

# 21st-Century Skills

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**E**ducation may be the most successful institution to emerge from the Industrial Age. First-world nations have thrived because they identified and employed effective strategies for educating the general population so citizens were well prepared to succeed in the 20th-century workforce and society. This strength may now become the downfall of education in these countries.

The world is changing. Rapid advances in technology have changed the way services are provided and goods are manufactured. It's difficult, if not impossible, to find an industry that has not changed because of these advances, and many people now have access to myriad goods and services that didn't exist a decade ago. Experts predict that advances will continue to accelerate for at least the next 10 to 15 years. This growth will continue to spur change in the worldwide workforce as economic globalisation continues to spread.

The critical question facing educators in all first-world nations today is: What are we doing to prepare our students for this new world? To date, the answer is not much. In his book, *The World Is Flat: A Brief History of the Twenty-First Century*, Thomas Friedman (2006) writes that his advice to his daughters is as follows:

Girls, when I was growing up, my parents used to say to me, "Tom, finish your dinner—people in China and India are starving." My advice to you is: "Girls, finish your homework—people in China and India are starving for your jobs." And in a flat world, they can have them, because in a flat world there is no such thing as an American job. There is just a job, and in more cases than ever before it will go to the best, smartest, most productive, or cheapest worker—wherever he or she resides. (p. 277)

Being confident that educators can prepare students for this new world is based on the assumption that they have some idea of what to prepare them *for*. And actually, they do. Education and business leaders



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have spent the last decade grappling with what students need to know and be able to do to find success in the 21st century. This skill set is often referred to as **21st-century skills**.

## WHAT ARE 21ST-CENTURY SKILLS?

Twenty-first-century skills comprise both content knowledge and applied skills that today's students need to master to thrive in a continually evolving workplace and society. Educators typically refer to three documents when discussing 21st-century skills. The first document, *enGauge 21st Century Skills for 21st Century Students*, was published in partnership by the North Central Regional Educational Laboratory (NCREL) and the Metiri Group (2003a). Couched in academic achievement, this document identifies four broad areas of applied skills where today's students must also excel: (1) digital age literacy, (2) inventive thinking, (3) effective communication, and (4) high productivity. Each broad area is further defined by subtopics designed to identify specific skills. A second document, *enGauge 21st Century Skills: Literacy in the Digital Age* (2003b), further explains this skills framework.

The second document frequently referenced in relationship to 21st-century skills is the refreshed National Educational Technology Standards for Students (NETS\*S), which were released by the International Society for Technology in Education (ISTE) in June 2007. Although technology-support instruction is the overriding focus of this updated set of standards, applied 21st-century skills are woven throughout the six standards and performance indicators, as is evident in the titles of the six standards areas: (1) creativity and innovation; (2) communication and collaboration; (3) research and information fluency; (4) critical thinking, problem solving and decision making; (5) digital citizenship; and (6) technology operations and concepts.

The final document is the *Framework for 21st Century Skills*, published by the Partnership for 21st Century Skills and updated in January 2009. This framework stresses the importance of basing instruction of applied skills in the context of core academic subjects and identifies four areas: (1) core subjects and 21st-century themes; (2) learning and innovation skills; (3) information, media and technology skills; and (4) life and career skills. As is the case with the enGauge framework, subtopics are identified in each of the four main areas, and the Partnership for 21st Century Skills website offers a variety of supporting documents.

Launched in 2004, Facebook was founded by Mark Zuckerberg and his roommates Dustin Moskovitz and Chris Hughes, who were all students at Harvard. Membership was originally limited to Harvard students, but it caught on so quickly that the network was soon extended to all university and college campuses in the United States. In 2005, high school students were invited to join, and by 2006, Facebook was open to anyone with an email address. Facebook currently reports more than 175 million active users, more than one-half of whom are not university students with the fastest growing demographic being those over the age of 30.

Use of **social network services** had grown so rapidly that in a recent survey of worldwide social network users conducted by Nielsen, survey respondents reported spending more time on social network sites than on answering email. The surprise in these findings is that the members driving this increase in use are not teens but people who are age 35 and older (Hachman, 2009)! This may mean that teens and young adults on the bleeding edge of technology use are already moving on to the *next thing*, but with millions of school-age users logging into social network services every day, schools will still need to deal with this issue for some time to come.



