The need for technology in homeschooling

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The need for technology in homeschooling

Abstract
Homeschooling is becoming a more popular option for parents who do not want their child to study in a public school. This literature review was developed to analyze the potential of technology for homeschooling. It does not focus on the positives or negatives of homeschooling. Instead, it focuses on the positives or negatives of technology in homeschooling. This literature review will analyze whether or not technology that is adopted by homeschooling families can make a big difference in the quality of a homeschooling program.
The Need For Technology in Homeschooling

A Graduate Review
Submitted to the
Division of Communication and Training Technology
Department of Curriculum and Instruction
In Partial Fulfillment
of the Requirements for the Degree
Master of Arts

University of Northern Iowa

By:
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December, 1999
This Research Paper by: Jonathan Luttenegger

Titled: The Need for Technology in Homeschooling

has been approved as meeting the research requirement for the

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Introduction

Homeschooling is becoming a more popular option for parents who do not want their child to study in a public school. It involves a child studying at home with their parents as teachers rather than at a public or a private school. This idea is not new, and in fact many presidents and famous people were homeschooled. Presidents such as Woodrow Wilson and inventors like Thomas Edison received their education in a homeschooling environment (Lyman, 1998).

This review will define homeschooling as any schooling that takes place outside a public or private school curriculum. Homeschooling is becoming a more difficult thing to define as time passes because homeschooling can often be combined with public or private classes or college classes. This review will define homeschooling as schooling that takes place mostly or completely outside of a public school, private school, or college.

Parents decide on homeschooling for religious reasons, but also because they believe they can offer their children opportunities that public and private schools cannot offer. These reasons would range from disagreement about what is taught in a school curriculum to the desire to center children in a more wholesome school environment (Latham, 1998).

This literature review was developed to analyze the potential of technology for homeschooling. It does not focus on the positives or negatives of homeschooling. Instead, it focuses on the positives or negatives of technology in homeschooling. This literature review will analyze whether or not technology that is adopted by homeschooling families can make a big difference in the quality of a homeschooling program.
This review discusses an important issue dealing with homeschooling and technology. The use of technology in homeschooling is becoming more popular and may eventually become an necessary part of homeschooling. It is important to analyze whether homeschooling would have a positive or a negative impact on a child's education before trying to answer this question. If technology has a negative impact, it could hinder a child's opportunities for getting into a top college or for getting a good job. This literature review will analyze the latest information to determine whether the use of technology should be encouraged or discouraged.

Technology is crucial to sending information through methods like E-mail, videoconferencing across the globe, or adding information into a database. It has become an important part of learning and development of necessary skills. Technology is a wonderful tool for developing problem-solving and research skills as well as technical design skills for development of research projects, graphics, or webpages (Lever-Duffy, 1991).

The truth is that homeschooling will have to become more technology oriented in order to survive into the 21st century. Homeschooling will need to offer the same services that public and private schools already offer. These services include offering students the ability to learn about new programming applications that will make them more marketable in a workplace where everything is done electronically (Rutowski, 1998).

The old methods of books, papers, and completing assignments do not allow for the same interactivity. It is impossible to ask a book questions in the same way that it is possible to ask someone questions over a teleconference. Linear materials, such as books, force students to learn in a specific way. The Internet makes it possible to jump from
page to page in a nonlinear fashion for students who choose to learn that way. Homeschooling is going to have to offer something the public schools are unwilling or unable to offer in order to stay competitive (Rutowski, 1998).

Research Issues

The review will provide an analysis of where technology in homeschooling is now and where it is headed if current trends continue. The current Internet technology has decreased the distance between students. Web pages and chat rooms allow for more interactivity between homeschooling students and bring the world into their home (Tuttle, 1998).

Methodology

The researcher found the information through searches by computer using Infotrac. The searches for information used the descriptions of “homeschool” and “technology”. These articles were selected based on their relevance to the technology issues involved in homeschooling children. Most of the homeschooling information described the pros and cons of homeschooling. This literature review will focus on the effects that technology has on homeschooling and the educational system in general, as well as, address the pros and cons of using technology in homeschooling.

The description of technology in this review will serve as a guide to how the use of technology can be catered to meet the needs of particular students. For instance, some of the homeschooled students may need special assistance from the use of technology because they are gifted or handicapped.

