Many middle school science teachers do not have the educational background for interactive media environmental education. The difficulties associated with moving school children into the proximity of educators who can address these topics were manifold. One solution to this dilemma was to train student educators (college students) to become the disseminators of river and watershed information to the middle school students through the use of technology.

The primary goal of this project was to make available to pre-service teachers the opportunity for service learning in a Middle School environment. Through the use of donating their time and knowledge the college students were able to experience teaching in a middle school environment. The college students were currently enrolled in a Science Methods course at our institution. Student educators possessed the sophisticated knowledge of current technology that teachers in the middle school lacked. Utilizing the student educators’ ability to develop power point presentations, I-movies, and interactive internet connections the student educators developed a series of lessons that were presented to the middle school students. The public school teachers collaborated with the student educators to focus on the river and its watershed.

A secondary goal of this project was to demonstrate to public school teachers how the state environmental standards could be taught and evaluated utilizing technology and active middle school student involvement. This project promotes environmental education, training, and stewardship in accordance with state educational standards. In addition, it meets the National Science Foundation’s SENCER program goals for civic engagement of the public with science. Schoolteachers could benefit from watching college students modeling the latest teaching approaches coming out of the colleges. One such area where public school teachers need good models is in the use of computers to teach science. For example, the national Center for Education Statistics (NCES, 1999) observed that less than 20% of current teachers reported feeling very well prepared to integrate educational technology into classrooms. Demonstration of software is one effective step on the road to improving computer self-efficacy (Gist, Schwoerer, and Rosen, 1989). Therefore, a community based service learning project was developed to reach not only public school students and environmental science college students, but also
public school teachers in need of good models effectively using technology in science education.

**Methods**

A collaborative middle school was identified to allow elementary school student educators to teach three environmental education lessons. Students were then presented with the state standards for environmental education. The college students were instructed in three distinct areas. The first area of instruction was the development and implementation of educational technology through direct instruction by the chairperson of technology in our department. The second area of instruction to the college students was in environmental education. A visiting environmentalist presented six (6) hours of instruction on water pollution, flood control, and ecological aspects of the Susquehanna River. The third area of instruction to the college students was in pedagogy of science methods. This teaching strategy stressed the value of technology in a science classroom when integrated into the subject area.

Lessons were developed in the college setting to include i-movies, interactive internet sites, and PowerPoint presentations. A planning session was established with the cooperating teacher and the teams of students who would be teaching the various classes. The lessons presented by the college students focused on flooding. This included reasons for flooding, economical issues of flooding, and sound ecological procedures to prevent flooding. College students taught the lessons and assessed each group of students on the knowledge they gained and their reaction to the technology presented. Copies of the technology were given to the classroom teacher to use in the future. A pre and post survey was administered to the middle school teachers about the use of technology in science classrooms.

**Results**

The impact of these lessons is exponential. First, the middle school students were actively involved in the hands-on technology based lessons. Second, the middle school teachers who learned the current technology were then able to present further instruction to the middle school students in the future. And finally, the college students (50) who are in training to become our future teachers will then have the knowledge to continue environmental education utilizing technology for twenty (20) years.