

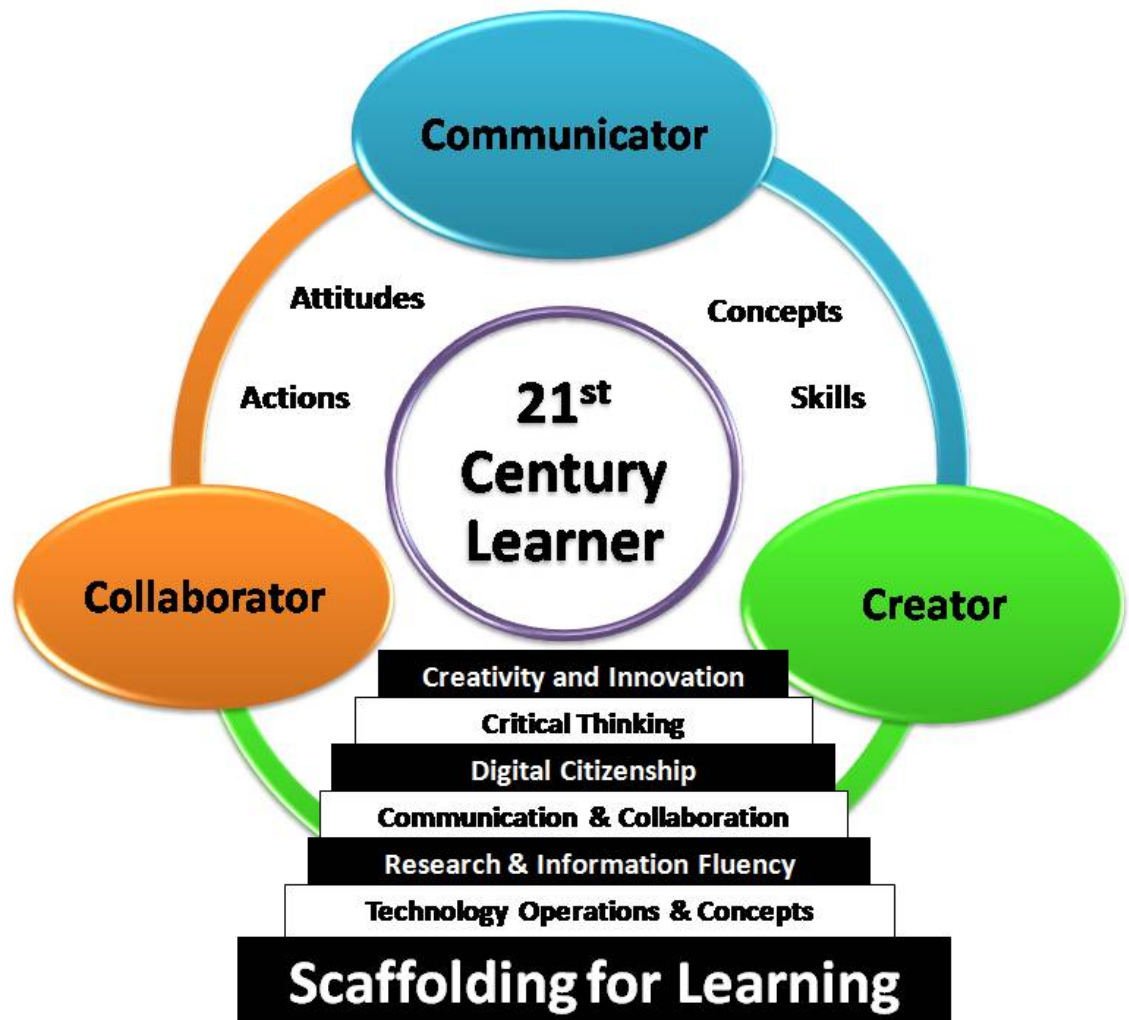
21st Century Learning

This document has been prepared by a team of educators from across the Primary and Senior schools at Qatar Academy, including library and media teachers and school administrators. The meetings were chaired by the Head of T and E-Learning. Final collation of the document and accompanying wiki was a team effort.

Refer to <http://21c.qataracademy.wikispaces.net/> for more details and hyperlinked resources.

In addition refer to 21st Century Practice

<http://21c.qataracademy.wikispaces.net/Practice+in+21C+Learning> for an online survey and link to responses to showcase best-practice learning at Qatar Academy.



