

# The kids are alright – or are they?

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Jenn Horwath, Mohawk College  
Cynthia Williamson, Mohawk College  
WILU 2008

# Agenda

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## Technology Skills of Millennials

What does the literature say?

Survey says?

## Intelligence of Millennials

What does research and evidence say?

## Library Research Skills of Millennials

What does our Mohawk survey say?

# Our Hypothesis

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Mohawk students who are also Millennials (aka the 'Net Generation), that is students born after 1981, may be comfortable and even proficient in the use of technology for social communication and entertainment but these digital natives' technological proficiency does not extend to their information literacy or online research skills.

# What we hoped to learn

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To either debunk or find scholarly support for what Prensky and others say about Millennials' brains, intelligence and technology skills and use of Web 2.0 tools.

# Millennials

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What do the big names say?

Prensky

Abram

Oblinger

Sweeney

# Prensky and Digital Natives

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The overarching, much noted and much quoted idea:

“... there are important, never-before-seen differences between the generation that grew up with digital technologies (the natives) and the generation that grew up before these technologies (the immigrants)”

**(From Digital Natives, Digital Immigrants, 2001)**

# Prensky

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- 11 articles in Educause cite Prensky
- 32 hits in Academic Search Premiere
- Google Scholar search of Marc Prensky and Digital Natives: 215 results
- Quoted by leaders in our field: Stephen Abram, Diana Oblinger, Richard Sweeney
- Mohawk instructors consulted the essay in the Winter '08 semester

# Prensky

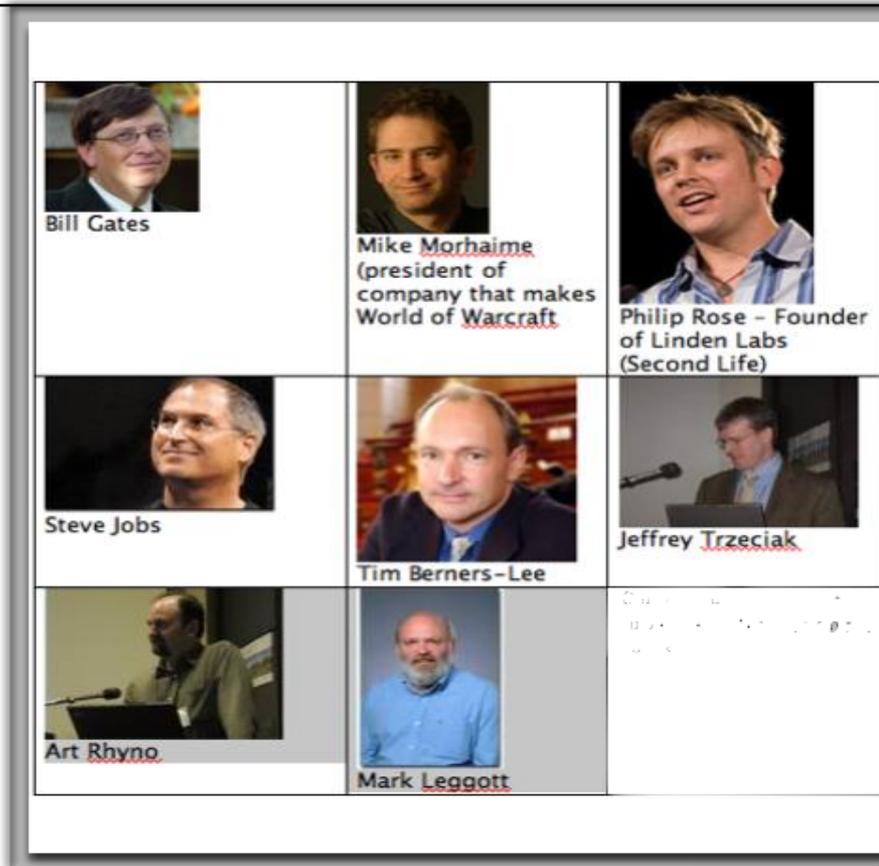
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“Someone once suggested to me that kids should only be allowed to use computers in school that they have built themselves. It’s a brilliant idea that is very doable from the point of view of the students’ capabilities.”

**(From Digital Natives, Digital Immigrants)**

# Millennials?

Do these men look like Millennials to you?



# Prensky

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“Students could quite feasibly invent technological solutions to streamline homework submission and correction, freeing up teachers for more meaningful work.”  
**(From Digital Natives, Digital Immigrants)**

# Prensky

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“All 21st century kids are programmers to some degree. Every time they download a song or ring tone or conduct a Google search, they are, in fact, programming.”

**(From Digital Natives, Digital Immigrants)**

# Oblinger

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“Having grown up with widespread access to technology, the Net Gen is able to intuitively use a variety of IT devices and navigate the Internet.”  
**(From: Is it Age or IT?: First Steps Toward Understanding the 'Net Generation.)**

# Abram

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“...there is a growing body of research that their IQs, their raw ability to access and use their intelligence has grown markedly and at a level of statistical significance. MRI studies of their brains show that they use a greater degree of their brains and have greater physical capacity through increased ganglia and folds of their brains.”  
**(From: Millennials: Deal with Them!)**

# Sweeney

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“...there are research findings showing that Millennials get higher scores on both SAT exams and standard IQ tests. Perhaps they are actually smarter...”

**(From: Reinventing Library Buildings and Services for the Millennial Generation)**

# Technology Skills of Millennials

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What do surveys find?



# Surveys

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ECAR

FIT

Colorado State

JISC/British Library

# ECAR Study of Undergraduate Students and Technology

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ECAR=Educause Centre for Applied Research  
Study is done annually and asks:

What kinds of technologies students use and what are their preferences?

