# 21ˢᵗ Century Fluency Skills

## Attributes of a 21ˢᵗ Century Learner (1ˢᵗ sort)

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*Please note that this is just a first draft. I (Ian) have spent the last day hunched over the computer trying to put this thing together. The effort has left me even closer to brain dead than before. Yes, we haven't covered it all of – you know, critical literacy, visual literacy, health literacy, scientific literacy, economic literacy, global literacy, multicultural literacy, financial literacy, cultural literacy (not E.D Hirsch's definition of it I can assure you) but this is just my first stab at it. Inevitably I've made some typos, duplications and omissions. Please don't just notice them and shake your head. I would really appreciate it if you would let me know your questions, comments and concerns so that I can fix them. You can send corrections to me at ijukes@mindspring,com.*

The primary task of the educational system must be to give learners the right tools and provide them with a critical mind, so that they can ask the right questions and make the right connections. The problem is that the world is not the stable, static place it once was. The world has changed and continues to change.

Today as Thomas Friedman notes in *The World is Flat* we are preparing students for jobs that don't exist, using technologies that haven't been invented, to solve problems we haven't begun to think about. As a result, the definition of what it means to be educated in the light of the modern world has changed and continues to change

In his book *The Third Wave* futurist Alvin Toffler noted that, "the illiterate of the twenty-first century will not be those who cannot read and write, but those who cannot learn, unlearn, and relearn."

In the information age, citizens will need to work with information in all forms to fashion content products that have value, that entertain and teach.

But if all learners do is learn the traditional literacies – to read, write, speak and calculate - they may be literate by 20th Century standards but certainly not by 21st Century standards.

And if they leave school with only 20th Century skills they will absolutely not be prepared for what awaits them after school in life and the workplace.

We need to move beyond literacy to an expanded list of 21st century fluencies. When you are literate you still have to think about what you have to do. Fluencies are unconscious skills. You don't even have to think about them. You just intuitively know what to do.nIt's like riding a bike - you don't have to think about it.

The 21st Century fluencies our students must have and our teachers must understand include:

**1 Speaking & Listening Skills**
- ability to listen & change one's mind
- ability to speak a foreign languages
- active listening & observation
- advanced listening & auditory comprehension
- advanced public speaking
- interactive communications skills
- non-verbal communication skills
- oral communications skills
- oral presentation skills

**2. Reading & Writing Skills**
- ability to read fiction and non-fiction for meaning
- ability to read technical material (manuals, screens, brochures…)for meaning
- ability to write technically (ability to take a sequence of complex instructions & write them in a manner that can be easily replicated by others)
- effective written communications skills
- visual learner - understands & applies the principles of graphical design
- visual literacy (ability to communicate & interpret as effectively in graphical environments as they can in the text-based environment)

### 3. Information Skills

- ability to analyze & authenticate a variety of information sources (understands the context of information & discern its veracity, accuracy & usefulness)
- ability to apply knowledge to create real life products
- ability to assess both the process & the product – what was learned, how was it learned, how could this process & product be made better
- ability to ask good questions - speculative questions & questions
- ability to assess the quality of the information.
- how digital information is different from print information
- ability how distinguish between digital information and print information
- ability to distinguish quality from quantity
- ability to evaluate result of process against core values & expected outcomes information fluency (the unconscious ability to access appropriate data, transform it into knowledge & consistently apply it)
- ability to examine each option & determine which to select
- ability to find, interpret & communicate paper-based & digital information
- ability to identify & access appropriate information sources using a variety of tools
- ability to identify known facts & tools'
- ability to improve understanding of a concept
- ability to locate, access, retrieve, organize, evaluate, understand, interpret, record,  create & use information from a variety of sources effectively, efficiently and ethically
- ability to obtain needed resources
- ability to pose speculative questions and questions to improve understanding
- ability to recognize and organize information needs - what is and isn't known – to be able to identify where there is incomplete information – can identify missing information
- ability to seek missing information
- ability to shape & distribute information in ways that make it understandable & useful to others
- ability to take organized, clear, complete notes about what is presented & discovered
- ability to understand the context of the information & discern its veracity, accuracy & usefulness
- identify known facts & tools
- ability to identify missing or incomplete information

