



# Is the Google Generation Information Literate?

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# Motivation for the study

- Just because people can use the various Internet tools (web 2.0, social networking) does not mean they are sophisticated users
- New IL (AASL/ALA 2007)<sup>1</sup> and NETS-S (ISTE 2007) standards<sup>2</sup> have converged -> emphasize IL competencies
- The new 2007 standards are learner-centric rather than technology-centric
  - <sup>1</sup> Standards for the 21<sup>st</sup> Century Learner  
<http://www.ala.org/aasl/standards>
  - <sup>2</sup> International Society for Technology in Education (ISTE): National Educational Technology Standards for Students  
[http://www.iste.org/Content/NavigationMenu/NETS/ForStudents/NETS\\_for\\_Students.htm](http://www.iste.org/Content/NavigationMenu/NETS/ForStudents/NETS_for_Students.htm)

# Standards as a Framework for this Study

- IL Standards for the 21<sup>st</sup> century LEARNER
  - Ask, think critically, gain knowledge
  - Draw conclusions, make informed decisions, apply knowledge to new problems, create new knowledge
  - Share knowledge and participate ethically
  - Pursue personal & aesthetic growth

- ISTE's NETS-S emphasize:
  - Critical thinking, focusing on creativity & innovation
  - Problem solving
  - Research and information fluency
  - Communication and collaboration
  - Digital citizenship
  - Technology operations, concepts, and systems



# Subjects under study

- Google generation is defined as persons who were born after 1993
- Results are based on a sample of availability (n=105) of middle school girls from over 30 different schools in California
- Google generation is “fluent” with digital cameras, iPhones, blackberry interfaces, face\_book, my\_space, YouTube, Amazon’s Kindle, etc.
- Are they savvy consumers, critical thinkers, life-long learners, ethical users of information?



# Methodology

- Paper-and-pencil IL test was administered during a regular class time (digital media class for all entering students)
- Permission was granted from H/S to study information seeking behavior of 7<sup>th</sup> graders
- Students' responses had no affect on their grades; the responses were used only to fine tune level of instructional material and sequence of presentation
- The study was carried out during 2007/2008

# Results of the study

- Confidence level: 77% confident and semi confident
- Prior library instruction (76%)
- First best sources 7th grade consult are:
  - Search engines (44%); examples are:
    - google, youtube, Yahoo!, Ask, dogpile
  - Encyclopedias (43%) including wikipedia
  - Primary sources, books
- Main purpose for using: school related, people finding, shopping, images, video, music
- How much is out there on the Web?
  - 42% of the surveyed students' perception is that 80% or more of everything that has been published is on the Web

# Is Google gen googling smartly?



- Wide variety of issues:
  - Where to start? Use of search engines regardless of inquiry/information need
  - Search strategies (teach search tips to modify and sharpen results)
  - Little or no skepticism (need for critical thinking skills) - all sources are not equally well designed for a variety of info needs
  - Public domain and attribution related issues

# What are primary sources?

- Students are generally confused:
  - Personal letters (57%)
  - Family records (39%)
  - Digital photos (27%)
  - Costume, period artifacts (12%)
- Nearly one third “didn’t know”
- Students could circle “ALL”



# Attribution related issues

- Attribution given to:
  - Avoid plagiarism related issues (82%)
  - “Help my reader find cited items” (82%)
  - “Support evidence used in reports” (70%)
- Students cite if:
  - Text copied exactly (46%)
  - Text is paraphrased (57%)
  - Text is quoted (77%)

# Mental map of i-space is needed

- Media, formats, access tools, resources
- Where do I go to search for:
  - DVDs, CDs
  - Music scores
  - Online sources, databases
  - Reference works
  - Newspaper and magazine articles
  - Atlases, maps
  - Rare books, manuscripts

# What made the difference?



From the Online Archive of California  
<http://www.oac.cdlib.org>

## Instruction:

Please use as many KW and phrases as you can to describe this image:

pantry, jars, food storage, store room, 1900 storeroom, woman in pantry, working woman, restaurant, dinners, 20<sup>th</sup> c. housewife, smiling housewife in room of jars, bottles, shelves with pickled food, lady in room with jars of food, white dress, woman with hairnet.

Which questions would you like to ask this person if you could meet her?

What is your job? Where do you live? What do bottles contain? Where is she and why? Country? What date is it?

# IRS introduced and modeled

**Please use as many keywords and phrases as you can to describe this image:**

family, children, men, women,  
late 1800s, early 1900s,  
family of 14 people, not smiling in picture,  
school photo, family photo,  
*family portrait*, daughters, sons, mothers, fathers,  
around 1900, teachers, group picture,  
old fashioned clothing, house, school,  
farmhouse, porch  
monkey, a dog



From the Online Archive of  
California <http://www.oac.cdlib.org>

**Any questions you wish to address?  
Are they a family?**

# Keywords: users vs indexers



From the Online Archive of  
California <http://www.oac.cdlib.org>

**Please use as many keywords and phrases as you can  
To describe this image:**

Pacific coast highway in 1920s  
Cars, roads, street  
poles, construction workers, people,  
stuntman, repairman, escape, telegraph,  
wires, phone pole, power lines,  
electricity/electrician, telephone worker with car in 1920s,  
electric lines, fixing telephone poles, dangerous,  
can be easy to fall, man in cowboy hat, [telegraph line]

**Questions this image raises?**

Who, when, where? why is he on a phone pole?  
why did the photographer take this picture?

# Students' self ranked importance of IL topics

- Critical thinking and skepticism in evaluating digital contents on the Web
- Understanding primary sources in various formats and collections
- Ethical use of information sources
  - Plagiarism prevention techniques
    - Conceptual (when to cite, why to cite)
    - Mechanical (how to cite, which style sheet to use)
- Modification search techniques

# Conclusions

- Google generation is:
  - Fluent in the use of sophisticated gadgets
  - Multitasking (breadth-first, less depth-first)
  - Limited in the use of potential features
  - Aware of their need to master higher order research skills:
    - create own content
    - problem solving
    - ethical use of information, ideas, and technologies
- Google generation needs to be native skills compatible with standards for the 21<sup>st</sup> c learning and ISTE's NETS\_for\_Students

# Next (immediate) steps

- Link within specific projects:
  - Use variety of materials (formats, media)
  - Practice critical thinking skills
  - Attribute sources
  - Annotate sources (software, manually)
  - Recognize cases of plagiarism
- Assess students' understanding
- Apply results into next teaching and learning moments, and reflect
- Be available, flexible, creative, and use tech devices that most of the students use

# Further research

- Compare keywords assigned by students with those assigned by OAC indexers
  - Currency (literary warrant)
  - Semantics, richness
  - Single keywords, phrases
- Search OAC
  - With student assigned vocabulary
  - With indexer assigned vocabulary
- Compare results

# Questions, discussion

😊THANKS😊

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