

# CREATING 21<sup>ST</sup> CENTURY-READY TEACHERS





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Atomic Learning is a professional development affiliate of the **Partnership for 21st Century Skills** which supports the integration of 21st century skills into all aspects of teaching and learning. The Partnership for 21st Century Skills is the leading advocacy organization focused on infusing 21st century skills into education. The organization brings together the business community, education leaders, and policy makers to define a powerful vision for 21st century education to ensure every child's success as citizens and workers in the 21st century by providing tools and resources to help facilitate and drive change.

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## PREFACE BY MISHRA AND WOLF

Socrates is quoted as saying “if men learn this [writing], it will implant forgetfulness in their souls; they will cease to exercise memory because they rely on that which is written, calling things to remembrance no longer from within themselves, but by means of external marks.” It is hard to imagine reading and writing as being a threat to education but Socrates’ concern is strikingly similar to the argument presented by Nicholas Carr in his 2008 Atlantic article “Is Google making us stupid?” arguing that the Internet is negatively impacting the way in which we think and how we read.

As Dennis Baron points out in his new book “A Better Pencil” every communication advancement throughout human history, from the pencil to the typewriter to writing itself, has been met with fear, skepticism and a longing for the medium that’s been displaced.

We live in a world driven by change, much of it imposed by technological innovation. Those who do not keep up with the latest educational technologies will almost certainly fall behind, and unfortunately, stay behind.

It is not enough to simply argue that new technologies need to be integrated in the classroom. Merely using technology will not lead to any significant change in



## PREFACE BY MISHRA AND WOLF (CONTINUED)

student learning. For students to succeed, they need to be provided with a skill set that sufficiently prepares them to live, and compete, in today's digital-age.

The kinds of knowledge educators need today are more than that of a technologist, an expert on theories of learning, or a content expert. Today's teachers need a firm understanding of 21st century skills, and an ability to pass them on to students.

Good teaching requires having a form of knowledge that understands the dynamic interaction between all three of these constructs, Content, Pedagogy and

Technology. This knowledge framework has been called the TPACK framework. This is consistent with the kinds of 21st century skills espoused by organizations such as the Partnership for 21st Century Skills and ISTE.

Consider this quote: "Knowledge is no longer an immobile solid; it has been liquefied. It is actively moving in all the currents of society itself."

Now, one would imagine that this was written reasonably recently, speaking about the educational potential of technologies such as Web 2.0 or mobile computing or some other new tool. As it turns out, this was written back in 1900, long before the Internet was even conceived, before computers became the ubiquitous



## PREFACE BY MISHRA AND WOLF (CONTINUED)

devices they are today. It was written by the educational philosopher John Dewey in his book *School and Society*.

So in some way what we are seeing today, the idea of information moving at the speed of light, across the globe, where texts and images and audio can be digitized and manipulated at will, is really the culmination of an educator's vision from over a century ago.

In this age of “liquefied knowledge” we can ignore these tools at our own risk (and that of our students).

The only constant in our field is change, and the more flexible we are in our understanding and use of technologies, pedagogy and our content areas, the more prepared we will be to integrate and teach with them. At the basis of this is a deep and nuanced knowledge of these tools. It is only with this knowledge as a foundation that teachers can be 21st century-ready.

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## WHAT ARE 21ST CENTURY SKILLS?

In the education sector, there has been a growing movement toward infusing 21st century skills into teaching. Driven by organizations around the world, this trend is more than a passing fad, and has caught the attention of those training and equipping teachers for the digital-age classroom.



21st century skills are what today's students and graduates need to compete, and succeed, in today's global workforce. They are a series of con-

cepts and themes that go beyond the conventional to teach safe and effective technology application.

Education groups such as the Partnership for 21st Century Skills (P21) and the International Society for

Technology in Education (ISTE), the United Nations Educational, Scientific and Cultural Organization (UNESCO), and additional country-led initiatives, have each worked to establish guidelines for 21st century skills. While

these guides vary, shared core subject areas and variations of several key concepts and themes occur.



## WHAT ARE 21<sup>ST</sup> CENTURY SKILLS? (CONTINUED)

The following pages will help you to nurture an understanding of what 21st century skills are, provide insight on the demonstrated need for these skills, and challenge you to incorporate 21st century skills into your current education program.

Whether you are a professor, an administrator, an instructor, a trainer or a future teacher, you must understand 21st century skills to be effective.





## 21ST CENTURY THEMES

**Four key themes** shape our understanding of 21st century skills. These themes describe areas of critical knowledge required for 21st century skills competency.

### *Financial and Economic Literacy*

**Financial and Economic Literacy** is the ability to understand and manage personal finances, as well as how individual choices affect local and global economies. It also involves the capacity to make satisfying and rewarding career choices.

### *Global Awareness*

**Global Awareness** means understanding one's place in the world and how individuals relate. This includes the ability to communicate, share, and work collaboratively with others who may come from diverse cultures, hold different beliefs, or maintain lifestyles different from one's own.