With what level of skill are they using these technologies?

How does this use contribute to their undergraduate experience?

What value does the use of info tech add in terms of learning gains?

# ECAR, 2006

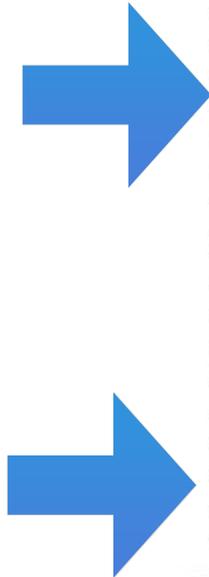
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- 4,374 students surveyed & interviewed
- 13 institutions in the US
- 95% of respondents were 25 years or younger & full time

# ECAR, Ownership of Devices

Table 4-1. What Electronic Devices Students Own

	N	Males	Females	All
<b>Type of electronic devices owned</b>				
Digital camera	28,234	65.9%	76.0%	72.3%
Personal computer—desktop	27,553	76.6%	68.0%	71.2%
Personal computer—laptop	27,436	65.7%	66.9%	66.4%
Electronic music/video device	28,129	62.1%	56.6%	58.6%
Electronic game device	28,013	65.9%	43.0%	51.5%
Wireless hub	27,847	45.3%	30.7%	36.1%
Personal digital assistant (PDA)	27,705	20.6%	12.9%	15.7%
Smart phone (combo cell phone/PDA)	27,638	10.7%	7.0%	8.3%
<b>Number of different types of electronic devices owned</b>				
None	213	0.6%	0.8%	0.7%
One device	1,844	4.8%	7.4%	6.4%
Two devices	4,421	12.4%	17.2%	15.4%
Three devices	6,921	20.5%	26.3%	24.2%
Four devices	6,702	23.5%	23.4%	23.4%
Five devices or more	8,522	38.1%	24.9%	29.9%
<b>Type of software purchased</b>				
Presentation software	28,241	52.7%	43.8%	47.1%
Spreadsheet software	28,295	54.3%	42.6%	46.9%
Video/audio software	28,078	46.8%	31.8%	37.4%
Graphics software	28,044	39.9%	27.8%	32.3%
Web page software	27,765	23.0%	12.1%	16.1%



# ECAR, Devices, cont'd

Table 4-2. What Electronic Devices Students Own, by Respondent Age

	18–19 (N = 10,084)	20–24 (N = 12,369)	25–29 (N = 2,387)	30–39 (N = 1,975)	40 and Older (N = 1,840)	All (N = 28,655)
Digital camera	69.0%	72.5%	73.8%	82.1%	76.6%	72.3%
Personal computer—desktop	62.3%	70.1%	82.0%	88.5%	91.8%	71.2%
Personal computer—laptop	76.4%	61.4%	60.3%	61.8%	57.1%	66.4%
Electronic music/video device	66.3%	58.5%	51.7%	48.7%	35.7%	58.6%
Electronic game device	56.7%	47.6%	54.9%	56.2%	39.0%	51.5%
Wireless hub	29.0%	38.6%	40.4%	44.7%	43.2%	36.1%
Personal digital assistant (PDA)	10.6%	15.8%	20.2%	26.4%	27.2%	15.7%
Smart phone (combo cell phone/PDA)	8.8%	7.2%	10.2%	10.1%	9.2%	8.3%



# ECAR, Use of Devices for Activities

Table 4-5. Student Use of Electronic Devices for Activities

IT-Related Activities	N	Students Engaged	Median Frequency of Use*	Factor 1	Factor 2
<b>Almost all Students Engaged</b>					
Create, read, send e-mail	28,612	99.9%	Daily		
Write documents for coursework	28,664	98.8%	Several times/week		
Use for course activities	28,607	98.5%	Several times/week	Senior	Engineering
Use library on university/college Web site	28,676	94.0%	Monthly	4-year institution	Social sciences
Create presentations (PowerPoint)	28,569	90.8%	Monthly	Senior	Business
<b>Most Students Engaged</b>					
Create spreadsheets or charts (Excel)	28,624	85.1%	Monthly	Senior	Business
Shop online	28,596	84.1%	Monthly	Senior	Male
As an in-class requirement	28,528	83.6%	Weekly	Senior	Engineering
Create, read, send instant messages	28,622	81.5%	Daily	Age (younger)	Reside on campus
Use course management system	28,663	75.0%	Several times/week	4-year institution	Senior

Play computer games	28,632	73.4%	Monthly	Male	Age (younger)
Online social network (facebook.com, etc.)	28,619	70.6%	Several times/week	Age (younger)	Reside on campus
Download Web-based music or videos	28,623	70.6%	Weekly	Age (younger)	Male
Create graphics (Photoshop, etc.)	28,634	68.0%	Monthly	Fine arts	Engineering
<b>Few Students Engaged</b>					
Online gaming (partypoker.com, etc.)	28,660	34.2%	Monthly	Male	Age (younger)
Blogging	28,510	28.6%	Monthly	Age (younger)	Fine arts
Create Web pages (Dreamweaver, etc.)	28,614	28.6%	Once per quarter/semester	Engineering	Male
Create audio/video (Director, iMovie, etc.)	28,588	27.7%	Once per quarter/semester	Male	Fine arts

\*The median is the midpoint in a series of numbers; half the data values are above the median, and half are below.

