

# ROADMAP TO A 21st-CENTURY EDUCATION

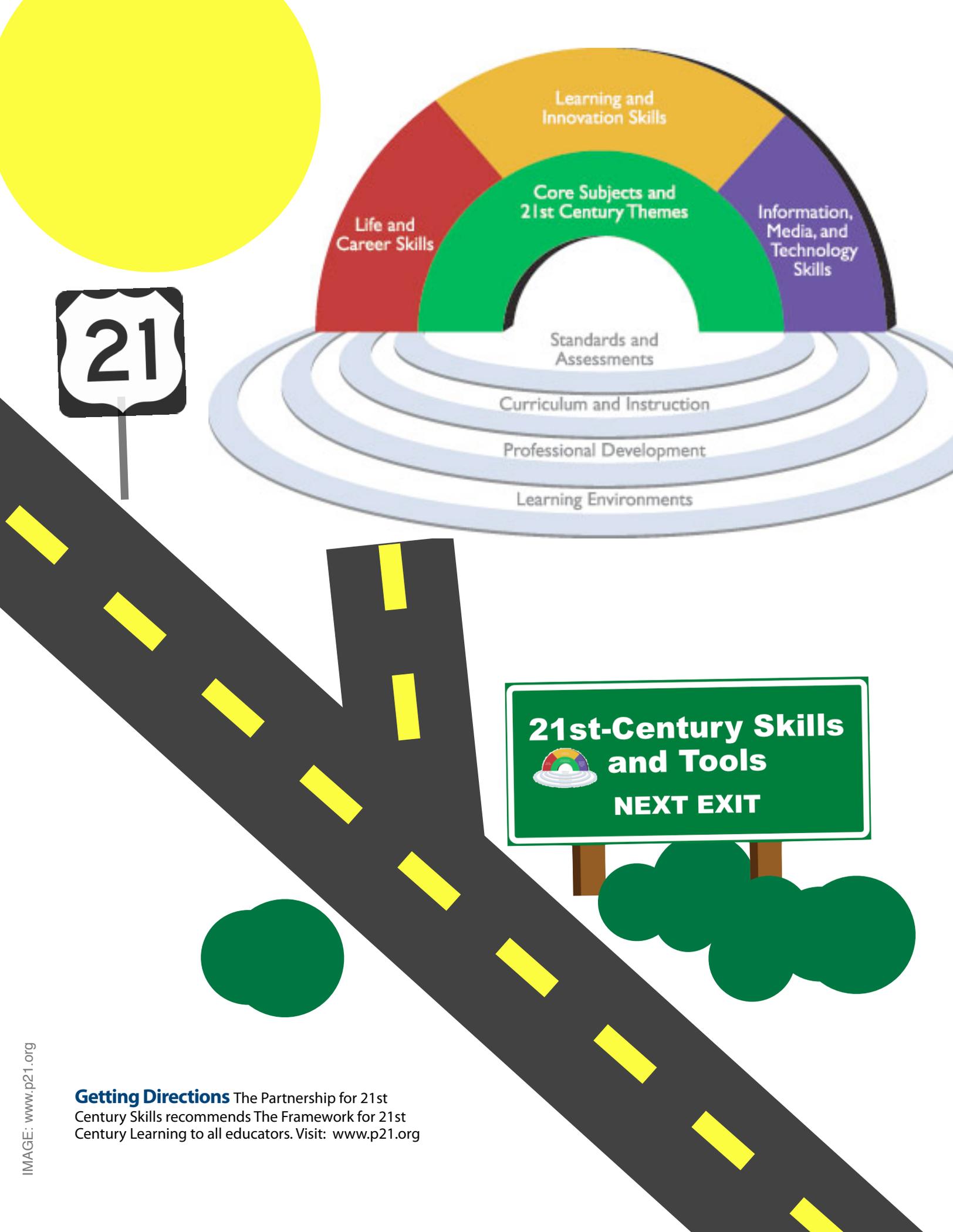
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WILL  
**YOU**  
MAKE IT?

