

Skills

FOR A NEW CENTURY

*What your students
should learn today
if they are to be
successful tomorrow*
By Naomi Dillon



Two students at New Technology High School prepare to present their project in an AP physics class.

New Technology High School is everything its name implies. Computers, updated every three years, await each student. Classroom communication occurs mostly in Lotus Notes. And every senior must complete a digital portfolio, including resume, personal statement, and work samples.

Without question, the graduates of this northern California school enter the world better prepared than most for all of life's endeavors. But it's not necessarily the latest software and equipment that give them such an edge. It's how they use those

tools to further and improve instruction, and why the school is a model for 21st century learning.

"It's not that our kids are techies," says Principal Carolyn Ferris. "Coming out of here, our kids know how to collaborate, make oral presentations, and write well. We prepare our students for the workforce and beyond."

New Tech's approach suggests that it is foolhardy to focus instruction on specific computer programs or hardware. But it's hard to know where to focus—especially at the onset of a century that has already seen so much change.

But focus we must, says Ken Kay, one of the more recognizable voices in a growing dialogue about what skills students must possess to make it in today's competitive and complex world. Such discussions are hardly new, but they're gaining momentum, driven largely by businesses and coalitions that fear the worst for America and its future.

With 300 million skilled workers expected to come from India alone over the next 10 to 15 years, the implications for the United States extend beyond the economy and labor market and into what we will look like as a society, says Kay, president of the Partnership for 21st Century Skills, one of many alliances emerging between the education community and the private sector.

"Some get it, but most haven't looked into the abyss of having a fully functioning India and China breathing down our neck," he says. "This is urgent, and much of what to do about it is to create a world-class education."

A 21st century world-class education, that is. But despite the name, many 21st century skills are timeless, drawing from the past as much as they draw inspiration from the future. Surprisingly, technology does not occupy the role you'd think it would in today's curriculum. Some models barely even mention the word.

"It's not that you need to master technology, but you need to be able to use technology to master those skill sets," Kay says. "[Technology] is a tool, and tools change. What we're hoping to express is a standard that will resonate over time, so that when we sit down 95 years later, there's not going to be a big hand-wringing over whether these skills are still important."

THINKING SKILLS AND TECHNOLOGY

Critical thinking is basically using your mind to its fullest potential. It's about using logic to make intelligent choices ... I used this skill when I chose to come to New Tech High School.—Senior Jerome Sadhu, excerpt from his digital portfolio.

Sadhu probably had no idea he would be putting on his thinking cap so much when he enrolled at New Tech High. But in an economy in which the creation of knowledge is supplanting the creation of products, the ability to breathe life into ideas, solve difficult problems, and dissect complex issues becomes an attribute that's, well, critical.

Never mind the latest technologies sprouting from every corner of the Napa Valley school, a luxury supported by a foundation that was fed up with dealing with ill-equipped graduates. New Tech High is mindful that an active brain is the most important tool in the 21st century.

Critical thinking is one of New Tech's eight learning outcomes, reinforced by the school's educational philosophy, which relies heavily on problem solving to teach subject material. Still, technology's influence can't be ignored in any arena, let alone the classroom.

"When I look at kids in general and see them doing more and more with technology, that doesn't make me feel better," Kay says. "The linkage with technology to critical thinking and



Last year, students at New Technology High School participated in "Tech Lends a Hand," a weeklong schoolwide series of community service projects that encompassed everything from reading to elementary schoolchildren to visiting veterans' homes to painting this mural on the back wall of the school.

problem solving is not there. They need help with that because they don't just get to it naturally."

In fact, some wonder if technology's pervasiveness has diminished as many capabilities as it has developed. Bob Kizlik, who has taught at every level of education since the 1960s and now operates an online resource of instructional materials for teachers, has mixed feelings.

"When I wrote my dissertation, it was on a typewriter," Kizlik says. "I proofread every paper, then I had my wife proofread every paper, and when you do that, you tend to think more carefully about what you're doing. There's something about technology we take for granted."