This review provides information on how competitive homeschooling has become to other forms of schooling as a result of technology. This literature review asks the
questions of what the technologies are, what the benefits of using the technologies in a homeschooling program are, what the problems are with using technology in a homeschooling curriculum, and how the technology is helping parents fulfill specific needs in schooling their children. This review also provides a picture of where technology is headed in the future and how that technology would affect homeschooling.
Discussion

This section of the literature review will analyze the kinds of technology that would be applicable to all homeschoolers and could assist in a student's development. Homeschooling is not the same experience for every child and the technology should account for the different kinds of homeschooling. Some homeschooled children are schooled completely outside of public and private schools. All of the education takes place at home with a parent. Other children are schooled in groups at other parent's houses or take public school or college courses. The curriculum is essentially what the homeschooling family makes of it (Russo, 1999).

This section will discuss the positive aspects and negative aspects of bringing technology into a homeschooling program and discuss the kinds of virtual schools that are now available to help homeschooled students. The discussion of the aspects of homeschooling will also focus on the K-12 curriculum rather than the college environment.

One of the newest trends is the use of the World Wide Web as an educational tool. It is possible for a student to take a quiz anywhere in the world with this capability, and the student can save money on textbooks by doing a simple web search for the information they need. Martorella (1996) states, "The availability of large numbers of extensive databases over the Web makes the world our classroom, with access as near as our computer and Web browser" (p. 39).

The technology of the Internet is eliminating the isolation of students through the use of chat rooms and bulletin board systems (Martorella, 1996). Chat rooms and bulletin board systems make it possible for students to collaborate on projects. Programs like
NetMeeting, a desktop videoconferencing program, make it possible for students to collaborate on a project by correcting each other's mistakes in a document online. Desktop videoconferencing allows two people at separate computers to see video, hear each other, and have a conversation using the Internet. Students would be able to engage in distance learning with classmates on the other end of the line if a video camera is installed on that computer. The connectivity allows homeschooled students to set up times to meet outside of their classwork experience at home or in groups for extracurricular activities as well.

In a typical chat room, students can participate in a discussion with two or more students in a virtual class (Martorella, 1996). The discussion with other students makes the class more lively and interesting because the opinions of a number of students are examined. Chat technology also allows for private messages to be exchanged back and forth between students about a particular project. The ability to send private messages back and forth makes group projects over the Internet a definite possibility.

E-mail is a form of technology that serves as a huge benefit to homeschooled children (Lever-Duffy, 1991). E-mail allows for instantaneous communication between homeschooled students to build a community. The E-mail community in this environment can be expanded to include parents and educators who want to use the newest methods of homeschooling children.

Another advantage of E-mail is the teacher's ability to instantly correct an assignment sent to them through this medium (Lever-Duffy, 1991). After the assignment is corrected, it can be forwarded back to the student with revisions. The student clearly
sees what they wrote and can make changes that will be forwarded back to a professor in the future.

All three of these technologies, the World Wide Web, E-mail, and chat rooms, involve distance education (Lever-Duffy, 1991). The trend in education is to move ideas rather than students. Lever-Duffy states, “It is time to move ideas around instead of people. This is the premise for distance education” (p. 15).
The benefits of using technology in a homeschooling program

The use of technology in homeschooling can provide benefits to children as they grow older (Kennedy, 1995). The use of technology can improve a child's technical skills by making them comfortable with computers at an early age. Children who grow up with computers are naturally less likely to be intimidated by technology later in life. These children have been learning from computers since they were young so it makes sense that they would not have any fear of learning from computers as they grow older.

The literature suggests that children are getting more and more involved with technology. Kennedy (1995) states, "Home schoolers are not unplugging from the culture at large but rather may be early adopters of new trends and technology" (p. 52). The system of teaching children will have to be modified in the future if children are learning faster at younger ages.

Computers also assist homeschooled children to use the methods of communicating that will be popular in the new millennium (Lyman 1998). If homeschooled children learn to use E-mail at an early age, these children will be better prepared to enter college or the work force because in these places E-mail is often the fastest and most efficient form of communication. The skills involved in adding an attachment to E-mail, composing a message, or understanding protocol will be much easier to explain to a new employee who has been working with these ideas since childhood.