- ability to draw upon past knowledge/experience & transfer it beyond the context in which it was learned to construct new knowledge
- the capacity for critical thinking – the ability to distinguish between the medium and the message
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4. **Technical Skills**
   - ability to create relevant, high quality products using digital tools & resources
   - ability to communicate effectively in a variety of media & formats to a variety of audiences
   - ability to collaborate on digital products/projects with others
   - ability to customize hardware/software features to fit your needs
   - ability to demonstrate a wide range of technical skills to enhance task performance
   - ability to demonstrate an understanding of the range of what's possible with a given hardware/software tool
   - ability to demonstrate technological fluency in the use of digital tools for problem solving
   - ability to develop a project from an initial idea to a completed product
   - ability to generate ideas for what you want to create
   - ability to identify the most appropriate tool (high tech, low tech, no tech) to complete a specific task or solve a problem
   - ability to learn new hardware/software features as needed
   - ability to modify and extend products/projects created by others
   - ability to recognize technical skills needed to solve a problem or complete a task and their relevance
   - ability to revise or debug digital products
   - ability to select the most appropriate tool or tools needed to complete a product
   - ability to use a range of appropriate digital tools to gather information that is valuable to organizations & individuals
   - ability to use digital tools transformatively (to do things that would not be possible without the use of the tool)
   - ability to use digital tools transparently with a primary focus on the task not the tool
   - ability to use multiple tools/software as needed to create a digital product
   - ability to use visual tools to communicate as well in graphical environments as they can in the text-based environment)

- comfortable and confident when learning new hardware/software features
- willingness to help others learn new features, programs, and ideas

## 5. Media Skills
- ability to create and publish original, relevant, high quality digital products using digital tools & resources
- ability to communicate effectively in a variety of media & formats to a variety of audiences
- ability to develop a project from an initial idea to a completed product
- ability to look critically at the content of various media formats (web site, PowerPoint presentation, podcast, video, blog, wiki TV show, newscast, , newspaper, magazine, video game…) and be able to determine how that medium is being used to communicate with the users and and shape their thinking
- ability to generate ideas for what you want to create
- ability to identify the most appropriate media format to use to complete a specific task or solve a problem
- ability to identify the most appropriate tool or tools needed to complete a media product
- ability to modify and extend media products created by others
- ability to use wide range of media to improve understanding of a concept
- ability to use a wide range of media shape & distribute information in ways that make it understandable & useful to others
- presentation design skills
- understanding of the principles of graphical design
- understanding of principles of page layout & page layout techniques
- understanding typography
- visual comprehension skills
- comfort and confidence when working with new media formats

## 6. Personal Skills
- ability to anticipate consequences, as well as monitor & correct own performance
- ability to apply abstract thinking techniques
- ability to apply Bloom's hierarchy of skills - perceive, comprehend, learn, reason, analyze, assess, interpret, organize, plan, predict, design, intuit, create, invent, perform, produce, construct, mentor, partner, teach, communicate, value

- ability to apply memorization techniques
- ability to apply technical information to real situations (applied math, science, languages)
- ability to demonstrate flexibility & adaptability to examine alternatives in a abstraction
- ability to discover patterns & meaning
- ability to establish goals
- ability to focus & apply creativity in problem solving
- ability to generalize learning
- ability to identify & apply the benefits derived from service to others
- ability to identify & apply the benefits of cultural diversity
- ability to identify & apply the benefits of being observant
- ability to identify problems & develop solutions
- ability to learn, both independently & with others in a cooperative & collaborative setting when appropriate
- ability to learn new skills & assimilate new ideas quickly
- ability to pose speculative questions and questions to improve understanding
- ability to make connections
- ability to multitask
- ability to prioritize, plan, & manage for results
- ability to respond to a rapidly changing environment
- ability to recognize patterns
- ability to recognize skills needed and their relevance
- ability to see patterns
- ability to take initiative & be self-directed
- ability to understand ethical consequences of decisions & actions – responds appropriately
- a broad based of knowledge in which generics are understood and appreciated
- active participation as citizen in diverse democracy
- analysis skills – capable of analytical thought
- an integrated knowledge structure: a personal map or landscape view of what is known
- adaptability/ability to manage complexity
- application of HOTS
- applied reasoning skills
- basic scientific & mathematical literacy skills