In 2002, a consortium of leaders from the public and private sectors of Australia, Brazil, Canada, France, and the United States deduced much the same thing. Because technology makes the simple tasks easier, the International Information

and Communication Technologies Literacy Panel wrote, it places a greater burden on the higher-level skills. Cultivating those advanced cognitive abilities, however, is no easy task for an education system that continues largely to emphasize rote memorization and broad coverage of material.

“The way you teach people to develop thinking skills is to give them interesting things to think about,” says Kizlik, who was often surprised by how few college students in his thinking skills courses knew how to make connections or solve problems. “We can teach kids all of the mechanics of critical thinking but that doesn’t mean they’re going to use it once

Today, literacy is more than just decoding text. It’s about making sense of everything in our world.

they’re out of class. The minute they leave class or don’t need it, it’s discarded. That’s the way education is set up now.”

READING VS. LITERACY

English, like most languages, is a living entity, expanding and evolving as new trends hit, significant events unfold, and habits change. It makes sense, then, that the term “literacy” should assume new identities along the way.

“Being literate in the 21st century is far different from being literate in the 20th century,” says Marcia Capuano, assistant superintendent for curriculum and instruction at the Metropolitan School District of Lawrence Township in Indianapolis. “For my grandparents, it meant they could write their names and read a little bit. For my parents, it meant they could read and write well.”

Today, literacy is more than just decoding text. It’s about making sense of everything in our world, whether it is the images displayed on computer screens and televisions, the ethical questions imbedded in stem-cell research, or the impact of global warming. But in an era of information overload, it’s also about finding meaning and applying it for maximum benefit—employing, yet again, those all-important thinking skills.

The catch-all phrase for this has become digital age literacy. At Lawrence Township, it’s become a districtwide initiative that started in earnest in 2001, when the Lilly Endowment awarded the district a \$5.9 million grant.

Working with the North Central Regional Educational Laboratory and the Metiri Group, a California-based education consulting firm, Lawrence Township administrators began wading through all of the literature on 21st century skills and literacy.

“It was really hard because there were a zillion reports out there, and some of them had similar skills and some of them didn’t,” Capuano says. Eventually, NCREL and Metiri developed a 21st century learning model that includes scientific, economic, technological, visual, information, multicultural, and basic literacy under the umbrella term “digital literacy.”

“We know from a lot of cognitive work that the difference between a novice and an expert isn’t so much that the expert knows more,” says Cheryl Lemke, who heads the Metiri Group. “The expert knows how to distinguish and lay out skills and use them.”

Teaching students how to find, analyze, and judge data for its worth is a key skill at a time when just about everything is a mouse click away. Understanding how technology works, both for and against you, is an integral part of information or media literacy, since technology has made it all accessible.

At first blush, multicultural literacy seems to be the one thing that doesn’t look like the others. Sometimes called global awareness, cultural sensitivity, or an appreciation for diversity, it has been embraced to varying degrees in the past. In the 21st century, however, the ability to work with people of differing backgrounds, lifestyles, and cultures becomes as necessary as the ability to write.

In fact, it’s the lubricant that makes the rest of the machine work. Consider the experience of Singapore’s Ministry of Education. After being lambasted by the local commerce community, the ministry shifted gears. Enlisting the help of the University of Chicago’s Collaborative for Academic, Social, and Emotional Learning, the ministry is working to make the social and emotional aspect of learning a focal point of the nation’s curriculum.

“The business community was coming down on education, saying, ‘You’re at the top of performance in math and science, but your graduates can’t work in multinational workgroups,’” recounts Mary Utne O’Brien, CASEL’s executive director. “They had all this technical knowledge but none of the skills for working with diverse groups.”

SOFT SKILLS ARE HARD TO FIND

For the past year, officials from the Society for Human Resource Management have traveled the country, talking to focus groups of personnel directors to gather their biggest gripes about new employees. Overwhelmingly, HR professionals say they’re frustrated and flummoxed by the graduates’ absence of basic skills.

In its most recent survey, the nonprofit organization’s members cited a lack of professionalism and poor communication skills as the top two deficiencies among incoming workers. These findings are sobering but not surprising. Good presentation, writing, and interpersonal skills, among others, have been traits that hiring managers and supervisors have consis-

tently sought but seldom found.

