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IL Assessment: Instruments, Portfolios & Focus Group

UNESCO "Training-The –Trainers In Information Literacy Workshop
Hosted by the Bibliotheca Alexandrina, Egypt
November 5, 2008

Richard Sweeney sweeney@njit.edu 973-596-3208

This PowerPoint can be downloaded at the URL below:

http://library1.njit.edu/staff-folders/sweeney/

At the bottom of the page.

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Who is IL assessment for?

1. Assessment should inform **the learner** about how he/she is skilled compared to other learners.

2. Assessment should inform **the institution** how their students are collectively performing.

3. Assessment should comparatively inform **outside agencies and the public** how that institution is performing.

Carr, Nicholas. "Is Google Making Us Stupid?: what the Internet is doing to our brains". Atlantic Monthly. 301:6 July/August 2008

IL Assessment: Instruments, Portfolios & Focus Group

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project SAILS Standardized Assessment of Information Literacy Skills

What is SAILS?

SAILS is the Standardized Assessment of Information Literacy Skills. It is a knowledge test with multiple-choice questions targeting a variety of information literacy skills. The test items are based on the ACRL Information Literacy Competency Standards for Higher Education.

vanced information literacy skills and concepts, the test asks students questions about research strategies; selecting sources; understanding and using finding tools; developing and revising search strategies; evaluating results; retrieving materials; documenting sources; and legal and social issues related to ethical and

including the Institute of Museum and Library Services, the Association of Research Libraries, the Ohio Board of Regents, the Academic Library Association of Ohio, and Kent State University.

Significant additional support was provided by the 82 institutions of higher education in Canada and

For More Information

- Visit us at projectsails.org
- Sign-up for email announcements

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iSkills™ Tour

Watch the *iSkills*™ tour to see sample tasks that exemplify how the 7 Information and Communication Technology (ICT) proficiencies are tested and the difference between the Core and Advanced assessments. You will gain a better understanding of how the *iSkills* assessment can help you evaluate students' ICT literacy to better position them for success in our technology-based society.

Watch the *iSkills* tour now.

Macromedia Flash Player is required. Free download

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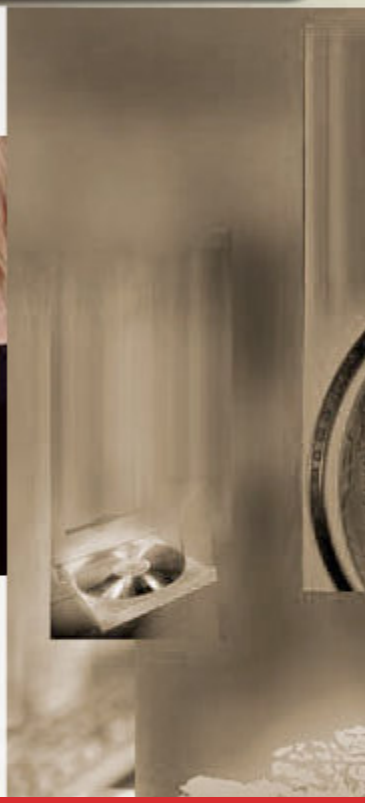
Comprehensive



Designed for higher education

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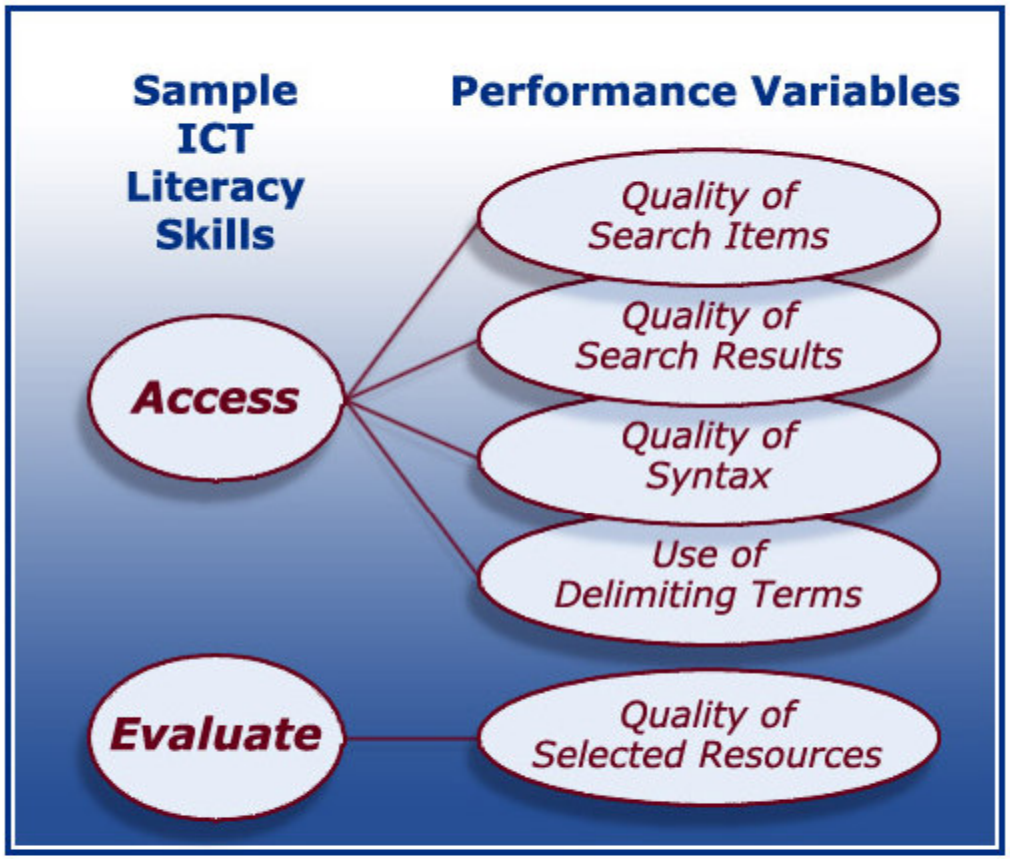

In one task, students are asked to locate resources (e.g., articles, web pages) relevant to a research issue. In this task the student would be asked to access information from a database using a search engine and identify the degree to which the information meets the needs of the task. Students are evaluated based on their ability to locate and identify relevant information with respect to an information need in a searchable database.

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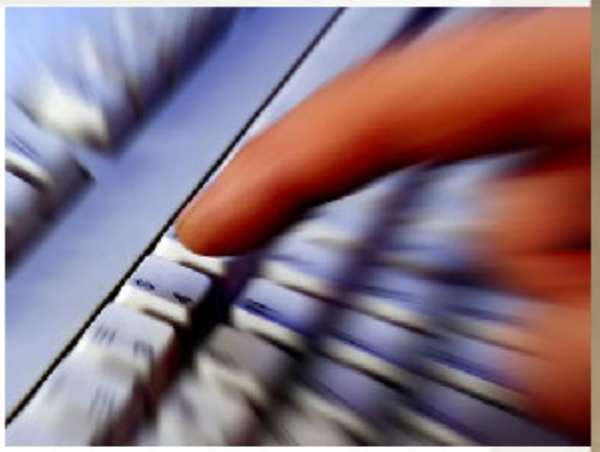
ICT Literacy



DEFINE • ACCESS • EVALUATE • MANAGE • INTEGRATE • CREATE • COMMUNICATE

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THE EDGE IN KNOWLEDGE

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CRL/IMLS Grant,
d the support of
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Colleges

Participating
rarians at these
stitutions are
gratefully

BAY AREA COMMUNITY COLLEGES INFORMATION COMPETENCY ASSESSMENT PROJECT

Exam Materials Request Form

Executive Summary

The Bay Area Community Colleges Information Competency Assessment Project, a collaborative project among faculty librarians in the San Francisco Bay Area, has developed and field-tested an information competency assessment instrument that is

- based on specific performance outcomes, and
- criterion-referenced to national standards

Part A	Part B
47 multiple choice, matching, and short answer items	12 performance-based exercises, several with sub-parts

The Project's purpose: to develop a challenge-out or credit-by-exam instrument that can be used and/or modified at community colleges that have an information competency requirement.

Project Outcomes [Formatted as pdf files. If needed, download Adobe Acrobat Reader.]

- Final Report of the Bay Area Community Colleges Information Competency Assessment Project

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Traditional Assessment	Authentic Assessment
Generally relies on forced-choice, written measures	Promotes integration of various written and performance measures.
Relies on proxy measures of student learning to represent target skills	Relies on direct measures of target skills
Encourages memorization of correct answers	Encourages divergent thinking in generating possible answers

Lombardi, Marilyn M. "Making the Grade: The Role of Assessment in Authentic Learning," *Educuase Learning Initiative.* ELI Paper 1:2008 (January, 2008): http://connect.educause.edu/Library/ELI/MakingtheGradeTheRoleofAs/45771

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Traditional Assessment	Authentic Assessment
Goal is to measure acquisition of knowledge	Goal is to enhance development of meaningful skills
Curriculum directs assessment	Assessment directs curriculum
Emphasis on developing a body of knowledge	Emphasis on ensuring proficiency at real world tasks
Promotes "what" knowledge	Promotes "how" knowledge

Lombardi, Marilyn M. "Making the Grade: The Role of Assessment in Authentic Learning," *Educuase Learning Initiative.* ELI Paper 1:2008 (January, 2008): http://connect.educause.edu/Library/ELI/MakingtheGradeTheRoleofAs/45771

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Traditional Assessment	Authentic Assessment
Provides a one-time snapshot of student understanding	Provides an examination of learning over time
Emphasizes competition	Emphasizes cooperation
Targets simplistic skills or tasks in a concrete, singular fashion	Prepares students for ambiguities and exceptions that are found in realistic problem settings
Priority on summative outcomes or product	Priority on the learning sequence or process

Lombardi, Marilyn M. "Making the Grade: The Role of Assessment in Authentic Learning," *Educuase Learning Initiative.* ELI Paper 1:2008 (January, 2008): http://connect.educause.edu/Library/ELI/MakingtheGradeTheRoleofAs/45771

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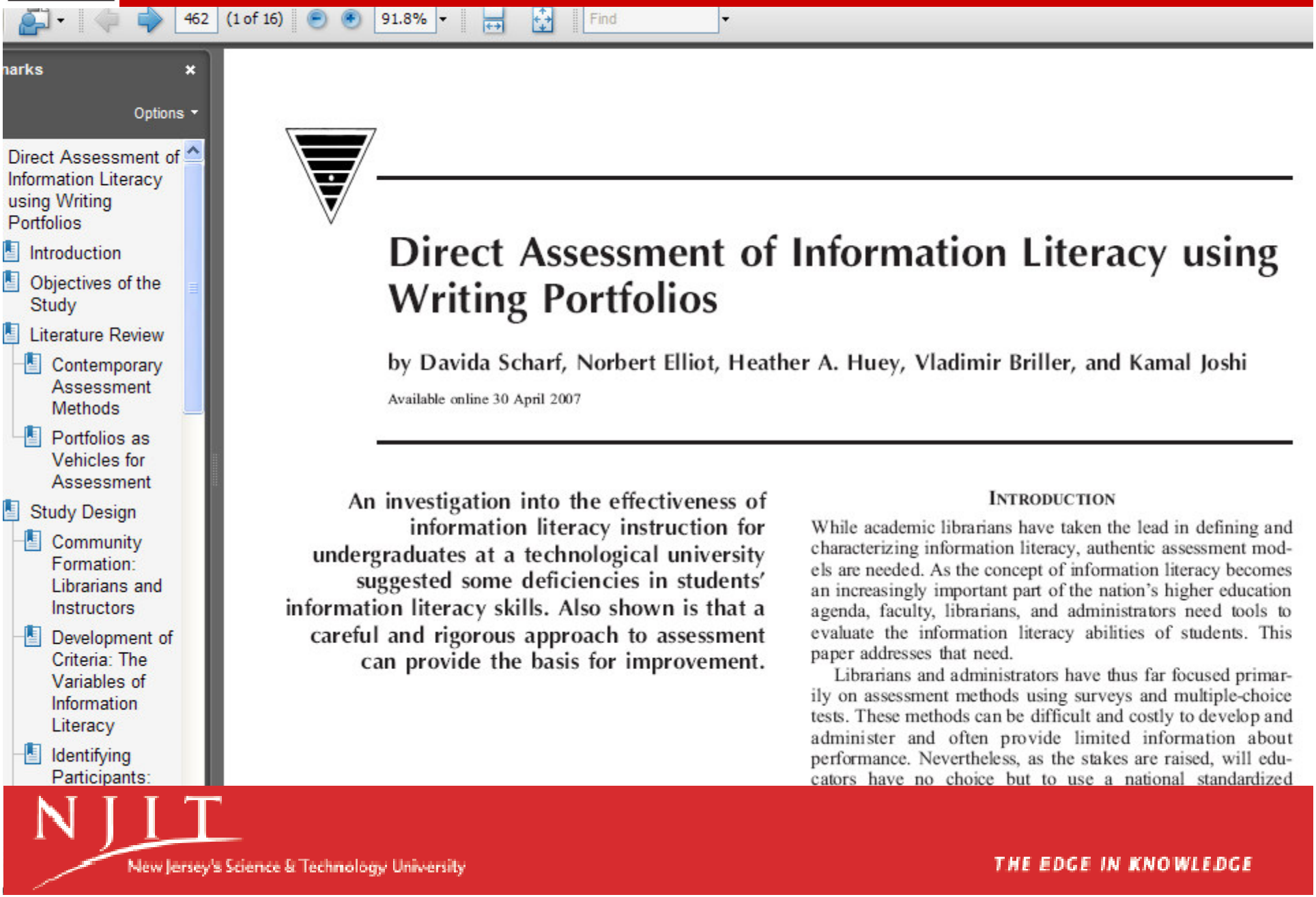


