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## 21st Century literacies: Transforming education for next generation learners

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# ***21st Century Literacies: Transforming Education for Next Generation Learners***

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**Public Services Summit @ Nobel Week 2005 <sub>1</sub>**

I can guarantee that I am going to provoke some of you today – my passion is the world of information – the scholarly and creative output of human endeavor– after all – its the role of libraries to collect, organize, and preserve it-in all its dozens of formats.. But mostly I am passionate about a critical need that has been distressing some of us for at least the past decade-- the consumption patterns of information by the post Internet generation – the tendency to find and select information on the basis of expediency and convenience -rather than quality and relevance– and the inability to recognize its context – its bias...



## 21st Century Literacies

### Millennials as Learners

### Engaging the Digital Native

### A Vegas Perspective



I have four points that I plan to connect – the imperative 21<sup>st</sup> century literacies - and some of the initiatives that address them... The next generation – not genxers, but the millennials –a bit about how they learn, how they communicate, and how they socialize – and then - engaging this digital native – and what educators can learn from online gaming and online gamers about why they spend so much time in those gaming environments– and finally – I have what I think is a unique perspective perhaps stimulated by where I live– certainly provocative-- perhaps a little scary... but definitely meant to be a wake up call for the education community about engaging the next generation of learners.



# 21st Century Literacies

information  
media  
multicultural  
numeric  
visual  
and more...



Literacy – media literacy – multicultural literacy – numeric literacy – visual literacy – and many others--- dozens of professional associations have issued a call to action to define learning outcomes for the information age – and regardless of the label – they all have at their roots a desire to foster critical thinking – problem solving – and information literacy – the ability to find, evaluate, and use information effectively.



# *The Imperative*

Infoglut

Google Rules

NetGen styles

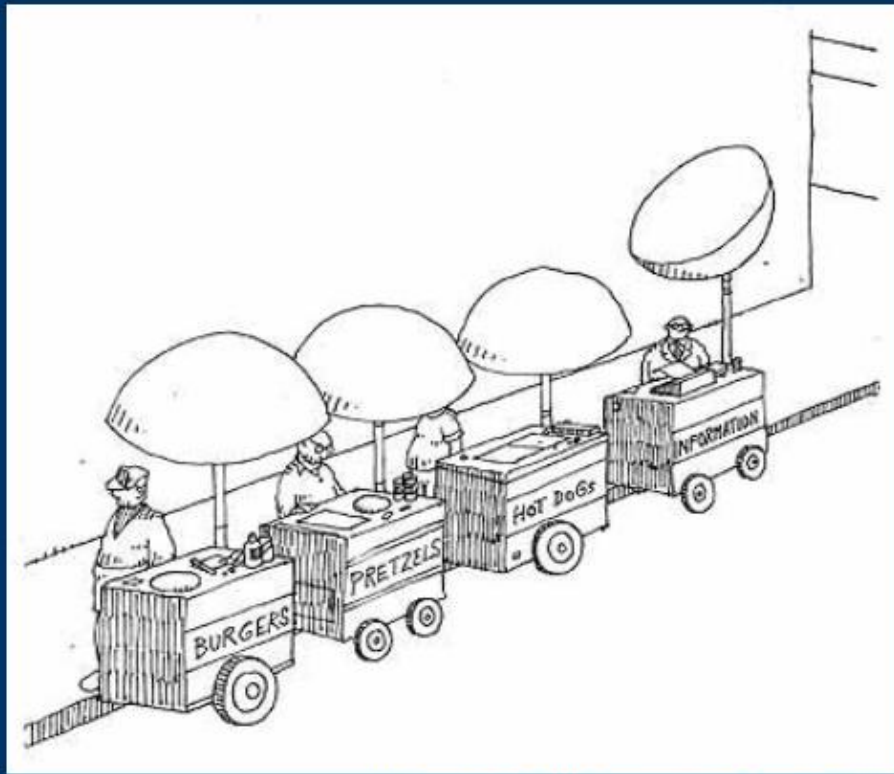
Information Illiteracy



The massive amounts of unfiltered unedited information - that some liken to trying to drinking from a fire hose - but I think of as the infoglut - has led to an intellectual laziness in information consumption patterns. Google rules, despite the fact that it does not index or retrieve the more than 50% of the web that is "private" - hidden in the "deep web" where all the journal articles and e-books and other scholarly output resides. Research shows that the three criteria applied by netgenners when they select information are: available, easy to understand, and easy to find - in that order.