(1 = never, 2 = once a year, 3 = once per quarter/semester, 4 = monthly, 5 = weekly, 6 = several times per week, 7 = daily)

# They're not Super-users

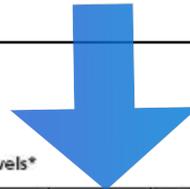


Table 4-7. Student Technology Skill Levels\*

	N	Minimal or No Use	Use Basic Features	Use Advanced Features	Factor 1	Factor 2
Online library resources	27,978	9.4%	46.9%	43.7%	Senior	Social sciences
Presentation software (PowerPoint, etc.)	27,433	14.0%	42.2%	43.7%	Business	Senior
Spreadsheets (Excel, etc.)	27,267	19.6%	41.9%	38.5%	Engineering	Business
Computer maintenance	27,405	20.1%	50.4%	29.5%	Male	Engineering
Computer security	27,563	20.1%	54.0%	25.9%	Male	Engineering
Course management system	26,023	34.3%	35.9%	29.9%	Male	Senior
Graphics (Photoshop, Flash, etc.)	25,373	41.5%	37.3%	21.2%	Engineering	Fine arts
Web pages (Dreamweaver, etc.)	24,740	73.6%	14.4%	12.0%	Male	Engineering
Video/audio (Director, iMovie, etc.)	24,740	74.0%	13.6%	12.4%	Male	Fine arts

\*Categories of skill: Minimal or No Use (very little or no use of basic features); Basic Features (use of some or all of the basic features, but not the advanced features); Advanced Features (full use of basic features and many or all of the advanced features).

# ECAR: Seniors more advanced than Freshmen



Table 4-8. Student Skills with Technology, by Class Standing\*

	N	Seniors		Freshmen	
		Use Basic Features	Use Advanced Features	Use Basic Features	Use Advanced Features
<b>Seniors report more advanced skill than freshmen</b>					
Online library resources	25,031	43.9%	50.0%	52.8%	36.9%
Presentation software (PowerPoint, etc.)	24,810	41.4%	49.4%	44.7%	38.6%
Spreadsheet software (Excel, etc.)	24,912	40.1%	45.6%	45.3%	29.1%
Course management system	24,243	35.7%	34.9%	38.3%	25.0%
Web pages (Dreamweaver, etc.)	25,183	17.4%	13.7%	10.6%	9.5%
<b>Seniors and freshmen report similar skill levels</b>					
Computer maintenance	24,289	50.2%	30.5%	51.4%	28.0%
Computer security	24,416	54.3%	26.2%	54.5%	25.6%
Graphics (Photoshop, Flash, etc.)	24,332	38.0%	21.7%	37.5%	20.3%
Video/audio (Director, iMovie, etc.)	25,173	14.2%	11.8%	13.3%	13.7%

\*Categories of skill: Basic Features (use of some or all of the basic features, but not the advanced features); Advanced Features (full use of basic features and many or all of the advanced features).

# Gamers may not be good students

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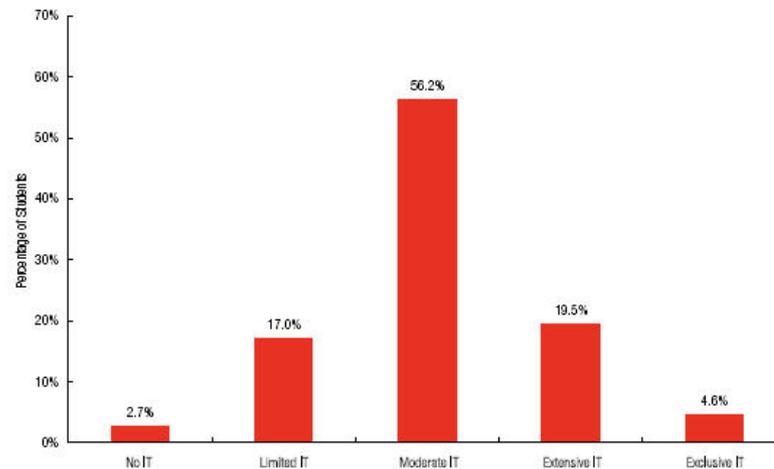
“...students with the lowest grade point averages (GPAs) spend significantly more time playing games.”

“Those respondents who reported frequent creation and exchange of instant messages, playing computer games, or downloading music or videos also reported achieving lower GPAs.”

**(From: Convenience and Control: How Students Use Technology)**

# ECAR: They don't need to be constantly wired

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# FIT Study

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Southwestern U. in Georgetown,  
Texas, 2001

Survey of 300 students in year 1-4,  
plus 20 interviews

# FIT: Mostly Basic Skill Levels

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- Skill levels were highest in the use of word processing, communications and the use of the Internet
- Skill levels were significantly lower for specialized applications such as spreadsheets and presentation software
- Also found much lower levels of skills in the maintenance of computers

# FIT

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“To say that our students, having grown up with digital media in their homes and schools, come to SU already equipped with skills and knowledge of information technology is a misconception.”

“They lack experience with and exposure to the other contemporary skills including working with spreadsheets and databases, networking and creating web pages.”

# Colorado State

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Colorado State University surveyed 2,102 students in 2001

“...the highest level of software use was for MS Office software and ... students had the least experience with programming.”

# Information Behaviour of the Researcher of the Future

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Study from JISC/British Library, January 2008

**“They are more competent with technology.”**

Their verdict: “Generally true, but we think older users are catching up fast. However, the majority of young people tend to use much simpler applications and fewer facilities than many imagine.”

