



Not very long ago, teachers and parents alike swore by the “3Rs”– Reading, wRiting and aRithmetic –essential skills that would ensure their children a successful future in higher studies and in life.

Today we are immersed in a bewildering array of subjects, extra-curricular activities, multiple intelligence theories and pedagogies. It is immensely difficult to cut through the chatter and address the core questions: What skills should we equip our children with, so that they may excel in life, and be fruitful contributors to society? How do we empower today's youth to cope with the ocean of knowledge around them, and achieve in the hyper-competitive, technology-driven, global economy?

The answer lies in the term “21st Century Skills”, an umbrella of well-identified skills that we must equip our children with.

What are 21st Century Skills?

21st Century Skills are skills that students need in order to be successful in the 21st century. The Partnership for 21st Century Skills (P21), a leading public-private partnership in this effort, classifies them as:

- Learning and Innovation Skills: Creativity and Innovation, Critical Thinking and Problem Solving, Communication and Collaboration (the “4 Cs”)
- Information, Media and Technology Skills: Information Literacy, Media Literacy and ICT Literacy
- Life and Career Skills: Flexibility and Adaptability, Initiative and Self Direction, Social and Cross-cultural Skills, Productivity and Accountability

These skills form a second tier of necessities for today's students. They must be built upon the framework of core subjects (the old “3 Rs”) as well 21st century themes such as global awareness, financial, economic, business and entrepreneurial literacy, civic literacy, health literacy and environmental literacy.

Several governments, multinationals, industry experts, academics and educationists have worked together in various groups to define them. Leading among them are P21 (www.p21.org) and the Assessment and Teaching of 21st century skills group (www.atc21s.org). The framework is a recognition that we now live in an interconnected, multi-cultural, technology-driven world, where awareness of a multitude of skills, and working collaboratively in cross-geographical, cross-cultural, multi-talented teams is an inevitable reality.



SKILL	DETAIL
<p>Learning and Innovation Skills The “4Cs”</p>	<p>Creativity (and Innovation)</p> <ul style="list-style-type: none"> • Think creatively • Work creatively with others • Implement innovations <p>Critical thinking (and Problem-solving)</p> <ul style="list-style-type: none"> • Reason effectively • Use systems thinking • Make judgments and decisions • Solve problems <p>Communication</p> <ul style="list-style-type: none"> • Communicate clearly <p>Collaboration</p> <ul style="list-style-type: none"> • Collaborate with others
<p>Information, Media and Technology Skills</p>	<p>Information literacy</p> <ul style="list-style-type: none"> • Access and evaluate information • Use and manage information <p>Media literacy</p> <ul style="list-style-type: none"> • Analyze media • Create media products <p>ICT (Information, Communications & Technology) literacy</p> <ul style="list-style-type: none"> • Apply technology effectively
<p>Life and Career Skills</p>	<p>Flexibility and adaptability</p> <ul style="list-style-type: none"> • Adapt to change • Be flexible <p>Initiative and self-direction</p> <ul style="list-style-type: none"> • Manage goals and time • Work independently • Be self-directed learners <p>Social and cross-cultural skills</p> <ul style="list-style-type: none"> • Interact effectively with others • Work effectively in diverse teams <p>Productivity and accountability</p> <ul style="list-style-type: none"> • Manage Projects • Produce Results <p>Leadership and responsibility</p> <ul style="list-style-type: none"> • Guide and lead others <p>Be responsible to others</p>

Table: The 21st Century Skills



A New Imperative for Our Children

An important shift has occurred in the workplace of the 21st Century. Tony Wagner, Innovation Education Fellow at Harvard University says, “The world doesn't care anymore what you know; all it cares is what you can do with what you know.”

How do our graduates fare against this standard? Consider the engineering sector. The last two decades have witnessed a glut of engineering colleges and graduates, aspiring for potentially lucrative careers. However, significant numbers of these engineers are going on to work in banks, schools, armed forces and other areas, as they are not employable in the jobs they trained for.