## 21<sup>ST</sup> CENTURY THEMES (CONTINUED)

### *Civic Literacy*

**Civic Literacy** is an individual's ability to participate responsibly in all aspects of life, staying informed of governmental policies, understanding civic rights and exercising civic responsibilities.

### *Health Literacy*

**Health Literacy** is having an understanding of what is necessary to maintain positive physical, mental and emotional well-being, and involves developing an understanding of community, national and international health issues.





## 21ST CENTURY CONCEPTS

Whereas a 21st Century Theme is an area of learning, a 21st Century Concept is a skill needed to use and apply the knowledge gained within those themes--or more traditional subjects--in effective and innovative ways.

Sometimes referred to as 'applied skills' or 'life skills,' the seven 21st Century Concepts compose a valuable skill set that allows students to learn and apply knowledge not only within a school setting, but throughout life.

### ***Creativity & Innovation***

Describing the ability to 'think outside the box,'

***Creativity & Innovation*** is the capacity to successfully apply gathered knowledge to develop new solutions to problems and address challenging situations.

### ***Communication & Collaboration***

***Communication & Collaboration*** is the ability of individuals to effectively use digital tools to discuss and address arising issues. Distance, time, or both may separate those involved, and should never be a hindrance to a project's success.



## 21ST CENTURY CONCEPTS (CONTINUED)

### ***Research & Information Fluency***

***Research & Information Fluency*** is the ability to use digital tools to find information, filter through available resources and assess the validity of presented data.

### ***Critical Thinking & Problem Solving***

Important to all aspects of life, school and work, the concept of ***Critical Thinking & Problem Solving*** is interwoven with many other 21st century concepts and themes. This particular concept focuses spe-

cifically on teaching individuals to make informed decisions and evaluate the effect that personal actions will have on others.

### ***Digital Citizenship***

***Digital Citizenship*** involves the safe and ethical use of digital tools. An important step toward creating students who are good digital citizens is guiding the development of standards related to plagiarism, cyberbullying, internet safety and other critical topics.



## 21ST CENTURY CONCEPTS (CONTINUED)

### *Technology Literacy*

**Technology Literacy** is more than understanding how to use computers, software and other technology. It also involves being able to choose the most effective tool to complete a project and finding a personal comfort level working with digital tools.

### *Growth & Leadership*

The concept of **Growth & Leadership** expands upon the natural curiosity and desire to learn. This portion of 21st century skills mastery focuses on nurturing the development of personal responsibility

to drive lifelong learning, self-evaluation and personal improvement.





## THE IMPORTANCE OF BEING 21<sup>ST</sup> CENTURY-READY

Now that you understand what 21st century skills are, you are likely wondering why they are so critical to student success and how they are different from what is already included in a standard curriculum.

In a recent study, an overwhelming 99 percent of American voters indicated they found teaching 21st century skills, like the previously outlined themes and concepts, are important to the future economic success of the United States. <sup>1</sup>

How important to our country's future economic success is teaching and learning 21st century skills?



<sup>1</sup> [Beyond the Three Rs Voter Attitudes toward 21st Century Skills.](#) The Partnership for 21st Century Skills. Public Opinion Strategies and Peter D. Hart Research Associates. 2007.



## BEING 21ST CENTURY-READY (CONTINUED)

Americans aren't alone in this sentiment. A recent article quoted Steve Andrews, Manager of the Intel U.S. Teach Program:

“China, India, South Korea, and Japan have invested in making sure their kids have access to the technology and the literacy skills that they see as key to their economic future. But the U.S. has not given as much attention as the highest-performing countries around the world, which means our kids aren't getting the opportunity to compete.”<sup>2</sup>

<sup>2</sup> [Global Competition: U.S. Students vs. International Peers](#). Kathleen Kennedy Manzo, Education Week's Digital Directions. June 2009.

In addition, an in-depth study found employers think that many Americans are “woefully ill-prepared for the demands of today's (and tomorrow's) workforce,” and cited 21st century skills as “very important” to success at work<sup>3</sup>.

The need for high school graduates to begin higher education or enter the workforce with a firm grasp on 21st century skills is real; the same applies for college graduates. As with many student needs, fulfillment starts with the teacher.

<sup>3</sup> [Are They Really Ready to Work? Employer' Perspectives on the Basic Knowledge and Applied Skills of New Entrants to the 21st Century U.S. Workforce](#). The Conference Board, The Partnership for 21st Century Skills, Corporate Voices for Working Families, Society for Human Resource Management. 2006.



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A critical starting point to preparing 21st century learners is rethinking not only what is taught, but how it's taught—making it necessary to prepare our current teachers and promising future teachers with a full skills set and toolkit of resources that allow them to bring 21st century skills into the classrooms in relevant and meaningful ways.