462 (1 of 16) 91.8% Find

marks

Options

Direct Assessment of Information Literacy using Writing Portfolios

- Introduction
- Objectives of the Study
- Literature Review
  - Contemporary Assessment Methods
  - Portfolios as Vehicles for Assessment
- Study Design
  - Community Formation: Librarians and Instructors
  - Development of Criteria: The Variables of Information Literacy
  - Identifying Participants:

Direct Assessment of Information Literacy using Writing Portfolios

by Davida Scharf, Norbert Elliot, Heather A. Huey, Vladimir Briller, and Kamal Joshi

Available online 30 April 2007

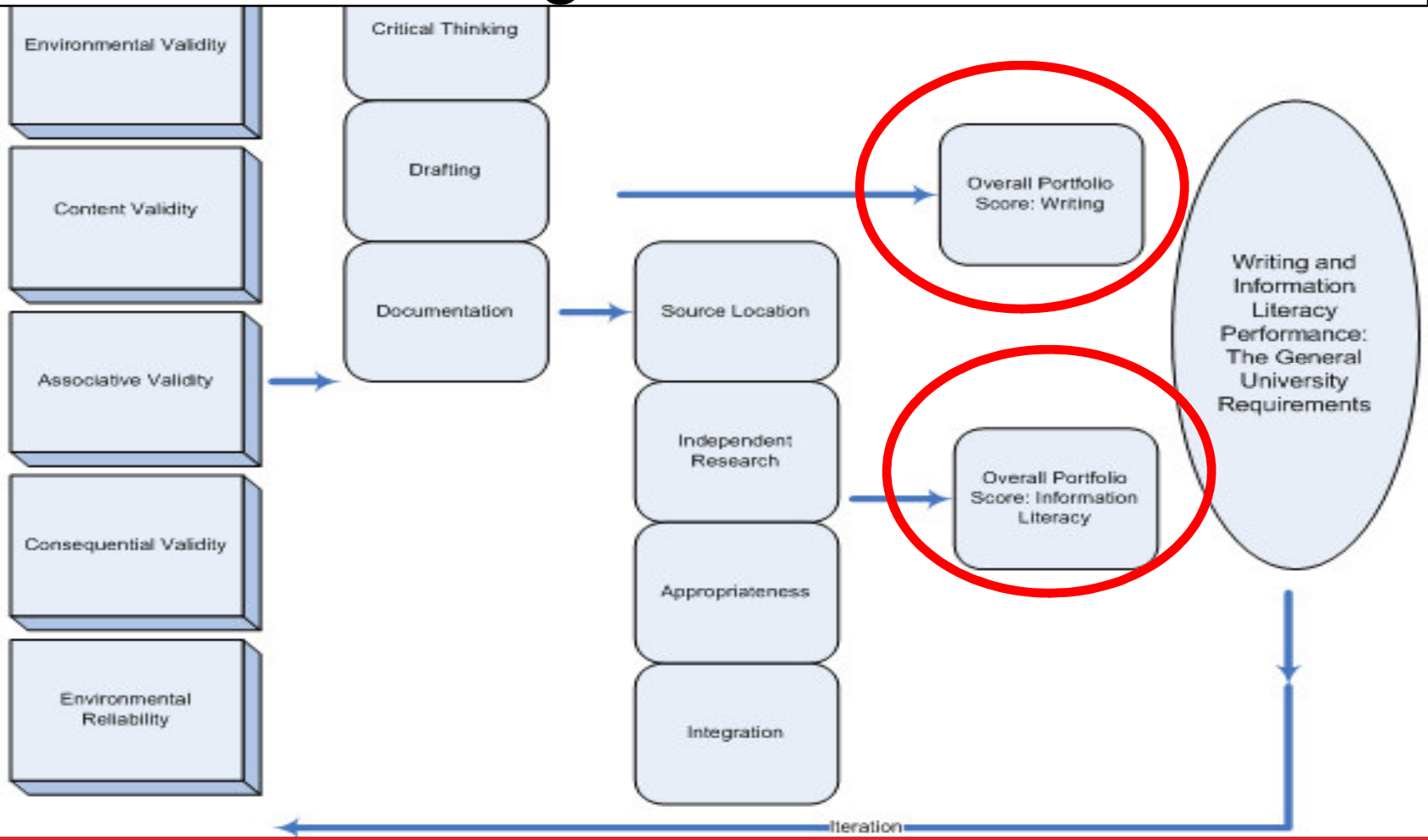
An investigation into the effectiveness of information literacy instruction for undergraduates at a technological university suggested some deficiencies in students' information literacy skills. Also shown is that a careful and rigorous approach to assessment can provide the basis for improvement.

Introduction

While academic librarians have taken the lead in defining and characterizing information literacy, authentic assessment models are needed. As the concept of information literacy becomes an increasingly important part of the nation's higher education agenda, faculty, librarians, and administrators need tools to evaluate the information literacy abilities of students. This paper addresses that need.

Librarians and administrators have thus far focused primarily on assessment methods using surveys and multiple-choice tests. These methods can be difficult and costly to develop and administer and often provide limited information about performance. Nevertheless, as the stakes are raised, will educators have no choice but to use a national standardized

Information Literacy Assessment Building out the model



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Programmatic Assessment is part of the program

- Writing Assessment already in place
- Building on the methodology

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Limited Response Assessment

- Fall 2005

  Brief online pre- and post-test

  (multiple choice)

- Spring 2006

  ETS ICT Literacy Assessment

  (Information, Communication, Technology)

  (scenarios)

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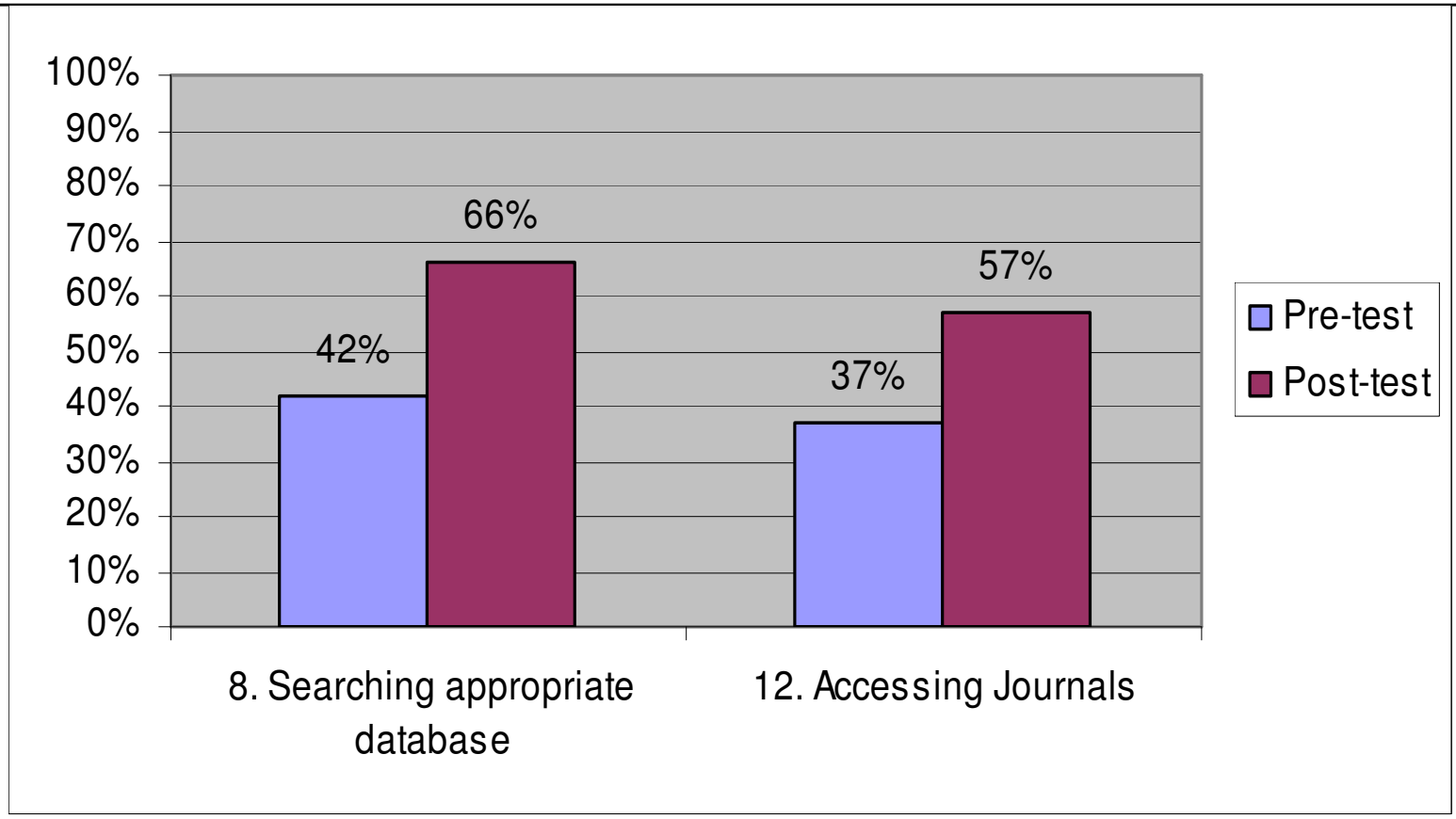
Standard 2—2.1Does the student know where to search for articles by topic? (n=255/190)



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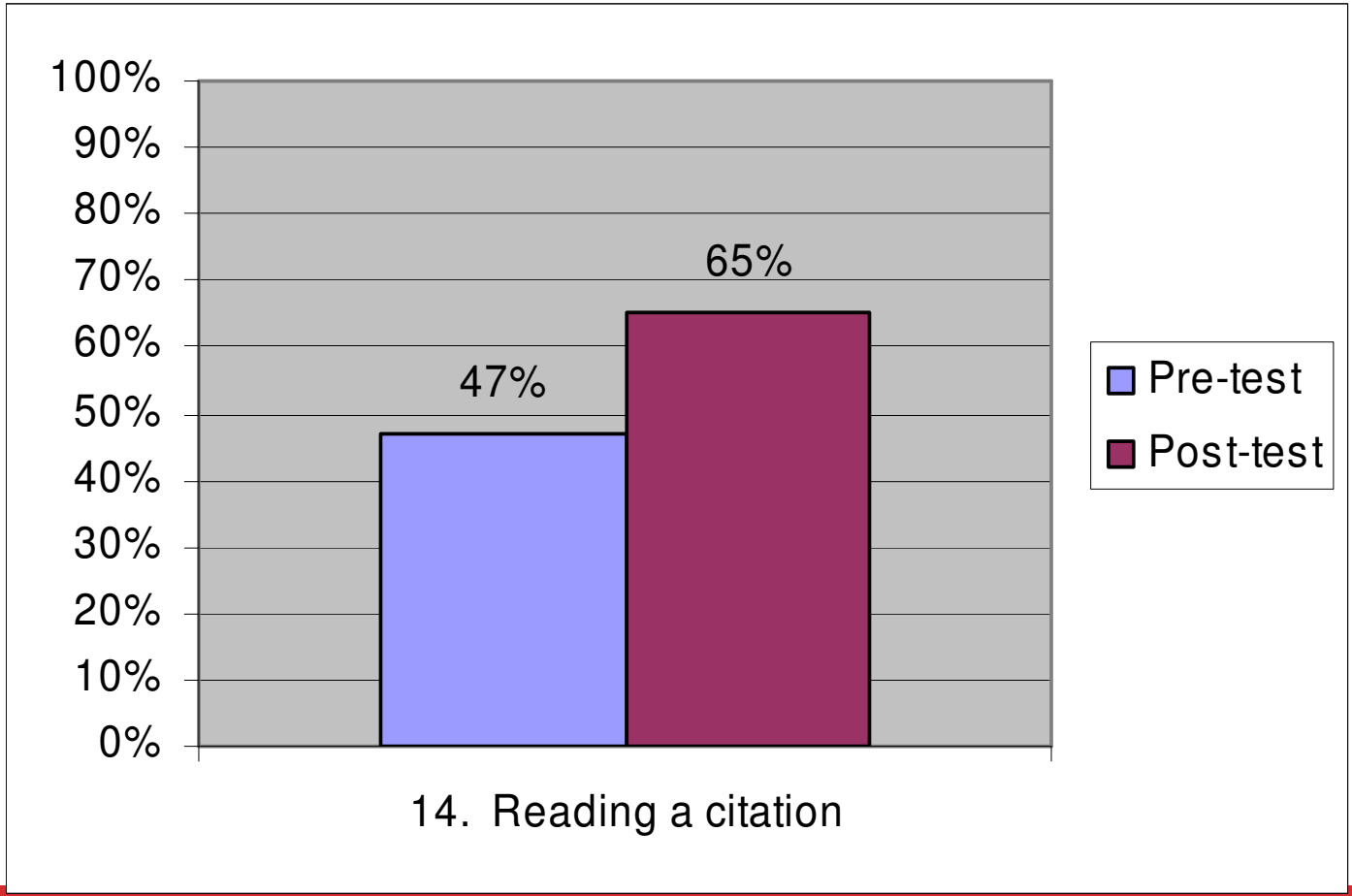
Standard 2—2.5
Can the student recognize types of sources from citation?
Can the student understand citation elements? (n=255/336)