**Social Network Services:** “Web-based services that allow individuals to (1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a connection, and (3) view and traverse their list of connections and those made by others within the system. The nature and nomenclature of these connections may vary from site to site” (boyd & Ellison, 2007, p. 4).

## COMMON OBJECTIONS TO SOCIAL NETWORK SERVICES USE AT SCHOOL

It is difficult to think of a technology application that has been more heavily demonised than social network services. Just bringing up the topic in a room filled with educators, law enforcement officials or legislators can unleash deeply emotional discussions about online predators, safety and privacy issues, and the amount of time youngsters “waste” in these online environments. And it is true that there are many examples of teens and tweens misusing social network sites. With 65% of all online teens having at least one social network profile, and 75% of young adults age 18 to 24 using these sites (Lenhart, 2009), it behooves us to make a serious effort to cut through the mythology that has sprung up related to the specific dangers of social networking services and attempt to identify those areas where adults should focus their efforts when helping teens and tweens learn ways to use social network services appropriately.

## WRITING ONLINE

The current reports on students and online writing typically focus on teens partly because some of these sites prohibit personal use by children younger than 13, but it's likely that their views reflect those of younger students as well. Online writing is manifested in a variety of ways both informal and formal. Informal writing formats include email, texting, instant messaging, and posting comments on websites or in response to others' blog posts. Formal online writing includes text on websites, original blog posts, online articles, poetry, music lyrics, and stories written for e-zines or online newsletters.

Interestingly, the majority of teens do not view informal online writing, which is nearly always personal communication, as being *real* writing. And they are aware that it is not a good idea to mix texting abbreviations, emoticons, or other shortcuts, such as ignoring capitalisation and punctuation, with formal writing tasks. Teens and their parents believe that effective written communication is an important life skill, but teens think that schools could do a better job of teaching writing (Lenhart et al., 2008). For example, teens report that most writing assignments range from one paragraph to one page in length, and they say this is not enough and that these assignments are not particularly enjoyable. They say they want to be challenged by interesting topics, high expectations, and to write for an audience beyond the classroom. A majority of teens also state they want to spend more time in class writing and would like teachers to make more use of technology-supported tools for writing (Lenhart et al., 2008).

There are a number of free online tools that educators can use with students in response to these requests. Three types of online writing tools—blogs and microblogs, wikis, and web-based word processors—are described here.

### Blogs and Microblogs

A **blog** is an online writing tool that consists of dated entries posted in reverse chronological order so that the most recent entry appears first. Entries, which may be just text or include embedded links and images, may



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consist of a sentence or two or be quite lengthy. Blogs can be configured to accept original entries from one or more authors and to allow readers to publish comments about original entries. To ensure that inappropriate remarks do

not appear, it's possible to moderate blogs so comments are reviewed before being made public.

Free blog-hosting sites first appeared in the late 1990s. These sites make it very easy for even the least technology-savvy user to create a blog website in just a few minutes using a template and series of simple directions. More experienced users can modify the templates to reflect individual preferences by adding images or rearranging the page layout. Blogs usually offer an **RSS feed** feature so that readers who subscribe to the blog are notified every time it is updated with a new post or comment to an existing post. Popular blog-hosting sites include Google's Blogger (<http://www.blogger.com/>), Edublogs (<http://edublogs.org/>) and WordPress (<http://wordpress.com/>).



**RSS Feed:** RSS is an acronym for really simple syndication. An RSS feed helps readers subscribe to blogs and other websites that are updated regularly to keep track of these updates and have handy access in one place.

**Microblogging** is a form of blogging that limits message length—typically to 140 characters or less. Microbloggers usually post messages using text messages, instant messages or via the web. These posts may be viewed by anyone or restricted to selected groups of readers, depending on how microbloggers set their preferences. Messages may include text and links to websites, audio files or images. As is the case with blogs, microbloggers can individualise their personal pages using readymade templates or by uploading their own images. Microblogging first gained notice in 2006 but has grown in popularity since that time, particularly among teens and young adults. Currently, the top microblogging sites are Twitter (<http://twitter.com/>), Plurk (<http://www.plurk.com/>) and Jaiku (<http://www.jaiku.com/>).



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## Wikis

A **wiki** is a website that allows visitors to add, remove and edit content. As is the case with blogs, wiki host sites provide templates that allow users to create a personal wiki in a matter of minutes. Depending on the wiki host site, it may be possible to individualise the template, but it is always possible to personalise the appearance of wiki pages by adding graphics and other online elements.



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