# Information Behaviour of the Researcher of the Future

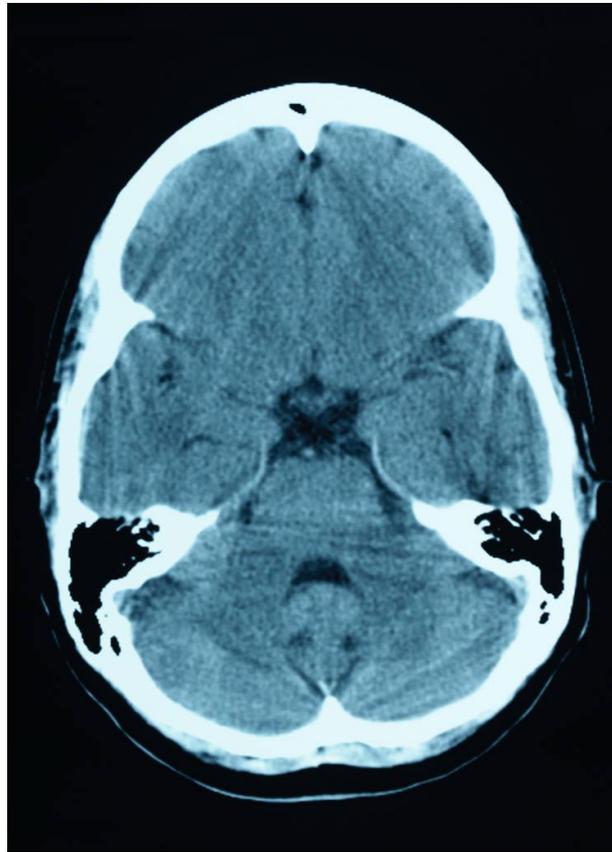
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**“They pick up computer skills by trial and error.”**

Their verdict: “This is a complete myth. The popular view that Google generation teenagers are twiddling away on a new device while their parents are still reading the manual is a complete reversal of reality.”

# Millennials' Intelligence and Brains

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# Abram

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“Secondly, there is a growing body of research that their IQs, their raw ability to access and use their intelligence has grown markedly and at a level of statistical significance. MRI studies of their brains show that they use a greater degree and balance of their brains and have greater physical capacity through increased ganglia and folds of their brains.”

**(From: Millennials: Deal with Them!)**

# Sweeney

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“...there are research findings showing that Millennials get higher scores on both SAT exams and standard IQ tests. Perhaps they are actually smarter...”

**(From: Reinventing Library Buildings and Services for the Millennial Generation)**

# IQs Going up?

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- IQ scores have been rising...
- Flynn Effect: an increase of 3-5 IQ points per decade in the last century discovered by James R. Flynn in 1987 (in 14 industrialized countries - beginning in 1917)
- “Gains in the neighbourhood of 18-20 points in a generation seem to be quite typical in many industrialized countries” (Flynn, 1999)

# On Second Thought

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- The sheer size of the gains undermines the very concept of “general intelligence.”
- Flynn now concedes: “... the tests do not measure intelligence but only a sort of “abstract problem solving ability” with little practical significance.”

**(From: Rising Scores on Intelligence Tests, Ulric Neisser)**

# IQs Going Down?

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- Studies in Norway, Sweden and Denmark show that IQ scores are declining in birth cohorts 1940-1980, 1972-1977 and in 18-19 year olds tested in 2004 (Millennials). (Teasdale & Owen, 2005)
- "A complete cessation of [IQ] gains between the mid-1900s and 2002" has been noted in Norway. (Sundet et al, 2004)
- A study of intelligence of 6-11 year olds in Australia found results the same or lower than in 1975 (using Raven's Coloured Progressive Matrices Test). (Cotton et al, 2005)

# Prensky

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“It is very likely that our students’ brains have physically changed - and our different from ours.”  
(From Digital Natives, Digital Immigrants)

# Prensky

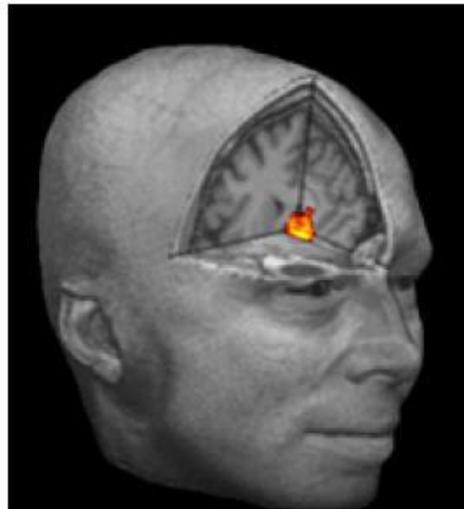
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“And while we haven’t yet directly observed Digital Natives’ brains to see whether they are physically different (such as musicians’ appear to be) the indirect evidence for this is extremely strong.”

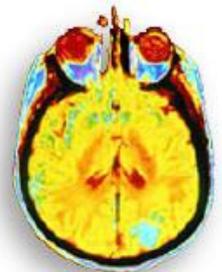
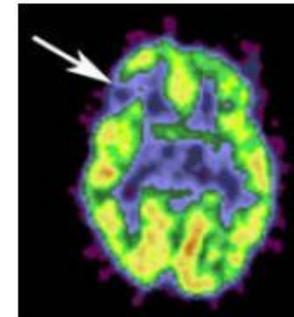
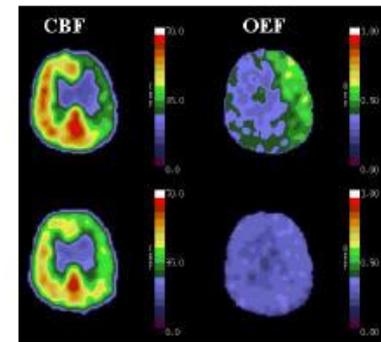
**(From: Do They Really Think Differently?)**

# Brain size and structure

- Millennials brain is used differently than Boomers brain



The Scary re-wiring of the Millennials and post-Millennials



# Brain Size and Structure

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Experience may shape brain structure  
- however there is very little evidence to suggest that brain structure is indicative of intelligence.