14. Reading a citation

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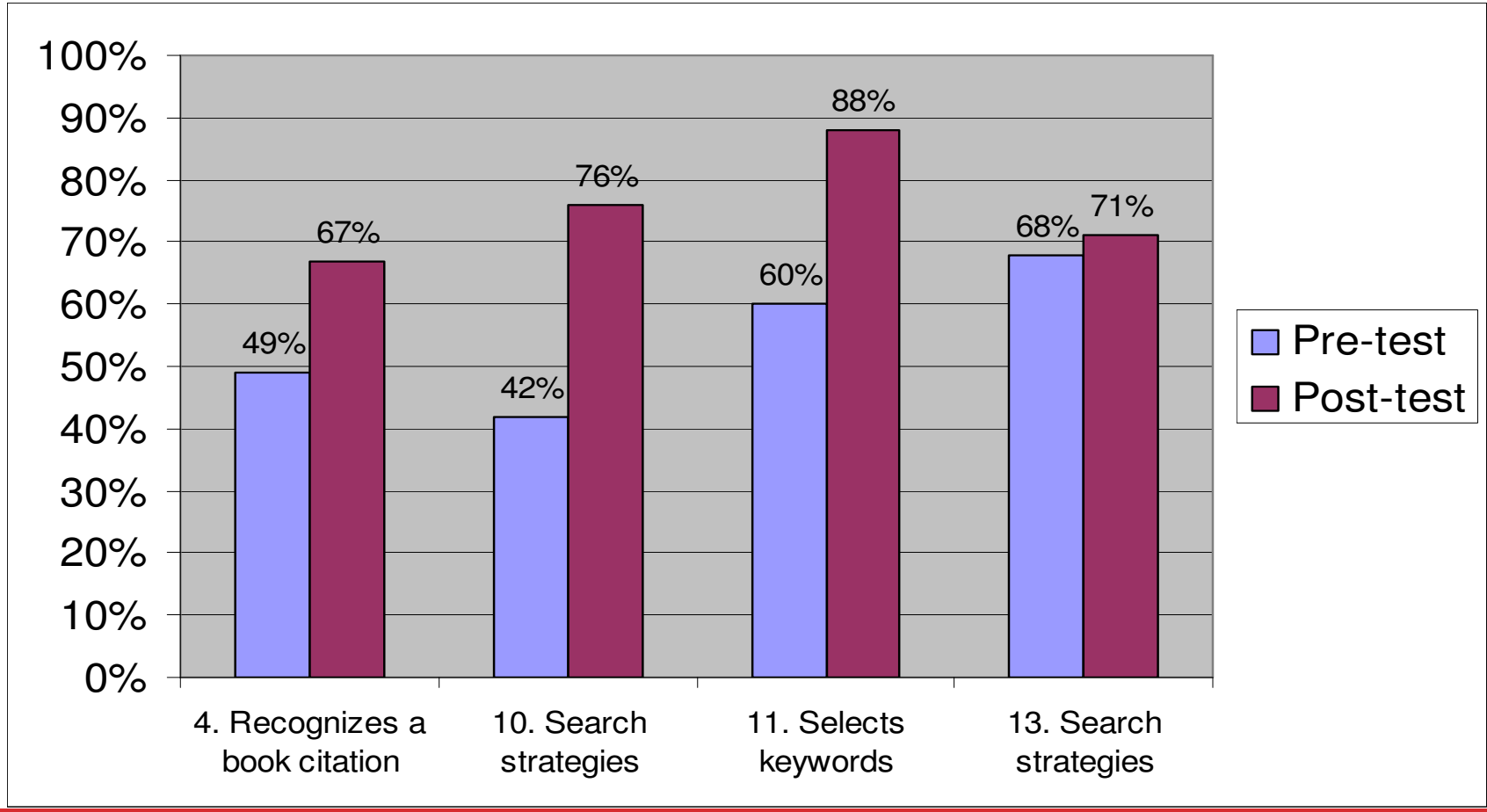
Standard 2—2.2
Can the student recognize parts of a citation?
Can the student use Boolean logic? (n=255/239)



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Capstone Seminar and National Standards

National Standards taken from Association of College and Research Libraries.
Information Literacy Competency Standards
for Higher Education.
Chicago: American Library Association, 2001. Accessible at
http://www.ala.org/ala/acrl/acrlstandards/informationliteracycompetency.htm

ACRL Standards	ACRL Performance Indicator	ARCL Performance Outcomes	Local Criteria category	Local Criteria
1 –Determines the nature and extent of the information needed.	1.1 Defines & articulates the need for information	c. Explores general information sources to increase familiarity with the topic. f. Recognizes that existing information can be combined with original thought, experimentation, and/or analysis to produce new information	Evidence of Research	- Puts effort into obtaining outside sources outside of those references in the syllabus. - Recognizes the need for more research.
	1.2 Identifies a variety of types and formats of potential sources for information.	a. Knows how information is formally and informally produced, organized, and disseminated.	Citation	- can correctly designate different types of sources.
		c. Identifies that value and differences of potential resources in a variety of formats. d. Identifies the purpose and audience of potential resources.	Appropriateness	-Knows when a website, article, or book is appropriate. - Uses scholarly materials when necessary.

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The Spring 2005 Portfolio Readings:

The Humanities Reading and the Information Literacy Reading

- The Spring 2005 Humanities Portfolio Reading: Citation
  - Mean=7.45
  - Range: 2,12
  - SD=2.62
    - Fall 03=7.88
    - Fall 04=6.37
- Rational Conclusion based on this evidence?

  All is well!

- The IL Reading:
  - Original Source=6.73
  - Evidence of Independent Research=6.46
  - Appropriateness=6.22
  - Integration of sources=6.04
  - Overall IL Portfolio Score=6.20
- Rational Conclusion based on this evidence?
- *All is far from well!*

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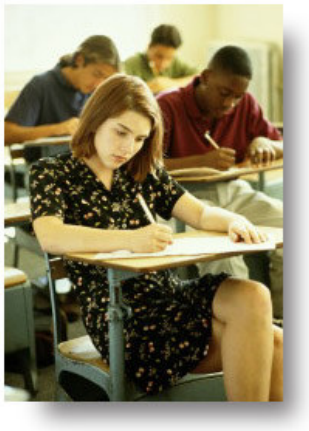
Collaborating with ETS www.ets.org

1. Correlate scores on ICT
2. with scores on writing portfolio IL scale
3. and student demographics



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"...we noticed parallels between teaching and assessing writing that could be applied to teaching and assessing information literacy." p. 462

Scharf, Davida, Norbert Elliot et al. "Direct Assessment of Information Literacy Using Writing Portfolios ". Journal of Academic Librarianship, v33 n4 p462-477 Jul 2007

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"In discussing the trend in higher education toward outcomes assessment and the implications for information literacy assessment, librarians Pausch and Popp mention using portfolios of student work as an assessment method. A more recent case study by Carol Rutz of writing portfolio assessment showed that faculty participation provided significant effects in the curriculum and student learning."
p. 464

Scharf, Davida, Norbert Elliot et al. "Direct Assessment of Information Literacy Using Writing Portfolios ". Journal of Academic Librarianship, v33 n4 p462-477 Jul 2007

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"The revised standards for accreditation in the Middle States Region, especially the emphasis on information literacy as a meta-outcome, could have an impact on higher education in at least three areas: long range planning, especially with regard to assessment,; a change in the institution dialogue about student learning; and increased collaboration woven into the campus culture."
p. 374

Rattery, Oswald M T. "Information Literacy in Self Study". Journal of Academic Librarianship, v28 n6 p368-375 Nov 2002

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"The Middle States region has introduced into its standards for accreditation an approach that effectively treats information literacy as a meta learning outcome that also has a role in an institution's ongoing assessment plan, its decennial self-study, and its interim report to the Commission.
p. 375

Rattery, Oswald M T. "Information Literacy in Self Study". Journal of Academic Librarianship, v28 n6 p368-375 Nov 2002

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"The result is a new handbook that addresses motivating and involving campus communities, developing learning goals, evaluating student learning, planning for the systematic assessment of student learning, using the results to improve teaching and learning, and institutional assessment and planning.
p. 375

Rattery, Oswald M T. "Information Literacy in Self Study". Journal of Academic Librarianship, v28 n6 p368-375 Nov 2002

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Selecting Appropriate Assessment Measures

Information Literacy Components	Measures	Findings
Framing the Research Question	Instructor or librarian reviews the students thesis statement for a 10-page paper.	Students' thesis statements are not focused.
Accessing Sources	Instructor or librarian reviews a list of keywords and synonyms that students generate from their topics and thesis statements.	Students' keywords are too broad to be productive. Few synonyms or related words are included.
Evaluating Sources	Sports medicine instructor reviews the bibliographies submitted with students' outlines of their 10-page paper.	Eighty-five percent of the sources are from appropriate current peer-reviewed scholarly sources.
	Psychology students verbally critique a journal article commenting on the author's	Students identify the various elements of the articles but are uncertain how the

Developing Research & Communication Skills: Guidelines for Information Literacy in the Curriculum . The Middle States Commission on Higher Education 2003http://www.msche.org/publications/Developing-Skills080111151714.pdf

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Evaluating Content	Psychology students verbally critique a journal article commenting on the author's use of the scientific method. Students are asked to identify the author's rationale for the research, the validity of the conclusions, and the article's significance and potential contribution to the project.	Students identify the various elements of the articles but are uncertain how the author's method evolved from his thesis. Students have more difficulty identifying the article's significance. Some issues remain with students identifying the article's potential contribution to the project.
Using Information for a Specific Purpose	Ecology instructor reviews students' poster presentations of their semester projects, using a criterion-based scale (a rubric). Instructor determines the effectiveness of the students' constructed tables to present their project data.	"Text heavy" posters indicate students have difficulty selecting and concisely presenting the main points of their projects. Students have difficulty using graphic information effectively, but there are no unnecessary tables. Most tables are self-explanatory, correctly labeled and supplement but do not effectively explicate the text.
Understanding Issues Affecting the Use of	History instructor reviews students' projects with	Students consistently use an appropriate documentation

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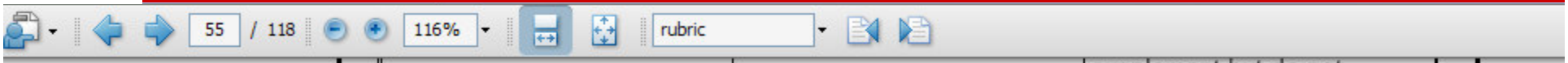

		supplement but do not effectively explicate the text.
Understanding Issues Affecting the Use of Information; and Observing Laws, Regulations, and Institutional Policies	History instructor reviews students' projects with particular attention to attribution and the use of documentation.	Students consistently use an appropriate documentation style, complete with page numbers for quoted material.

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Figure 11

From Assessment Data to Improvement

Assessment Findings	Problem Areas Identified	Proposed Solutions
Lower-level Examples:		
Freshman Experience Survey reveals that 35 percent of freshmen believed their library skills were deficient; 55 percent indicated that the curriculum challenged their library skills.	Students unprepared in basic skills, such as the ability to formulate a search and identify appropriate information; limited previous experience with libraries and information resources	Freshman seminar to include series of short assignments designed to improve students' ability to formulate searches and to identify topics and resources for their seminar project Students complete an on-line tutorial for basic skills as part of their first assignment
A sociology instructor finds numerous references to *Redbook, Newsweek,* and web sites in students' social problems reports.	Expectations not clearly communicated; students unfamiliar with the types of resources expected	Study guide detailing the differences between popular and scholarly information resources Study guide outlining sociology-related information resources

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A review of a semester-long project (due by the last class) reveals several students plagiarized and most students did not effectively utilize information sources to support their thesis.	Procrastination; lack of familiarity with the steps in the research and writing process and with the use of information sources in building and refuting a position	More detailed instructions; outline the role of information sources in the project; break the project into smaller segments with sequential due dates and more frequent feedback; provide a project rubric and samples of excellent work; and offer warnings about the significance of plagiarizing.
Upper-level Examples:		
Instructor notes many students were unable to critique journal articles effectively	Limited knowledge of the structure of research articles and elements of research design	Materials distributed to detail the elements of a research article, their purpose, and common research flaws; more practice in critiquing
Program faculty observe that several capstone students had difficulty distilling their research for oral presentation.	Inability to summarize, identify major points, and point out the implications of their findings; no oral presentations in previous courses	Multiple assignments requiring the abstracting and annotation of research as well as oral presentations introduced earlier in the curriculum

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Appendix 1

Criteria for Information Literacy Competency

Developed by Grace Bulaong, Director of the Library; Dr. Helen Hoch, Professor of Biology; and Robert J. Matthews, Associate Professor of Business Administration, New Jersey City University. It is based on *Information Literacy Competency Standards for Higher Education* (Association of College and Research Libraries, 2000). Reproduced with permission.

Name:_____ Date:_____

Course Title:_____ Instructor:_____

Assignment Title:_____

Competency	Assessment Criteria

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Competency	Assessment Criteria				
	Novice	Developing	Proficient	Accomplished	N/A
Extent of Information					
1. Ability to define and articulate the need for information	❑ Cannot develop a thesis statement	❑ Develops a clear thesis statement, formulates a question based on information needed	❑ Defines or modifies information to achieve a manageable focus and can identify key concepts and terms	❑ Combines existing information and original thought, experimentation and/or analysis to produce new information	❑
2. Identifies a variety of types and formats of potential sources	❑ Does not recognize that knowledge is organized into disciplines and cannot locate information beyond local and print resources	❑ Recognizes that knowledge is organized into disciplines and identifies the value differences of potential resources	❑ Identifies the purpose and audience of potential resources, reevaluates the nature and extent of information needed and differentiates between primary and secondary sources	❑ Recognizes the use and importance of primary and secondary sources and realizes that information may need to be constructed with raw data from primary sources ❑ Knows how information is formally and informally produced, organized, and disseminated	❑

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13 Years after the Internet: Where Goes Information Literacy?

