

NEWS

An Evaluation Study Conducted for the Mid-Atlantic Regional
Technology in Education Consortium (MAR*TEC) by:

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September 6, 2005

Executive Summary

The advent of the Internet and the widespread proliferation of high speed computers has produced dramatic changes in the ways that Americans do business and communicate across time and space, yet the impact on schools and classrooms has been far less dramatic and more sporadic. Concern among educators on the potential problems associated with placing powerful information processors and extensive access to media in the hands of students has impeded its use by teachers and students, despite widespread recognition among educators that the Internet contains great educational potential. This concern often stems from a lack of training of teachers in how to make the most use of the Internet for teaching and learning, and from the perceived role of teachers as filters to protect children from harmful information and people in their formative years. For five years, school teachers and administrators have turned to the Mid-Atlantic Regional Technology in Education Consortium (MAR*TEC), part of Temple University's Center for Research in Human Development and Education, for guidance in how to successfully implement the Internet and computer technology in their schools while taking those concerns into account. MAR*TEC identified the CyberSMART! curriculum as a particularly promising free online product that could help the teachers and students in the Mid-Atlantic region learn how to use the Internet to improve teaching and learning. MAR*TEC needed more information to justify recommending CyberSMART! to its member schools and teachers, so they commissioned this exploratory research study to be conducted by Dr. Alex Schuh of FRONTIER 21 Education Solutions.

CyberSMART! is an organization dedicated to educating elementary and middle school teachers and students about how to safely and effectively use the

Internet for learning. With the support of McGraw Hill Publishing, CyberSMART!'s founders created an online curriculum and lesson plans for teaching about key aspects of the Internet, including safety, manners, advertising, research and technology. Their curriculum and materials are currently being used by thousands of teachers in their classrooms across the United States. This study explored the use of the CyberSMART! Internet research curriculum by four teachers with four groups of students in two schools, and the use of some aspects of the CyberSMART! professional development by two teachers with two groups of students in one school, and compared the skills and knowledge gained by the teachers and students in those schools with the Internet research-related skills and knowledge gained by the teachers and students in a similar school that did not use any of the CyberSMART! materials or professional development.

The researchers examined students' and teachers' skills and knowledge in using the Internet for research before and after completing a 6 to 12 week long research project. All of the students and teachers in the CyberSMART! schools and in the comparison school showed growth in their research skills and knowledge. The teachers in the CyberSMART! schools taught the lessons for the most part as written on the CyberSMART! website. The teacher in the comparison school generally taught the students specific research skills embedded within the context of pursuit of a particular research question that they had developed with their teacher. The students in the CyberSMART! schools showed more growth in specific research skills overall than the students in the comparison school. For example, the CyberSMART! students tended to use a greater variety of websites to find information, whereas the comparison students relied almost completely on web search engines. Also, the percentage of students believing all websites were connected to the same information increased for the comparison students from before to after their research projects, whereas the percentage of students believing that decreased in both CyberSMART! schools. Likewise, the percentage of students using advanced search techniques to narrow their web searches decreased among the comparison students, but increased among the CyberSMART! students.

Although the comparison students demonstrated fewer skills or lower growth than the CyberSMART! students in some Internet-research areas, in other areas they were remarkably similar in their growth and levels of skills, even surpassing the growth and skill levels of the CyberSMART! students in both schools. For example, the percentage of students recognizing that information from the web should not be copied without proper citation increased to 98% for the comparison school students, but only to 71% among CyberSMART! using students.

Overall, the teachers using the CyberSMART! curriculum and professional development felt that both were very useful, including the lesson content, lesson format, alignment with standards, student activity sheets, organization of the CyberSMART! website, and grade appropriateness of the lessons.

Teachers were less enthusiastic about the overview provided for the lesson, and the related material such as the printable posters.

The contexts in which the CyberSMART! lessons were implemented clearly influenced their ability to impact student research skills. While the three schools in the study were similar in many ways, the school with the teachers with the least knowledge and experience teaching with technology, and with some students with limited English language skills, made the least amount of progress. The comparison school teacher, by contrast, was skilled and educated in the use of educational technology, and was able to embed her teaching of research skills within the context of an “authentic” research project for her students. By doing this, her students were able to learn much of the same skills as the CyberSMART! students.

The CyberSMART! appeared to be an effective tool for educating students in some of the fundamental skills and knowledge necessary to make better use of the Internet for research, particularly for those teachers with little training in teaching research or the use of computer technologies. While experienced and knowledgeable teachers may be able to effectively educate their students in some of the same skills that CyberSMART! emphasizes, the curriculum was found to be highly useful and to make a significant impact on the Internet research skills of students in classrooms with less experienced and knowledgeable teachers.