21st Century Teaching and Learning Beliefs

A Vision for Learning

As we move into the 21st Century we realize that Qatar Academy can take advantage of social learning, globally and collaboratively, supported by effective tools for digital literacy and fluency. The vision for learning across the curriculum is for an embedded approach where higher order thinking is fostered, technology is ubiquitous and teachers embrace all aspects of 21st Century pedagogy, including fostering the essential role of the student as a **communicator, collaborator and creator**.

As the world becomes more technologically and globally interconnected it's increasingly imperative that we all understand and plan how to facilitate student and faculty acquisition and mastery of 21st Century skills.

"In the 21st Century School, technology must be like oxygen, ubiquitous and necessary"

Chris Lehmann, Science Leadership Academy (SLA), Philadelphia, USA

Our vision is one where technology is a natural and essential part of everyday school life for teacher and student as well as community members. Where technology empowers students to pursue dreams, and purposeful learning experiences inspire students to develop critical thinking skills and support continuous inquiry. A vision where at Qatar Academy all members of the community understand and model respectful, responsible, and ethical uses of technology in academic, social, and personal contexts; a vision where learning is meaningful for all. Qatar Academy has the potential to make a difference in education and to lead the way modeling best practice experiences for collaboration, interaction, online learning and more. We can bring the world to QA and bring QA to the world by extending the walls of our classroom through authentic and rich learning experiences and by using information technology in creative ways.

In 21st Century, 'School 2.0' developments, there has been a change in mindset, a shift in thinking away from technology being an add-on to it being an integral and ubiquitous part of learning for all. Technology in this context is not an end in itself but an infrastructure that can make enormous advances in the quality of teaching and learning for all. Ongoing research is already showing that access to digital learning tools does improve learning outcomes and provides for a differentiated approach.

The following belief statements guide the realization of this vision:

- We believe learning is enriched and enhanced by use of digital tools.
- We believe technology accelerates student learning.
- We believe the use of technology will prepare our students to function more effectively in a digital society and economy.
- We believe students and staff must be skilled users of technology, and that acquiring and maintaining skills is a continuing process.

- We believe students and staff must understand and apply the ethical guidelines associated with the use of technology.
- We believe students and staff must have access to reliable and efficient technology resources.
- We believe all teachers must be responsible for the appropriate integration of technology across the curriculum.
- We believe parents play a major role in the education of their children and must work actively with teachers to connect formal and informal uses of technology.
- We believe in being leaders in educational technology, and will investigate, ensure, and develop best practices in the integration of technology.

Coming towards an understanding of E-Learning

E-learning is an approach to facilitate and enhance learning through, and based on, both computer and communications technology. E-learning may also be used to suit distance education through the use of the Internet, and may also be considered to be a form of flexible learning where just-in-time learning is possible. Essential components of e-Learning include:

- The use of online technologies including Internet and Web 2.0 tools in the learning process
- The use of learning technologies to enhance the learning experience for all
- The use of digital tools for curriculum delivery and assessment
- The use of digital tools for ongoing professional development, interaction and collaboration

21st Century Learning

[Acknowledgment to the American School of Bombay for the information in the section below]

We are in the 21st century, where rapidly changing digital technologies have redefined the concepts, skills, attitudes and actions that our students need in order to be prepared to meet the challenges of living in the digital economy. In addition to the core subject knowledge and skills, they need meaningful learning opportunities to develop 21st century skills – critical thinking, innovation, problem solving, collaboration, leadership, communication, creativity. Providing these opportunities requires a transformation in traditional teaching/learning environments. The goal is to embed technology integration through the creation of these 21st century learning environments where traditional assessment criteria and expectations are exceeded.

Technology by its nature challenges traditional classroom teaching and learning models, and the way a school interacts with its community. ISTE (International Society for Technology in Education) outlines the characteristics of these new learning environments.