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Competency	Assessment Criteria				
	Novice	Developing	Proficient	Accomplished	N/A
Access to Information					
1. Selects the most appropriate investigative methods or information retrieval systems	❑ Cannot select appropriate investigative methods for information retrieval	❑ Identifies appropriate methods and investigates the benefits and applicability	❑ Investigates the scope, content, and organization of information retrieval systems	❑ Selects efficient and effective approaches from the investigative method or information retrieval system	❑
2. Constructs and implements effectively designed search strategies	❑ Cannot construct or implement search strategies	❑ Identifies key words, synonyms, and related terms	❑ Constructs a search strategy appropriate to the information retrieval system	❑ Selects discipline-specific search vocabulary and develops an appropriate research plan	❑
3. Retrieves information using a variety of methods	❑ Cannot retrieve information effectively from any source	❑ Uses various search systems in a variety of formats	❑ Uses various classification schemes and other systems to locate information resources and identifies specific sites for exploration	❑ Uses specialized services (on-site or on-line) as well as surveys, letters, interviews, and other forms of inquiry to retrieve primary information	❑
	❑ Cannot assess	❑ Revises and	❑ Identifies gaps	❑ Assesses quantity,	❑

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3. Retrieves information using a variety of methods	❑ Cannot retrieve information effectively from any source	❑ Uses various search systems in a variety of formats	❑ Uses various classification schemes and other systems to locate information resources and identifies specific sites for exploration	❑ Uses specialized services (on-site or on-line) as well as surveys, letters, interviews, and other forms of inquiry to retrieve primary information	❑
4. Refines the search strategy	❑ Cannot assess the quantity, quality, and relevance of search results	❑ Revises and repeats searches effectively	❑ Identifies gaps in retrieved information and determines if search strategy should be revised	❑ Assesses quantity, quality, and relevant search results to determine whether alternative information retrieval systems or investigative methods should be used	❑
5. Extracts, records, and manages the information and its sources	❑ Cannot select appropriate information technologies to gather information	❑ Selects appropriate sources and can create a system for organizing the information	❑ Differentiates between types of sources and understands the elements and syntax of citations	❑ Uses various technologies to manage information and can record all pertinent citation information for a wide range of resources	❑

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Competency	Assessment Criteria				
	Novice	Developing	Proficient	Accomplished	N/A
Evaluation of Information					
1. Summarizes main ideas	❑ Cannot select main ideas from text information gathered	❑ Selects data accurately	❑ Identifies verbatim material and appropriately quotes it	❑ Summarizes main ideas from information sources and can restate textual concepts in own words	❑
2. Articulates and applies initial criteria for information and its sources	❑ Cannot evaluate information	❑ Examines and compares information from various sources to evaluate reliability, validity, and timeliness, authority, and point of view of bias	❑ Analyzes the structure and logic supporting arguments or methods ❑ Recognizes prejudice, deception, or manipulation	❑ Recognizes the cultural, physical, or other contexts within which the information was created and understands the impact of context on information	❑
	❑ Cannot synthesize main	❑ Uses computer and other	❑ Recognizes interrelationships	❑ Extends initial synthesis to	❑

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3. Synthesizes main ideas to construct new concepts	❑ Cannot synthesize main ideas	❑ Uses computer and other technologies for studying the interaction of ideas and other phenomena	❑ Recognizes interrelationships among concepts and combines them into potentially useful primary statements with supporting evidence	❑ Extends initial synthesis to construct new hypotheses that may require additional information	❑
4. Compares new knowledge with prior knowledge to determine the value added, contradictions, or other unique characteristics of information	❑ Cannot determine whether information satisfies the information need	❑ Tests theories with discipline-appropriate techniques	❑ Uses consciously selected criteria to evaluate information from other sources and draws conclusions based upon information gathered	❑ Integrates new information with previous knowledge, can select information that provides evidence for the topic ❑ Determines probable accuracy by questioning the source, the limitations of gathering information, and the reasonableness of conclusions	❑

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p.71

4. Compares new knowledge with prior knowledge to determine the value added, contradictions, or other unique characteristics of information	❑ Cannot determine whether information satisfies the information need	❑ Tests theories with discipline-appropriate techniques	❑ Uses consciously selected criteria to evaluate information from other sources and draws conclusions based upon information gathered	❑ Integrates new information with previous knowledge, can select information that provides evidence for the topic ❑ Determines probable accuracy by questioning the source, the limitations of gathering information, and the reasonableness of conclusions	❑
5. Determines whether new knowledge has an impact on the individual's value system and takes steps to reconcile differences	❑ Cannot determine whether new knowledge has an impact on one's value system	❑ Investigates differing viewpoints	❑ Investigates differing viewpoints to determine whether to reject viewpoints encountered	❑ Determines whether to incorporate viewpoints encountered into one's own value system	❑

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13 Years after the Internet: Where Goes Information Literacy?

Richard Sweeney & Haymwantee Singh sweeney@njit.edu 973-596-3208 / 8498

p.72

Competency	Assessment Criteria				
	Novice	Developing	Proficient	Accomplished	N/A
Evaluation of Information cont'd					
6. Validates understanding and interpretation of information through discourse with others, including experts and/or practitioners	❑ Cannot effectively participate in discussions	❑ Participates effectively in classroom and other discussions	❑ Effectively uses class-sponsored electronic communications forums	❑ Seeks appropriate expert opinions through a variety of mechanisms	❑
7. Determines whether the initial query should be revised	❑ Cannot determine if information needs have been satisfied	❑ Determines if original information need has been satisfied or if added information is needed	❑ Reviews search strategy and incorporates additional concepts as necessary	❑ Reviews information retrieval sources and search strategies used to revise initial queries	❑
Use of Information					
1. Applies new and prior	❑ Cannot organize content in a meaningful way	❑ Manipulates digital text, images, and	❑ Organizes content in support of purposes and	❑ Integrates new and prior information, including quotations	❑

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Use of Information					
1. Applies new and prior information to the planning and creation of a particular product or performance	❑ Cannot organize content in a meaningful way	❑ Manipulates digital text, images, and data from original locations to format a new context	❑ Organizes content in support of purposes and format and articulates knowledge and skills from prior experiences	❑ Integrates new and prior information, including quotations and paraphrasing, in a manner that supports the product or performance	❑
2. Revises the development process for the product or performance	❑ Cannot effectively revise work	❑ Maintains a journal or log of activities	❑ Maintains a log that includes an evaluation of information relevant to the data found	❑ Reflects on past successes and failures; Develops alternative strategies in searching, evaluating, and communicating	❑
3. Communicates the product or performance effectively	❑ Cannot communicate effectively	❑ Uses a limited range of information technology	❑ Uses a range of information technology ❑ Chooses communication medium/format that best supports the purposes of the product or	❑ Incorporates principles of design and communication and communicates clearly to the intended audience	❑

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Competency	Assessment Criteria				
	Novice	Developing	Proficient	Accomplished	N/A
Ethical and Legal Issues					
1. Understand ethical, legal, and socio-economic issues surrounding information and information technology	❑ Does not understand the ethical/legal/ socio-economic issues surrounding information and information technology	❑ Identifies and discusses issues related to free vs. fee-based access in print and electronic environments	❑ Identifies and discusses issues of privacy, security, censorship, and freedom of speech	❑ Demonstrates an understanding of intellectual property, copyright, and the fair use of copyrighted material	❑
2. Follows copyright and other laws, regulations, institutional policies, and etiquette related to the access and use of information resources	❑ Does not follow appropriate laws, policies, and "netiquette"	❑ Uses appropriate passwords, ID, and "netiquette" in the collection of information ❑ Understands what plagiarism is and does not plagiarize	❑ Complies with institutional policies on information resources and preserves the integrity of information sources, equipment, systems, and facilities	❑ Obtains, stores, and disseminates text, data, images, and sounds within legal guidelines ❑ Understands relevant institutional policies, including those on human subject research	❑

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other laws, regulations, institutional policies, and etiquette related to the access and use of information resources	laws, policies, and "netiquette"	passwords, ID, and "netiquette" in the collection of information ❑ Understands what plagiarism is and does not plagiarize	on information resources and preserves the integrity of information sources, equipment, systems, and facilities	data, images, and sounds within legal guidelines ❑ Understands relevant institutional policies, including those on human subject research	
3. Acknowledges the use of information sources	❑ Does not acknowledge sources	❑ Inappropriately acknowledges sources	❑ Usually acknowledges sources in an appropriate style	❑ Consistently cites sources in an appropriate style and posts permission granted notices for copyrighted material, where applicable	❑
Self-Assessment					
Self-regulation and goal-setting	❑ Identifies major weaknesses and strengths	❑ Synthesizes feedback from instructor and students	❑ Synthesizes feedback and integrates with self-analysis	❑ Utilizes self-assessment and feedback to determine means of modifying performance	❑

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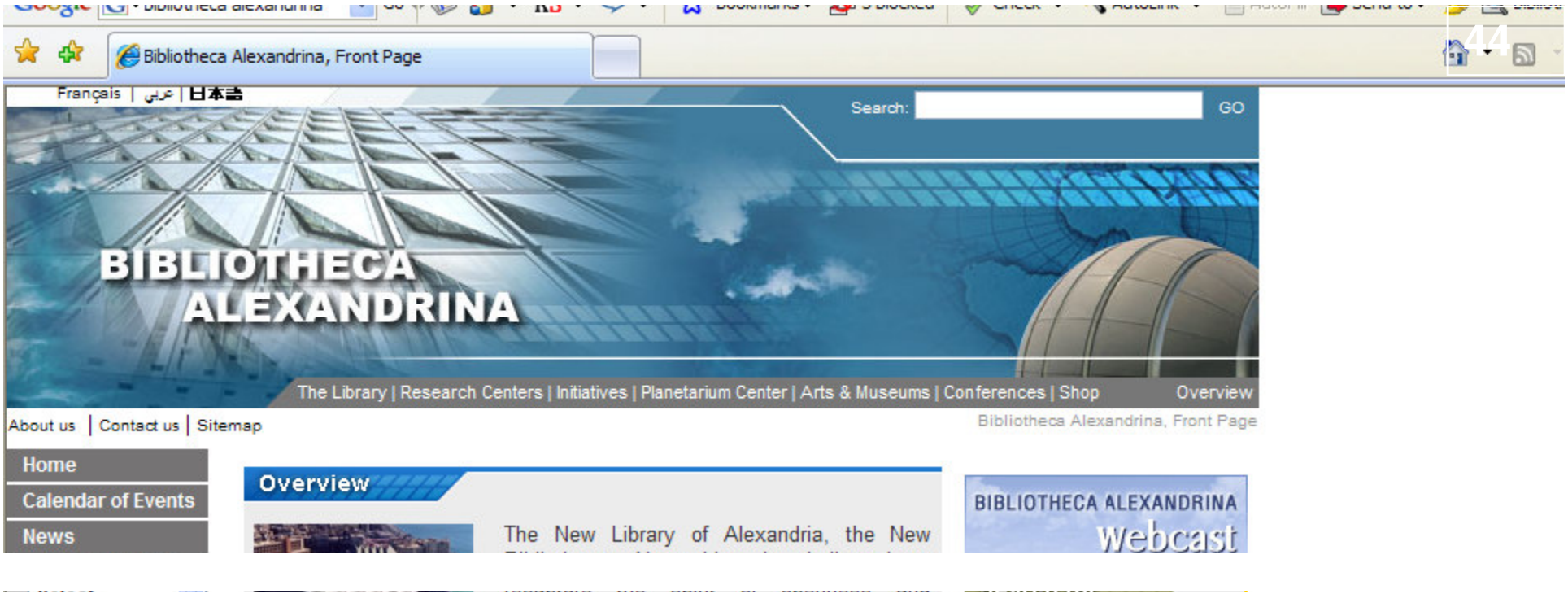

Understanding & Engaging Millennial Students:
A Focus Group

Richard Sweeney sweeney@njit.edu 973-596-3208

1. I am regarded by my students as an expert researcher.

Richard Sweeney sweeney@njit.edu 973-596-3208

1. I am regarded by my students as an expert researcher.

2. I am regarded by my students as a superior teacher.

Richard Sweeney sweeney@njit.edu 973-596-3208

1. I am regarded by my students as an expert researcher.

2. I am regarded by my students as a superior teacher.

3. My students are more engaged and better learners.

Richard Sweeney sweeney@njit.edu 973-596-3208

1. I am regarded by my students as an expert researcher.

2. I am regarded by my students as a superior teacher.

3. My students are more engaged and better learners.

Which is more important to us?

Same Goals?

Richard Sweeney sweeney@njit.edu 973-596-3208

1. I am regarded by my students as an expert researcher.

2. I am regarded by my students as a superior teacher.

3. My students are more engaged and better learners.

Which is more important to us? To our students?