# Brain Size is NOT equated with Intelligence

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“Any program that seeks to relate brain weight, cranial capacity, or some other measure of overall brain size to individual performance ignores the reality of the brain’s functional diversity.”

**(From: Neuroscience, 2001)**

# Brain Changes

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- "... it is not apparent whether new genetic adaptations discovered in human brains have any effect on brain size, or intelligence." (Inman, 2005)
- "Many researchers doubt there is any mechanism by which nature could be selecting for greater intelligence today, because they believe culture has effectively blocked the action that natural selection might have on our brains." (Inman, 2005)

# Millennials and Web 2.0

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What are they doing  
with 2.0  
Technologies?



# Prensky

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“Our young people ... [are] busy adopting new systems for communicating (instant messaging), sharing (blogs), buying and selling (eBay), exchanging (peer to peer technology), creating (Flash), meeting (3D worlds), collecting (downloads), coordinating (wikis), evaluating (reputation systems), searching (Google), analyzing (SETI), reporting (camera phones), programming (modding), socializing (chat rooms), and even learning (Web surfing)”

# Oblinger

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"A junior at the university, Eric wakes up and peers at his PC to see how many instant messages (IMs) arrived ... Several attempts to reach him are visible on the screen, along with various postings to the blog he's been following... he pulls up an eclectic mix of news, weather and posts on the homepage he customized using Yahoo ... he switches back and forth between the paper [he's writing] and Internet-based multiplayer game he's trying to win."

**(From: Is it Age or I.T.: First Steps toward Understanding the 'Net Generation. 2006. Oblinger & Oblinger)**

# The Push is to Be Where They Are

## Web 2.0 and Libraries: Best Practices for Social Software

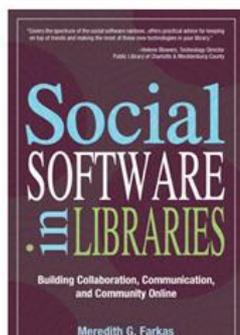
by Michael Stephens



*Web 2.0 & Libraries: Best Practices for Social Software*  
by Michael Stephens

**What can social software do for your library?** Library staffers like the ones at Ann Arbor District Library (AADL) in Ann Arbor, Michigan, can tell you. "Just a brief look at our Director's Blog will illuminate the fact that the blogs promote a constant two-way director, Josie I notes John Blyt and authors [Bly](#) take a look at that are staffer bright minds," h

AADL has realized social-software system with 46 served holding.



Meredith G. Forkas



## Library 2.0: A Guide to Participatory Library Service (Paperback)

by Michael E. Casey and Laura C. Savastinuk (Author)

[Write a review](#) (1 customer review)

List Price: \$29.50

Price: **\$29.50** & this item ships for FREE with Super Saver Shipping. [Details](#)

Availability: In Stock. Ships from and sold by Amazon.com. Gift-wrap available.

13 used & new available from \$23.50

## Web 2.0 & Libraries, Part 2: Trends and Technologies

by Michael Stephens

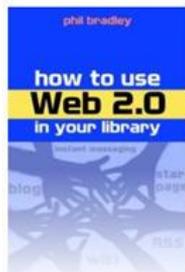


*Web 2.0 & Libraries, Part 2: Trends and Technologies*  
by Michael Stephens

Social software, more ubiquitous than ever, continues to have a profound impact on information and communication in the Information Age.

From the [American Library Association](#) to [social software news aggregation](#), it's clear the trend toward utilizing "Web 2.0" technologies for information and communication in the 21st century is growing stronger.

In "Web 2.0 & Libraries, Part 2: Trends and Technologies," librarian and educator Dr. Michael Stephens continues his 2.0 work and re-emphasizes the importance of libraries embracing this world of conversation, community, and



## How to Use Web 2.0 in Your Library (Paperback)

by Phil Bradley (Author)

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# MOHAWK

COLLEGE OF APPLIED ARTS AND TECHNOLOGY

LIBRARY@MOHAWK  
connect o learn o succeed

# Our Survey

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- Survey of 389 Mohawk College students, conducted Fall 2007
- Survey of 26 Questions in three parts:
  - Part One:** About You, program of study, year, gender, etc.
  - Part Two:** Your use of Computers and the Internet
  - Part Three:** About Your Use of the Library

# Our Survey

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- Used Survey Monkey
- Online for the month of October
- Incentives
- Promotion - website, in-library, class visits

# Students at Mohawk

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- 10,000 FTE (full time equivalents) students
- 5000 adult learners
- 3,180 apprentices

# Our Survey: Participants

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- Almost 85% of our respondents fall into the age range definition of a Millennial (18-24)
- 67.8% Female, 32.2% Male
- Majority full-time (89.5%), majority 63% in first semester
- Only 30.4% came to Mohawk from high school, another 31.3% had worked full-time, very few came from another college or university

# Participants – Where they filled out survey

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- online - library website: 83.3%
- in print - in the classroom: 1.5%
- in print - in the library: 15.2%

# Device Ownership

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Less than 10% have no portable communication or entertainment device

- iPod or mp3 player: 53%
- Cell phone with camera or cell phone with mp3: 44%
- Cell phone with no extra features: 27.1%
- Cell phone & camera & mp3 all in one: 22.2%
- No portable entertainment/communication device: 9.3%
- PDA or Palm Pilot or Blackberry: 4.6%

# How do they contact us?

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- **In-person: 56.7%**
  - “I do not contact the Library@Mohawk for help”: 22.1%
  - Library’s online chat plus service called Ask TheBrain: 14%
  - Phone: 4.9%
  - Chat using Yahoo!, MSN, AOL, or Google Talk: 2.3%

# Why Chat?

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- Vast majority use chat & IM for social reasons (82.8%)
- Only 17.2% use it for work (which we defined as: “to communicate with classmates, work colleagues, instructors, librarians, etc.)