Transforming Learning Environments with Technology		
Technology-Enabled Strategies for Student Learning		
Traditional Environments		Emerging Learning Landscape
Teacher-directed, memory-focused instruction	→	Student-centered, performance-focused learning
Lockstep, prescribed-path progression	→	Flexible progression with multi-path options
Limited media, single-sense stimulation	→	Media-rich, multi-sensory stimulation
Knowledge from limited, authoritative sources	→	Learner-constructed knowledge from multiple information sources and experiences
Isolated work on invented exercises	→	Collaborative work on authentic, real-world projects
Mastery of fixed content and specified processes	→	Student engagement in definition, design, and management of projects
Factual, literal thinking for competence	→	Creative thinking for innovation and original solutions
In-school expertise, content, and activities	→	Global expertise, information, and learning experiences
Stand-alone communication and information tools	→	Converging information and communication systems
Traditional literacy and communication skills	→	Digital literacy's and communication skills
Primary focus on school and local community	→	Expanded focus including digital global citizenship
Isolated assessment of learning	→	Integrated assessment for learning

21st Century Learner

Based on the vision for 21st Century learning, a 21st Century IB learner at Qatar Academy is supported by best practice community learning and seamlessly uses digital tools to support their essential role as a:

- Communicator
- Collaborator
- Creator

Effective learning includes adoption of key concepts, skills, attitudes and actions. The focus is on student-centred learning, not the technology and for this to become a reality the technology must be mobile when needed, ubiquitous at all times and functional to support all educational objectives.

Scaffolding for Learning

This document emphasizes scaffolding for learning in order to be effective communicators, collaborators and creators. Scaffolding includes carefully planned pedagogy using 21st Century key features that include information and digital fluency, working collaboratively, teaching contextually, using project-based learning and fostering an inter-disciplinary approach. The essential concept here is that learning does not take place in isolation.

Through interaction, collaboration and opportunities to share and reflect, powerful experiences leading to or resulting in learning take place. All learners will be part of the immediate and extended learning community provided.

In addition to the essential roles of a 21st Century learner, a set of constructs provide the scaffolding for teachers across all levels of education to refer to and embed into curriculum objectives.

Constructs for Learning

1. Creativity and Innovation

Students **create products that apply to authentic, real world, global and local contexts** by

- demonstrating creative thinking, constructing knowledge from existing knowledge and developing innovative products and processes
- creating original works as a means of personal or group expression, face to face, and over distance
- writing concisely, communicating effectively using the most appropriate medium and expressing the facts in a clear manner
- expanding their repertoire of tools to include multimedia applications
- displaying information clearly and accurately
- processing data and reporting results
- using standard language and MLA citation conventions
- using models and simulations to explore complex systems and issues
- identifying trends and forecasting possibilities

Students will

- **seek opportunities for pursuing personal and aesthetic growth** through reading, viewing and listening for pleasure, making connections with self, the world and previous understanding/knowledge. They will discuss, evaluate and share ideas from different eras and cultures in a variety of formats, including multimedia and Web2.0 applications. This will involve collaboration and communication within school, community, national and global environments.

2. Communication and Collaboration

Students **demonstrate leadership and confidence** by

- presenting ideas to multiple audiences , online and in person, in both formal and informal situations,
- interacting, collaborating, and publishing with peers, experts, or others within and beyond the immediate school community
- participating and collaborating as members of a social and intellectual network of learners (both face to face and at a distance)
- using a variety of digital media and environments to support individual learning and contribute to the learning of others.
- developing cultural understanding and global awareness by engaging with learners of other cultures across the world
- contributing to local and international project teams to produce original work or solve problems.

Students will participate in the social exchange of ideas both digitally and in person, locally and internationally. Students **show social responsibility** by

- collaborating with others in learning situations
- exchanging ideas
- developing new understandings
- making decisions
- solving problems
- connecting learning to community issues.

3. Research and Information Fluency

Students will **make the real-world connection for using an inquiry-based process** in their own life.

They will

- seek information for personal learning from diverse genres and formats, both digital and in hard copy
- solicit and respect diverse perspectives while searching for information, collaborating with others, and participating as a member of a wider international community
- display emotional resilience by persisting in information searches despite challenges
- demonstrate flexibility in the use of resources by adapting information strategies to each specific resource
- seek additional resources when clear conclusions cannot be drawn.

Students follow a modeled inquiry process whenever pursuing information through inquiry or research.

Students will:

- use prior and existing knowledge as a context for new learning to brainstorm and generate new ideas, products or processes.