Richard Sweeney sweeney@njit.edu 973-596-3208

"They're variously called the Internet Generation, Echo Boomers, the Boomlet, Nexters, Generation Y, the Nintendo Generation, the Digital Generation, and, in Canada, the Sunshine Generation. But several thousand of them sent suggestions about what they want to be called to Peter Jennings at abcnews.com, and "Millennials" was the clear winner."

http://www.generationsatwork.com/articles/millenials.htm Claire Raines Associates Managing Millennials 2002

Richard Sweeney sweeney@njit.edu 973-596-3208

Today's Agenda

1. What does the research say about the Millennials? No Millennials present.
2. I will conduct a live focus group interview of Millennials that I have never met and who do not know about my research.

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Generations	Birth Years	Ages in 2008
GI Generation	1901 - 1924	83 -
Silent Generation	1925 - 1945	63 – 82
Baby Boomers	1946 - 1964	44 – 62
Generation X	1965 - 1978*	30 – 44
Millennials	1979*- 1994	14 - 29

***Experts differ on end or beginning date of generation : 1974-1981**

Richard Sweeney sweeney@njit.edu 973-596-3208

MILLENNIAL PANELS

- over 50 Millennial panels

- 8 to 14 Millennials

- New Brunswick (CA), California, Colorado, Connecticut, Florida, Georgia, Guatemala, Kansas, Louisiana, Massachusetts, Michigan, Minnesota, Missouri, Nebraska, Nevada, New Jersey, New Mexico, New York, Ohio, Pennsylvania, Rhode Island, Tennessee, Texas, Washington D.C, and Wisconsin.

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Today's main question:

Are Millennials different from prior generations *at the same age*?

Future question:

Will these differences become part of the Millennial lifelong culture?

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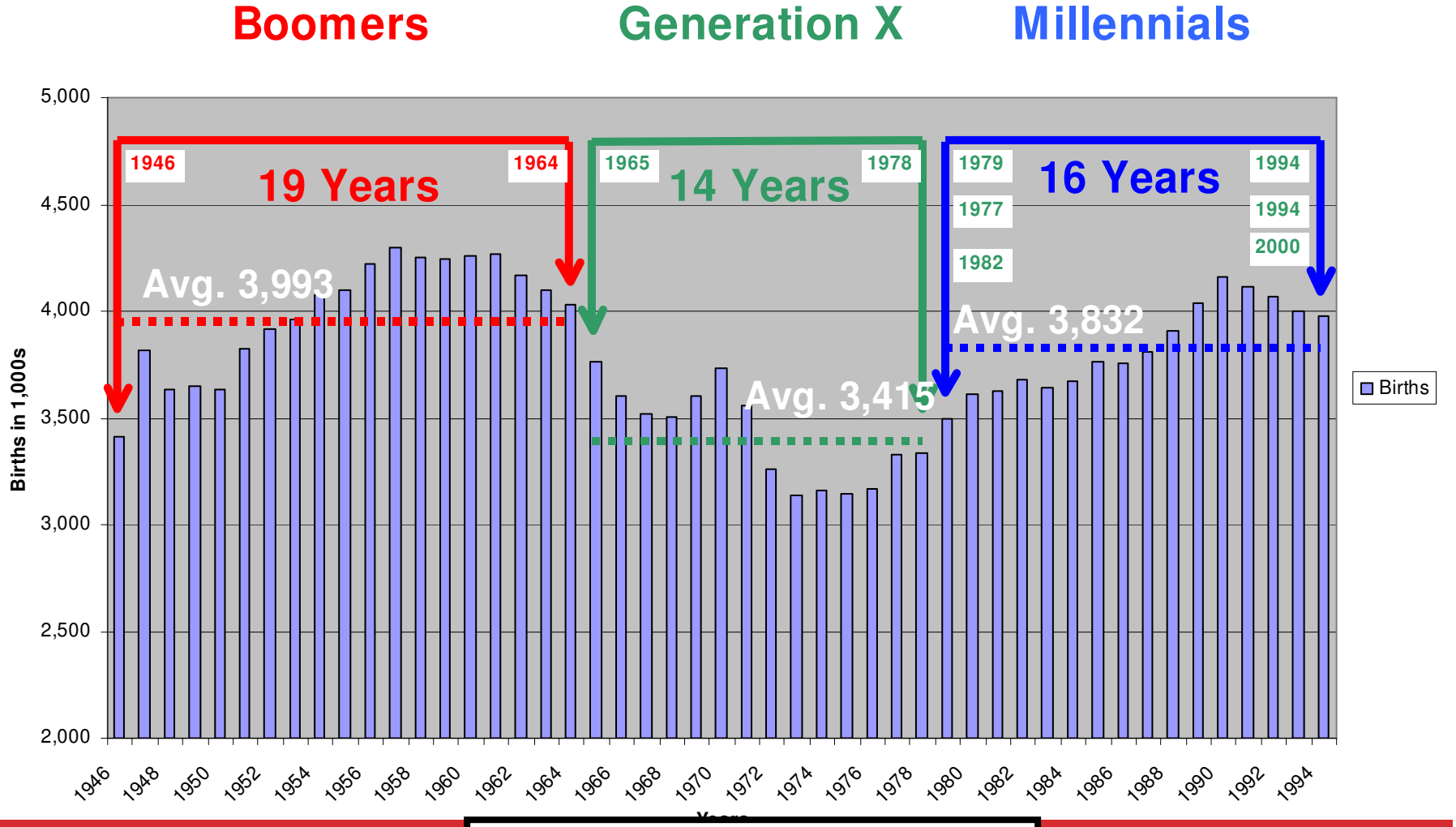
U.S. Births in Thousands



Huge Generation

Boomers Retired

Born 1946-1952

66 yrs & older

Boomers Still in Workforce

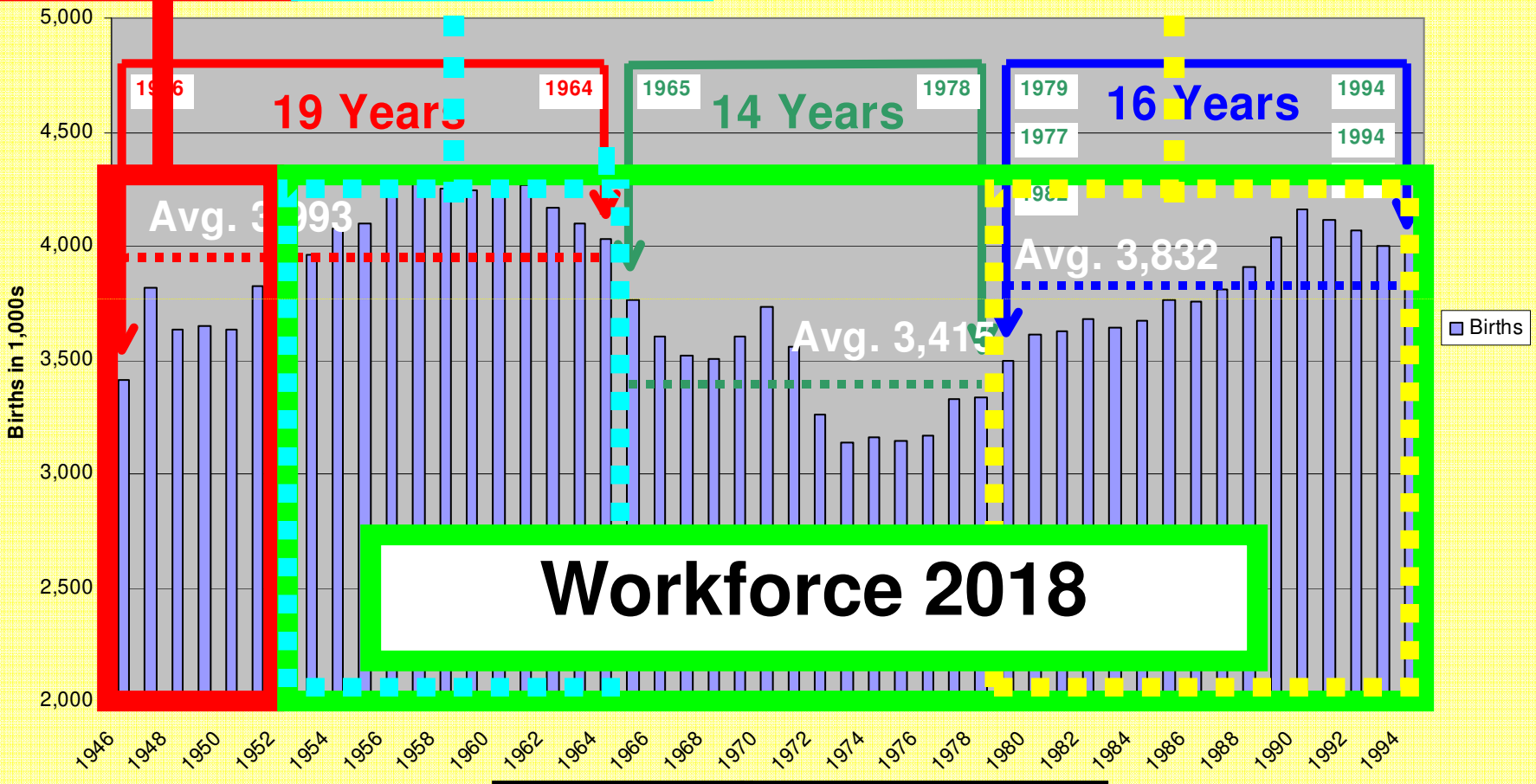
Born 1953-1964

65 yrs & younger

All Millennials in Workforce

Born 1980-1994

@ 23 yrs old



Workforce 2018

Huge Generation

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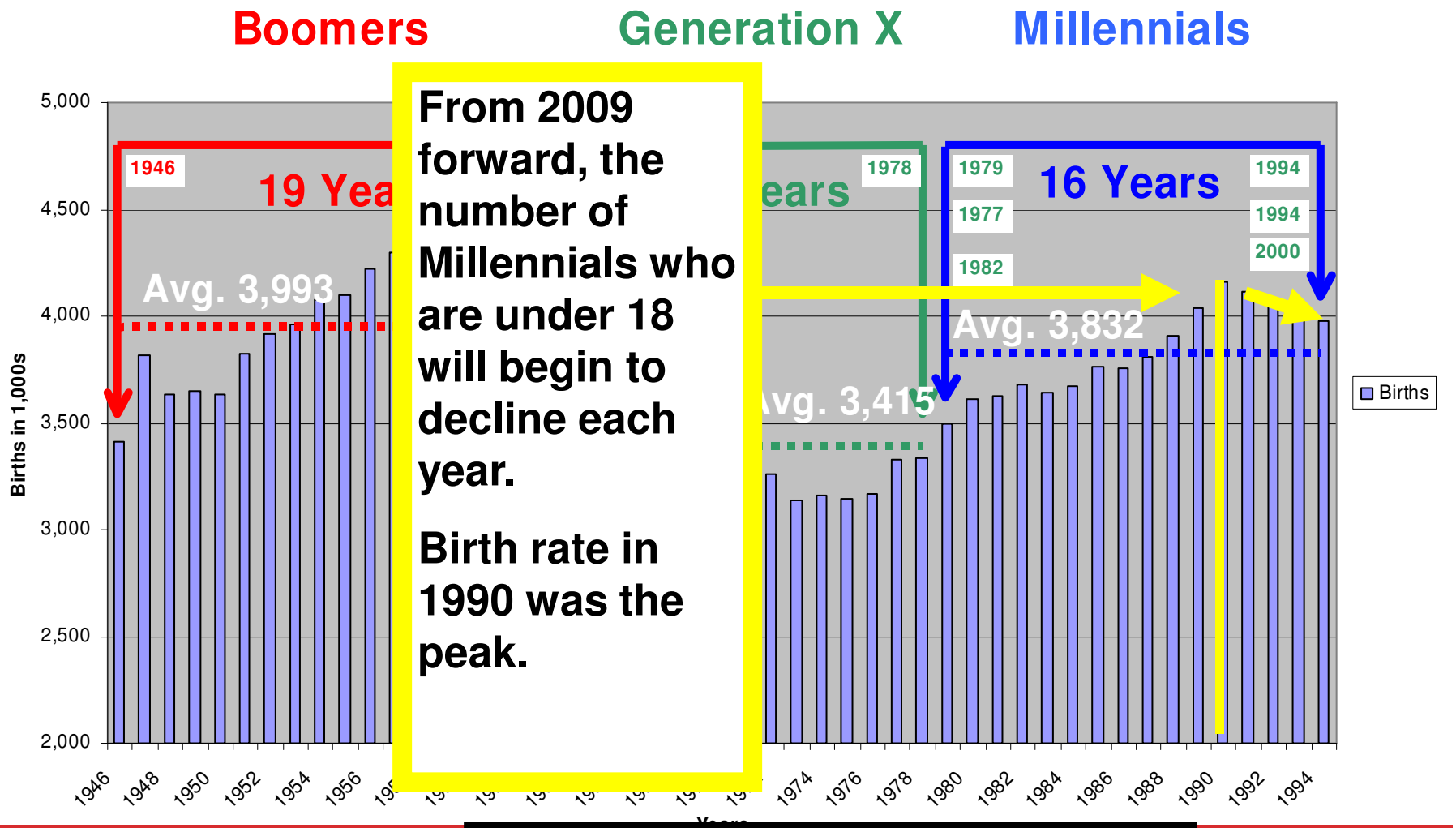
U.S. Births in Thousands



From 2009 forward, the number of Millennials who are under 18 will begin to decline each year.

Birth rate in 1990 was the peak.