- the digital natives are changing not only learning styles, but social structures - communication styles
- and despite technological adeptness - information illiteracy abounds





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And for the visual learners in the room – here's a visual representation of those who seek instant information gratification, students can be indiscriminate and uncritical



Elizabeth Honig, Professor, Fine Arts  
University of California, Berkeley



Kristin Lukey, Professor,  
Professor, Law and Sociology  
University of California, Berkeley



And from  
a student



## *International Efforts*

American Library Association

National Forum on Information Literacy

International Federation of Library Associations

OECD



Many sectors of education and public policy are addressing the issue – the past decade has seen an explosion of activity around the world

NFIL - with over 200 member organizations - just held an international colloquium in Alexandria - cosponsored by UNESCO and IFLA -- Alexandria Proclamation. Information Literacy lies at the core of lifelong learning. It empowers people in all walks of life to seek, evaluate, use and create information effectively to achieve their personal, social, occupational and educational goals. It is a basic human right in a digital world and promotes social inclusion of all nations.

OECD -- The knowledge-based economy is characterized by the need for continuous learning of both codified information and the competencies to use this information. As access to information becomes easier and less expensive, the skills and competencies relating to the selection and efficient use of information become more crucial... Capabilities for selecting relevant and discarding irrelevant information, recognizing patterns in information, interpreting and decoding information as well as learning new and forgetting old skills are in increasing demand.

So there is an intense need and a challenge – despite the fact that students appear to be more technologically literate than ever.

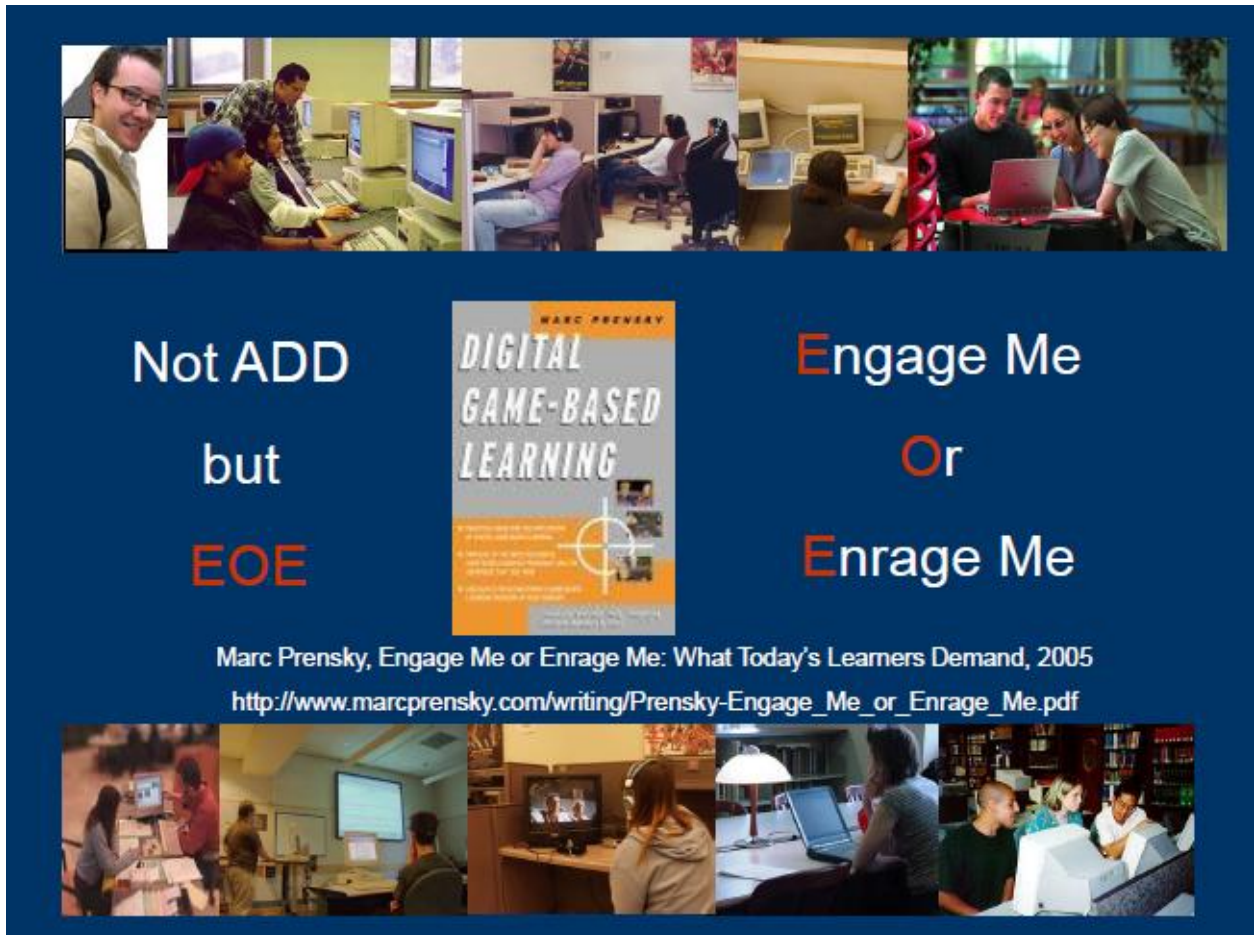
What do we know about millennials ..their relationship to technology – and how they prefer to learn?