- develop and refine the topic, problem or question to arrive at a worthy and manageable topic.
- develop a framework for the inquiry and to fulfill the purpose of the research.
- develop and refine a range of significant questions to frame the search for new understandings.
- develop keywords and plan strategies to guide inquiries,
- set the time frame
- consider how the work will be presented and the form of the presentation.
- use knowledge and information skills and dispositions to engage, locally and internationally, in public conversation and debate around issues of common concern.
- use critical thinking skills
- effectively apply the criteria for assessment
- recognize that the purpose of the inquiry determines the type of questions and the type of thinking required.

Students locate, organize, and ethically use information from a variety of sources and media

Students will:

- access an ever-expanding web based toolbox for communication, collaboration and creativity in their search for information and new understandings.
- select tools for accessing information and pursuing inquiry, based on their appropriateness to specific tasks
- recognize that resources are created for a variety of purposes, and in a variety of media
- be able to identify primary and secondary sources of information.
- develop skills essential for note taking
- adhere to academic honesty guidelines by acknowledging sources and avoiding plagiarism

4. Critical Thinking, Problem Solving, and Decision Making

Students **display curiosity** by pursuing interests through multiple, multimedia resources.

Students **make sense of information gathered** from diverse sources

Students analyze, evaluate and synthesize information from a variety of sources and media

Students will:

- apply appropriate tools to collect, organize, and analyze data to evaluate theories or test hypotheses.
- answer questions and identify solutions, solve problems and/or make informed decisions.
- display initiative and engagement by investigating the answers to their questions beyond the collection of superficial facts
- be aware that non-subscription web-based resources have not been subject to any selection process, rendering the evaluation process even more vital
- evaluate information found in selected sources on the basis of appropriateness for needs, importance, and social and cultural content.
- evaluate information for fact, opinion, point of view and bias
- identify inaccurate and misleading information, checking the authority and currency (dated/outdated) of the material

Students share new understandings and reflect on their learning.

Students will

- review the initial information requirement to develop, clarify, revise or refine the question, and ask new questions for continuing inquiry
- reflect on / evaluate their performance at each stage of research, analyzing how research could be improved and identifying the areas of improvement in research skills.
- reflect on / evaluate the research process model, identifying its usefulness and areas for improvement.
- reflect on / evaluate their performance at each stage of learning, analyzing how the learning could be improved and identifying the areas of improvement in communication, collaboration and creativity
- participate in peer evaluation and engage in self-evaluation using thoughtfully formulated criteria and rubrics
- consider the action that will follow and explore alternative solutions

5. Digital Citizenship

Students understand human, cultural, and societal issues related to technology, and practice legal and ethical

behavior. **Understanding and practicing digital citizenship** is an essential element of all aspects of life.

Students will

- model responsible, legal and ethical behaviors in all forms of personal communication and interaction
- exhibit a positive attitude toward using technology that supports communication, collaboration, and creativity
- demonstrate personal responsibility for lifelong learning.
- exhibit leadership for digital citizenship
- promote a safe and supportive online community

6. Technology Operations and Concepts

Students demonstrate a sound understanding of technology concepts, systems, and operations.

Students will

- use a variety of technology systems.
- select and use applications effectively and productively.
- troubleshoot systems and applications
- transfer current knowledge to learning of new technologies
- be aware of a variety of ergonomic strategies when using technology, and practice injury prevention by applying them.
- analyze the capabilities and limitations of current and emerging technology resources and assess their potential to address personal, social, lifelong learning and career needs.

Works Cited

American Association of School Librarians. Standards for the 21st - Century Learner.

Publication. 2007. AASL. 18 June 2009

<http://www.ala.org/ala/mgrps/divs/aasl/guidelinesandstandards/learningstandards/ASL_Learning_Standards_2007.pdf>.

International Society for Technology in Education. National Educational Technology Standards and Performance Indicators for Students. Publication. 2007. ISTE. 18 June 2009

<http://www.iste.org/Content/NavigationMenu/NETS/ForStudents/2007Standards/NETS_for_Students_2007_Standards.pdf>.

New York City School Library System. Information Fluency Continuum. Publication. 20 Oct.

2005. New York City School Library System. 18 June 2009

<http://www.nyla.org/content/user_19/INFOFLUENCYCONTK12Final102006.pdf>.

New York Library Association. 21st Century Information Literacy Standards for the Digital

Learners of New York. Publication. 2008. NYLA. 18 June 2009

<http://www.nyla.org/content/user_1/NYLA_Info_Lit.pdf>.