Increased Competition

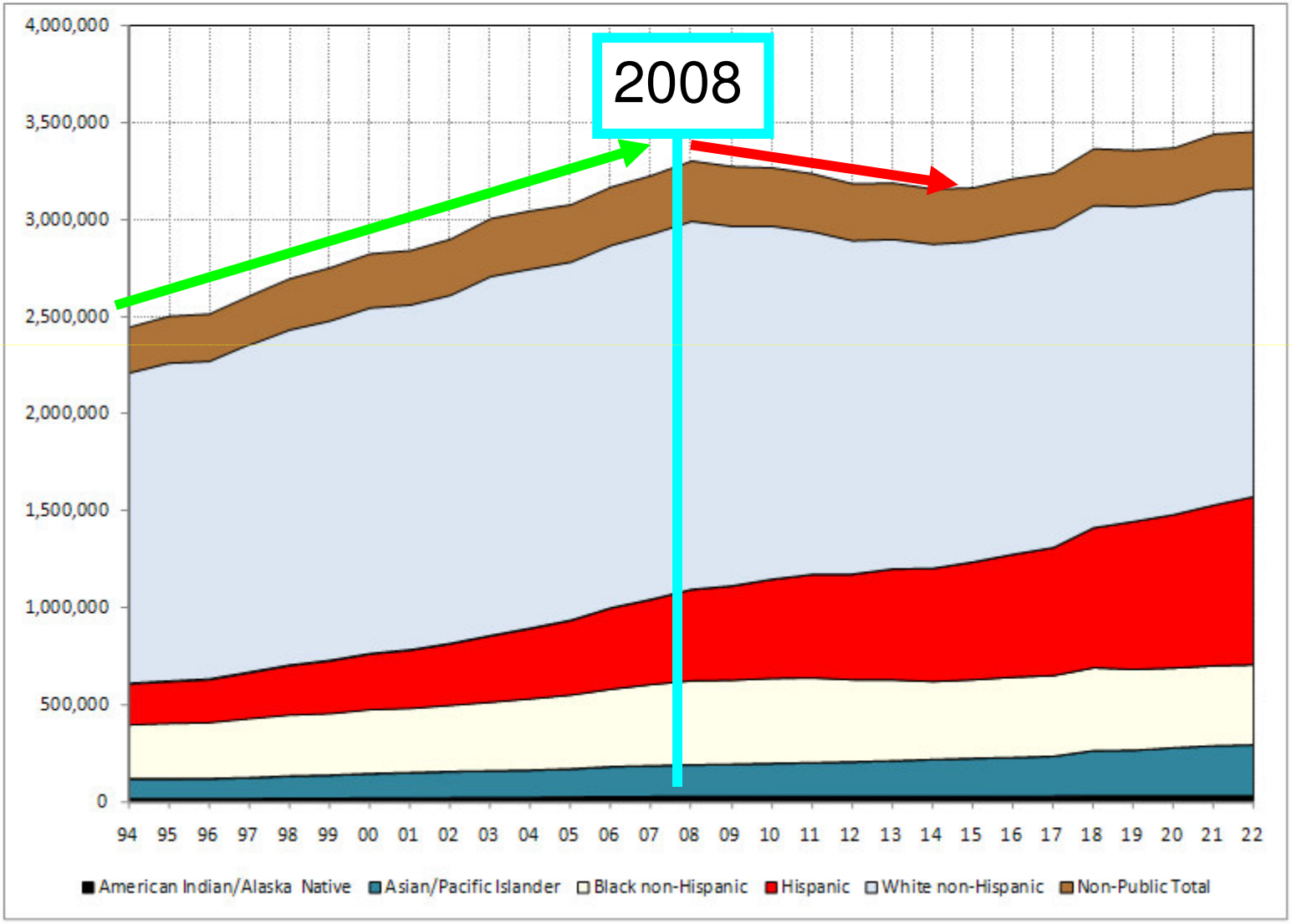
College Board Data from Web

CollegeBoard

Trends in Number of High School Graduates: National

Number of High School Graduates 1994-2022: United States

College Board Data from Web



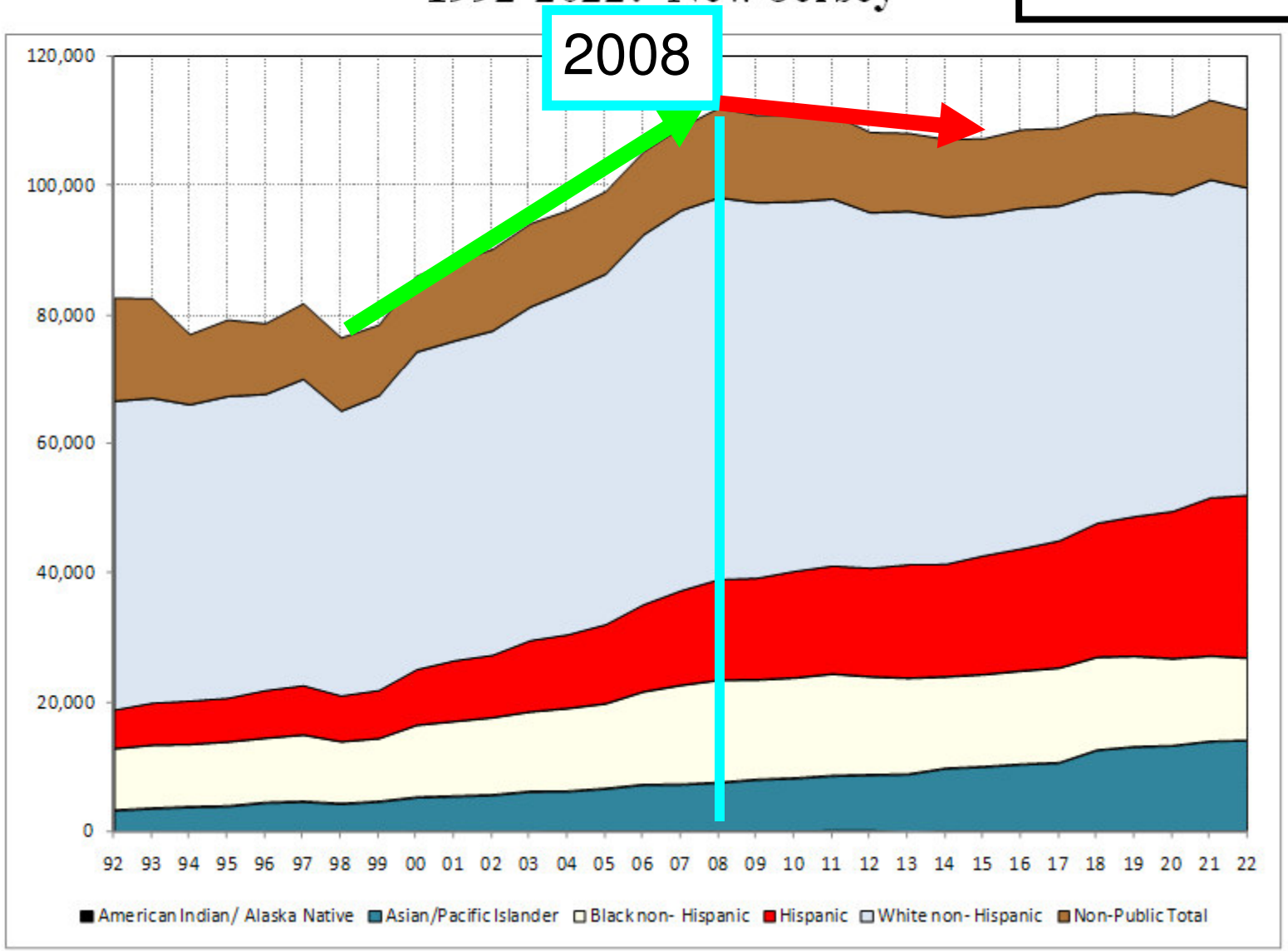
of high school graduates Go Bookmarks 2 blocked Check AutoLink AutoFill Send to number

tp://www.collegeboard.com/prod_downloads/highe...

Page

Number of High School Graduates, 1992-2022: New Jersey

College Board Data from Web



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"Using descriptors from the 16PF subscales, we found that Millennial students are more *warm and outgoing* (Warmth), more *abstract than concrete* (Reasoning), more *adaptive and mature* (Emotional Stability), *more dutiful* (Rule Consciousness), more *socially bold and adventuresome* (Social Boldness), more *sensitive and sentimental* (Sensitivity), more *self-doubting and worried* (Apprehension), more *open to change and experimenting* (Openness to Change), and more *organized and self disciplined* (Perfectionism) compared to Generation X medical students."
p. 574

Nichole J Borges et al. "Comparing Millennial and Generation X Medical Students at One Medical School. Academic Medicine; 81.6 (2006): 571-576

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"Furthermore, we found Millennial medical students to be less *solitary and individualistic* (Self Reliance) than their Generation X counterparts." 574

Note: this study looked at medical schools students:

Generation X	**born 1965 - 1980**
"Cuspars"	**born 1975 – 1980 (Gen X Subset)**
Millennials	**born 1981 - 1989**

Nichole J Borges et al. "Comparing Millennial and Generation X Medical Studetns at One Medical School. Academic Medicine; 81.6 (2006): 571-576

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"A number of studies, including new ones by the Center for American Progress in Washington and by Demos, a progressive think tank in New York, have shown that Americans in this age group [Millennials] are faced with a variety of challenges that are tougher than those faced by young adults over the past few decades. Among the challenges are worsening job prospects, lower rates of health insurance coverage and higher levels of debt."

Herbert, Bob. "Here Come the Millennials". New York Times; 13 May 2008 late ed. A21.

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More Choices - Selectivity	Digital Natives	More Friends	Huge Population
Personalization / Customization	Gamers	Respect Intelligence	Merit Systems
Collaborative / Social Networking	Practical / Achievement Oriented	Optimistic / Positive / Confident	Family Oriented / Largely Children of Divorce
Flexibility / Convenience	Nomadic	More Diverse / Inclusive	High Expectations (e.g. Incomes)
Read Less	Pull, not Push	Direct	Values
Experiential / Interactive Learners	Media Consumers	Patriotic / Civic Minded	Balanced Lives / Healthy Lifestyle
Impatient	Multitaskers	More Liberal	Social Involvement

Millennial Characteristics

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MILLENNIAL CHARACTERISTICS

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For more information on how these Millennial behaviors, characteristics, and preferences were discovered from the research please see my website.
http://library1.njit.edu/staff-folders/sweeney/

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"We have no patience. The Gen Y consumer is brand-and–store loyal", she said, "but the store must provide choices and have them in stock, or they will go elsewhere."

Lillo, Andrea. "Young consumers tell it 'straight' " Home Textiles Today; High Point; May 27, 23.38 (2002): 6

More Choices

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"Trouble is, the world is full of too many choices [even the cereal aisle can "turn into a painful decision process"]…. And as Healy describes, they also have a lot more choices. This generation has the luxury of living with their parents until they get on their feet, can start their own company, and can take time to travel, notes Penelope Trunk, columnist, blogger, and author of Brazen Careerist [Warner Business Books, 2007]." p. 6

McCormack, Karyn. "Careers: The Goods on Generation Y". Business Week Online, 25 June 2007: 6

More Choices

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"The secret to creating a thriving Long Tail business can be summarized in two imperatives

1. Make everything available
2. Help me find it." p. 217

Anderson, Chris. The Long Tail: Why the Future of Business Is Selling Less of More New York: Hyperion, 2006

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"*Millennials* aren't interested in the financial success that drove the boomers or the independence that has marked the gen-Xers, but in careers that are *personalized*."

Sacks, Danielle. "SCENES from the culture clash". Fast Company, 102 (2006) 72-77

Personalization - Customization

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"Millions of *millennials* are logging onto social networks like imeem and iLike, which allow visitors to discover new music and recommend it to their friends. Millions more are flocking to online radio stations such as Pandora Radio, where you can create your own personalized stations."

Burrows, Peter. "Stars Are Aligning for Subscription Music". Business Week; 12/17/2007 Issue 4063, p066-067, 2p, 2c

Personalization - Customization

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"Research shows that customized and *personalized* rings are hugely popular among *Millennials*."

Heebner, Jennifer . "*Millennials* Get Married". JCK; Jan2005, Vol. 176 Issue 1, p70-73, 4p

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"Because of their collaborative upbringing, law students of the Millennial generation thrive on interactive lessons." p. 12

"Is Your Firm Ready to Make Learning High-Tech & Fun?" Compensation & Benefits for Law Offices; Aug2007, Vol. 7 Issue 8, p1-15, 5p

Collaborative / Social Networking

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"Lyons believes that there is an increasing need for a *collaborative* business model which focuses on geographically dispersed teams. She feels that Generation Yer's fondness of *collaborative* environments will increase productivity in companies who embrace these environments."

p. 4

Lyons, Martha. "Career Watch". Computerworld; 1/22/2007, Vol. 41 Issue 4, p39-39, 3/4p

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"Schools should also use digital technologies to encourage team-based learning. Digital Natives are proving, all the time, that they can build communities around ideas, good and bad.

Pauley, John and Urs Gasser. Born Digital: Understanding the First Generation of Digital Natives. New York: Basic Books, 2008

Collaborative / Social Networking

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"First, it's where Gen Y is, and the overwhelming feedback from RBC research last year was "they said you have to be where we are, which is online." Second, Facebook provides a mechanism for youngsters to circulate Royal Bank information to their group.

Social networking is the key distinction between Gen Y and other generations, including the relatively techie Gen X, says Barkwell."