Another benefit of using technology in a homeschool environment is its ability to assist students in expressing themselves. In an ordinary school environment, some students may feel too intimidated to speak in front of a class full of people.
Homeschooled children who learn to use chat rooms and post on the Internet do not have to meet their classmates face to face. They can say what they feel without the fear of being ridiculed. The Internet can solve two problems at once by taking away the problems of a public school class and the fear of isolation at the same time. Natale (1995) described the situation of Jason Smith, a homeschooler who she interviewed for her article. In the article Natale (1995) states:

Now at home and on-line with Compu-High, Jason says he doesn’t have to worry about conflict with classmates. He works at McDonald’s during the day and logs onto his computer about 6 p.m. to start school. He ‘talks’ via computer with his teacher, who lives in West Virginia, and with fellow students about assignments and ‘anything else that comes to mind.’ (37)

Homeschooled children who have special needs can also benefit from the use of technology (Van Camp, 1999). The technology can be specialized to suit the student’s needs and make it easier for them to get individualized attention. In a classroom full of people, particularly a large class, it is often difficult to focus on the needs of a particular student. Students with Attention Deficit Disorder, for instance, may be difficult to deal with in a normal class setting. A technological homeschool environment gives these students the chance to get individualized attention from their parents. Technology also gives students the chance to roam in their home without being a disruption to a class of students.

Gifted children are often homeschooled for other reasons. A gifted student may receive harsh criticism from their classmates because their scores are so high. In this case, isolation from a normal classroom would be a benefit to a child’s education. Some gifted
students have difficulty in a normal school setting because they get bored with the material. The problem is that the school system does not provide these students with enough challenging information to keep them interested. The Internet and other kinds of technology can provide new and challenging information to inspire gifted children to explore their talent (Raymond, 1998).

The problems of using technology with homeschooled students

The use of technology to homeschool may have drawbacks. Many of the problems that deter parents from homeschooling can also deter parents from using technology to homeschool their children. Parents of homeschooled children may not be qualified teachers or have the personalities that are required to teach their children. School deals with more than just textbooks, and parents have to be parents as well as educators to their children. The change from parent to teacher and parent is a difficult one to make for some parents and some may not be able to succeed in this new role (Bittner, 1999).

The personality of the parent makes a big difference in homeschooling and in homeschooling a child with technology (Stevens, 1996). Parents who are nervous about using new technologies would not be suited to keep up with the real world skills their children are learning. Some parents believe in a certain style of learning, such as auditory or visual, and do not believe in teaching with any other style. A web-based curriculum which uses a completely different style of media could be a shock to a parent who is unprepared or not technologically skilled.

Other parents are perfectionists or find it difficult to relate to a child learning about technology or relate to the technology their children will be using (Stevens, 1996).
Parents need to understand that their children are going to make mistakes while being homeschooled. Everyone makes mistakes and technology is especially prone to break down as hardware is used or becomes obsolete. The homeschooling process has to be a process of continued learning for the student and the parent who is homeschooling the student. The new advances in technology require that parents be willing to make a few mistakes along the way in selecting technology and materials. These advances also require parents to keep themselves appraised of the newest information available.

The equipment used in homeschooling also requires money. In order for students who are schooled completely at home to not to feel isolated, the students may want video cameras with their computer, as well as, microphones, scanners, or other equipment. The students would also be assisted by an Internet connection to the world (Tuttle, 1998).

Students in online homeschooling courses in high school will also have to be just as organized as students who take online college courses (Tuttle, 1998). The use of this kind of equipment requires time management skills and being responsible. Adolescents and younger students are sometimes unpredictable and this could lead to a problem in using these technologies. No parent can predict what problems are going to arise in the future with the technology or with the needs of parents or homeschooled students who will be using the technology. The technology could break down, for instance, during a critical testing period in a child’s education. In this case, the parent and the homeschooled students will need to be prepared to deal with the problem and arrange some way of solving the problem.

Tuttle (1998) points to some of the problems of using technology in his article pertaining to the use of virtual schools. Virtual schools are schools that students can
attend online. In his article, Tuttle pointed out the problem that students will need to be good readers before making use of technology or virtual schools. The information that is available online is available through webpages that a student will have to read. Students will also need good keyboarding skills in order to use the technology effectively.