**21st-Century Skills  
and Tools**  
  
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## MOVING FORWARD:

# 21 DEFINITIONS for a st-CENTURY EDUCATION

BY VICTOR RIVERO

I recently asked thousands of educators what "21st-century skills and tools" means to them, and how one might integrate such technologies and skills into today's classrooms. The responses were overwhelming—and *surprisingly passionate*. For now, I've selected a portion of them to share here, but there are plenty more where these came from. Are there as many answers as there are people? Or should there be an

agreed-upon set that would benefit all students? Let me know what *you* think—and for now, enjoy these viewpoints:

**1**

"A teacher with 21st-century skills and tools is one who can integrate strong communication skills with manageable technology skills," says **Matthew Braun**, a seventh-grade math teacher in the School District of Philadelphia. "[It's]

someone who can creatively problem solve both people- and equipment-related obstacles to learning. A teacher possessing 21st-century skills fearlessly seeks out methods and tools—technology—that will enhance not only their students’ learning—but their own personal growth as well.”

**2**  
“From an education standpoint,” says **Nadene Mathes**, an educator at RSU #18 in Lewiston-Auburn, Maine, “I believe it is the ability to utilize technology to deliver curriculum content in a manner that is both rigorous and relevant.”

**3**  
**Greg Rodriguez**, a doctoral student at Texas State University San Marcos College of Education, is the program coordinator for their Teaching Residency Program for Critical Shortage Areas. His studies focus on K-12 public school improvement. To him, a 21st-century education requires “skills in communication, collaboration, and information analysis.”

## “A teacher with 21st-century skills and tools is one who can integrate strong communication skills with manageable technology skills.”

**4**  
“Twenty-first century learning is the master plan of how to generate innovative, relevant practices in education,” says **Lucy Miller-Ganfield**, an e-learning advocate and president of Students Working to Advance Technology (visit [swatweb.net](http://swatweb.net)). “Twenty-first century learning is a remix of multiple literacies which fuse with the tools of technology—and the skills of critical thinking—to stimulate authentic, relevant learning opportunities for all learners, anywhere, anytime. The tools allow individuals to be

collaborators and creators of authentic solutions to global problems as they emerge over time,” she says.

**5**  
“Twenty-first century tools enable students to better prepare for the workforce,” says **Allen C. Grant**, Ph.D., an assistant clinical professor and program director at Drexel University. Grant is an education technology researcher with specific experience in virtual learning and web 2.0 technologies. He says that true 21st-century tools and skills must “facilitate collaborative,



**SWAT Teams**  
Students Working to Advance Technology is an organization ensuring that schools provide authentic, relevant learning opportunities for all learners—anywhere, anytime—but can a few dedicated groups really make a difference?

inquiry-driven and authentic means of learning.”

6

“Twenty-first century skills and tools are essential to any educator these days. The ability to use technology to bring education alive is what our students search for,” says **Greg Limperis**, a technology facilitator and lab instructor at Lawrence Public Schools in Lawrence, Mass. Limperis is the founder of Technology

#### Integration in

Education, a professional learning network with thousands of members both on LinkedIn and at



technologyintegrationineducation.com. “Administrators are looking for teachers who can use technology to generate data that they can use to help influence their decisions when it comes to educating our youth. Teachers themselves need to have 21st-century skills and tools in order to manage the ever increasing amount asked of them by students, staff and parents on a daily basis. The use of computers, mobile devices



**Using Mobile Tools** is a 21st-century skill that most students already have—but can our schools help them search and assess the relevance of what they are finding?

such as smart phones; student response systems, projectors, video and digital still cameras, smart boards and much more—are all tools that a 21st-century teacher has to be comfortable with.”

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“To ready the citizens of tomorrow, we need to align the curriculum to Generation 2.0,” says **Trupti Gandhi**, an ICT (Information, Communication and Technology) support person at Dame Alice Owen’s School in Enfield, United Kingdom—a school founded in 1613 but that has no doubt undergone change since then. “The technology and tools they use

during the school life become almost obsolete by the time they are in the job market or are responsible citizens, hence we need to teach them to learn and make them life long learners.”