O'Sullivan, Orla. "Getting real with Gen Wired". ABA Banking Journal, Nov2007, Vol. 99 Issue 11, p48-50,

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"Along with differences in attitudes, millennials exhibit distinct learning styles. For example, their learning preferences tend toward teamwork, **experiential** activities, structure and the use of technology. Their strengths include **multitasking**, **goal orientation**, positive attitudes, and a **collaborative** style."

Oblinger, Diana. "Understanding the New Student." Educause Review, 38.3 (2003): 36-42.

Collaborative / Social Networking

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"Today Millennials demonstrate a renewed sense of interest in contributing to the collective good and are volunteering for community service and joining organizations in record numbers. Described as sociable, confident, optimistic, talented, well-educated, collaborative, open-minded, and achievement-oriented, members of the Millennial *Generation* are being welcomed into the workplace as shortages exist in numerous settings (Raines, 2003). "

Oblinger, Diana. "Understanding the New Student." Educause Review, 38.3 (2003): 36-42.

Collaborative / Social Networking

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"Gens X and Y insist on the time to enjoy life and care for their families, and they demand the balance and flexibility to do so."

Molas, Sandra A. "*Flexibility* becoming the Norm in the Workplace: Is Your Firm Stretching to Meet the Demand?". Pennsylvania CPA Journal; Fall 2006, Vol. 77 Issue 3, p28-30, 3p

Flexibility / Convenience

"They want a great deal of **flexibility** without commitment. They like to switch." p. 12

Cameron, Alan. "Maxing with the Millennials" GPS World; December 2007, Vol. 18 Issue 12, p10-12

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"50% say having flexibility in planning a career around major life events is the most important element for achieving a good balance between a career and personal life."

p. 4

Ernst and Young, Canada. "Sixty-five Per Cent of College Students Think They Will Become Millionaires." 2001. Press Information Worldwide. 3/14/05. http://www.pressi.com/us/release/35870.html

Flexibility / Convenience

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"When you look at the generation coming up now, I think the thing that generation will value more than anything is flexibility," Friedman said. "People want to have a more balanced life."
p.15

Rulison, Larry. "Gen Y in search of flexibility". Philadelphia Business Journal. 22.31 Sep 19, (2003). 15

Flexibility / Convenience

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"In short, the future of the U.S. News industry is seriously threatened by the seemingly irrevocable move by young people away from traditional sources of news."

Merrril Brown, "Abandoning the News." Carnegie Reporter 3.2 (Spring 2005)

Read Less

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"Main Purposes of the Library – By Age of U.S. Respondent

	U.S. 18-24	U.S. 25-64
Information	49%	56%
Books	32%	26%
Research	20%	15%

Millennials

Mostly Older Generations

De Rosa, Cathy et. al. Perceptions Of Libraries and Information Resources; A report to the OCLC membership. Dublin, OH OCLC Online Computer Library Center, Inc. 2005

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"Over the past 20 years, young adults (18-34) have declined from being those most likely to read literature to those least likely (with the exception of those 65 and older. The rate of decline for the youngest adults, aged 18 to 24 was 55 percent greater than the total adult population."

Hill, Kelly. "Reading at Risk; A Survey of Literary Reading in America" National Endowment for the Arts Research Division Report, 46 (June 2004)

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Impatient	Multitaskers

"Time, location, and interaction are the critical components of mobile usage for millennials." p. 10

Cameron, Alan. "Maxing with the Millennials" GPS World; December 2007, Vol. 18 Issue 12, p10-12

Experiential / Interactive

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"The average college class has minimal interaction; estimates are that students ask 0.1 question per hour and that faculty ask 0.3. By contrast, students in tutored sessions ask 20-30 questions, and tutors ask more than 100. In computer based instruction, the number of questions posed to students per hour ranges from 160 to 800." p. 70 Diana Oblinger VP, Educause

Diana G. Oblinger, "Learners, Learning and Technology", Educause Review 40.5 September/October 2005 66-75

Experiential / Interactive

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"We are a generation of learners by exploration. My first Web site, for example, was constructed before I had any concept of HTML or Java. I simply experimented with the commands until the pieces fit together."

Note: this article published by a Millennial

Windam, Carrie "Father Google and Mother IM: Confessions of a Net Gen Learner". EDUCAUSE Review, 40.5 (2005): 42–59.

Experiential / Interactive

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"Interaction and a sense of community are the key requests of those born digital when it comes to online learning, as surveys indicate." p. 248

[citing Joel Hartman, Patsy Moskal, and Chuck Dziuban,"Preparing the Academy of Today for the Learner of Tomorrow". In Diana G. Oblinger and james L. Oblinger, ed.s Educating the Net Gegeneration (Boulder: Educause, 2005), pp. 6.6-6.10

Pauley, John and Urs Gasser. Born Digital: Understanding the First Generation of Digital Natives. New York: Basic Books, 2008

Experiential / Interactive

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"Even if the lecturer is charismatic, holding the attention of several hundred students for an entire lecture of fifty minutes or longer is impossible."
p.15

Foreman, Joel. "Next-Generation Educational Technology Versus the Lecture." Educause Review. 38.4 (2003) 12-22

Experiential / Interactive

Richard Sweeney sweeney@njit.edu 973-596-3208

"To bridge this gap [i.e. digital divide], schools should encourage kids to learn by doing in digital environments.
…The idea is to build on their penchant for developing online profiles and other materials in MySpace, Facebook, blogs, and YouTube." p. 247-248

Pauley, John and Urs Gasser. Born Digital: Understanding the First Generation of Digital Natives. New York: Basic Books, 2008

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"The ideal learning situation:
1…customized to the very specific needs of the individual.
2…provides students with immediate feedback.
3...is constructive ..to explore learning environments (preferably multi sensorial)...
4…motivates students to persist far in excess of any externally imposed requirements.
5…builds enduring conceptual structures." p.14

Foreman, Joel. "Next-Generation Educational Technology Versus the Lecture." Educause Review. 38.4 (2003) 12-22

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More Choices - Selectivity	Digital Natives
Personalization / Customization	Gamers
Collaborative / Social Networking	Practical / Achievement Oriented
Flexibility / Convenience	Nomadic
Read Less	Pull, not Push
Experiential / Interactive	Media Consumers
Impatient	Multitaskers

"For these new 20-something workers, the line between work and home doesn't really exist. They just want to spend their *time* in meaningful and useful ways, no matter where they are." p57

Trunk, Penelope. "What Gen Y Really Wants." Time South Pacific (Australia/New Zealand edition); 7/16/2007 Issue 27, p57-57, 1p

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"Average Monthly Calls Made/Received and Text Messages Sent/Received per US Mobile Phone Subscriber, by Age, Q2 2008"

Ages	Calls	Texts	Ratio
<12	137	425	3.1
13-17	231	1742	7.5
18-24	265	790	2.9
25-34	239	331	1.4
35-44	223	236	1.0
45-54	193	128	.7
55-64	145	38	.3
65-	99	14	.1

eMarketer Inc. "Why Talk When You Can Text?" September 22, 2008
http://www.emarketer.com/Articles/Print.aspx?id=1006604&src=print_article_graybar_article&xsrc=print1_articlex

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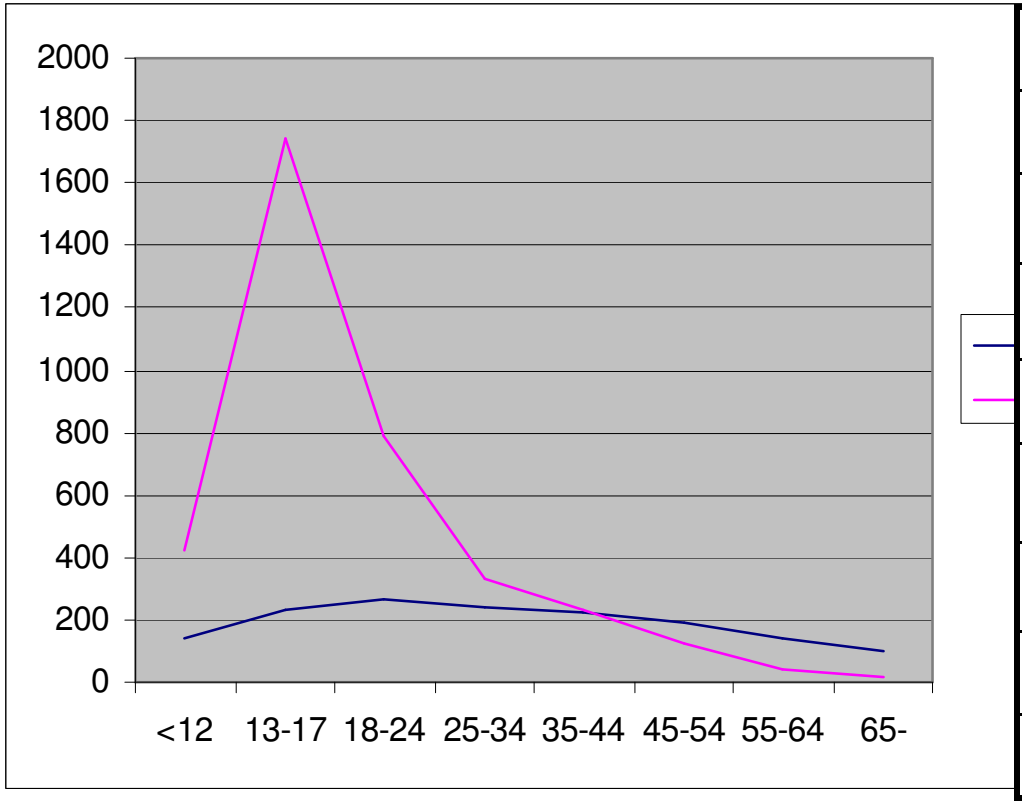

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"We want everything to be easy, and we want it now," said Katie Smith, a student at the University of Florida. "We have no patience."
p.6

Lillo, Andrea. "Young consumers tell it 'straight' " Home Textiles Today; High Point; May 27, 23.38 (2002): 6

Impatience; Easy

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"Busy Around the Clock

"Millennial teens may be America's busiest people.

Long gone are the days of Boomer kids being shooed outside to invent their own games – or of GenXer Kids being left "home alone" with a "self-care" guide." p. 45

Howe, Neil and William Strauss. Millennials Go To College. Washington, DC: American Association of Collegiate Registrars, 2003.

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" 'Nothing infuriates us more than busywork,' says 24-year-old Katie Day, an assistant editor at Berkley Publishing, a division of Penguin Group USA. Fearlessness ? "I don't have time to be intimidated," says Anna Stassen, a 26-year-old copywriter at the advertising agency Fallon Worldwide who treats her bosses like 'the guys'."

Sacks, Danielle. "SCENES from the culture clash". Fast Company, 102 (2006) 72-77

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Impatient	Multitaskers

"Technology is a huge force in shaping the way Millennials consume as well as "commune" with media." p. 11

Mumford, David E. "Make a Connection With Tech-Savvy Millennials". Television Week; 11/13/2006, Vol. 25 Issue 43, p11-11

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"And we will never understand or use the technology in precisely the same way as the Natives do."

This distinction is critical in education, because we are currently in a time where all our students are DIGITAL NATIVES, yet the bulk of our educators, teachers, administrators and curriculum developers are Digital Immigrants." p. 3

Prensky, Marc. "Use Their Tools! Speak Their Language!" Marc Prensky. March 2004. http://www.marcprensky.com/writing/Prensky-Use_Their_Tools_Speak_Their_Language.pdf

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"The most important thing that schools can do is not to use technology in the curriculum more, but to use it more effectively. We ought to experiment with ways in which technology ought to be part of the everyday curricula in schools—but only where it belongs." p. 247

Pauley, John and Urs Gasser. Born Digital: Understanding the First Generation of Digital Natives. New York: Basic Books, 2008

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"Gen Y was socialized in a digital world. It is more than technically literate; it is continually wired, plugged in, and connected to digitally streaming information, entertainment, and contracts." p. 6

Eisner, Susan P. "Managing Generation Y". SAM Advanced Management Journal Autumn 2005 70:4 p4-15

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"While most respondents are enthusiastic IT users and use it to support many aspects of their academic lives, most prefer only a 'moderate' amount of IT in their courses (59.3 percent)". p. 13

Salaway, Gail et al. ECAR Study of Undergraduate Students and Information Technology, 2007 Boulder, Colorado: EDUCAUSE Center for Applied Research, 2007 (www.educause.edu/ecar)

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"Within the instant messaging Gen Y (18-27 years) age group, 46% report using IM more frequently than email."

p. iii

Shiu, Eulynn and Amanda Lenhart. "How Americans use instant messaging". Pew Internet and American Life Project 9/1/2004 http://www.pewinternet.org/PPF/r/133/report_display.asp

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"35% or the largest portion of those who IM for about an hour are Gen Y-ers. In contrast, the greatest percentage of instant messengers who IM for less than 15 minutes consist of Trailing Boomers (26%)." p.iii

Shiu, Eulynn and Amanda Lenhart. "How Americans use instant messaging". Pew Internet and American Life Project 9/1/2004 http://www.pewinternet.org/PPF/r/133/report_display.asp

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"Again this year, they overwhelming (85.1 percent) favor e-mail for official college and university communications". p. 12-13`

Salaway, Gail et al. ECAR Study of Undergraduate Students and Information Technology, 2007 Boulder, Colorado: EDUCAUSE Center for Applied Research, 2007 (www.educause.edu/ecar)

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Read Less	Pull, not Push
Experiential / Interactive	Media Consumers
Impatient	Multitaskers

“ ‘The most important things to remember are: multi-player, creative, challenging, and competitive.’
-*a high school student*” p. 1

Prensky, Marc. “Use Their Tools! Speak Their Language!” Marc Prensky. March 2004. http://www.marcprensky.com/writing/Prensky-Use_Their_Tools_Speak_Their_Language.pdf

Gamers

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"So we now have a generation of students that is better at taking in information and making decisions quickly, better at multitasking and parallel processing; a generation that thinks graphically rather than textually, assumes connectivity, and is accustomed to seeing the world through a lens of games and play."
p. 3

Prensky, Marc. "Use Their Tools! Speak Their Language!" Marc Prensky. March 2004. http://www.marcprensky.com/writing/Prensky-Use_Their_Tools_Speak_Their_Language.pdf

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"The real question is: Does the behavior of this new group [gamers] change the world in any way that really matters?