Unless those shortcomings are rectified, the situation looks even more acute in the 21st century. Work now, labor analysts say, will mostly be accomplished by teams of individuals from within and outside a company and sometimes from outside the country.

“A lot of people haven’t understood until recently that these skills can be taught,” O’Brien says. “It’s not a matter of, ‘You’ve either got it or you don’t, you’re a jerk or you’re not, or lucky enough to have a family that taught you these things or not.’”

Much of what CASEL does either builds or complements these so-called soft skills, whether it’s teaching kids how to form and maintain relationships, handle their emotions, or be more aware of themselves and others.

“I think the interconnectedness of the world requires an awareness of self, of knowing how I am coming off,” O’Brien says. “Because you can’t assume people act and react just like you.”

At New Tech High and Lawrence Township, staff and students have many opportunities to hone their interpersonal

skills. Instructors pair up to lead courses at New Tech High, while at Lawrence Township roughly three dozen motivated teachers undertook extensive training to lead their colleagues in attaining digital literacy. Project-based learning at both sites forces students to form groups and lead their own learning, from topic selection to oral and written presentations.

The success of these collaboratives hinges as much on the flexibility of each individual as on that person’s strength—a lesson best learned and reinforced early. In the volatile 21st century, accepting and responding to change quickly is what will differentiate those who advance from those who stagnate.

“Average American workers used to have nine jobs in their whole lives, most of them right in the beginning,” says Martin Carnoy, an education and economics professor at Stanford University. “Now you’ve had nine jobs by the time you’re 35.”

Flexibility for employer and employee alike is the name of the game today. Companies want to hire and fire according to the market, while employees no longer see themselves spending a lifetime in a single job. Instead, employees work up the ladder by hopping from company to company, turning behav-

From vision to action

SO YOU’RE NOT New Technology High School, founded and funded by a glut of local and national businesses intent on preparing graduates for the 21st century. And you’re not the Metropolitan School District of Lawrence Township, buoyed by \$5.9 million, and counting, from the Lilly Endowment.

But look past the impressive monetary support, and you should find something in common with both places: vision. While money has kept New Tech High’s name relevant, the school’s specified learning outcomes ensure that its students will remain relevant in an ever-changing world. And years before the Lilly Endowment awarded a grant to Lawrence Township, the district changed its mission statement to reflect the need for “self-directed, lifelong learners in a competitive global community.”

While most educators agree that attributes like collaboration, creativity, and personal accountability are important traits for students to possess now and in the future, turning rhetoric into action is a hurdle most districts fail to leap, says Ed Coughlin, senior vice-president of the Metiri Group, a California-based consulting firm.

“Lots of people like to look at 21st century skills, but when it comes to implementation, actually doing and assessing it, nobody wants to do it,” Coughlin says. “We can probably count on one hand those groups who are actually doing that grunt work.”

Much of that grunt work is less about acquiring the latest

and greatest technologies and more about acquiring a common goal between the education and business communities.

“The first order of business is to focus on the skills and attributes [employers] are looking for and reach consensus that these are ones that will make kids successful in the 21st century,” says Ken Kay, president of the Partnership for 21st Century Skills, a coalition of business and education organizations. “Once you do that, it helps inform everything else you do in education.”

Kay’s organization has produced a number of publications to help educators and policymakers weave 21st century skills into classrooms. Among the suggestions for building momentum: Develop a professional development plan for 21st century skills, collaborate with outside partners, and develop assessments to measure student progress.

Both the Metiri Group (www.metiri.com) and the Partnership for 21st Century Skills (www.21centuryskill.org) have defined sets of skills deemed important for the 21st century. In addition to listing these attributes, both websites include information on assessing the skills and integrating them into your district.

“Instead of starting the conversation with what the physical building will look like and what the school day will look like, we should be determining what skill sets are needed to drive school design,” Kay says. “The school board needs to understand how urgent the situation is and that [it is] on the front lines for turning us around.”

ior that used to be viewed as flighty and irresponsible into drive that is focused and career-oriented.

