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RESEARCH PAPER

Computers in children's education- Effects and needs

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ABSTRACT

Children use computers on daily basis at school and at home. They use computers both for education and recreation. Proponents for the use of high-tech equipment in education, many parents, teachers and policy makers argue that children need to become competent computer user instead of watching television, for coping with the demands of work places later in life. Computer technology is rapidly transforming society and the task of influencing that transformation in children education needs to be encouraged. Children learn and experience through the use of computers. It can ensure that all children are empowered to use computers effectively and creatively.

Key Words : Computers, Children, Education, Effects, Needs

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When first introduced, computers were almost exclusively used by adults. Today, thousands of children use computers every day at school and at home (Subrahmanyam and Kraut, 2000). Children increasingly use these devices both for education and recreation (Anonymous, 2000). This has raised questions about how the use of computer technology may make a difference in their lives - from helping with homework to causing depression to encouraging violent behaviour.

Proponents for the use of high-tech equipment in education, many parents, argue as follows:

– Computers improve the child's academic achievement.
– The earlier a child is introduced to the use of computers, the better will he or she be prepared for coping with the demands of workplaces later in life and the greater is the likelihood of a successful future.
– If the latest technology does not find its way into general education, many children, especially those from low-income families, will miss out and be disadvantaged.
– Today computer related technology is playing a decisive role in accessing information. Learning is highly dependent on information and on linking to the world. Therefore, computers need to be available for students.
– Computers are great motivators for learning and they

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promote interaction.

– Currently available educational software can be trusted for widening the knowledge level of the children.

When children use home computers instead of watching television, it is generally viewed as positive; but when they use computers instead of participating in sports and social activities, it raises concerns about the possible effects on their physical and psychological well-being.

At the same time, cognitive research suggests that playing computer games can be an important building block to computer literacy because it enhances children's ability to read and visualize images in three-dimensional space and track multiple images simultaneously. This inturn will help in enhancing their creativity.

Although a wide consensus prevails among parents, teachers and policymakers that children need to become competent computer users, to be prepared for life and work in the twenty-first century, questions are also being raised about the effects of the expanding role of computers in children's lives.

Effects on children's development :

The amount of time and the types of activities that children engage in while using computers are key factors influencing whether computer technology has positive or negative effects on their development. Studies on computer use, on children's development, on learning and on the effects of other media, suggest that excessive, unmonitored use of computers can be harmful.

– Obesity in children is linked to excessive time in front of a television screen—defined as five or more hours a day. The sedentary time spent in front of a computer screen could pose a similar risk.
– Reports warn that repetitive-strain injuries may result when children use computers at workstations not designed for them, and that children's vision may be harmed from staring too long at a computer screen.
– Teens who spend more time online, communicating with strangers in multi-user domains and chat rooms, have been found to experience greater declines in their social involvement and which inturn increases their feelings of loneliness and depression.
– Playing violent computer games—a popular activity, especially among boys—has been linked with increased aggression.

Computer use can have positive effects on children when used appropriately:

– Interesting and engaging educational software and nonprofit web sites offer children opportunities to explore the world and to create original works of art and literature.
– Communicating through the Internet can enable children to keep in touch with friends and family, and to form online communities with others who share their interests.
– Children's use of home computers is linked to slightly better academic performance.
– Through training in media literacy and "computer fluency," children can learn to recognize and seek out higher-quality software and web sites, and learn to use computers in more active ways to create, design and invent.

Use to enhance learning:

Computer technology has been demonstrated to enhance classroom instruction by making learning more engaging and by providing new ways of teaching complex concepts and critical thinking.

– Use of technology that incorporates visual and collaborative teaching practices has helped to promote learning among students of all ability levels, but especially those with mild learning disorders.
– Maths and science applications have improved middle-school students' understanding of graphs and concepts such as velocity and acceleration.

Computers may not be the panacea envisioned by some, but they can be used in ways that benefit students. Further experimentation and research will be required to identify additional opportunities to enhance student learning and the

supports required to ensure such opportunities are integrated effectively into classroom instructions.

Computer technology is rapidly transforming the society and the task of influencing that transformation may seem daunting. But by the steps we take today to shape what children learn and experience through their use of computers, we can help ensure that all children are empowered to use computers effectively, and creatively to shape the digital world of tomorrow.

Needs to enhance learning:

- More public and private research should be allocated to assessing the effects of extended computer use and exposure to various types of computer content on children's physical, intellectual, social, and psychological development.
- Parents, teachers and other adults working with children should limit the extent of time children spend using computers and supervise the content children are exposed to, including games, software and the web.
- Public, private and non profit groups concerned with the role of computer technology in society should support and encourage the dialog that has been initiated among researchers, software and Internet companies and government agencies to create new incentives for developing high-quality content for children.
- Schools and community organizations should provide media literacy training for teachers, parents, other adults who work with children and children themselves, to strengthen their critical understanding of the motives underlying much of the software and content found on the web and to empower children to make good choices about their computer use.
- State and local education agencies should refine and adopt age-appropriate guidelines for children's computer fluency. Such guidelines should be disseminated to all elementary and secondary teachers and incorporated into pre-service and in-service technology training sessions.
- The Department of Commerce should work with industry to expand opportunities for low-income families to acquire home computers and Internet access.
- Public and private funds should support efforts by libraries and community centers to include technology programs focused specifically on children, and to provide their staff with training in the skills and types of exposure appropriate and enriching for children of different ages.
- The Department of Education should assist the poorest schools and encourage all schools to offer a broad range of technology related experiences to their students, preferably connected to the curriculum in ways that have been shown to be appropriate and effective.
- When acquiring new hardware and software, schools should consider options that incorporate universal design features to facilitate access to computers for all students, including those with special needs.
- More public and private research fund should be allocated to assessing the effectiveness of technology-supported practices in the classroom, across various subjects and grade levels and to disseminating the results widely to state and local education agencies and teachers.

Conclusion:

Children can be benefited from computers if they are used wisely. Parents should supervise their children when they are on the computer and ensure that everything is happening safely. Computers are the wave of the future, but old fashioned learning techniques should not be forgotten. A child needs to interact physically with other people and not learn everything from computers. More systematic research are needed to understand how computer use affects children's development, and to help parents, teachers, and policymakers refine and adopt guidelines that maximize the positive effects and minimize the negative effects of computers in children's lives.

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