activ Media  
 créative rich  
 commons IM  
 pod-casts Convergent devices  
 Group work blogs  
 multitasking multitasking relev  
 ant wikis  
 mmorpg mp3 **SELF** wireless  
**SERVICE**  
 open exploration Online communities  
 source Google  
 Interactive tv peer-to-peer experiential  
 iPOD mobile web-casts self-

## Moving from Searching to Research: the Net Generation and their Tools

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Not ADD  
but  
EOE

**DIGITAL  
GAME-BASED  
LEARNING**

Engage Me  
Or  
Enrage Me

Marc Prensky, Engage Me or Enrage Me: What Today's Learners Demand, 2005  
[http://www.marcprensky.com/writing/Prensky-Engage\\_Me\\_or\\_Enrage\\_Me.pdf](http://www.marcprensky.com/writing/Prensky-Engage_Me_or_Enrage_Me.pdf)

Some of you may have heard of Marc Prensky - an activist on the topic of student learning - and application of gaming - he coined the phrases digital native and digital immigrants - and argues that "Today's students are no longer the people our educational system was designed to teach"

I love this phrase - he claims our students are not ADD - they are EOE -

-a lot of his work focuses on student engagement and he claims that they make choices - and if not engaged - they tune out.

## Engaging the Digital Native

group work  
interaction  
**engagement**  
gaming offer?  
problem solving  
multimedia



Online games foster group work (teams, guilds, armies) have a high degree of interaction - encourage exploration and problem solving and have sophisticated animation, sound, video

## voices of gamers



Here's a film created by the video convergence team at the University of Central Florida in Orlando –



*What I heard*

Community  
Immersive  
Control  
Options/customization  
Problem solving  
Unpredictable  
Visualization/effects



Consider what you heard ...





**Can we create**  
**online learning communities that**  
**immerse individuals –that are highly**  
**customizable – that give**  
**learner control – that challenge with**  
**problem solving - that can be highly**  
**unpredictable – with great**  
**visuals and special effects?**



There are some fascinating projects where education meets gaming- Education Arcade at MIT  
*Revolution*, a multiplayer online role playing game set during the American War for Independence  
 Replicate: viral attack on cells: Cellular Migration and Cellular Attack

<http://www.educationarcade.org/gtt/Virus/Intro.htm>

<http://simulearn.net/leadershiptraining/leadershipseminars.htm>

James Paul Gee:

*What Video Games Have to Teach Us About Learning and Literacy*



*It's all about engagement...*



Observations from the literature about engagement

*"shared experience environments"*

*"engagement has everything to do with relationships..."*

*"consumers draw environmental energy from their media experiences, which helps facilitate a deeper level of engagement."*