As a recent report outlining the recommendations of a special 21st century skills task force pointed out:

“We cannot change how our students learn until our teachers are equipped to teach in new ways. It is unreasonable to expect that our students will ever gain the skills and knowledge to succeed in the 21st century if they are taught primarily by educators trained using a model developed in the 19th century.”<sup>4</sup>

The following pages will provide insights into how teacher preparation programs and professional development initiatives can be expanded on to include necessary 21st century skills training.

<sup>4</sup> [School Reform in the New Millennium: Preparing All Children for 21st Century Success](#)  
Massachusetts Department of Elementary & Secondary Education.  
November 2008



## TEACHER PREPARATION PROGRAMS

It may seem obvious that teacher preparation programs should all have one common goal—preparing tomorrow’s teachers to work with students. The question is whether they’re prepared to work with the changing needs of today’s students.

Modern students are not content to read from a textbook and sit through presentations or lectures. They are tech-savvy digital natives that live in an age where answers are available at their fingertips and technology is a tool as much as a toy.

They live and learn in a Web 2.0 world that places both exciting and intimidating expectations on to-

morrow’s teachers. More than ever before, colleges and departments of education are seeing a need to help their students enter the workforce with a firm understanding of their students and the skills those students need—21st century skills.

In a recent article, the American Association of Colleges for Teacher Education (AACTE) stated, “The superior teachers required of the complex, multi-cultural, fast-paced 21st century do not enter a classroom as a blank slate and learn on the job. They are schooled in their subjects and how students learn them.... Those who will become the outstanding teachers our nation needs must be prepared for the profession of teaching.”<sup>5</sup>

<sup>5</sup> [Teacher Preparation Makes a Difference](#). American Association of Colleges for Teacher Education (AACTE). April 2009



## TEACHER PREPARATION PROGRAMS (CONTINUED)

21st century skills training begins in teacher preparation programs and follows into schools and classrooms. Though the development of 21st century skills can be approached in a variety of ways, a few key items should be included:

### *Concept Training*

**Concept Training** on what 21st century skills are and the potential impact they have on education, the nation, and the world.

### *Development Projects*

**Development Projects** to practice the application of 21st century skills—training future teachers how to apply 21st century concepts in a classroom situation.

### *Assessments*

**Assessments** to monitor training progress and verify that future-teachers are 21st century-ready.

As with any adaptations of the existing programs, integrating 21st century skills training as a standard practice in education programs is likely to be intimidating, but it is a needed change that will affect the success of generations to come.



## PROFESSIONAL DEVELOPMENT FOR EDUCATORS

Reading, Writing and Arithmetic are not enough anymore. Today's digital age demands that educators are not only able to teach standard curriculum, but to prepare students for the workforce of tomorrow.

Creating 21st century-ready students and instructors starts with a solid professional development program and then transfers into classroom practice.

There are four key phases that create a successful 21st century skills training and development program:

### *Understand Training Gaps*

First, to make the most effective use of your professional development time and resources you need to ***Understand Training Gaps***. This begins by assessing teachers' current understanding and comfort with 21st century skills.

### *Develop Skills*

Once training gaps have been identified, a training program can then be built to ***Develop Skills*** based on indicated strengths and weaknesses. Ideally, this program will allow targeting for each person's current level of knowledge.



## PD FOR EDUCATORS (CONTINUED)

### *Analyze Progress*

After training has begun, it is vital to **Analyze Progress** in order to identify growth and pinpoint where additional development and training will be needed. A reporting system is a must-have to help evaluate progress and ultimately define if an individual is prepared to apply newly developed skills in the context of classroom instruction.

### *Tech Training and Support*

Finally, because technology is a large part of developing and implementing 21st century skills,

providing a **Tech Training and Support** resource is imperative.

As with any professional development initiative, the goal of a successful 21st century skills training and development program is to prepare educators to integrate 21st century skills into their classrooms—and ultimately impact students.

For many, the thought of developing a program around 21st century skills training can be daunting—but it's not insurmountable.



## REVIEW & RESOURCES

21st century skills are a timely topic that can be exciting, confusing and intimidating all at the same time. The information presented in this ebook is just a brief look into what 21st century skills are, and why they are so important.

Now that you're familiar with the concepts, what's next? To assist you in integrating 21st century skills into your teacher preparation or professional development program, ebook sponsor Atomic Learning has compiled planning worksheets to walk you through the process.

Providing the training and resources teachers need to become 21st century-ready not only have an impact on your students today, but will ultimately impact tomorrow's workforce.

### *21st Century Teacher Preparation*

### *21st Century Professional Development*



## REVIEW & RESOURCES (CONTINUED)

### *In the Classroom*

View an excerpt of a complete 21st century skills project available from Atomic Learning.

### **Myth & Lore We Share**

Subjects: Language Arts; Social Studies

Grade Range: 9-12

Application Types: Presentation; Word Processing

This project examines common themes and archetypes found in folklore and myth, as one way to illustrate cross-cultural similarities and promote global awareness.

*What the Example Project Looks Like*

*Learn more about Myth & Lore We Share*

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