



Summary of 21st Century Teaching and Learning Research

We believe that to succeed in the 21st century, students need experiences that allow them to collaborate, communicate effectively, be open to diverse perspectives and incorporate group feedback into their schoolwork. The ability to work collaboratively and creatively with others has become an essential skill for long-term success. Below is some of the research that has led us to these convictions about 21st century teaching and learning.

The Global Achievement Gap

by Tony Wagner - Innovation Education Fellow Technology & Entrepreneurship Center at Harvard. The Global Achievement Gap is the gap between what even our best schools are teaching and testing vs. the skills ALL students will need for careers, college and citizenship in the 21st century.

- We are preparing our students for jobs that do not yet exist.
- The “NET GENERATION” is motivated differently to learn
- The NEW PROBLEM: How to create an “Innovation Nation?”
- The culture of learning Vs. the culture of innovation
 - Individual achievement vs. collaboration
 - Specialization vs. multi-disciplinary learning
 - Risk avoidance vs. trial and error
 - Consuming vs. creating
 - Extrinsic vs. intrinsic motivation
 - Play, passion and purpose

Curriculum 21: Essential Education for a Changing World”

by Heidi Hayes Jacobs, Columbia University

What year are we preparing our students for?

- We have 21st century children
- We are currently using curricula from the 1990's. (20th century curriculum)
- Our schedule was developed in 1896 (180 days, agrarian, 6-hour day, 8 subjects)- (19th century schedule)
- Children and youth process information differently than we do

What we need

- Curricula must be constantly updated
- Tools must be supportive

Essential questions we should be asking ourselves

- How can we prepare our learners for their future?
- Who owns the learning?
- What do we cut?
- What do we keep?
- What do we create?



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5 Minds for the Future

by Howard Gardner

- Disciplined Mind (Depth)
- Synthesizing Mind (Breadth)
- Creative Mind (Stretch)
- Respectful Mind
- Ethical Mind

The Future of Learning - 4 Mega Trends

- Globalization – increasing connections between world nations
- Biological revolution – cloning, genetic engineering
- Digital revolution – multi-user games, social networking, Internet resources, twitter
- Lifelong learning – education is not K-12 or K-16. Professionals need to continue learning

21st Century Skills: Learning for Life in Our Times

by Charles K. Fadel; Global Education Lead, Cisco Systems Harvard Graduate School of Education

- Make curriculum relevant
- Globalization – Productivity – Education
- Rethink Relevance, Application, Knowledge, and Skill

What do we teach for?

- Fluidity with Technology
- Asking the right questions
- Synthesizing and Integrating
- Creating
- Interpersonal skills
- Adaptability
- Resilience

Your Creative Brain: Seven Steps to Maximize Imagination, Productivity, and Innovation in Your Life

by Shelley Carson

The Creative Process

- Preparation (gathering knowledge – Problem Finding)
- Creative Solution (hardest part)
- Evaluation of the solution(s)
- Elaboration



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- Implementation

Creative Solutions

- Trial and Error – Deliberate creativity
- Deliberate pathway to test novel ideas (Edison's light bulb experiments)
- Failure is part of the process and is important to the learning process
- The more ideas you generate, the more likely you will be to succeed

Education Nation – Six Leading Edges of Innovation in our Schools By Milton Chen

- The Thinking Edge: Getting Smarter About Learning
- The Curriculum Edge: Real Learning and Authentic Assessment
- The Technology Edge: Putting Modern Tools in Young Hands
- The time/Place Edge: Learning Any Time, Anywhere
- The Co-Teaching Edge: Teachers, Experts, and Parents as Coeducators
- The Youth Edge: Digital Learners

The twenty-first-century teacher should be a manager of learning students rather than their sole instructor. The knowledge that students need to master is now on the Internet rather than contained inside the teacher's head and between the covers of a single textbook. A teacher's knowledge of subject matter is still very important, but it's more important that she or he understands that students need to arrive at their own understanding. Today's teacher also values working with other co-educators to bring in expertise from the outside world and strengthen the parent-teacher-student bond. (206)