# Web 2.0 - Are they There?

16. Social Tools: Which of the following have you done?							
Pick the choice that best describes your use of this technology							
	I don't know what this technology is	I know what this is but have not tried it	I tried this once, not interested in trying it again	I do this occasionally (less than 5 times per week)	I do this frequently (5-10 times per week)	I do this a lot (more than 10 times per week)	Response Count
A. Read a blog	6.9% (28)	25.7% (104)	20.5% (83)	<b>35.6% (144)</b>	5.9% (24)	5.2% (21)	404
B. Created a blog	7.2% (29)	<b>48.8% (197)</b>	22.8% (92)	17.8% (72)	2.0% (8)	1.5% (6)	404
C. Read the Library's blog (the BRAINblog)	12.6% (51)	<b>61.6% (249)</b>	7.2% (29)	15.8% (64)	1.7% (7)	1.0% (4)	404
D. Listened to a podcast	25.5% (103)	<b>39.9% (161)</b>	8.7% (35)	21.5% (87)	3.2% (13)	1.2% (5)	404
E. Created a podcast	28.2% (114)	<b>66.1% (267)</b>	4.0% (16)	1.0% (4)	0.2% (1)	0.5% (2)	404
F. Listened to the Library's podcast (BRAIncast)	30.9% (125)	<b>59.7% (241)</b>	4.0% (16)	4.0% (16)	0.7% (3)	0.7% (3)	404

# Creative Generation?

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- 71.6% have either tried blogging ONCE and are not interested in trying it again or know what it is but have NEVER tried it
- 1.7% read the library's blog frequently
- 25.5% reported not knowing what a podcast is
- 43.3% have never created a webpage (outside of Facebook & the like)

# Information Behaviour of the Researcher of the Future

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## **Quoting a Pew report:**

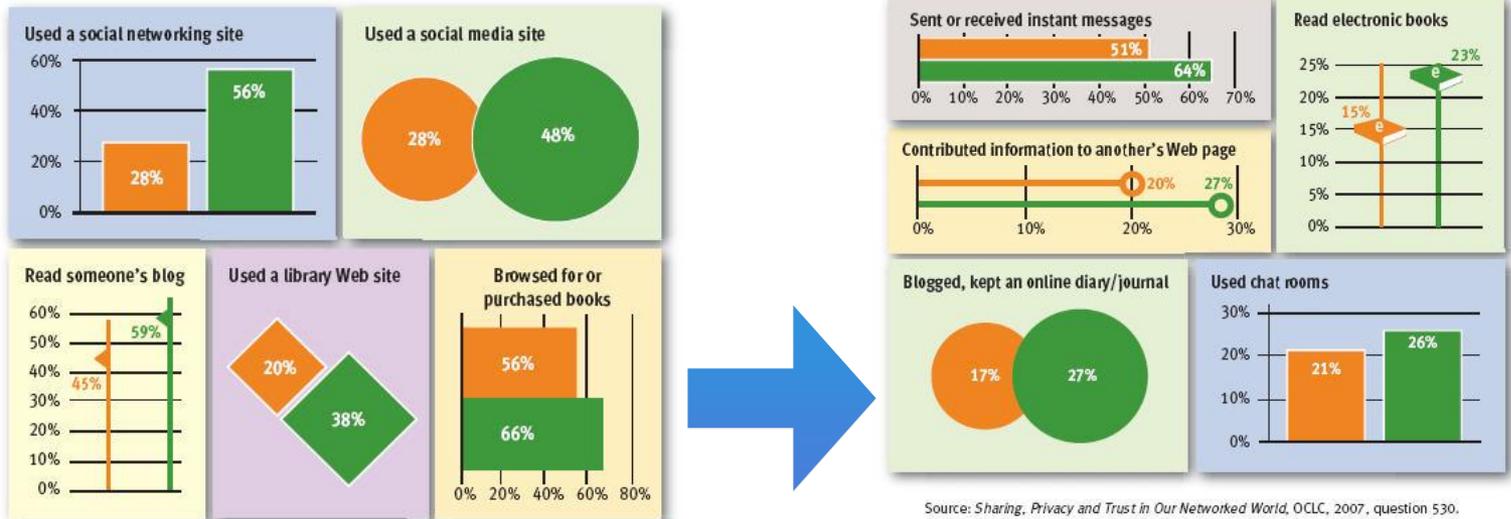
“...Wikipedia and YouTube both exhibit a marked age separation between viewers of content (mainly 18-24s) and content generators (mainly 45-54s and 35-44s) respectively.”

# Creative Generation?

## Online Activities

What type(s) of online activities have you done or participated in during the last 12 months?

■ Total General Public ■ College Students



Source: *Sharing, Privacy and Trust in Our Networked World*, OCLC, 2007, question 530.