Dominiak, Mark TelevisionWeek Oct 24, 2005

vol 24, iss 43, p 16 Look at engagement as a consumer

## A Vegas Perspective



© Ron Niebrugge



*Gaming meets gaming  
What have they learned?*

*What can we learn?  
Will we be competing?*

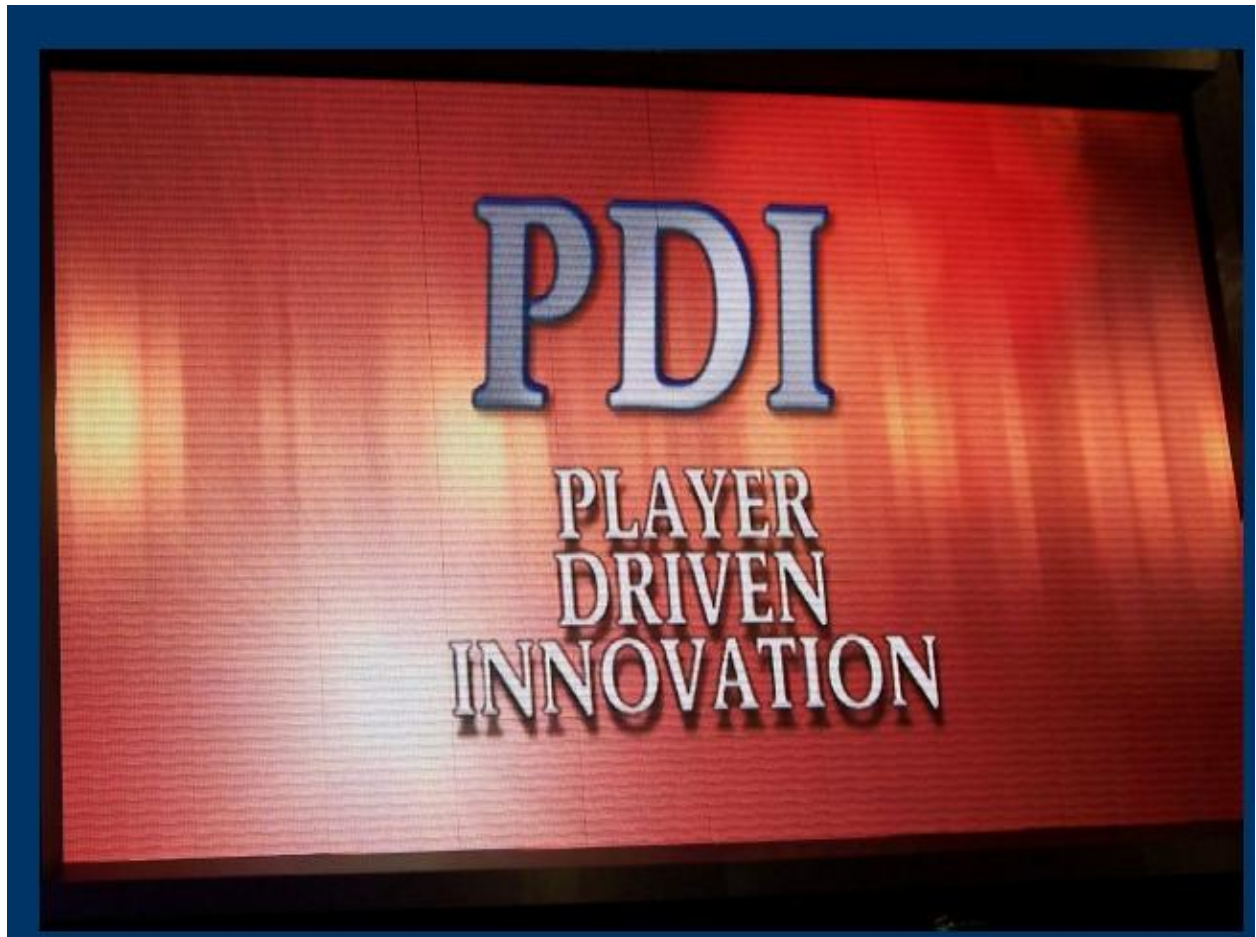


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At the recent G2E show in Las Vegas - the global gaming exposition - I was struck by this partnership between Sega and IGT - a major gaming manufacturer - gaming has met gaming -- slot machines that incorporate aspects of video games - catering to the next generation - the gamers..

- is there anything for us to learn - about engagement?? Research on gambling –classifies it as "experiential consumption" – one other leisure activity.. "Chances, Trances, and Lots of Slots: Gambling Motives and Consumption Experiences – Journal of Leisure Research – 1997 v 29 no 4 pp380-406 Cotte, June
- Relationship between gambling and video game playing –journal of gambling studies vol 12 no 4 1996 pp375 children 9-14- "similar attractive features and intermittent reinforcement schedules" – high frequency and low frequency video game players – high frequency gamble more and take greater risks...





