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### Preferred Learning Methods of the Millennial Generation

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## Learning Preferences of Millennial College Students

The Millennial generation is the most computer literate generation to enter the workforce. Also known as the Net Generation, those born from 1981- 2001 have been raised in an era of instant access. Their learning and communication style is through multi-media. The common method of contact is text messaging and instant messaging as well as cell phones. Learning has even moved into web-based tools such as web-ct, online courses, online journals and i-pod downloads. The different environment of this technologically enhanced generation will be important to understand for their learning in school as well as the workplace.

The attitudes of Millennial generation students from a small private college were measured regarding the style of learning they use, prefer and which method has resulted most successfully in their acquiring and retaining knowledge. Their views give an illustration of the outlook of this generation.

Anyone who has stood in front of a classroom of Millennial, or any students, has been concerned with if and how his or her pupil is learning the material. There may even be a question if the student is truly taking notes on the shielded, black box that sits on his or her desk or simply checking on the plans among friends for the evening's activities. Trying to stimulate the learning process for the generation that grew up with the Internet is a challenge.

### *Millennials*

Millennials are the generation born 1981 – 1999 (Lancaster & Stillman, 2002). Millennials have been called entitled and empowered due, in part, to their

inclusion in decision making since childhood (Coomes & DeBard, 2004; Lancaster & Stillman, 2002). According to Lancaster and Stillman (2002), the Millennials' personalities reflect the influence of the skeptical Gen Xers (their closest cohort) which has merged with the input of the Baby Boomer parents and the Millennials' own pragmatism resulting in their being described as 'realistic'.

They have a more global orientation and understand the need for interconnectivity in the worldwide market (Alch, 2000).

### *Millennial Generation*

Generational theorists explain that those who were raised during comparable events and environmental conditions, including technological change, will have related outlooks (Marías, 1970; Smith & Clurman, 1997). Millennials are part of a generation that has experienced metal detectors at places of learning, the impeachment of a president, real-time war and reality television (Pelton & True, 2004). MTV, (music television), which premiered in 1981, has been around all of their lives (Coomes & DeBard, 2004). Millennials have been raised during years of exceptional wealth in the United States. According to generational consultant and researcher Cam Marston (2005), the Millennials "feel entitled to life's rewards without paying their dues" (p. 93). Their experiences in school and society, however, have been guarded and strict. They have had less free time than any other generation as many Millennials shifted from supervision at school to adult supervised activities (Howe & Strauss, 2000). They are said to have "helicopter parents" who hover over them (the over-involved Boomer parent) (Sacks, 2006).

### *Techno-literate*

The Millennial cohort has been described as techno-literate, techno-savvy, technologically fluent and even dependent on technology (Lewis, 2003; McGhee, 2006; Zemke, Raines, & Filipczak, 2000). In a nationwide survey of 1,171 college students, 97% of these Millennials owned cell phones and over two-thirds had sent text-messages on them. Over half of the students in the study said that “instant messaging was their top choice of communication” (McCasland, 2005, p.8). They download podcasts and music, can take photos with their phones and text message one another in their created messaging language (McCasland, 2005). Millennials are said to be experiential, engaging, and interactive (Skiba, 2006).

Millennials have a “curious blend of collaboration, interdependence and networking to achieve their ends” (Alch, 2000 p. 4) and their technology seems to bring them and keep them together. Instant messaging, text messaging and chat rooms may be essential to the urban and suburban Millennial connectivity (Cox, 2004). Their style is high-tech and highly networked and Millennials “will want to be able to work quickly and creatively, and they want to do it their way” (Zemke, Raines, & Filipczak, 2000, p. 143). Their creativity and investigation with electronic media, free expressions, strong views and the need for independence without restraint are noted facets of their generation (Alch, 2000).