8

“The two new skills to add to 21st-century life skills list are: 1) information skills: searching, assessing relevance and consuming, and 2) technology adoption skills: using mobile, PC and Internet tools,” says **Bhanu Potta**, a global product manager for education and knowledge information services for emerging market countries at NOKIA, the Finnish, multinational communications corporation primarily engaged in manufacturing of mobile devices and in the converging Internet and communications sectors. “We are already seeing these skills developing among kids in developed countries and education systems there are supportive. Kids of economically affluent families in emerging countries are also in the league and rapidly developing these skills, however the education system has not yet started

supporting these skills. But, the lower sections in emerging countries and most sections in the underdeveloped world have not even started.”

**9**  
**Kristine Petricas** is an executive at Daydream Education, an education media company. “My working definition is as follows: A fully integrated curriculum that includes technology tools that deliver, enhance and create passionate, accountable individuals who use problem-solving skills and resources to transition from a learning environment to a working environment, seamlessly.”

**10**  
 “At their core, the most important 21st-century skills that foster success are really no different that the most important 20th-century skills: the ability to communicate, connect, create, and collaborate to solve problems—quickly, easily,



clearly,” says **Catherine Kedjidjian**, director of marketing at School Town, a student-centric e-learning, content sharing and collaboration platform based in Northbrook, Illinois. “The difference comes in the use of 21st-century tools and



technology to facilitate those skills. The evolving technology that allows achievement and success must be present in the classrooms to engage and educate students—of any age—because they are omnipresent everywhere else in our society.”

**11**  
**Laurie Burruss** is the director of Education at lynda.com—an online learning and training site for professionals—and the director of the Digital Media Center at Pasadena City College. “Today’s students are well versed in the use of the Internet and ‘see’ it as easy access to almost all information. They understand the web—its interactions



among people, technological devices, and the creation, flow, and sharing of information from Wikipedia to YouTube to Facebook.



Therefore, it seems reasonable that the already-familiar practice of online knowledge networking and resources that leverage skills, professional position, and life-long learning would be natural and necessary to a student’s education,” says Burruss. “Opportunities exist to reinvent education utilizing old and new systems based on affordability, accessibility, and agility. A type of partnership between industry and education is at the forefront of

'reinventing' learning— usages and applications will vary as those engaged in this effort bring the 'whole' learning experience to the student. The idea of a new kind of collaborative environment signals the end of the institution as 'gatekeeper' and the opening of the 'floodgates' of online knowledge and points to a crossroads where education is reinvented and the student is at the center of his or her learning in order to succeed in the 21st century."

**12**

"Twenty-first century skills combine traditional soft and hard skills with emerging new technologies," says **Cathleen White**, director of Instructional Technologies at Cleveland-based Gilmour Academy, a Catholic, college-

## **"Twenty-first century skills are the skills students will need to be competitive in their future careers—collaboration software, productivity tools and web 2.0 programs."**

preparatory boarding school. "Students continue to need to communicate effectively, think creatively and solve problems but they also need to be nimble in their use of tools: pencil and paper, computer with resident software and web 2.0 tools. Of course, that being said, the implication is that teachers also need to possess and model those skills."

**13**

"In addition to information communication technological literacy, 21st-century skills require a high level of socio-emotional competence and sophistication," says

**Christine Jacobsen**, a school counselor at Middletown City Schools and an adjunct professor in the State University of New York

(SUNY) system. "The collaborative teamwork needed in 21st-century jobs requires expertise in managing one's emotions, in order to resolve conflicts productively," says Jacobsen. "I suppose these are 20th-century values of civics and character education—but who is going to teach this?"

**14**

"Twenty-first century skills and tools necessarily come into education technology, so it means that one needs to be 'digitally prepared' for the digital 'natives' and to see technology as a way to reach learning objectives faster and more efficiently," says **Peter Krisam**, business development manager at Latin Telecommunications S.A. "Don't make the mistake of seeing technology as itself and get afraid of it—see it as a tool, as transparent, just as it is—as that is how our 'digital natives' see it."



