

# Technological Literacy in NJ: Background & Standards

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## What is Technological Literacy?

	For Teachers	For Students
Lower Order	Basic ICT skills (e.g. ICDL)	Basic ICT skills (e.g. ICDL)
Higher Order -- using technology to support professional goals	<ul style="list-style-type: none"><li>• Educational media: enhance teaching &amp; learning, e.g.:<ul style="list-style-type: none"><li>• Chalkboard</li><li>• Educational TV</li><li>• Computers</li></ul></li><li>• Best taught using TPACK framework</li></ul>	<ul style="list-style-type: none"><li>• ICTs in the profession of “student”</li></ul>

ICT: Information and Communication Technology

ICDL: International Computer Drivers License

[\(http://www.icdlus.com/\)](http://www.icdlus.com/)

Need for both lower order & higher order skills, knowledge and understanding.

# Historical Developments

- Educational media/ Educational technology: skills for teachers, not students (e.g. chalkboard writing, showing filmstrips)
- Technology Education – International Technology & Engineering Educators Association (ITEEA)
  - Standards for Technological Literacy (STL)  
<http://www.iteea.org/TAA/PDFs/ListingofSTLContentStandards.pdf>
- Information Literacy - ALA | American Association of School Librarians (AASL)
  - 1998 *Information literacy standards for student learning*  
<http://weblink.scsd.us/~liblinks/AASLstandards.pdf>
  - 2007 *21<sup>st</sup> Century Learner Standards*  
[http://www.aasl.org/ala/mgrps/divs/aasl/guidelinesandstandards/learningstandards/AASL\\_LearningStandards.pdf](http://www.aasl.org/ala/mgrps/divs/aasl/guidelinesandstandards/learningstandards/AASL_LearningStandards.pdf)
- Technology Foundations for students – International Society for Technology in Education (ISTE)
  - 1998 *National Educational Technology Standards for Students (NETS-S)*  
[http://www.iste.org/Libraries/PDFs/NETS\\_for\\_Students\\_1998\\_Standards.sflb.a.shx](http://www.iste.org/Libraries/PDFs/NETS_for_Students_1998_Standards.sflb.a.shx)
  - 2007 *National Educational Technology Standards for Students (NETS-S)* -  
<http://www.iste.org/standards/nets-for-students/nets-student-standards-2007.aspx>

Mid to late 1990s

ITEA (now ITEEA) – ‘woodshop’ for nerds: CAD, computer programming, systems design

- The Nature of Technology
- Technology and Society
- Design
- Abilities for a Technological World
- The Designed World

AASL standards for students included higher order skills – teaching them to not just use the card catalog to find a book, but to locate and use appropriate information from a library resource – 1998:

- L1: Information Literacy
- L2: Independent Learning
- L3: Social Responsibility

ISTE NETS-S standards also included both lower order and higher order although 1998 focus was very much on technology

1998 vs. 2007 NETS-S

1998	2007
1. Basic operations and concepts	1. Creativity & Innovation
2. Social, ethical, and human issues	2. Communication & Collaboration
3. Technology productivity tools	3. Research & Information Fluency
4. Technology communications tools	4. Critical Thinking, Problem Solving, & Decision Making
5. Technology research tools	5. Digital Citizenship
6. Technology problem-solving and decision-making tools	6. Technology Operations and Concepts

NJCCCS 8.1 standards: using ICTs to support processes used in the “profession of being a student”

1. Creativity & Innovation - Students demonstrate creative thinking, construct knowledge, & develop innovative products & processes using technology.
2. Communication & Collaboration - Students use digital media & environments to communicate & work collaboratively, including at a distance, to support individual learning & contribute to the learning of others.
3. Research & Information Fluency - Students apply digital tools to gather, evaluate, & use information.
4. Critical Thinking, Problem Solving, & Decision Making - Students use critical thinking skills to plan & conduct research, manage projects, solve problems, & make informed decisions using appropriate digital tools and resources.
5. Digital Citizenship - Students understand human, cultural, & societal issues related to technology & practice legal & ethical behavior.
6. Technology Operations & Concepts - Students demonstrate a sound understanding of technology concepts, systems, & operations.