### *Millennials' Teamwork and Technology*

Millennials' most widely used form of collaboration is through their cell phones and text messaging (McCasland, 2005). The experiences of connectivity through text messaging, instant messaging, blogging (Web logs, My Space) and

video gaming are familiar to most Millennials. Socializing for Millennials has become a comfortable fit through technology. Camera phones, e-mail, instant messaging and chat rooms keep friends connected. Daniel Drath, vice president for Teenage Research Unlimited (TRU), noted that many ‘buddies’ on their ‘buddy list’ (chat mail contacts) have never been met in person (Cox, 2004). Millennials are accustomed to relating and collaborating with others through technology. This form of group collaboration and being a team player (Howe & Strauss, 2000), are some of the abilities and traits of Millennials along with their technical savvy. They like teamwork, but they prefer to collaborate and work in teams with their generational peers (Lancaster & Stillman, 2000; Skiba, 2006)

Millennials have been recruited from trade schools, high schools and colleges for their “technical abilities” (Lancaster & Stillman, 2002, p. 207). They are touted as possibly the best workforce to come as “they combine the teamwork ethic of the Boomers with the can-do attitude of the Veterans [Traditionalists] and the technological savvy of the Xers” (Hicks & Hicks, 1999, p. 302). Also described as self reliant and independent, Millennials are known for their ability to create with technology as well as use it to gather and share information (Marston, 2005; Martin, 2005). Millennials expect communication via technology and “may be intolerant of those who are technologically challenged” (Murray, 2004, p. 106).

### *Millennials and Learning*

Considering the characteristics of the Millennial generation, there is some concern about the effects on their learning process. “Many young people today

are accustomed to watching TV, talking on the phone, doing homework, eating, and interacting with their parents all at the same time” (Frاند, 2000). Routine multitasking behavior may have shortened their attention span and caused them to lack critical thinking skills and introspection (Murray, 1997). Although there may be concern for Millennials’ analysis of material, there is confidence in their usage of media that can be a tool for learning. Constance Yowell, MacArthur Foundation’s director for digital media, learning and education, noted that digital technology, “a peer-driven learning” is very familiar to this generational cohort as “young people are way ahead of the adults in understanding how to use these tools” (Trei, 2006, p.2). Yowell asks “in 10 to 15 years, will kids coming into public education be thinking, behaving or acting differently, or expecting different things because they’ve been engaged in digital media?” (Trei, 2006, p.1). According to the foundation’s statistics, they will be, as nearly seventy-five percent of young people use instant messaging and eighty-three percent play video games (Trei, 2006) – a certain indication of changed attitudes towards learning and interaction.

### *Research Question*

This paper will address the questions regarding the learning preferences of the Millennials. What are Millennials preferences of learning methods? Which teaching format is preferred? How do they try to improve their learning?

### *Survey Method*

Students of a small, private New England university were invited to participate in an online survey through an e-mail invitation. Approximately 400 students

received an email inviting them to take part in the survey. The survey response rate was over 25%. Of the 106 surveys returned, 102 were Millennials and used for this study. The response rate was less for some items that were skipped/missed but all surveys used included the demographic data of the respondents. The survey instrument included some items adapted from a previous study by Messineo, Gaither, Bott & Ritchey (2007) that focused on college students' preferences of learning class material, specifically for active learning in large classes. Additional created items included locations of studying and attitudes toward Service Learning work that is not a part of this paper.

*Results*

Of the 102 respondents, 74 were female and 18 were male. This disparity is not surprising considering the demographics of the school; only about 30% of students are male.

In response to the question “What study methods help you to better understand a course topic?” students show that writing notes is done more than typing. Typing does have some usage. See chart A.