# Creative Generation?

## PEW Study - Teens and Social Media

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- 28% of teens surveyed have created their own blog
  - Only 10% higher than general public (17%) (OCLC)
  - 27% of college students surveyed maintain their own blog

# Creative Generation?

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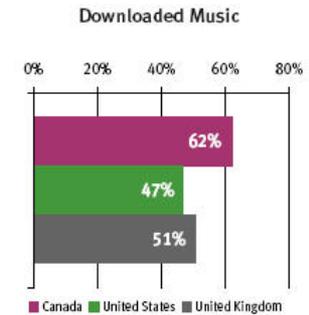
- University of Michigan, Oct. 2007
- Library Web Survey (330 students)
  - 80% of respondents have never written a wiki
  - 58% of respondents have never rated things
  - 70% of respondents have never tagged
  - 90% of respondents have not created a podcast
  - 80% of respondents have never blogged
  - 80% of respondents have never social bookmarked

# General Public (OCLC)

**31%**  
*of respondents  
age 50+ have  
read blogs;*

**40%**  
*have used  
instant  
messaging.*

**37%**  
*of American  
respondents  
have used  
a social  
networking site,  
the highest rate of any  
country surveyed.*



# OCLC

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## **Sharing, Privacy and Trust in our Networked World, 2007**

“Our research and other current studies ... suggest ... that due to the widespread adaptation of digital technologies over more than a decade, the behaviours and attitudes of these two technology generations are beginning to converge ... many digital immigrants are now fully indoctrinated into the culture.”

# They're Not all the Same

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“Each age cohort appears to have its technology champions who adapt early, with others following.”  
**(Horrigan, 2007)**

# Back to Mohawk: Sharing?

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- Almost half (48.5%) have either visited a photo sharing site once and are not interested in going back or have never visited a photo sharing site.
- 42% have never tried social bookmarking, another 40.5% don't know what it is

# Second Life?

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- 44.6% say they have never created an avatar in Second Life
- 47% say they have never visited the Library@Mohawk's Second Life site
- 45.3% say they don't know what Second Life is

# Got Game?

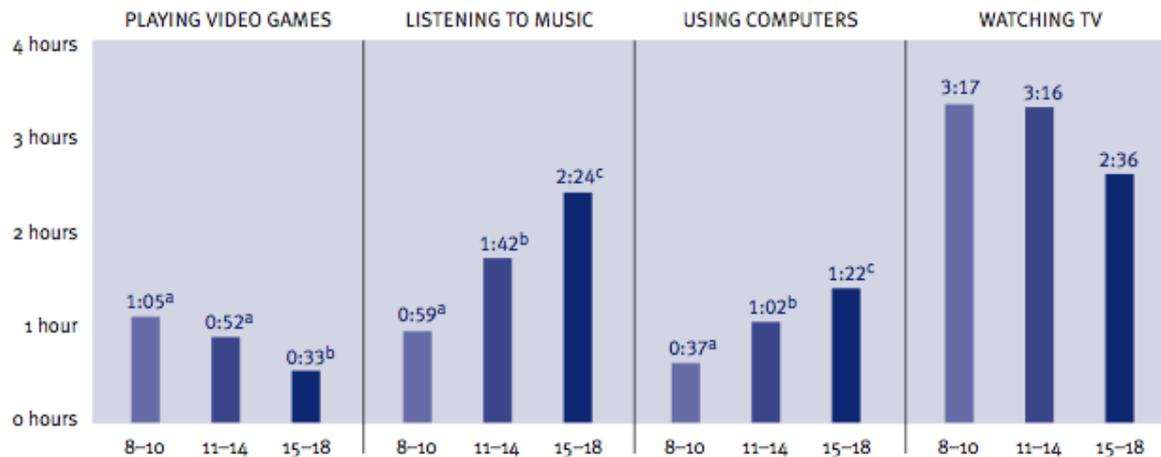
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- Just under half (44.8%) of Mohawk students claim to play video games less than 5 times per week
- 32% say they are not interested or have never played a video game
- 52.5% say they have never played a Massively Multi-player Online Game such as World of Warcraft
- 22% say they don't know what MMOGs are

# Other Findings about Gaming (Generation M, 2005)

## Differences in Media Use by Age

Average amount of time young people spend per day...



# Mohawk Survey: Personalization

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- 52.7% say they have never customized a webpage such as iGoogle or MyYahoo
- 36.9% say they have never used RSS feeds

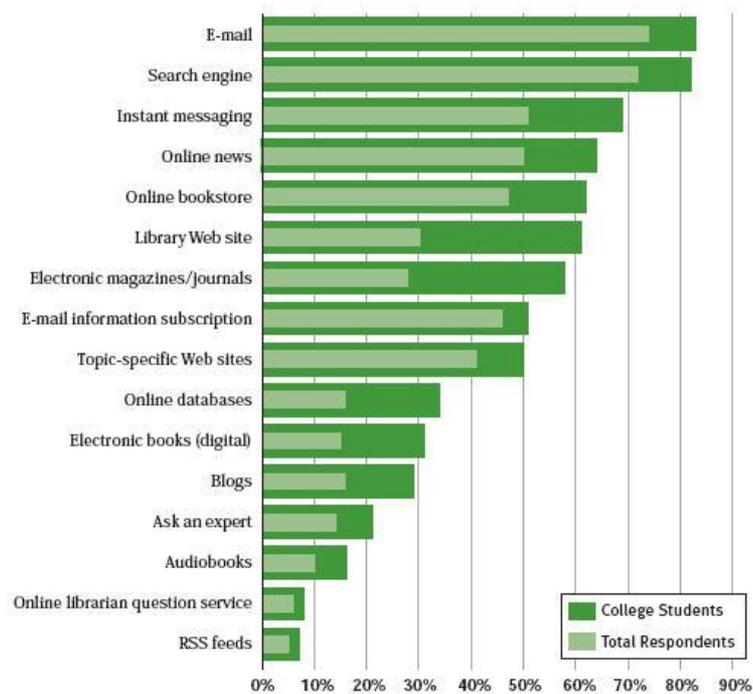
# OCLC & Personalization

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- 75% of Canadian college students surveyed had never heard of RSS feeds
- only 2% are extremely familiar with RSS feeds

## Usage of Electronic Resources— by College Students and Total Respondents

Please indicate if you have used the following electronic information sources, even if you have used them only once.



