Children and Interactive Media

Research Compendium Update

Ellen A. Wartella, June H. Lee, and Allison G. Caplovitz
University of Texas at Austin

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Correspondence concerning this article should be addressed to Ellen A. Wartella, University of Texas at Austin, College of Communication, 1 University Station A0900, Austin, TX 78712 (e-mail: wartella@mail.utexas.edu)

1.0 Introduction

This is an update of the *Children and Interactive Media: A Compendium of Current Research and Directions for the Future* report to the Markle Foundation from October 2000. In this update, we examine the literature that has been published on the topic between June 2000 and May 2002, focusing on children's in-home use of interactive technologies (see Wartella, O'Keefe, & Scantlin, 2000, for details on our search strategy). In addition, we have organized our review of this literature according to the categories of the original research compendium, including children's use and access to interactive media; cognitive and social outcomes of such interactive media use, health and safety issues, and policy concerns.

In developing the bibliography for this review, we noted that since publication of our original compendium, there have been four books or special issues of journals devoted to this topic (Calvert, Jordan, & Cocking, 2002; *The Future of Children: Children and Computer Technology*; Singer & Singer, 2001; *Zero to Three: Babies, Toddlers, and the Media*, 2001) and an additional set of six research reviews of the literature (Buckingham, 2002; Cordes & Miller, 2000; Subrahmanyam, Greenfield, Kraut, & Gross, 2001; Subrahmanyam, Kraut, Greenfield, & Gross, 2001; Tarpley, 2001; Villani, 2001). Interestingly, however, as we noted in the 2000 report, most of the empirical research to date are studies of the amount of time children spend using interactive media, and studies of the influence of violent content in video games and other interactive media on children's social behavior.

Thus, the topics of inquiry continue to be narrowly focused, and there is still a paucity of research on such issues as the role of interactive media in promoting cognitive growth, the impact of interactive technologies on children's health (e.g., seizures, addiction, and weight gain), and studies of how children interpret advertising in web environments or understand disclosure and other practices to protect their privacy. Indeed, to date little systematic research has been conducted to either legitimize or dispute claims about the impact of interactive media content on children's development, although expression of concern is in the literature (e.g. Cordes & Miller, 2000). Further, few investigations have been conducted that reflect recent advances in interactive technology, including studies on the use and impact of handheld devices, wireless technology, and interactive toys. Explorations on the implications of media convergence (e.g., the manifestations of content across different platforms), accompanied by media

consolidation in the industry itself (e.g., the America Online and Time Warner merger in 2001) have also been conspicuously absent.

The empirical research on children and interactive media has yet to match the myriad of questions posed about its effects. This research, however, has become a thriving area of study as interactive media continue to pervade children's lives and as the technology itself continues to evolve.

2.0 Media Use and Access

Since the 2000 report, both large- and small-scale studies have been published on children's in-home use of interactive media. These studies indicated that ownership of computer-based media has continued to grow. Between 1999 and 2000, computer ownership in American households had grown 2% (from 68%-70%), whereas ownership of video game systems remained relatively stable, with a 1% growth (from 67% to 68%). Online access saw the most significant increase from 1999 to 2000: household dissemination grew 11%, from 41% in 1999 to 52% in 2000 (Woodard & Gridina, 2000). Almost no academic research has emerged on children's use of interactive appliances such as handheld games, interactive toys, and wireless technologies.

The data from the 1997-1998 U.S. Census Bureau's Current Population Survey of U.S. Households (Becker, 2000) showed that 57% of homes with children and adolescents had a computer, and that 60% of children in those households could be classified as regular users (at least 3 days a week). Children most frequently reported using the computer for playing games, followed by school assignments. Internet access was less prevalent than other computer applications: 34% of school-aged children had in-home access to the internet. Among teens, the most cited purpose for going online was for homework, but the data also showed that children's use of the internet for information seeking had declined between 1997 and 1998, while the use of email had grown. Thus, in the home environment, where internet use was propelled by children's preferences, informational use might be giving way to recreational use (Becker, 2000).

Compared with these 1997-1998 Census statistics, recent studies indicate greater media saturation in the home. The most recent national survey, involving 1,235 parents of 2- to 17-year-olds and 416 eight- to sixteen-year-olds, was conducted by the Annenberg Public Policy Center (Woodard & Gridina, 2000). According to the *Media in the Home 2000* survey, American children live in a media-rich environment. In homes with children ages 2-17, 70% owned a computer, 68% owned video games, and 52% had online access. For non-interactive media, 98% of households had at least one television, 97% owned a VCR, 78% had a subscription to basic cable and 31% to premium cable, and 42% subscribed to a daily newspaper. For the first time, online access surpassed newspaper subscriptions. Interactive media had begun to permeate many children's bedrooms: Among 8- to 16-year-olds, 20% had a computer in their bedroom, of which 54% had internet access.

Although television continued to dominate children's time with media, interactive media occupied a significant portion of 2- to 17-year-olds' time. Parents reported that, on average, these children spent 34 minutes a day on a computer, 33 minutes playing video games, and 14 minutes on the internet (Woodard & Gridina, 2000). From this same survey, data on young children's computer use had begun to emerge: According to reports from 145 parents of 2- to 3-year-olds, even these young children spent an average of 17 minutes on the computer, 19 minutes playing video games, and 5 minutes on the internet daily (Jordan & Woodard, 2001). Although data on the time young children spend with interactive media are being collected, the *content* of programs or activities remain overlooked.

Since 2000, we also know more about teenagers' internet use—knowledge that was previously a domain of market research. One small-scale study with 189 middle-class teens (ages 14-19) revealed most teens used the internet for less than an hour a day at home or in school (La Ferle, Edwards, & Lee, 2000). Internet use was less prominent than other media use, namely watching television and listening to the radio. About half of the teens reported spending 1 to 3 hours watching television, and over 3 hours listening to the radio daily. They appeared to use the internet for informational purposes—research, homework, news, and health education—and television and radio for entertainment purposes (La Ferle, Edwards, & Lee, 2000).

In late 2000, the Pew Research Center conducted large-scale studies of Americans' internet use. According to the Pew Internet and American Life Project (N = 754; Lernhart, Rainie, Lewis, 2001), 45% of teens ages 12 to 17—which projects to 17 million American youth—used the internet. Of online activities that these teens have done, sending and receiving email was most frequently reported, followed by Web-surfing for fun, visiting entertainment sites, and sending instant messages. Relatively few teens reported having ever looked for health-related information, creating a Web page, and looking for information on a topic that was difficult to talk about. For most teens in this study, the place where they were most likely to use the internet was the home. Three-quarters of teens reported going online at least a couple of times a week, and frequency of use increased with both experience with the internet and with age. Instant messaging (IM) was a popular online activity, with 74% of the sample reporting such use, compared to 44% of adults. Almost 70% of teens used instant messaging at least a couple of times a week, and 45% of online teens reported using IM every time they went online. An important appeal of IM is the ability to stay in touch with friends and relatives who live far away.