What study methods help you to better understand a course topic?					
	Strongly agree	Agree	Dis agree	Strongly disagree	Response Count
Hand written notes in lecture classes	37.3% (38)	54.9 % (56)	3.9% (4)	3.9% (4)	102

Typing notes in class	14.7% (15)	37.3 % (38)	<b>38.2</b> <b>% (39)</b>	9.8% (10)	102
Adding notes in class to printed PowerPoint slides	26.5% (27)	<b>52.0</b> <b>% (53)</b>	13.7 % (14)	7.8% (8)	102
Typing notes in class in PowerPoint slides	7.8% (8)	26.5 % (27)	<b>52.9</b> <b>% (54)</b>	12.7% (13)	102
Reading the material before class	29.4% (30)	<b>56.9</b> <b>% (58)</b>	10.8 % (11)	2.9% (3)	102
Reading the material after class	27.5% (28)	<b>55.9</b> <b>% (57)</b>	13.7 % (14)	2.9% (3)	102
Listening to recorded lectures	2.9% (3)	18.6 % (19)	<b>48.0</b> <b>% (49)</b>	30.4% (31)	102

Chart A

In response to the question “What types of electronic resources do you use for your assignments?” web sites including personal, corporate, government, educational and professional were rated as frequently used. Wikipedia<sup>1</sup> and Google (the highest rating of 98%) were also “frequently” used. See chart B.

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<sup>1</sup> Can be edited by others with incorrect information “Use with caution: The perils of Wikipedia.” CNN.com/technology, November 7, 2007  
<http://edition.cnn.com/2007/TECH/11/02/perils.wikipedia/>



What types of electronic resources do you USE for your assignments?					
	Frequently	Seldom	Don't Use	Never heard of	Response Count
E-books (Ebrary, NetLibrary, Credo, etc.)	6.9% (7)	36.3% (37)	<b>43.1% (44)</b>	13.7% (14)	102
E-journals (Ebsco Academic Premier, JSTOR, Wilson)	22.5% (23)	<b>46.1% (47)</b>	24.5% (25)	6.9% (7)	102
E-newspapers (Proquest, LEXIS/NEXIS, etc.)	18.6% (19)	<b>42.2% (43)</b>	32.4% (33)	6.9% (7)	102
Audio books	0.0% (0)	19.6% (20)	<b>69.6% (71)</b>	10.8% (11)	102
Web sites (personal)	<b>64.7% (66)</b>	26.5% (27)	7.8% (8)	2.0% (2)	102
Web sites (corporate)	<b>80.4% (82)</b>	18.6% (19)	2.0% (2)	1.0% (1)	102
Web sites (educational, governmental, professional)	<b>87.3% (89)</b>	11.8% (12)	0.0% (0)	1.0% (1)	102
Blogs/wikis	15.7% (16)	26.5% (27)	<b>55.9% (57)</b>	3.9% (4)	102
Google	<b>98.0% (100)</b>	1.0% (1)	0.0% (0)	1.0% (1)	102

Wikipedia	<b>57.8% (59)</b>	25.5% (26)	16.7% (17)	1.0% (1)	102
Alerts/RSS	3.9% (4)	17.6% (18)	<b>44.1% (45)</b>	34.3% (35)	102
Social web applications (Discussion boards, YouTube, etc.)	32.4% (33)	<b>35.3% (36)</b>	33.3% (34)	2.0% (2)	102

Chart B

Some items were compared to a previous study by Nicholas and Lewis (2007) of the same population of students (N = 74). For example, the use of E-journals, 45% frequently used, 30% seldom used E-journals, 17% never used E-journals, and 8% had never heard of E-journals, and E-newspapers, 30% frequently used, 37% seldom used E-newspapers, 24% never used E-newspapers, and 9% had never heard of E-newspapers (Nicholas & Lewis, 2007) were compared.

In this study, less usage of E-journals (22.5%) and E-newspapers (18.6%) was reported then in the 2007 study, but more awareness of their presence (“had never heard of” E-journals 6.9% and E-newspapers 6.9%) was shown in the present study.

However, there were more “frequently used” Personal web sites, 58%, (2007), 64.7% (2008); Corporate web sites, 66.3% (2007) 80.4% (2008); and Educational/governmental/professional web sites, 87.3% (2008), 82% (2007).

Although “frequently used” Blogs/wikis, 24% (2007), 15.7% (2008); had decreased, awareness had increased (“had never heard of” 10%, 2007, 3.9% 2008).