Source: *Perceptions of Libraries and Information Resources*, OCLC, 2005, question 505.

# What *are* they doing?

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- Mohawk students are:
  - Chatting: 49% claim to do this a lot (more than 10 times per week)
  - Facebooking: 45.8% claim to do this a lot (more than 10 times per week) & 37.1% edit their own page a lot
  - Listening to music on the go: 53% claim to own an iPod or mp3 player

# What about their Research Skills?

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- We posed a series of questions about doing research and provided multiple choice answers
- Asked students to choose a correct tool or approach
- They did better than we thought they would but they are not experts and they really do like Google.

# Example of a question we asked

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If you needed a magazine article about the Kyoto Accord and the involvement of Canada with this Accord, what tool would you use to find this item?

44.7% say they would go to Google

35% say they would choose the “library’s online magazine and journal databases”

# Need a book?

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If you needed to find a book about business etiquette in Japan, what tool would you use to find this item?

44.7% would use Google

30.8% would use the library catalogue

# Peer-reviewed?

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Your instructor has asked you to use peer-reviewed or scholarly articles for your paper. What would be the best tool to use to find a scholarly article?

Google lost this one, 48.3% would use our databases, while only 22.9% would go to Google

# Where do they like to start?

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- What is the first step you take in your research process when writing a research paper?
  - 35.2% start on Google or a search engine
  - 30.6% use their textbooks or class readings
  - only 10.3% start on the library website and only 2.8% ask a library staff member

# Beyond Google: How do Students Conduct Research?

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“Many young people have been exposed to computers since birth and are considered “naturals” with technology. Though students clearly have an avid use of MySpace and YouTube, this does not mean that college aged students are natural born researchers.”

# Information Behaviour of the Researcher of the Future

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“... there is a big gap between their actual performance on literacy tests and their self-estimates of information skills and library anxiety.”

# Information Behaviour of the Researcher of the Future

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“... Internet research shows that the speed of young people’s web searching means that little time is spent in evaluating information for either relevance, accuracy or authority.”

# Is there any good news?

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- Commissioned by Proquest:  
Observing Student Researchers in  
their Native Habitat
- One of their findings is that research  
instruction classes and library  
outreach & awareness programs do  
help to to get students to use  
library's resources

# Our Findings

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- Millennials are not the wonder generation they have been touted as being, at least not all of them
- Intelligence doesn't seem to be greater than previous generations
- Technological literacy and fluency is not so great in the group as a whole
- There is a spectrum of ability (surprise!)

# Our Findings

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- All Millennials are not spending their time creating and using Web 2.0 tools
  - Other age groups are spending time creating content and sharing, maybe even more than than the 'Net Gen
  - Millennials spend more time on Facebook, YouTube, and iTunes than creating blogs, podcasts, RSS feeds or web pages
  - All Millennials are not gamers

# Incidental Findings

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- Consider the method of research - are there quantitative findings to back up the qualitative and anecdotal findings?
- Where are the references? Scholarly research to back up assertions.
- Quality of research? e.g. focus groups in front of an audience
- Check behind the curtain of the hype - Web 2.0
- Arcade Scholarship (=superficial and cartoonish analysis)

# McKenzie and Arcade Scholarship

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- Jamie McKenzie, Yale, Columbia MA & Rutgers EdD
- Wrote Digital Nativism, Digital Delusions and Digital Deprivations
- Article finds serious flaws in Digital Natives, Digital Immigrants
- None of us should be relying on Prensky's findings on Digital Natives

# Recommendations

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- Spend resources building technological skills of the Millennials instead of assuming they already have them
- Choose a service to start or develop because you've studied your students, then, if a Web 2.0 tool is the right tool for delivery, use it.
- Some gaming techniques may enhance instruction but don't assume that all Millennials prefer it and are able to perform in this environment

# Recommendations

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- Mandatory technology courses for first year students:
  - Evaluation of web resources
  - Database searching
  - How to use 2.0 tools such as RSS and social bookmarking
  - How to use spreadsheet and presentation software
  - How to use web programs such as Dreamweaver, Photoshop and Flash

# Recommendations

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- In our liaison with instructors we need to get information/technology literacy and expectations on the table
- Students will use Google and not library resources if their work is acceptable to their instructors

# Further resources...



**THE KIDS ARE ALRIGHT?**

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**Researcher of the Future study released**  
Posted in [studies](#) on January 20, 2008 by kidsarealright

We are excited about Wednesday's release of the study [information behaviour of the researcher of the future](#)! This study was commissioned by the British Library and JISC (Joint Information Systems Committee) and conducted by the Centre for Information Behaviour and the Evaluation of Research (CIBER) at UCL. The [press release](#) says that the study "overturns the common assumption that the 'Google Generation' – youngsters born or brought up in the Internet age – is the most web-literate. The first ever virtual longitudinal study carried out by the CIBER research team at University College London claims that, although young people demonstrate an apparent ease and familiarity with computers, they rely heavily on search engines, view rather than read and do not possess the critical and analytical skills to assess the information that they find on the web."

**About**

- » [About this blog](#)

**Our reading list**

- » [Information Behaviour of the Researcher of the Future](#)
- » [Pew Internet: The Internet Goes to College: How Students are Living in the Future with Today's Technology](#)
- » [Pew Internet: The Internet and Education -- Report](#)
- » [Flynn effect - Wikipedia, the free encyclopedia](#)
- » [Main Page - Digital Native](#)
- » [Millennials article by Sweeney](#)
- » [American Scientist Online - Rising Scores on Intelligence Tests](#)
- » [Social, work lives collide on](#)

<http://kidsarealright.wordpress.com>