- creativity skills – a capacity for innovation, creativity. & personal inventiveness
- critical thinking skills
- cultural literacy & global awareness skills – a global view – to think globally
- curiosity, creativity, risk taking skills
- deep understanding of one's self
- demonstrates social awareness and confidence
- digital entrepreneurship skills
- displays integrity & honesty
- emotional intelligence (personal awareness skills)
- enthusiasm/energetic
- entrepreneurial skills
- evaluation skills
- expanded understanding of geography & its relation to other fields
- expanded understanding of history & its relation to other fields
- expanded understanding of mathematics & its relation to other fields
- expanded understanding of nonlinear mathematics
- expanded understanding of science & its relation to other fields
- evaluates own work
- financial literacy – money management – budgeting skills
- goal setting skills
- high self-esteem
- improvisation skills
- intellectual fluency & ability to deal with ambiguity
- intellectual honesty
- intuition
- knowledge of a variety of learning strategies
- lifelong learning skills
- managing creativity techniques
- nonlinear but logical thinking skills
- observation skills
- organizational skills
- openness to change
- passion
- passion for renewal
- perseverance skills when the solution is not readily apparent
- personal & social responsibility
- personal counseling techniques

- personal development psychology skills
- plans & directs own progress
- positive attitude toward learning
- pride in work
- problem solving skills
- recognition & exploration of possibilities (possibility thinking)
- reasoning skills
- resourceful
- respect for the complex identities of others, their histories & their cultures
- self-assessment skills
- self-control
- self-direction
- self-discipline skills
- self-evaluation skills
- self-motivation skills
- sense of maturity
- social intelligence (interpersonal awareness skills)
- strategic planning skills
- synthesis skills
- system thinking
- test writing skills
- the capacity to learn, to teach oneself, and to engage in learning throughout life
- time management skills
- tolerance/understanding/appreciation of cultural/social diversity and the capacity to reject cultural/social stereotypes
- understanding of science as a learning process
- understanding of history as a process, not fact
- understands of own capabilities & a sense of strengths & weaknesses
- understands value of useful failure
- willingness to creatively flounder
- willingness to experiment
- willingness to explore new ideas and options
- willingness to take risks, challenge assumptions & adapt
- works effectively, both independently & with others in a cooperative & collaborative setting when appropriate

## 7. Group/Team/Partner Skills

- ability to accept/give constructive criticism
- ability to define core values & guiding principles of self & group
- ability to establish personal and group goals
- ability to exchange ideas, opinions, questions & experiences within working groups, larger organizations & virtual communities
- ability to pose speculative questions and questions to improve understanding
- ability to recognize skills needed and their relevance
- ability to take organized, clear, complete notes about what is presented & discovered
- ability to work collaboratively & cooperatively with others (teamwork), to participate in group projects & decision making & to assume a variety of roles
- assumes leadership when appropriate
- brainstorms solutions
- conflict resolution skills
- consensus skills
- defines core values & guiding principles of self & group
- demonstrates group management skills
- integrates others work into own or collective work
- interpersonal communication skills
- jointly plans, develops, & reviews in progress work
- perseverance skills when the solution is not readily apparent
- shares ideas and opinions
- systems thinking skills - ability to think of most problems within the context of a complete system with interrelated elements
- teaches others new skills
- tolerant & respectful of the ideas & opinions of others
- willingness to explore new ideas and options
- works effectively, both independently & with others in a cooperative & collaborative setting when appropriate
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**8. Professional Skills**
- ability to apply the principles of total quality management
- ability to deal with rapid change
- advertising techniques
- comfort with the Web lifestyle
- customer service skills
- dress for success
- entrepreneurial skills
- examines each option & determines which to select
- goal setting skills
- interview skills (both interviewed and interviewer)
- issue/problem identification & understanding
- knowledge of the new rules & tools
- marketing/self marketing skills
- meets deadlines & stays motivated
- negotiations techniques (while demonstrating personal responsibility)
- organizes known & unknown facts to use in specific circumstances
- possibility thinking
- sales techniques
- self promotion skills
- sense of humor
- shares ideas and opinions
- trend analysis skills
- teamwork
- visualization

## 9. Teacher Skills

- advanced public speaking skills
- advanced listening skills
- advertising techniques
- customer service skills
- knowledge of the new rules and tools
- managing creativity techniques
- marketing/self marketing skills
- negotiations techniques
- knowledge of a variety of learning strategies
- nonverbal communication skills
- personal counseling techniques
- personal development psychology
- sales techniques
- strategic planning skills
- teaches others new skills
- time management skills
- total quality management skills

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