

# DEVELOPING TECHNOLOGY LITERACY

## Creating Critical Thinkers and Lifelong Learners

By Andrew Kerr

Ask educators anywhere in the world what they want for their classrooms and the answer will usually be computers – even if needs for electricity, phone service, textbooks, or a classroom haven't been met. The push for computers in education is driven by the almost universal recognition of the importance of technology in the world today. Computer skills are the ticket to better jobs, success, and money in areas where employment is limited to low-paying agriculture or manufacturing jobs. As the world has made the shift from the industrial age to the information age, schools have struggled to keep up. Often computers are purchased from already very tight school budgets, cutting textbook and supply purchases and even “non-essential” programs like art, music, and vocational education to ensure money for computers.

What many schools fail to realize, however, is that the power of technology rests not on a computer but on developing technology literacy. Technology is not an end, but a means to an end. The best technologies in the world will not help students without a proper plan of instruction. As ironic as it may seem, a school with limited technology resources that maximizes student time on computers by integrating technology into the curriculum will be more successful in developing technology literacy than a school that offers high technology environments with no integration. It is the difference between creating short-term computer operators and life-long learners with critical thinking skills. Computers can be powerful teaching and learning tools or \$1,500 a piece drill-and-practice machines.

So what is the solution? How do we move students out of computer classes in which they at best learn straight applications without proper instruction and at worst play “skill building” games that are little more than expensive interactive worksheets? The answer is to focus on technology literacy through technology integration. Instead of offering separate computer and writing classes, for example, schools can offer writing classes that use the computer. Through technology integration, students engage in real world tasks (like writing papers), learn a computer application (Microsoft Word), and learn a computer concept (word processing). The difference may not be readily apparent, but it is key to understanding technology literacy. Microsoft Word 2000 will change, but the concepts of writing, layout, and word processing will stay (for the most part) constant. If a student is not just literate, but technology literate, they can use any word processing program with little or no instruction. The difference is between training students on an application versus teaching them to be critical thinkers and life-long learners.

The International Society for Technology in Education ([www.iste.org](http://www.iste.org)) has developed National Education Technology Standards (NETS) that list technology skills and concepts students should acquire by the end of grades 2, 5, 8, and 12. These are the standards that the Pacific Regional Technology Education Consortium (PR\*TEC) and PRELSTAR have used to teach technology integration not only in the PREL service area, but most recently at Shanghai Teachers University in Shanghai. The NETS site also provides practical examples and advice on how to integrate technology into the classroom. Although the NETS standards were developed for the U.S., teachers in other nations have found them useful. Some of the entities in the PREL service area have adapted many of the standards for their own educational systems.



▷ These students at Shanghai Teachers University are learning to integrate technology into school curricula.

The key to technology literacy is not “seat time,” or the amount of time each student gets to spend on a computer, but the quality of the time spent. Here are a few of the many questions educators should ask themselves:

- Does using technology enhance or inhibit my curriculum?
- Can I accomplish the same objectives without technology?
- Does the way technology is utilized in the classroom meet technology standards?

There is no mystery to technology literacy. The key is to recognize it for what it is – a “literacy” – and to build upon those skills accordingly.

For more information on technology literacy and the PR\*TEC's initiatives in this area, please contact Andrew Kerr at [kerra@prel.org](mailto:kerra@prel.org).

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