**Students at Gilmour Academy** outside of Cleveland, Ohio, work on their Macbooks to think creatively, communicate effectively and solve problems—but is that really enough to get them through to life after graduation?

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**Nick Hobar**, president and chief learning officer at LearningFront, a global learning community helping to increase results on tests, training and assessments—and former assistant state superintendent of instruction at Maryland State Department of Education—has developed a wiki for envisioning the role of the 21st-century teacher. “It contains a preliminary set of characteristics and opportunities for others to add their ideas,” he says. “It’s available here and in our learning community: [http://www.learningfront.com/LF\\_21teacher.html](http://www.learningfront.com/LF_21teacher.html)”

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For **Erin Moran McCormick**, director of curriculum innovation and technology at

**“Technology is enabling us to connect to each other in remote areas of the world. It’s a new, global classroom.”**

Babson College in Massachusetts, 21st-century education is about “Taking the blinders off. Looking at teaching and learning differently in new, revolutionary ways,” she says. “Technology is enabling us to connect to each other in remote areas of the world, share ideas, identify and solve problems—it’s a new, global classroom. Embracing and mastering new 21st-century skills and tools is an essential part of this revolution to ‘C’ the future: Connect. Communicate. Collaborate. Change.”

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**Victoria Hart**, a web 2.0 and technology consultant for K-12, says, “I use the Framework for 21st Century Learning to guide my thoughts as to which skills and tools learners will need.” [http://www.p21.org/index.php?option=com\\_content&task=view&id=254&Itemid=120](http://www.p21.org/index.php?option=com_content&task=view&id=254&Itemid=120)

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“Twenty-first century skills are the skills students will need to be competitive in their future careers—this generally encompasses collaboration software and other productivity web 2.0 programs. Also, it means the ability to discern information, to find answers to problems, and to be comfortable using any number of applications to be productive,” says **Matthew Baughman**, a technology integration specialist in the education management industry at ISS in Germany.



**A World of Difference** The 25-ton, free-standing Babson Globe is a campus landmark. Are institutions of higher education ready for today’s high school graduates?

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**William Cain** lived and worked in Beijing, China for 15 years as a writer, editor, content provider and English teacher in academic and corporate settings. Cain relates a story: "Speaking to a young man this morning who is barely out of his teens, I suggested the prospect of 'brick and mortar' schools becoming a thing of the past. All the recent advances in collaborative information and communication technology make this possible, so why not? To my surprise, he immediately balked and said a one-hundred percent virtual learning experience was a bad idea. There was too much to be learned from actual face-to-face, human interaction between students and teachers, he said. Now if someone my age said that, I might consider them old-fashioned and behind the times. But here was someone who has never really lived in a world without computers, smart phones, the Internet, and so on—telling me that tactile, real-world experiences in education are just as important to him as the content he studies. From that perspective, I think '21st-

**"I can create, engage and build not only personal relationships but strong communities of practice and knowledge without worrying about physical and time limitations."**

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century skills' are skills that enrich and inform our real-world interactions with others, prepare us for faster, technology-driven collaboration, and broaden yet deepen our engagement with our surroundings. For the young man in question, those skills meant having a facility and understanding of emerging technology with a firm foundation in some of our oldest virtues: courtesy, creativity, integrity, and compassion. It sounds like a pretty tall order, but I think that's what younger generations are hoping we can teach them."

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What *are* 21st-century tools, really? "Any tool that helps you problem solve," says **Tammy Stephens**, a consultant assisting K-12 schools in strategic planning, web 2.0, digital media, 1-to-1 computing and professional development.

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**Jeannine Hamilton** is a student support specialist at the University of Central Arkansas. For Hamilton, "Twenty-first century skills and tools means that I can create, engage and build not only personal relationships but strong communities of practice and knowledge and everything in between without worrying about my physical and time limitations so much. It allows me to digest the information overload without getting a tummy ache due to the skills of information literacy, critical thinking and evaluation." 

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