Increased percentages were noted for “frequently used” Google, 87.1% (2007) 98% (2008); Wikipedia, 51% (2007), 57.8% (2008); and Social web applications such as Facebook/MySpace/YouTube, 22.8% (2007) 34.2% (2008).

An additional item reiterated the preferences of Google and “other” search engines over library resources when asked how an information search was started (see Chart C).

When you begin an information search, what is your starting point?						
	Always	Most often	Sometimes	Rarely	Never	Response Count
Library online databases	19.5% (16)	20.7% (17)	<b>32.9% (27)</b>	17.1% (14)	9.8% (8)	82
Library (in person)	12.2% (10)	13.4% (11)	<b>36.6% (30)</b>	22.0% (18)	15.9% (13)	82
Google	<b>69.5% (57)</b>	25.6% (21)	3.7% (3)	0.0% (0)	1.2% (1)	82
Other search engine	<b>26.8% (22)</b>	<b>26.8% (22)</b>	24.4% (20)	12.2% (10)	9.8% (8)	82
Government websites	<b>4.9% (4)</b>	<b>28.0% (23)</b>	36.6% (30)	19.5% (16)	11.0% (9)	82
Company websites	<b>12.2% (10)</b>	<b>23.2% (19)</b>	30.5% (25)	25.6% (21)	8.5% (7)	82
Other online sites such as Hoovers	<b>2.4% (2)</b>	<b>4.9% (4)</b>	22.0% (18)	30.5% (25)	40.2% (33)	82

Chart C

Google was again the most used starting point followed by “other.” As Wikipedia was not included, it is possible that “other” included Wikipedia which one respondent wrote in as an answer.

### *Preferences of Learning Course Material*

For the item regarding preferences of learning course material, the majority of the 91 respondents strongly agreed (42.9%) and agreed (42.9%) with preferring PowerPoint slides along with lectures. Collapsing strongly agree and agree categories and strongly disagree and disagree categories, other learning method results were:

I learn from video clips that relate to class material.  
86.8% agreed, 13.2% disagreed

I like a mixture of activities (lecture, group, work, discussion, problem solving) in a large class  
91.3% agreed, 8.7% disagreed

Having to solve problems in class helps me learn the course material  
92.3% agreed, 6.8% disagreed

I am interested and willing to do work that will help me to learn the course material but is not graded.  
60.2% agreed, 39.8% disagreed

I prefer lecture as the format of class instruction  
62.6% agreed 47.3% disagreed

I consider class discussion in small groups with other students to be a valuable way to learn the course material.  
63.6% agreed, 16.4% disagreed

Working with other students on an in-class activity helps me feel more prepared to participate in class discussions.  
72.5% agreed, 27.5 % disagreed

I think doing group work in class is a valuable way to learn material.  
72.3% agreed, 27.8% disagreed

I prefer multiple-choice exams compared with essay exams.  
84.6% agreed 15.4% disagreed

I think frequent quizzes over the reading or assignments are a good idea.  
80.2% agreed, 19.8% disagreed

I prefer to have more frequent exams and a variety of ways to earn grades.  
 90.1% agreed, 9.9% disagreed

Interestingly, solving problems in class, a mixture of course material and preferring frequent exams with a variety of ways to earn grades ranked in the 90<sup>th</sup> percentile. Although the lowest ranking (60.2%) of the items was for doing ungraded work to help learn the material, it was still the majority. Lecture format (62.6%) was still a majority but not as highly ranked as others.

How important methods of study were perceived to improve their learning of course material was asked by the following item (see Chart D).

