

Instructional Technology for 21st Century Skills

This reference guide provides educators with a comprehensive overview of technology resources that can be incorporated into the classroom in order to help students master the skills they need to succeed in today's global economy. It presents solutions that can positively impact teaching and learning through the development of "technology-infused" classrooms.

Technology for a Global Environment



In his landmark book, *The World is Flat*, Thomas L. Friedman explains that we are living in a period that is very different from any other in recorded history; a time when, as citizens of the world, technology connects us to one another as never before. This interconnectedness, which impacts us economically and politically, should also affect

our educational practices. Specifically, educators need to reconsider the traditional curriculum and update it to focus on building skills that will best prepare students to meet the unique challenges of the 21st century.

It was once possible for our schools to focus on a standard curriculum that all students needed to master. Today that knowledge base is expanding at such a logarithmic rate that it is no longer realistic to have each and every student graduate with the same knowledge base. Information is changing at lightning speed and students need to know how to effectively access this information, as well as successfully problem solve and process it.

Students as

"Digital Natives"



We need only look at the "digital natives" sitting in our classrooms to recognise the extent to

which technology infuses students' daily lives. With iPod buds in their ears and mobile phones in their hands, they have to downshift when they enter most classrooms.

The traditional curriculum just does not reflect the technologically dense world in which today's students live, where texting, instant messaging and using the latest computer technologies is such a major part of their personal experiences. Faced with this new reality, schools must adapt by incorporating 21st century technology into the delivery of 21st century skills instruction.

It is imperative that we teach students how these varied technologies can be used to enhance their education and provide them with the foundational skills that will help them to become true 21st century learners. Teachers through their professional development must build models and align the curriculum to take into account the many technological innovations at their disposal.

Partnership for 21st Century Skills

In 2002, education leaders, members of the business community, and policymakers formed the Partnership for 21st Century Skills (21stcenturyskills.org) in order to advocate for the adoption of a 21st century teaching and learning framework. This partnership currently has 14 American state members who have made a commitment to implementing a 21st Century Skills initiative within their state. It maintains that, in addition to mastering core academic subject content, successful students must be equipped with the following skills:

- problem solving
- communication
- global awareness
- critical thinking
- collaboration
- financial literacy

These standards are consistent with the National Educational Technology Standards (NETS, 2007) which were developed by the International Society for Technology in Education (ISTE). Some regions have adopted NETS standards for implementation in their schools (for more information: iste.org).

Instructional Tool Set & Building Blocks

In order to teach 21st century skills, today's classrooms need to be equipped with a rich set of tools to enable both teacher and students to access, collaborate and connect to the latest resources on the Internet. Virtually every classroom in Australia now has at least one computer connected to the Internet. In order to maximise student and teacher access to online resources, schools must strive to provide wireless services that will enable students to connect to the Internet wherever they are in the school.

Let's take a look at the building blocks of a technology-infused classroom.

Interactive Whiteboards

At the heart of a technology-infused classroom is the interactive whiteboard, a large interactive display that connects to the teacher's computer and a projector. An image of the program running on the computer is then projected onto the whiteboard which acts as a portal to the outside world. Software allows teachers (and students) to operate the computer from the board. The interactive whiteboards serve as replacements for traditional whiteboards or media systems (i.e., DVD and TV combination). Many companies, including Smarttech (www.smarttech.com), Promethean (www.prometheanworld.com), Mimio (www.mimio.com) and others, now manufacture interactive whiteboards that help teachers deliver highly interactive lessons using resources on the web and/or the school's network. Some interactive whiteboards can be operated using a stylus, while others are touch-based and respond to a finger or pointer. Certain programs enable teachers to turn a standard whiteboard into an interactive board by connecting an electronic bar on the whiteboard. Usually, a computer, data projector, whiteboard and the accompanying software are required in order to utilise this technology.