But there's a downside to operating like a free agent, says Carnoy, who has authored a number of books and articles that delve into life, family, and work in the Information Age.

"I think nowadays, like in the rest of society, there's much more emphasis on the individual to make it or break it," Carnoy says. "It's like an investment portfolio and you're the investment. I think its superindividualism, and it's very alienating."

FROM TRAIT TO SKILL

It may seem that 21st century skills are merely a reflection of the marketplace. While it is true that work and the future of work play a large role in the formation of these skill sets, many of these attributes help to create a better person as well as a better employee.

In 2003, the Business-Higher Education Forum released *Building a Nation of Learners*, which reiterated what many

The habits and traits necessary in life and work today aren't modeled in many American classrooms.

have seen coming for a long time. "Even if employees are equipped for today's jobs, they need to be ready to learn, re-learn, and in some cases, unlearn to respond to corporate downsizing, workplace modifications, and other realities," the report states.

Educators have always aspired to instill the love of learning in their pupils. But now, it must become a learning objective as education becomes a lifelong endeavor that can only be sustained by a true passion for acquiring knowledge.

New Tech High places students on this path by requiring all of its graduates to take four courses at the local community college. "It's an opportunity for students who never thought about going to college to think about it," Ferris says.

But too much knowledge, particularly when it's used the wrong way, can be a bad thing, says Robert Sternberg, director of the Psychology of Abilities, Competencies, and Expertise Center (PACE) and dean of Tufts University's arts and sciences department.

"People can be very smart, get excellent grades, go to graduate schools and undergraduate schools, and then they run Enron and make a mess of things because they're not wise," he says. What's more, he says, too much knowledge can stifle a skill he considers essential in the 21st century.

"Creativity is a willingness to see problems in new ways," Sternberg says. "It's also the willingness to take sensible risks, two things we'll have to do a lot of in the future."

Sternberg has spent much of his career exploring notions of intelligence. He considers the ability to set and achieve goals one important aspect of intelligence. He also considers leadership a decision that each individual makes, though that has become less of a choice in the 21st century.

"I understand, not everyone can be the leader," says Kay. "But the kind of leadership tied to self-direction and motivation will be required of everyone. Do you have a sense of where to go, what to look for, which questions to ask? So that your boss isn't standing there telling you what to do every minute?"

MOVING INTO THE 21ST CENTURY

Unfortunately, the habits and traits necessary in life and work today aren't modeled in many American classrooms, says Ed Coughlin, senior vice-president at the Metiri Group.

"Districts ask us to do audits of them all the time," he says. "One of the things we look at is whether teachers are building 21st century skills, and by building we don't mean displaying, but developing and promoting these skills. In these audits, teachers don't do that."

That's changing, but slowly. In May, South Carolina enacted the Education and Economic Development Act, which calls for creating curriculum around career clusters, providing students with rigorous academics and real-world problem solving skills. That same month, Ohio established the Partnership for Continued Learning, a systemic approach to meeting workforce needs that involves widespread collaborations between pre-K and post-secondary education. And in California, the Commission on Teacher Credentialing is studying how to integrate 21st century skills into teacher preparation programs.

While this is all great and good, Coughlin and others argue that unless 21st century assessments accompany 21st century learning, a world-class education will never become a reality in the United States.

"The assumption in No Child Left Behind is that if we can raise kids' scores, we're actually going to improve their lot in life," Coughlin says, adding that studies have refuted that belief. "What we need to have is broader indicators of student success and better metrics. Our outcomes should be how successful are our workers in the workplace, how successful is our economy."

But we should also look at what kind of a country we will create in this race to the future, says Carnoy. "The question of skill is in some sense important, as it relates to what we're going to be as a society," he says. "Being competitive depends on a lot more than people having skills. The best analogy is to a team. You can have talented players but have a lousy team."

Naomi Dillon (ndillon@nsba.org) is associate editor of *American School Board Journal*.

Copyright of American School Board Journal is the property of National School Board Association and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.