Importance of the effectiveness for improving knowledge of course material					
	Very Important	Important	Somewhat Important	Unimportant	Response Count
Case analysis	23.2% (19)	<b>46.3% (38)</b>	26.8% (22)	3.7% (3)	82
Take home tests	30.5% (25)	<b>48.8% (40)</b>	14.6% (12)	6.1% (5)	82
In class tests	35.4% (29)	<b>52.4% (43)</b>	9.8% (8)	2.4% (2)	82
Multiple choice selection tests	42.7% (35)	<b>45.1% (37)</b>	11.0% (9)	1.2% (1)	82
Essay	19.5%	<b>45.1%</b>	29.3% (24)	6.1% (5)	82

answer tests	(16)	<b>(37)</b>			
Short papers	32.9% (27)	<b>47.6% (39)</b>	17.1% (14)	2.4% (2)	82
Long term papers	13.4% (11)	29.3% (24)	<b>40.2% (33)</b>	17.1% (14)	82
Individual researched presentation	26.8% (22)	<b>35.4% (29)</b>	23.2% (19)	14.6% (12)	82
Team presentation	20.7% (17)	<b>37.8% (31)</b>	22.0% (18)	19.5% (16)	82
Individual case study	18.3% (15)	<b>32.9% (27)</b>	30.5% (25)	18.3% (15)	82
Team case study	9.8% (8)	<b>39.0% (32)</b>	32.9% (27)	18.3% (15)	82

Chart D

Other than long term papers, all the other methods described ranked as important.

#### *Web-Based Material*

Of the 70 students that responded “yes” to the question “Have you taken a course that used WebCT or other online data (ex. instructor’s home page)?”, 26% (19) answered it “improved my learning of the material,” 15.1% (11) answered they “did not learn as well”, and the majority 58.9% (43) answered, “about the same.” This could be the result of the efforts of the student using the material and/or the design and method if the material itself.

### *Limitations*

Although large enough to make generalizations about attitudes, the sample size of Millennials may reflect a distinguishable attitude of a population from a private school in the northeast United States. The sample also only included those Millennials in the advanced stages of education, an opportunity not available for all Millennials. Within this cohort, there are still some “have nots” regarding the access to technology, tutors, and/or travel (Brownstein 2000). The study also only reached those with Internet access. Web based surveys may not get the responses from those who are not comfortable with technology (Shannon, Johnson, Searcy & Lott, 2002). It should also be noted

### *Conclusions*

The results of this study indicates there many uses of technology, such as typing notes in class and searching online, of Millennials. It is still interesting to note that in a school that laptops are required of students, it is a small percentage that bring them to class for typing notes. This could be the due to the burden of carrying a computer to class or the typing skill of the user. As for research, the low percentage of scholarly research sites is a concern. In the 2007 study, 87.1% of Millennial students used Google frequently, and 35.1% thought Google a more useful tool than those provided by the library and 51% frequently used Wikipedia for assignments. (Nicholas & Lewis). The usage of these methods increased in this study to 98% who frequently used Google and 57.8% who frequently used Wikipedia for assignments.

Learning methods will have to continually adapt to engage and educate this generation. Their interest in multi-media is shown by their answer of favoring PowerPoint's in classes. But does that just add entertainment and prevent discussion or problem solving? There was indication that these respondents did *value group work, problem solving and case analysis*. But does the preference of more testing indicate short term memory and not retaining the knowledge for future needs and analysis?

### *Future Research*

There are a number of opportunities for future research about this generation and their learning preferences. Certainly, a larger sample could be used and yearly comparisons could yield more information. An assessment of learning could be measured. Comparison with other generations and faculty attitudes as well as the personality of the participants and gender differences could be discerned.

There is more usage of MUVE multi user virtual environment' for students' experiential learning options. This 'bicentric' perspective that engages both an exocentric frame of reference, (FOR) -- viewing from the outside -- and an egocentric FOR perspective of the inside gives students a psychological immersion (Dede, 2005). This kind of learning is one that should be investigated. Web sites such as Virtual u (<http://www.virtual-u.org>) may become more popular with learning methods. Just as E-learning has shown a cost savings for workplaces (Macpherson, 2004), educational institutions may recognize a benefit both financially and in student learning through new technological methods. Educators



and managers will have to adapt to new means of engagement to attract and retain the Millennial students and workforce.

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