Children and Computer Technology

As we enter the new millennium, computer technology has become an essential feature of our society. Indeed, computers and the Internet are fueling our strong and dynamic economy. Moreover, in nearly every American city, town, and neighborhood, the personal computer has profoundly affected the lives of families and their children. Computers and other related technologies are very much a part of our lives and our culture. Now we must learn how to live with them. The challenge.

The public has historically had strong but competing views of new forms of media. The emergence of television brought public excitement for new advances in technology, hopes for potential educational benefits, and enthusiasm for a new type of entertainment shared by families and communities of viewers. It also brought fears that access and exposure to new information and values generated from outside of one's community might erode family cohesion, social values, and children's moral and intellectual development.

Computer technology, especially the Internet with its ability to allow communication across disparate geographies and easy access to informative and at times inappropriate content, has elicited similar reactions among today's parents and educators. While most view computer literacy as an absolute necessity for success in today's technology-driven economy, many fear the effects that computer gaming, instant messaging, long hours of use, savvy advertising, and interaction with online predators may have on children's physical, cognitive and emotional well-being and development. *The fear factors.*

Public perception of what is at stake with regard to children's use of computers is confounded by a lack of hard research in this area and the media's interest in drumming up its next headline. The media is replete with nightmarish stories of online victimization, incidences of children misspelling domain names and stumbling onto sexually explicit websites, and speculations that easy access to bomb-making directions aided the shooters at Columbine High School in their violent actions.

While all of these issues are clearly matters of great public concern, other challenges facing parents, educators, and young computer users—problems which may have a greater impact on young people on a daily basis—may be falling out of the scope of public interest and political attention. These areas include the following:

Equitable Access: Recent research by groups such as the Center for Media Education have shown great disparities in access to computer technology in the schools and homes of families in low socioeconomic brackets. Great potential exists for this "digital divide" to become an economic void for young people lacking access to the educational opportunities technology offers. Additionally, researchers have noted differences in the extent and type-of-use patterns between boys and girls, a difference which could serve to prevent women from closing the gender gap in wages which has been narrowing in the recent past. *Sound familiar?*

Efficacy of Technology in Education: Although access to technology is the first barrier to stimulating computer literacy, the mere presence of a computer in every classroom is not enough to transform literacy to the type of technological skills and facility with information that young people will need in order to be competitive. Computers have great potential as educational tools capable of facilitating deeper comprehension of subject matter, increasing proficiency in handling information, and mainstreaming students with special needs. However, accomplishing these objectives require new curriculums, computer software, and teacher training that will integrate computer use into the classroom in highly effective ways. The focus of our working group – to drive this home to MCPS?

Development and Well-Being*:* As equal to the negative impact not using computers may have on young people's long-term economic prospects is the possibility that the time children currently spend online may come at the cost of other activities essential for healthy development. That children's online use may not be positively contributing to cognitive development or emotional well-being is also of great concern. For instance, if children are devoting more of their free time to computer use, this may come at the cost of physical activity and social interaction. If in addition to this trade-off in time, the types of activities children involve themselves in online are not of high quality (e.g., a shoot-em-up video game vs. tracking the progress of polar explorers Liv Arnesen and Ann Bancroft as they cross Antarctica), young people may be doubly disadvantaged in achieving healthy development.

To date, there have been only limited amounts of research on these topics, and yet there is increasing interest in developing high quality, enriching computer programs and websites for young people. Although research on other forms of media such as television offers some basis for direction in guiding policy, the interactive nature of the Internet complicates any speculation on the effects of computer use. Furthermore, national policy has been focused primarily on protecting children from harm on the Internet. This is an ideal time to take stock of what we do and do not know in an effort to inform future efforts in this regard.

The Board on Children, Youth, and Families will organize a workshop that will examine: (1) children's access to and use of computer and Internet technologies; (2) the impact of these technologies on young people's educational and academic growth as well as their social, emotional, and physical well-being and development; (3) the quality of existing products, programs, and websites targeted to young people; (4) the use of computers to support and facilitate the learning process of children with special needs; and (5) efforts to stimulate more equitable access to and quality of the technologies available and used by young people. Among the questions that are likely to be addressed include: (a) how can computers and the Internet serve children of different ages as entertainment, as a means to enhance education and learning, and as a tool to promote positive developmental outcomes among children and adolescents? (b) who's wired and who is not in the classroom, at home, and in the community? (c) what data are available to inform us about children's access to and use of computers according to different age groups, race/ethnicity, gender, and urban/rural settings, and what do these data tells us about historical and recent trends? (d) what are the costs of expanding access to computers in classrooms, homes, and communities? (e) how are computers changing the ways children learn? (f) what strategies are being used to increase learning in classrooms and at home? (f) how effective are these strategies for improving student learning? (g) how can, and are, computer technologies being used to help mainstream children with special needs? (h) what is the impact of computers on children's development? (i) how are the computer and Internet similar to and different from other forms of the media, and in what ways are computer and Internet technologies, as well as other related products, beneficial and harmful to children and their development? (j) what are the costs, benefits, and policy implications of the increasing role of computers in children's lives? (k) what are the costs, benefits, and policy implications of efforts to ensure equitable access to computers? (l) what are the costs, benefits, and policy implications of efforts to promote positive developmental outcomes among children, in and outside of the classroom? and (m) what are the costs, benefits, and policy implications of using computer technology to meet the special needs of children with disabilities?

This one-day workshop, to be held in Washington, D.C., will convene researchers, federal and state policy makers, foundation representatives, and representatives such as educators, librarians and parents who are often responsible for monitoring children's computer use. Participants will include experts in computer technology, curriculum development, child and adolescent health and development, media research, psychology, sociology, evaluation research, economics, anthropology, family and community services, and public policy. The workshop will be timed to coincide with the publication of a forthcoming issue of The Future of Children focused on children and computer technology.

The focus of the workshop will be on the patterns and effects of computer use on young people's academic, social, physical, and emotional development and well-being. The overarching goal of this activity is to review and synthesize the current knowledge base for each of these topics, to explore the implications of this knowledge with regard to policy and practice, and to identify gaps in the current research. As presently envisioned, the workshop will use a panel format to provide a set of research-based presentations followed by open discussion. *If the workshop is open to us, we should consider attending. Likewise, you'd think that MCPS would also be interested. Perhaps you should ask if they are aware and plan to attend?*