

## Securing a Learning Return On Your Educational Technology Investment: A Parent's Guide to Applying the Lessons Learned from Research



Everywhere we turn, we hear great claims about how technology can help our children learn better in school and prepare them to be successful in the 21<sup>st</sup> century workforce. Politicians and policymakers have made it a political priority to bring technology into the classroom, and they are allocating large sums of taxpayer money to help make computer-based technology part of the daily school routine. As a result, schools have purchased computers and other new technologies in hopes of raising student achievement and increasing their motivation to learn.

WestEd RTEC recently reviewed the research related to the value of teaching with technology and released a summary of that research in a paper called *The Learning Return on Our Educational Technology Investment*. That paper looks at the circumstances and conditions under which technology works best in the classroom, and outlines nine lessons learned from the research – lessons that can help parents understand the issues, make sense of the claims they hear, and apply those lessons to their children's education. We have summarized those nine lessons below and have included after each entry some suggestions to help you apply those lessons in your child's education.

A full copy of the paper, *The Learning Return on Our Educational Technology Investment*, is available at <http://www.wested.org/cs/wew/view/rs/619>.

### **Lesson # 1: Technology must be matched with learning goals -**

Computer-based technology can be used in the classroom in many different ways. In order to know how to use technology best in their lessons, teachers first decide what they are trying to accomplish with it. Drill-and-practice software, like many math, science, and phonics programs, helps children learn “from” technology, in much the same way they would learn from a tutor. This type of learning certainly has a place in the curriculum. By contrast, when students use technology as a tool for problem-solving, critical thinking, and conceptual development, they are learning “with” technology. This kind of learning can

happen when teachers engage students in a project-based curriculum, using research and multimedia to publish their work. Learning “with” technology is active learning; students are not just memorizing or practicing facts, they are building deep understandings of the content they are studying. Both learning “from” and learning “with” technology result in students’ learning how to use computers, but only learning “with” technology results in the development of higher-order thinking and the ability to apply what is learned in different situations.

- Let your child’s teachers know that you think it is very important to have technology integrated into the core curriculum.
- Ask your child’s teachers what kinds of learning software or computer-based activities they use and how it fits into their district’s content standards. Let them know that you think it is important for your child to be learning “with” technology as well as learning “from” it.

**Lesson #2: Technology is only one piece of the puzzle** – Even though it helps students to have technology integrated into the curriculum, technology alone is not enough to ‘turn around’ challenged schools or raise student achievement. Students show the most improvement in schools where technology integration is part of a bigger reform plan that deals with issues like content standards, teaching practices, curricula, administrative policies, home and community involvement, etc.

- Ask your teachers, principal, school board members, or superintendent about the overall plan to improve education at your child’s school, and ask how technology fits into that plan.

**Lesson #3: Adequate and appropriate teacher training is vital** - Studies have shown that, unless teachers are adequately and appropriately trained to use technology and integrate it into their lessons in meaningful ways, there will be little benefit to students. Teachers who are more knowledgeable about how to use technology will use it in a variety of ways and for a variety of purposes in their classrooms. They are also more likely to have their students use technology in lessons and projects that build higher-order thinking. In addition to this training, teachers need to see first-hand the benefits that technology has for students and how other teachers use it in their instruction. This means they need time to observe other teachers and talk to them about how technology is helping their students. Teachers who are convinced about why technology is so important to students’ learning will have more motivation to meet the challenges of implementing technology integration.

- Support teachers by letting the principal know that you want them to receive the kinds of training that will let them provide your children with technology-integrated curricula. Let him or her know that you are not opposed to teachers occasionally taking time away from the classroom receive training.

- Let your child's teachers and the principal know that you think it is important for teachers to have time away from their own classrooms to observe other classrooms and reflect on their practice.

**Lesson #4: Sufficient equipment: An adequate computer-to-student ratio should be determined** - In order for students to benefit the most from using technology in their classrooms, they must have individual time at the computer. This does not mean that every student needs his or her own computer. Research has found that a ratio of four or five students to one computer in a classroom will provide enough access for students to show improvements in achievement.

- Ask your child's teachers how many computers are available for students to use. If the 4:1 or 5:1 student-to-computer ratio is not in practice, find out why. If more computers are needed, it may be possible to work with other parents or local businesses, etc. to get computers and equipment donated to your school.

**Lesson #5: Accessible equipment: Classroom access is best –**

We know from many research studies that students had more improvement in basic skills (reading, writing, mathematics) when they had access to computers right in their classrooms, rather than having to go to a special computer lab to do computer work.