It's an industry that is totally about engagement – they hook you – and then they keep you – this logo made me pause – I wonder what higher education would look like if we had “learner driven innovation”

Some “innovations” in that other gaming industry...





Blackjack tables with virtual programmable dealers and individual computer stations for each player

*Tablemaster combines the **excitement** of traditional tables games with the latest **interactive video technology** to create a revolutionary new gaming experience. It's **fast-paced, exciting** game play and **eye-popping visuals** will entice your players to try their luck at table games, and its unprecedented levels of **customization** make it easier to create the perfect player atmosphere...*

**ShuffleMaster inc..**

The language in the advertising from the company that manufactures this product really struck me...



And this roulette table with its joystick control that lets you manage the virtual hand that is placing chips – was not designed for my generation – I still can't play Mario I am so uncoordinated ...







I have to admit I paused at the visuals from this roulette table – with its video projection - sleek console design – individual player station...





And talk about your immersive virtual reality – I had to laugh at this one – 30 years ago this was a simple mechanical table with metal horses that moved around a metal track. while players sat on stools around the table and dropped quarters in to pick their horse.. All of course controlled by the machine.. The 21<sup>st</sup> century version is technology intensive – animation on wide screen – surround sound on huge speakers – dozens of player consoles that look like a control panel for a spaceship – and totally fictitious racing data for fictitious horses, trainers, track records, conditions, etc – all for virtual races...