How technology is helping parents fulfill the needs of homeschooled students

The Internet provides information on matching a specific program to a specific child. The curriculum may be catered to a particular child’s religion or value system. Gifted students can find more challenging materials online as well as information about special schools. The trend in homeschooling is moving toward more choice in education, and the Internet is simply providing parents with more information to choose from (Rutowski, 1998).

In addition, a technology based homeschooling program serves as a conduit for homeschooling parents and children. The Internet can assist in helping students to feel less alone, and also help parents realize that they are not alone either. Parents who begin a web search to learn more about homeschooling will find thousands of parents who have already started a homeschooling program over the Internet before they have. Parents of homeschoolers can connect with other parents to learn about successful techniques. These parents can also arrange extra-curricular activities so their homeschooled student can have experience with people outside of class (Rutowski, 1998).

In some areas, the street is a dangerous place for any child to wander whether they’re homeschooled or not. Technology helps children develop interests in positive activities and it keeps them at home. When homeschooled students are focused on their studies, it gives these students less time to be focused on drugs, gangs, or other kinds of
dangers that could hurt their future. It takes time to learn new technologies. When a student learns new technologies they also learn how much more there is to learn (Charbuck, 1993).

Technology makes learning a full-time experience of growth and expansion with no days off. A technology-based curriculum reinforces a student's ability to think on their own. This gives a homeschooled student less time to focus on the negative influences in the world. In this situation, a child will need to focus on the assignment and the tasks at hand rather than their friends or the negative influences of the world. If they choose not to focus on the assignment, students will not have a worthwhile learning experience (Stevens, 1996).

Students can be inspired by the Internet and develop creativity through a multimedia based homeschool program (Charbuck, 1993). When these students work on a project, they are using multimedia skills and not just working on text. The different kinds of presentations, such as audio, video, and PowerPoint presentations encourage students to create and do rather than just read text in a book. It makes sense that students who learn how to become effective presenters through PowerPoint could also learn to become effective multimedia presenters by using Hyperstudio or another multimedia application.

Finally, parents who homeschool their children often do so because they want to establish the family as the primary source of education for their children. Technology can be viewed as a helping tool rather than as a negative influence.
The future of technology in homeschooling

The prevalence of technology in the lives of homeschoolers can be a benefit rather than a deterrent to education. As the quality of computers improves, the quality of sound and video will also improve. The technologies such as desktop videoconferencing, distance education, and intelligent tutors are going to expand to larger areas and include even more students. There is also great potential in the technologies that have not been developed to their full potential like virtual reality (Martorella, 1996).

Homeschooling is gaining more credibility as a result of technology. It is possible that in the future the online classroom will be just as accepted as the classroom in a public school. The truth is that technology is determining the way the public school system turns and not the other way around. Schools and classrooms are going to have to change and adapt in order to keep up with the new technologies. In this kind of medium, learning is not about reading and memorizing something out of a textbook. Learning involves experimentation and exploring rather than soaking up information and the new technologies may allow for more experimentation (Lever-Duffy, 1991).

Some parents and teachers are already beginning to offer complete schools online (Tuttle, 1998). Virtual schools, according to the literature, are still relatively new. A virtual school currently serves as a supplement to a public school curriculum or as a school in itself. Tuttle mentions a number of schools that are completely online. This review will provide information about a couple of the schools in Tuttle’s article.

Virtual schools

Some of the homeschooled students are taught by professionals who know how to adapt homeschooling to a technology oriented environment. Tuttle (1998) states that,
“not all teachers know how to teach in this new learning environment. Some schools simply transfer their traditional courses to the Internet without using modern technology to transform learning.” Apparently virtual schools still have a long way to go before becoming an alternative to the kind of curriculum that already exists in public and private schools.

Tuttle (1998) mentions one school called the Willoway Cyberschool. This school teaches 5th to 8th graders. It involves video conferencing and bulletin board systems so students can stay connected with each other. The online teacher sets a certain amount of time for students to complete research tasks and communication between other students in the online course. The assignments in the Cyberschool involve the technical skills like web page creation and using Hyperstudio that were described earlier in this review.

