

## **One-to-One-Laptops-to-Students or Mobile Carts: 21st Century Learning**

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**NETS Summary:** In the one-to-one laptop-to-student classroom students and teachers gain proficiency using technology while improving their problem solving skills. The social ethical and human issues are discussed and practiced on a regular basis as students use the computer as a learning tool. The use of productivity tools and a variety of media are incorporated into the learning environment on a regular basis. Since the computer in a one-to-one laptop-to-student classroom becomes another learning tool the technology standards are seamlessly interwoven into the curriculum.

### **Purpose and Objectives**

After a bond and technology override passed in November 2005, providing a large school district in a metropolitan area of the Southwest with technology funding, questions were raised concerning the most effective model for classroom technology; as a result my district began to look at putting wireless laptops into the classroom. All Title I schools were equipped with a wireless mobile computer cart, and four classrooms in four different schools, three of which were Title I schools, were equipped with projectors, interactive whiteboards, and a wireless laptop for the teacher and each student. Research was conducted to compare the usage of computers in the classrooms having different configurations of computer access for students with the goal being to determine if one configuration was more effective.

Two classrooms with the one-to-one laptop-to-student configuration and three classrooms with access to shared mobile carts were observed on a regular basis, these teachers also kept logs of technology use in their classrooms, student work was collected, and the teachers were video taped during a focus group at the end of the school year. All five teachers gained an increased understanding of technology integration and became more enthused about trying new ideas in this area. The three teachers using the shared mobile carts expressed an interest in applying for the one-to-one student-to-computer project stating they wanted more access in their classrooms and that they wanted the access to be permanent not mobile.

Student engagement went up in all classrooms when using the computers and students were more enthused about their work, especially with writing. The teachers with laptops for each student reported changing their teaching styles to becoming a coach and learning along with their students. The technology skills of the teachers and students increased according to the amount of access they had to the computers. The use of wireless computers in these classrooms had a positive impact on the students and teachers. The extent of this impact was directly related to the availability and accessibility of the computers in the classrooms.

## **Overview of the Project**

### Tempe Teachers of Tomorrow

- Who are the participants, teachers and students, in the project (Ages, socio-economic levels, etc)?
- What technology was put into these classrooms?
- What training is provided for the teachers?
- What software and online programs are used by the teachers and the students?
- Impact on student learning
- Changes in teaching style

### Mobile Carts in the Classroom

- Who are the participants, teachers and students, in the project (Ages, socio-economic levels, etc)?
- What technology was put into these classrooms?
- What training is provided for the teachers?
- What software and online programs are used by the teachers and the students?
- Impact on student learning
- Changes in teaching style

### Student Projects

- iMovie
  - Students at work
  - Student productions
- Posters with photographs and charts related to the research
- Student projects

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## **Background of Presenters**

An elementary school teacher for 15 years, Jannifer Wolfgramm received her Master of Education degree, with an emphasis in Educational Technology, from Arizona State University West in 2006. A former Project Venture teacher, she is now an Educational Technology Teacher with Tempe Elementary District #3 in Tempe, Arizona where she serves as co chairman of Tempe Teachers of Tomorrow, a one-to-one-laptop-to-student initiative. She has presented at regional conferences.

Dr. Alice Christie is an exemplary teacher with over forty years of experience in the classroom both in the K-12 and university sectors. She is a frequent presenter and keynote speaker at regional, national and international educational technology conferences. She was recently named as one of four Arizona State University President's Professors.

Beverly Keefer is an elementary school teacher with 15 years of experience and is currently teaching in a one-to-one laptop-to-student classroom.