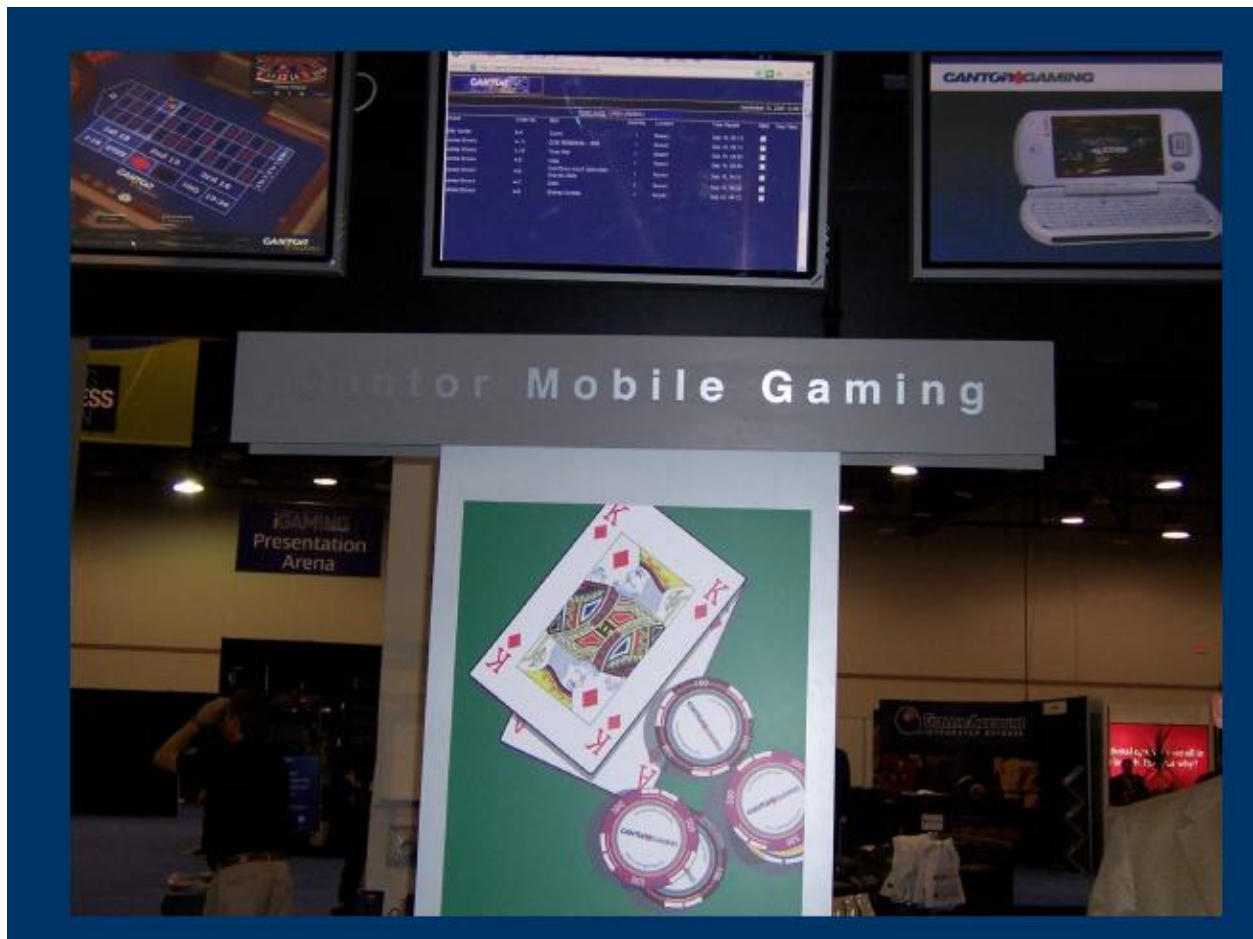




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Remember when poker – other card games – were a community of people around a real table playing with each other – that became an individual and a computer – an isolating experience – evolved into online gaming – playing against real people anywhere in world – now that experience has been reproduced within the casino – play against anonymous others in the same space – communicating through the machine – why did this remind me of students IMming each other in the same spaces – this generation communicates through devices..





And speaking of devices – they want them to be mobile – so here it is – mobile gaming – use your convergent device to gamble on the casino floor – not tied down to a “table” ...

**Business PRESS**

**Bond trader makes its move on the gaming industry**



**By David M. Rosen**  
LAS VEGAS  
Nevada's gaming industry is poised to become as hot as the state's bond market as long as the state's gaming industry remains open to outside investors, according to a report by a bond trader who has been active in the state's gaming industry.



Nevada Governor Kenny Guinn signing A.B. 471 with representatives of Cantor G&W.

**GAMBLING AND TECHNOLOGY**  
**Bill would allow bets by device**

Measure would permit wagering with handheld or casino-grade devices

**By David M. Rosen**  
LAS VEGAS  
Nevada's gaming industry is poised to become as hot as the state's bond market as long as the state's gaming industry remains open to outside investors, according to a report by a bond trader who has been active in the state's gaming industry.

**THE WALL STREET JOURNAL**  
**Nevada May Allow Hand-Held Gaming Devices**

**By David M. Rosen**  
LAS VEGAS  
Nevada's gaming industry is poised to become as hot as the state's bond market as long as the state's gaming industry remains open to outside investors, according to a report by a bond trader who has been active in the state's gaming industry.

**The New York Times**

**Losing Shirt At Casino Pool (It's Wireless)**

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LAS VEGAS  
Nevada's gaming industry is poised to become as hot as the state's bond market as long as the state's gaming industry remains open to outside investors, according to a report by a bond trader who has been active in the state's gaming industry.

**Ever Poolside, Casinos Entice Gamblers With Wireless**

**By David M. Rosen**  
LAS VEGAS  
Nevada's gaming industry is poised to become as hot as the state's bond market as long as the state's gaming industry remains open to outside investors, according to a report by a bond trader who has been active in the state's gaming industry.



Nevada recently passed a law that will allow gambling with the use of mobile devices...





## What's it really all about?



I am going to close with a quote from an article called **Father Google and Mother IM:**

### **Confessions of a Net Gen Learner**

Published in *EDUCAUSE Review*, vol. 40, no. 5 (September-October 2005): 42–59.

**And included as a chapter in Educause e-book:** Educating the Net Generation

Carie Windham - 2004 grad of North Carolina State - Masters student at the University of Ulster in Northern Ireland, where she is studying Irish history as a Mitchell Scholar.

*we despise this traditional format of lecture and regurgitate. We feel we learn better in an environment in which we can teach ourselves. The online professor should therefore find ways to offer students a method of exploration and research within the curriculum. Students might be asked, for example, to abandon the course Web page in order to search an archive or journal for information. They might be asked to weave current events within the context of the course material. Or they might be required to use their own technical savvy to construct research Web pages or blogs.*

*The simple rule is to engage the students, to move them beyond being mere participants in the class to becoming active learners and discoverers.*