago, IL, and a former graduate researcher for CMHD. She earned a PhD from the Media, Technology, & Society program at Northwestern University.

Drew P. Cingel is a graduate research assistant in the Center on Media and Human Development and a PhD candidate in the Media, Technology, & Society program at Northwestern University.

Lisa B. Hurwitz is a graduate research assistant in the Center on Media and Human Development and a PhD candidate in the Media, Technology, & Society program at Northwestern University.

Alexis R. Lauricella is the associate director of the Center on Media and Human Development and a lecturer in Communication Studies at Northwestern University.

References

Anderson, C. A., & Bushman, B. J. (2002). Human aggression. *Annual Review of Psychology, 53*, 27–51. doi:10.1146/annurev.psych.53.100901.135231

Anderson, D. R., & Pempek, T. A. (2005). Television and very young children. *American Behavioral Scientist, 48*, 505–522. doi:10.1177/0002764204271506

Anderson, D. R., Bryant, J., Wilder, A., Santomero, A., Williams, M., & Craley, A. M. (2000). Researching *Blue's Clues*: Viewing behavior and impact. *Media Psychology, 2*, 171–194.

Anderson, D. R., Huston, A. C., Schmitt, K. L., Linebarger, D. L., & Wright, J. C. (2001). Abstract. *Monographs of the Society for Research in Child Development, 66*, vii–viii.

Blackwell, C. K. (2015, March). *iPads in kindergarten: Investigating the effects of tablet computers on student achievement*. Poster presented at the Society for Research in Child Development Biennial Meeting, Philadelphia, PA.

Borzekowski, D. L. G., & Macha, J. E. (2010). The role of Kilimani Sesame in the healthy development of Tanzanian preschool children. *Journal of Applied Developmental Psychology, 31*, 298–305. doi:10.1016/j.appdev.2010.05.002

Clarke, B. (2014). *The use of tablet computers in UK schools*. UK: Tablets for Schools. Retrieved from http://tabletsforschools.org.uk/new-research-launched-tablet-computers-in-69-of-uk-schools/

Cole, M., & Gajdamaschko, N. (2010). Vygotsky and context: Toward a resolution of theoretical disputes. In S. Kirschner & J. Martin (Eds.), *The sociocultural turn in psychology: The contextual emergence of mind and self* (pp. 253–280). New York, NY: Columbia University Press.

Dayanim, S., & Namy, L. L. (2015). Infants learn baby signs from video. *Child Development, 86*, 800–811. doi:10.1111/cdev.12340

Druin, A. (2009). *Mobile technology for children: Designing for interaction and learning*. San Francisco, CA: Morgan Kaufmann.

Elkind, D. (2006). *The hurried child: Growing up too fast too soon*. Boston, MA: Da Capo Press.

Erikson, E. H. (1968). *Identity: Youth and crisis*. New York, NY: Norton.

GSM Association, & NTT DOCOMO. (2014). *Children's use of mobile phones 2013: An international comparison*. Retrieved from http://www.gsma.com/publicpolicy/myouth/research

Krcmar, M., & Cingel, D. P. (2014). Parent–child joint reading in traditional and electronic formats. *Media Psychology, 17*, 262–281. doi:10.1080/15213269.2013.840243

Lillard, A. S., & Peterson, J. (2011). The immediate impact of different types of televi sion on young children's executive function. *Pediatrics, 128*, 644–649. doi:10.1542/peds.2010-1919

Livingstone, S. (2008). Taking risky opportunities in youthful content creation: Teenagers' useof social networking sites for intimacy, privacy, and self-expression. *New Media & Society, 10*, 393–411. doi:10.1177/1461444808089415

Livingstone, S., Haddon, L., Hasebrink, U., O'Neill, B., Smahel, D., & Staksrud, E. (2014). *EU kids online: Findings, methods, recommendations*. Retrieved from http://lsedesignunit.com/EUKidsOnline/index.html?r=64

Mares, M. L., & Acosta, E. E. (2008). Be kind to three-legged dogs: Children's literal interpre tations of TV's moral lessons. *Media Psychology, 11*, 377–399. doi:10.1080/15213260802204355

Means, B., & Olson, K. (1997). *Technology and education reform: Studies of education reform*. Washington, DC: US Government Printing Office.

Meyrowitz, J. (2005). *No sense of place: The impact of electronic media on social behavior*. Oxford: Oxford University Press.

Neuman, S. B., Newman, E. H., & Dwyer, J. (2011). Educational effects of a vocabulary interven tion on preschoolers' word knowledge and conceptual development: A cluster-randomized trial. *Reading Research Quarterly, 46*, 249–272. doi:10.1598/RRQ.46.3.3

Pew Research Center. (2015). *Social networking fact sheet*. Retrieved from http://www.pewinternet.org/fact-sheets/social-networking-fact-sheet/

Piaget, J. (1962). *Play, dreams and imitation in childhood*. New York, NY: Norton.

Quintana, C., Shin, N., Norris, C., & Soloway, E. (2006). Learner-centered design. In R. K. Sawyer (Ed.), *The Cambridge handbook of the learning sciences* (pp. 119–134). New York, NY: Cambridge University Press.

Rideout, V. (2013). *Zero to eight: Children's media use in America*. Retrieved from https://www.commonsensemedia.org/research/zero-to-eight-childrens-media-use-in-america-2013

Valkenburg, P. M., & Peter, J. (2008). Adolescents' identity experiments on the internet: Consequences for social competence and self-concept unity. *Communication Research, 35*, 208–231. doi:10.1177/0093650207313164

Valkenburg, P. M., Peter, J., & Schouten, A. P. (2006). Friend networking sites and theirrelationship to adolescents' well-being and social self-esteem. *CyberPsychology & Behavior, 9*, 584–590. doi:10.1089/cpb.2006.9.584

Viriyapong, R., & Harfield, A. (2013). Facing the challenges of the One-Tablet-Per-Child policy in Thai primary school education. *International Journal of Advanced Computer Science and Applications(IJACSA), 4*, 176–184.

Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Cambridge, MA: Harvard University Press.

Wartella, E., Rideout, V., Zupancic, H., Beaudoin-Ryan, L., & Lauricella, A. R. (2015). *Teens, health, and technology: A national study*. Evanston, IL: Center on Media and Human Development, School of Communication, Northwestern University.

Wartella, E., Lauricella, A. R., Cingel, D. P., & Connell, S. (2016). Television, computers, and media viewing. In H. Friedman, R. Schwarzer, R. C. Silver, D. Spiegel, N. E. Adler, R. D. Parke, & C. Peterson (Eds.), *Encyclopedia of mental health* (2nd ed.). Oxford: Elsevier.

Watkins, B. (1985). Television viewing as a dominant activity of childhood: A developmental theory of television effects. *Critical Studies in Mass Communication, 2*, 323–337. doi:10.1080/15295038509360095

Wood, D., Bruner, J. S., & Ross, G. (1976). The role of tutoring in problem sol ving. *Journal of Child Psychology and Psychiatry, 17*, 89–100. doi:10.1111/j.1469-7610.1976.tb00381.x

Yelland, N., & Masters, J. (2007). Rethinking scaffolding in the information age. *Computers & Education, 48*, 362–382. doi:10.1016/j.compedu.2005.01.010