The Babbage Net school is another school that Tuttle (1998) mentions in his article. In this school, students are allowed interactivity through a chat program in order to communicate with other students. These students are also given the opportunity to explore by using the World Wide Web to visit webpages and assignments. Students participate in a live conference with a teacher, and when they are in conference with a teacher they can explore new assignments and webpages at the same time. The school allows creativity on the part of the teacher as well as the student. The student can take a look at sounds, video, or whatever the instructor wants to make available. Chat and E-mail technology makes the class interactive by allowing students to ask questions and have their questions answered by instructors or other members of the class. In this kind of environment, students can send in assignments or discuss new possibilities or ideas with other students.
Conclusions and Recommendations

Overall, the combination of technology and homeschooling appears to be inevitable. The lure of huge resources of information online, such as the World Wide Web, is going to make the Internet a popular resource for homeschoolers. The freedom that the online homeschooling curriculum is seen as the only option for some parents to have educational freedom.

Every time technology advances it brings groups of people closer together to share new information or ideas. Students from around the world now have the ability to be educated on their terms rather than having someone else set the pace for them. Parents have the freedom of choice to pick a curriculum online that suits the ideals they want their child to learn. A lot of families, as mentioned in this review, have homeschooled their children because they feel they know what education is best for their children and that the school system has no idea. An example of a specialized curriculum might be a curriculum that supports particular religious values and ethical standards (Rutowski, 1998).

Technology has made it possible to transfer video information as well as text and audio information instantaneously. The clarity of the audio and video through the newer technologies will be so clear that soon it may not be necessary to travel great distances or even the distance to an Iowa Communications Network room to get a quality education. The video quality may be just as good through a Real Video stream at home in the future (Tuttle, 1998).

Different students have different needs. People are different, they learn at different levels or paces, and they have different ways of learning. The individualized
programs that technology offers makes technology more suited to handle these needs. As mentioned before in this review, the World Wide Web can offer education in a number of learning styles ranging from text and visual to audio or other learning styles. The more variety there is in the education, the more opportunity there will be to reach the minds of students with varied learning styles (Stevens, 1996).

The researcher would recommend further study into this subject. Many of the technologies that were discussed in this review are new technologies. Research could help solve the problem of what technologies are the most reliable, the cheapest, and the most popular. The best way to achieve these results, in the researcher’s opinion, is through a qualitative study into how useful each of the latest technologies are for education and how many families want to use them.

Research on the issue of technology in homeschooling could take place over a few years by comparing the practical skills of homeschooled children to the practical skills of children who had been educated in public or private schools. This would involve surveying teachers, business people, parents, or other professionals on what job skills are the most important job skills to have in the new millennium. The homeschooled children as well as the public or private school children could then be tested to see whether or not they meet those skills.

All of the technologies in this review could be used in public schools if they are not already. It would serve the public schools well to train students in using these technologies and to set up workshops to train parents to use these kinds of technology. Any child who is educated, whether homeschooled or not, could benefit from their parents learning more about technology. These workshops could be set up to educate
parents on the newest technologies to help them to relate to their children. The technologies in this review all require the use of a computer and some families may not be able to afford one. Nevertheless, the families who have computers would undoubtedly want their children to have an edge on the future even if their children are not homeschooled.

The homeschooling information on the web is very detailed, and there are a number of websites. Nevertheless, the World Wide Web does not ensure the quality of the websites that are available. The researcher recommends that homeschooling websites advertise their information to public school administrators or technology coordinators more often. This would make the information on their websites more popular among schools and society in general. If these websites communicated with school professionals more often, they would be able to set up a better system for assessing the quality of the information they present. It would make it easier for the information to get to parents so they can make an informed decision about what website is best for homeschooling their child. If the creators of homeschooling websites could demonstrate that they use adequate assessment tools, it could only serve to make their websites more popular.

Overall, technology needs to combine with homeschooling in order to make it more competitive. It needs to be made safer, smarter, and more capable of delivering a well-rounded education. More computers is a start, but homeschooling that takes place online needs to be teaching students about how to conduct research on the web or do technical applications. Distance education is becoming more popular and the homeschooling classroom is going to have to adopt the new technologies to prepare students (Churbuck, 1993).
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