A 2011 NASSCOM survey states that only 25% of our engineering graduates are employable. Datla V, Co-founder and Director at Creya Learning Solutions, a leading provider of 21st Century Skills programs to schools states that, “It is no longer enough to gain knowledge in a particular subject. Students must acquire a combination of workplace and life skills across multiple areas of knowledge for success”.

A 2011 National Employability Report by employability solutions researcher Aspiring Minds goes further, stating that only 17% of our engineering grads are employable. Other key findings of this report include:

- Less than 40% engineers can perform 'problem solving' by cross application of concepts
- Fewer than 30% engineers can apply engineering mathematics concepts.

Source: National Employability Report (2011)

The report points out that a whopping 47% of all graduates were unemployable for any job in today's knowledge economy. Why these poor figures among our nation's best and brightest? This is because not only does today's workplace demand multiple areas of competency from employees, but also new ways of working: the abilities to collaborate effectively with diverse teams, work autonomously with minimal or no supervision, solve problems using systems-based thinking and tools and to communicate clearly with all stakeholders. These are the very skills that the 21st century skills' framework emphasizes.

It is not enough to be an MBA to fill, say, a position such as a “Social Media Manager”, a position that did not exist a few years ago. How adept is the candidate with Facebook and LinkedIn? Can the candidate engage with potential customers across the globe 24X7 by tweeting, blogging and posting relevant pictures on Pinterest?

Employers appreciate employees who can see patterns in data, communicate effectively with stakeholders, ideate on new processes and provide solutions to problems. It is this “value-add” that employers are for the most part unable to find in employees. This is what training in 21st Century skills can help our students become: the inventors, solution-finders and thinkers of tomorrow. And training must start from the K-12 level.



Skills required for success @ Workplace	Relevant 21st Century Skill
Computational Thinking	Critical thinking and problem solving
Sense making	
Design mindset	
Social intelligence	Social and cross-cultural skills
Cross cultural competency	
Trans-disciplinarity	Flexibility and adaptability
Novel and adaptive thinking	
New Media Literacy	Media literacy ICT literacy Collaboration
Virtual Collaboration	

Table: Today's workplace skill requirements and mapping to the 21st Century Skill set
 Sources: 21st C. Workplace Requirements: Institute for the Future (2011); 21st C. Skills: P21 (www.p21.org)

Action on the Ground

Various efforts are on to reach out to educators across school boards to propagate the 21st Century skills framework, many spearheaded by luminaries. P21 has technology giants such as Intel, Apple and Microsoft, UNICEF and private foundations like the Pearson foundation as members. They aim to catalyse 21st Century readiness among US school children. ATC21s, an initiative by the University of Melbourne is funded and driven by a public-private partnership among multiple stakeholders. These organizations are tying up with K-12 schools and education boards to design and implement programs based on the 21st Century Skills framework.

Closer to home in India, the movement is very nascent. “Although there is a recognition among parents and teachers that students need new kinds of skills for the new era, like digital literacy and information fluency, there is little awareness about a well-defined framework being available for learning and teaching these new skills”, says Mr. K M Naveen, Managing Director of Trio World School, Bengaluru. Mr. Naveen's team has identified the need to inculcate these skills in their children, and tied up with Creya Learning to implement their Creya XEL program at Trio.

Creya Learning is one of the early pioneers in the field, implementing their STEM (Science Technology Engineering Math), Digital Media and Arts and 21st Century Themes programs in schools across India.



Many of these skills are not new. “These skills reflect dimensions of human competence that have been valuable for many centuries, rather than skills that are suddenly new, unique and valuable today”, says Terrie Rust, DTE, technology education expert and Director of Academics at Creya Learning.

“Learning how to collaborate effectively and use technologies as instruments to connect ourselves, locally and globally, are essential for every person living in a knowledge society”, she adds.

21st Century Skills address not just the needs of the workplace, but of society as a whole. Complex issues confronting us such as global warming, immigration, or equitable distribution of resources require well-educated citizens to participate fully in finding solutions.

It is our duty as educators to design our education system to address this need and to meet the current and future demands of society.

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For more resources on 21st Century skills, visit: <http://www.creyalearning.com/21stcentury>

Next in the series:

How can schools and teachers prepare to deliver 21st Century skills?