If you're in business today, the answer is clearly yes." p. 1

Beck, John C., and Mitchell Wade. Got Game: How the Gamer Generation is Reshaping Business Forever. Boston: Harvard Business School Press, 2004.

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"How hard this new cohort works, how they try to compete, how they fit into teams. How they take risks – all are different in statistically verifiable ways. And those differences are driven by one central factor: growing up with video games."
p. 2

Beck, John C., and Mitchell Wade. Got Game: How the Gamer Generation is Reshaping Business Forever. Boston: Harvard Business School Press, 2004.

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"The important thing for business professionals to know about games isn't whether someone plays them now, but whether he or she *grew up playing them*."

p. 25

Beck, John C., and Mitchell Wade. Got Game: How the Gamer Generation is Reshaping Business Forever. Boston: Harvard Business School Press, 2004.

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"So we now have a generation of students that is better at taking in information and making decisions quickly, better at MULTITASKING and PARALLEL PROCESSING; a generation that THINKS GRAPHICALLY rather than textually, assumes connectivity, and is accustomed to seeing the world through a lens of games and play."
p. 3

Prensky, Marc. "Use Their Tools! Speak Their Language!" Marc Prensky. March 2004. http://www.marcprensky.com/writing/Prensky-Use_Their_Tools_Speak_Their_Language.pdf

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Impatient	Multitaskers

"In teams, Nexters can be very effective, but they want a strong leader for guidance and well defined goals, she says."
[Loyalty Factor President Dianne Durkin]
p.18

Marshall, Jeffrey. "Managing Different Generations at Work". Financial Executive. July/Aug 2004 20:5 1p.

Practical / Achievement Oriented

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"Gen Y employees are goal-oriented and have high expectations of themselves. They're high-performers, competitive, and seek tasks with tight deadlines that reward and acknowledge their efforts. They take ownership of their work, value individualized goal setting, and seek new skills."
p. 1

Understand Gen Y Employees". Credit Union Magazine; April 2006 72:6 p.70

Practical / Achievement Oriented

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Impatient	Multitaskers

"Time, location, and interaction are the critical components of mobile usage for millennials." p. 10

Cameron, Alan. "Maxing with the Millennials" GPS World; December 2007, Vol. 18 Issue 12, p10-12

Nomadic / Mobile

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More Choices - Selectivity	Digital Natives
Personalization / Customization	Gamers
Collaborative / Social Networking	Practical / Achievement Oriented
Flexibility / Convenience	Nomadic
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Experiential / Interactive	Media Consumers
Impatient	Multitaskers

"…selling effectively to our New *Millennial* prospect requires that you become a non-stressful provider of information, because New *Millennials* are over-stressed and over-scheduled. You'll need to highlight peer-to-peer testimonials, because New *Millennials* seek that approval." p. 9

Stein, Dave. "Selling Across **Generation** Gaps". **Sales & Marketing Management**; Oct 2007, Vol. 159 Issue 8. p9-9.

Pull, not Push

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"Word-of-mouth is a strong motivator with *Millennials*. According to the survey, word-of-mouth is the most common reason for *Millennials* to visit a Web site. A television ad was the second-most-common reason. "

Millennials claim to tell 17.7 people about things of interest to them. In the survey, the average respondent replied at a rate of 9.7, meaning *Millennials* spread word-of-mouth to 82 percent more people than the average respondent. p. 68

Dominiak, Mark. "*'Millennials' Defying the Old Models. Find More Like This".* Television Week; 5/7/2007, Vol. 26 Issue 19, p68-68, 1p, 1c

Pull, not Push

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"In the inversion of power that has accompanied the user-driven web—individuals trusted more, institutions trusted less---the most effective messaging comes from peers. Nothing beats word of mouth, and as we've seen, the Web is the greatest word-of-mouth amplifier the world has ever seen.

p. 229

Anderson, Chris. The Long Tail: Why the Future of Business Is Selling Less of More New York: Hyperion, 2006

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"Millennials, however, do not view the online space in any way, shape or form as a conventional *media* channel.

…Millennials, therefore, invest 50 percent more time with user-generated content than the average user. " p. 68

Dominiak, Mark. "*'Millennials' Defying the Old Models. Find More Like This".* Television Week; 5/7/2007, Vol. 26 Issue 19, p68-68, 1p, 1c

Media Consumers

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".. A recent Kaiser Family Foundation report, "Generation M: Media in the Lives of 8- to 18-Year-Olds," found that **students who use media the most also spend more time with family, friends**, and other activities. That may explain the need to do many things at once." p. 33

McHale, Tom. "Portrait of a Digital Native" Technology & Learning, 26.2 (2005) 33-34

Media Consumers

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"Because they are all about media, and boy, do they consume it. They use media differently than you or I, to paraphrase F. Scott Fitzgerald. They consume content in their own way." p. 10

Cameron, Alan. "Maxing with the Millennials" GPS World; December 2007, Vol. 18 Issue 12, p10-12

Media Consumers

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"Media influences: Baby Boomers rely on traditional media such as

television
(50 percent boomers, 27 percent Generation Y)

and newspapers (19 percent versus 6 percent),

while Generation Y business owners rely on the Internet for news (31 percent versus 9 percent of Boomers)." p. 15

"Boomers vs. Gen Y". Community Banker; Sep2007, Vol. 16 Issue 9, p15

The favorite online Millennial environment, is virtual, interactive, multimedia, full motion, personalized, customized, and socially

Media Consumers

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Read Less	Pull, not Push
Experiential / Interactive	Media Consumers
Impatient	Multitaskers

"In a phrase, they are the multiplexed generation or Generation MUX… The members of Generation MUX have adapted to that digital flow. They multitask better than their predecessors did."
p. 42

Harney, Ken. "Generation MUX" Where will we find tomorrow's best IT workers? . InfoWorld. 7/18/2005, Vol. 27 Issue 29, p42-42

Multitaskers

"IM-ers are multi-taskers.

32% of IM users say they do other things on their computer such as browsing the web or playing games *virtually every time* they are instant messaging and another 29% are doing something else some of the time they are IM-ing. p. iv

Shiu, Eulynn and Amanda Lenhart. "How Americans use instant messaging". Pew Internet and American Life Project 9/1/2004 http://www.pewinternet.org/PPF/r/133/report_display.asp

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"It's the way we've all come to be raised," says Fear, a senior at Hunterdon Central Regional High School in Flemington, New Jersey. She is a member of the National Honor Society, student leader of the local Amnesty International chapter, and president of the school's International Thespian Society. "There's a lot of work we're expected to do. You have to multitask to get everything done. ”

McHale, Tom. “Portrait of a Digital Native” Technology & Learning, 26.2 (2005) 33-34

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"The great thinkers have decreed that we are now **incapable of concentrating** for a sustained period of time. We are suffering from what is known in philosophical circles as the channel-hopping, YouTube-trucking, Google-gorging, MySpace-sniffing, post-millennial, post-post-modern condition."

Hattenstone, Simon. "Quick-fix culture is no way to get a proper contest." The Guardian (London) - Final Edition, October 25, 2006 Wednesday, GUARDIAN SPORT PAGES; Pg. 12,

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Teaching-Centered	Learning-Centered
Deliver instruction	Produce learning
Transfer of knowledge from teacher to student	Discovery and construction of knowledge
Active faculty	Active students
One teaching style	Multiple learning styles
	Learning technologies development
Curriculum development	
Quantity and quality of resources	Quantity and quality of outcomes

Robert B. Barr and John Tagg, "From Teaching to Learning: A New Paradigm for Undergraduate Education," *Change*, vol. 27, no. 6 (November/December 1995): 12–25

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Teaching-Centered	Learning-Centered
Quality of faculty	Quality of students
Time held constant; learning varies	Learning held constant; time varies
Learning is linear and cumulative	Learning is a nesting and interacting of frameworks
Promote recall	Promote understanding
Faculty are lecturers	Faculty are designers of learning environments
Learning is competitive and individualistic	Learning is cooperative and collaborative

Robert B. Barr and John Tagg, "From Teaching to Learning: A New Paradigm for Undergraduate Education," *Change*, vol. 27, no. 6 (November/December 1995): 12–25

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Learning Strategies for Millennials:

1. Increase teacher – student interaction; feedback
2. Engage students (motivation; involvement)
3. Accelerate student learning
4. Increase experiential learning (gaming; simulations, role playing)
5. Increase learning options
6. Increase peer-to-peer (collaboration) learning
7. Offer more "pull" web based learning options
8. Offer more interactive multimedia learning.

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"Two proven innovation strategies are the common-course redesign strategy and the flex program and service redesign strategy. These strategies use IT innovatively to improve accountability-that is, to improve and account for institutional performance-whenever measurably improved academic results and reduced unit costs are simultaneous goals." p. 79

Graves, William. "Improving Institutional Performance through IT-Enabled Innovation". EDUCAUSE Review Nov/Dec 2005: 79-98

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"With a few important [IT] exceptions, these investments did not directly seek to reduce long-term unit costs and/or dampen spiraling tuition increases and, not surprisingly, did not do so whether or not they used technology to enable innovation. As a result, these "innovations" did not increase productivity but instead either added to long-term operating expenditures or proved unsustainable after the loss of special funding. p. 84

Graves, William. "Improving Institutional Performance through IT-Enabled Innovation". EDUCAUSE Review Nov/Dec 2005: 79-98

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“ Bankers don’t market “distance banking” or label customers as ‘traditional’ of ‘nontraditional’. They realize that different customers have different needs and preferences for obtaining services. Banks also know that time-shifted online self-service can reduce costs while increasing customer satisfaction, which is why they frequently offer incentives for self-service.”

p. 86

Graves, William. “Improving Institutional Performance through IT-Enabled Innovation”. EDUCAUSE Review Nov/Dec 2005: 79-98

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"To one degree or another, all thirty projects share the following six characteristics:

1. Whole course redesign
2. Active learning (learner centered)
3. Computer-based learning resources
4. Master learning (scheduled milestones for completion)
5. On-demand help
6. Alternative staffing (sometimes grad and undergrads)" p. 30

Twigg, Carol A. "Improving Learning and Reducing Costs: New Models for Online Learning". EDUCAUSE Review Sep/Oct 2003: 28-38

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"At UMass, attendance in the traditional format averaged 67 percent; in the redesigned course, attendance averaged 90 percent, which correlated significantly to performance on exams.

In addition exams no longer emphasize recall of factual material or definitions of terms; 67 percent of the questions now require reasoning or problem-solving skills, compared with 21 percent previously" p. 32

Twigg, Carol A. "Improving Learning and Reducing Costs: New Models for Online Learning". EDUCAUSE Review Sep/Oct 2003: 28-38

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"Preliminary results show that all thirty institutions reduced costs by about 40 percent on average, with a range of 20 to 84 percent."

p. 86

Twigg, Carol A. "Improving Learning and Reducing Costs: New Models for Online Learning". EDUCAUSE Review Sep/Oct 2003: 28-38

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"Currently in higher education, both on campus and online, we individualize faculty practice (that is, we allow individual faculty members great latitude in course development and delivery) and standardize the student learning experience (that, is we treat all students in a course as if their learning needs, interests, and abilities were the same). Instead we need to do just the opposite: individualize student learning and standardize faculty practice. " p. 38

Twigg, Carol A. "Improving Learning and Reducing Costs: New Models for Online Learning". EDUCAUSE Review Sep/Oct 2003: 28-38

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Examples:

- Managing the Digital Enterprise (Rappa-North Carolina State)
- Solar System Collaboratory (Colorado)
- Virtual chemistry experiments (Davidson)
- U.S. History Videos (History Channel)
- BoilerCast (Purdue - podcasts, vcasts)
- Game Based Learning Sites (Marc Prensky)
- Math Emporium (Virginia Tech)
- Building bridges (Civil Engineering-Nova)
- Physics Tutorial Modules Andersen Center (RPI)
- Collaborative Learning Table (RPI)
- Immediate stock market quotes (Yahoo Finance)
- SearchPath information literacy tutorial (Rutgers)

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More Choices - Selectivity	Digital Natives	More Friends	Huge Population
Personalization / Customization	Gamers	Respect Intelligence	Merit Systems
Collaborative / Social Networking	Practical / Achievement Oriented	Optimistic / Positive / Confident	Family Oriented / Largely Children of Divorce
Flexibility / Convenience	Nomadic	More Diverse / Inclusive	High Expectations (e.g. Incomes)
Read Less	Pull, not Push	Direct	Values
Experiential / Interactive Learners	Media Consumers	Patriotic / Civic Minded	Balanced Lives / Healthy Lifestyle
Impatient	Multitaskers	More Liberal	Social Involvement

Millennial Characteristics

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Thanks for your kind attention.

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THE EDGE IN KNOWLEDGE

- **Powerpoint (available at:**
- **http://library1.njit.edu/staff-folders/sweeney/**