- Find out where the computers are located in your child's school. If they are housed in a computer lab, let the teachers and principal know that research indicates students need regular access to computers, not just once a week for a limited time. Computers located in the classroom are the best way to ensure this kind of regular access.
- Again, if your school just doesn't have enough computers to go around, it may be possible to work with other parents or local businesses, etc. to get computers and equipment donated to your school.
- Find out whether your child's school is wired, and whether the computers are connected to the Internet. If the school is not wired or the computers are not connected, find out why and talk to the principal about your concerns.
- Ask your child's teachers if they are incorporating Internet work into their curriculum and tell them why you think it is important.

**Lesson #6: Computer access at home holds great benefits -**

Students do best who have 'sustained access' to technology. This means they have a computer at home as well as at school, and can access the Internet and use email from both places. Although it is important for students to have technology access at school, home access gives them even more benefit.

- If you have a home computer, encourage your child to use it as often as possible for homework, writing, research, and other projects, not just for entertainment purposes.
- Talk to your child's teachers to find out how your child's classroom learning can be supported by using the computer in your home. Let the teacher know that you support homework that enriches and includes computer work.
- If you do not have a computer at home, ask the principal to allow students to have after-school access to school computers. The local library will also have computers your child can use free of charge.

**Lesson #7: Long-term planning is the first step** - Too often, schools purchase technology and set it up in their classrooms before they have developed a clear plan for how the use of technology will further their school or district educational goals. It is vitally important for districts and schools to take the time to make long-term plans about why and how integrating technology in the classrooms will further educational goals. In addition, adequate funds must be set aside to guarantee that, once it is purchased, technology can be maintained and updated.

- Let your superintendent and the school board know that you support the integration of technology into your child's education. Ask them for a copy of your school's or district's long-term plans. Vote for school board members, superintendent, etc. who are knowledgeable about technology integration and have a plan for implementing it in your district's schools.

**Lesson #8: On-site technical and instructional support must be provided** -

Research has shown that a major reason why teachers stop using technology (or don't ever really start) is that they do not get the kind of support they need from their school to keep their computers and other technology in working order. Many teachers don't have the knowledge or time to repair equipment that has broken or is malfunctioning, so they simply stop using it. The effective use of technology in a school requires someone on the school grounds who is able to give teachers help as soon as they need it.

- If you have the technical skills that can help keep the school's technology in working order, volunteer to help out if you can.
- Let your voice be heard - through letters, phone calls, or talking with school administrators - that you support an on-site technology expert.
- Help the school identify local resources that provide volunteers and other technical support services.

**Lesson #9: Technology needs to be integrated within the curricular framework** –

Technology integration means using technology as part of a lesson or project because it is the best way for the child to accomplish the learning goals the

teacher has set. If students feel like they are just using technology for its own sake, not because it is important to what they are learning, they will not be as interested or engaged in what they are doing. Teachers should choose courseware (software that is designed to be used in an educational program) that is based on curriculum standards, designed around how students learn, and promotes both concept and content learning. In this way, technology use will fit into the larger curricular and instructional framework.

- Ask for your teacher's plan – how will she or he integrate technology into lessons.
- Check out your child's homework and school work to see if your child is making regular use of a variety of technologies as an integrated part of the school day.

By following these nine lessons, schools can make sure that the technology they are using in their classrooms will have the most benefit for students and will result in higher student achievement and motivation. Although these nine lessons are aimed primarily at teachers, administrators and policy-makers, they are important for parents to know as well. You should feel free to talk to your child's teachers or principal about the issues raised in these lessons and find out where your school stands on them. By letting the school know that you are concerned, you are exercising your right to be involved in your child's education. Schools are more able to meet the needs of our children when parents get involved. Your questions and feedback are a vital part of improving education and making schools better.

Some additional helpful websites and resources for you and your children:

### ***Parents' Guides to Technology in the Classroom***

\*The George Lucas Education Foundation (GLEF) –  
<http://www.glef.org/parents.html>

Parents Guide to the Internet - <http://www.ed.gov/pubs/parents/internet>

### ***Online Information About Parenting and Advocating for Your Children at School***

\*Primes, online parent brochure - <http://www.stanford.edu/group/primes/>

The Family Education Network - <http://www.familyeducation.com/home>

### ***Homework Help***

AOL@SCHOOL - Homework Help – <http://www.aolschool.com>

B.J. Pinchbeck's Homework Helper -  
<http://school.discovery.com/homeworkhelp/bjpinchbeck/>

MiddleWeb's Ten Best Homework Sites –  
<http://www.middleweb.com/Homework.html>

The Kids on the Web: Homework Tools – <http://www.zen.org/~brendan/kids.html>

The Copyright WebSite – <http://www.benedict.com>

***Internet Safety and Security***

Safe Kids – <http://www.safekids.com>

\* Partner of the Regional Technology in Education Consortium (RTEC) at WestEd.