- Initially part of Cross-Content Workplace Readiness Standards; result of Secretary's Commission on Achieving Necessary Skills (SCANS) report
- 2004: NJCCCS 8: Technological Literacy; result of NCLB Title IID
  - **8.1: Computer and Information Literacy:** All students will use computer applications to gather and organize information and to solve problems. (based on 1998 NETS-S & AASL Info Lit Stds) [http://www.nj.gov/education/cccs/2004/s8\\_tech.pdf](http://www.nj.gov/education/cccs/2004/s8_tech.pdf)
  - **8.2: Technology Education:** All students will develop an understanding of the nature and impact of technology, engineering, technological design, and the designed world as they relate to the individual, society, and the environment. (based on ITEA STLs)
- 2009: **8.1: Educational Technology:** All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaboratively and to create and communicate knowledge. [http://www.nj.gov/education/cccs/2009/std8\\_tech.doc](http://www.nj.gov/education/cccs/2009/std8_tech.doc) or <http://www.njcccs.org/ContentAreaTabularView.aspx?code=8&Desc=+Technology>
- (based on 2007 NETS-S & Partnership for 21<sup>st</sup> Century Skills framework [http://www.p21.org/documents/P21\\_Framework.pdf](http://www.p21.org/documents/P21_Framework.pdf))

2004 vs. 2009 NJCCCS 8.1

2004	2009
<b>A. Basic Computer Tools and Skills</b> <ul style="list-style-type: none"> <li>. Keyboarding</li> <li>. Word processing</li> <li>. Internet usage</li> <li>. Spreadsheets</li> <li>. Database concepts &amp; usage</li> <li>. Publications and presentations</li> </ul>	<b>A. Technology Operations &amp; Concepts</b>
<b>B. Application of Productivity Tools</b> <ul style="list-style-type: none"> <li>. Social Aspects</li> <li>. Information Access &amp; Research</li> <li>. Problem Solving</li> </ul>	<b>B. Creativity &amp; Innovation</b>
	<b>C. Communication &amp; Collaboration</b>
	<b>D. Digital Citizenship</b>
	<b>E. Research &amp; Information Literacy</b>
	<b>F. Critical Thinking, Problem Solving, &amp; Decision-Making</b>

2004- 8.1 Computer and Information Literacy

2009 – 8.1 Educational Technology

- A. Technology Operations and Concepts - use of technology and digital tools requires knowledge and appropriate use of operations and related applications
- B. Creativity and Innovation - use of digital tools and media-rich resources enhances creativity and the construction of knowledge.
- C. Communication and Collaboration - Digital tools and environments support the learning process and foster collaboration in solving local or global issues and problems.
- D. Digital Citizenship - Technological advancements create societal concerns regarding the practice of safe, legal, and ethical behaviors
- E. Research and Information Literacy - Effective use of digital tools assists in gathering and managing information.
- F. Critical Thinking, Problem Solving, and Decision-Making - Information accessed through the use of digital tools assists in generating solutions and making decisions.

Very specific CPIs, starting with lower order skills at pre-K grade level. Workshops this afternoon will give ideas for helping your students meet these performance indicators.

## USDOE Requirements

- 2001: NCLB (now ESEA) Title II D - Enhancing Education Through Technology
  - <http://www2.ed.gov/policy/elsec/leg/esea02/pg34.html>
  - Primary goal: improve student academic achievement through the use of technology in elementary schools and secondary schools.
  - Additional goal: ensuring that every student is technologically literate by the time the student finishes the eighth grade, regardless of the student's race, ethnicity, gender, family income, geographic location, or disability
    - State: NJTAP-IN assessment of 8.1 stds.
    - National: NAEP Technology & Engineering Literacy Assessment (more related to 8.2 stds.)

Primary goal – higher order technological literacy skills for teachers (enhancing teaching with ICTs)

Secondary goal – 8<sup>th</sup> grade tech literacy

NAEP (2014, was 2012) grades 4, 8 & 12

NJTAP-IN

- New Jersey Technological Assessment for Proficiency And Integration (NJTAP-IN)
- <http://www.nj.gov/education/techno/techlit/tapin/>
- Assessment based on 2004 NJCCCS 8.1 standards
- Initial assessment by Grade 4 as well as Grade 8 assessment
  - Recommendation to use checklist throughout the years
  - Provide active learning opportunities for students to demonstrate 8.1 standards

Recommendation to districts for ensuring 8<sup>th</sup> grade technological literacy

Not sure about upgrading/further efforts for 2009 standards.

Provide active learning opportunities- afternoon workshops will hopefully give you ideas for helping your students demonstrate 8.1 standards and create artifacts to show their competencies.



## Resources

- NJDOE Educational Technology office:  
<http://www.nj.gov/education/techno/>
- NJCCCS for Technology:  
<http://www.njcccs.org/ContentAreaTabularView.aspx?code=8&Desc=Technology>
- NJ Association for Educational Technology (NJAET): <http://www.njaet.org/>
- NJ Educational Computing Cooperative (NJECC): <http://www.njecc.org/>
- International Society for Technology in Education (ISTE): <http://www.iste.org/>  
(conference in Philadelphia June 26-29, 2011)