Negotiating the deal: using technology to reach the Millennials

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Abstract

"Let's Make a Deal," a popular game show when Baby Boomers were in college, has become the mantra of the Millennial generation, much to the chagrin of their instructors and parents. Millennials are constantly looking for "the deal" and wanting to know WIIFM (What's In It For Me)? Given the generational differences between most students and their instructors, the use of learning methodologies and technology in the classroom becomes important in engaging the short attention span of this generation. Millennials are a technologically-oriented and savvy generation, and many professors do not share their skills or attitude concerning technology. Adapting to these students and incorporating online and social networking in the classroom is vital to engage these students. Instructors need to reassess their teaching methods and syllabi to garner Millennials' interest. By using collaborative experiences, role playing, case studies, brainstorming, discussion, simulations and group projects, instructors can reach the visual and kinesthetic learner. Incorporating different pedagogies and learning outcomes can facilitate Millennials' grasp of the concepts. Continuous improvement and enhancement of courses to adapt to changing student needs and learning styles will engender more engaged and prepared students who will be able to compete in the dynamic global marketplace of the new millennium.

Introduction

In the 1960s and 1970s a game show called "Let's Make a Deal" was popular among the Baby Boomer generation as they entered college. Little did they know that the show's slogan would become the mantra of their own children and grandchildren in the Millennial generation. As those of us who teach or work with the Millennials know, this generation often looks for "the deal" and wants to know WIIFM ("What's In It For Me?"). This generational difference presents some interesting dichotomies when baby boomers and Millennials cross paths in academic or the corporate world.

Another challenge facing Baby Boomers is the Millennials' reliance on technology and the Internet. The Millennial generation has grown up with technology and feels extremely comfortable with it, as technology is a natural extension of their everyday behavior. Many Baby Boomers have at least some trepidation with technology and this becomes particularly evident in the classroom and corporate world where Millennials and Baby Boomers often clash.

This paper will explore the differences between the generations with respect to learning styles, use of technology, attitudes toward learning, and how to adapt and relate to Millennials.

Digital Natives vs. Digital Immigrants

The Millennials, those students born between approximately 1979 and 1995 (Leung, 2005), are often called "digital natives" or people who "are used to the instantaneity of hypertext, downloaded music, phones in their pockets, a library on their laptops, beamed conversations and instant messaging. They've been networked most or all of their lives" (Prensky, 2001, p. 3). The irony is that these digital natives are often taught by "our Digital Immigrant instructors, who speak an outdated language (that of the pre-digital age), [and] are struggling to teach a population that speaks an entirely new language" (Prensky, 2001, p. 2). This issue is particularly evident in the classroom where students can often be found texting or surfing on their cell phones as their instructors struggle to use classroom management software and other technologies. Instructors need to employ technology in their classrooms to prevent the Millennials from "tuning out" and disengaging. Many Baby Boomers were taught using the lecture method of instruction, something the Millennials cannot relate to at all. Millennials are visual and kinesthetic learners who need peer-to-peer interaction and hands-on learning to master concepts. Instructors who do not employ such methods risk losing Millennials' attention.

Millennials also behave differently than their instructors, primarily as a result of their upbringing. The irony is that most Millennials have Boomer or Generation X parents who are responsible for their attitudes and outlook on life. Nevertheless, Millennials were taught from an early age that they are "special" and that they can be "anything they want to be." Hence, they want to feel "special" when they enter the classroom or the corporate world. Millennials' parents have often been referred to as "helicopter parents" because they hover over their children and have been involved in virtually every aspect of their lives, thus over-sheltering these children. An unfortunate consequence of this influence is that Millennials are often ill-equipped to handle the college environment, much less the corporate world. Millennials have also been taught that they can "change the world" and "are the future," so the world must adapt to them. This outlook

presents problems, especially when Millennials interact with the Baby Boomers or Generation X members who often do not share their enthusiasm and optimism. Millennials are also social learners and work best in teams with one another. They will often ask "can we work together on this?" as they feel comfortable with social networking, as evidenced by their love for sites like FaceBook, FourSquare and others. They constantly text each other and feel a strong need to stay connected. Millennials are also achievers, but in different ways from their parents and instructors. They want to achieve meaningful experiences and often ask WIIFM if they do not see an outcome benefiting them. Instructors, on the other hand, expect high levels of learning outcomes and good performance in the classroom. Finally, Millennials feel stressed with life and the pressure to "grow up" and face the world. They have been told that they can do anything, yet often feel unprepared to face the world. Their expectations are often shattered by reality when they learn they will not get a trophy for finishing last or get a guaranteed job with great pay. Thus, a generation that craves student-centered learning requires new teaching innovations and learning environments (Howe and Strauss, 2000; Matulich, et al., 2008; Twenge, 2006).

Any Time Any Place Learning

Millennials don't think of technology as a tool the same way Boomers do—they simply use it as part of their daily lives. They commonly have digital music players or smart phones but no two have the same songs, videos, or pictures on them, illustrating their "individuality of fitting in and being different" (Tsai, 2008, p. 26). Thus, Millennials need technology not only to network among themselves, but also to learn and grow. They use Google to look up just about everything and often do not question the source of the information. If it came from the Internet, they reason, then it *has* to be correct (Matulich et al. 2010).

Millennials have new and unexpected learning styles. They prefer to learn at their own pace and in environments that are as active, collaborative, experiential, team-based, and self-paced as possible (Cao, et.al., 2009; Oblinger ,2005; Twenge, 2006). Millennials are comfortable with an online environment for testing, lectures, and assignments; they are informal learners, preferring "any time, any place" learning to a traditional classroom. They do not like to listen to long, boring lectures, but prefer classes that involve them with interaction, demonstration, and social networking.

Millennials are visual and kinesthetic learners who prefer to experience the world through multimedia and not print. (Cao, et. al., 2009; Matulich, et. al., 2008; Twenge, 2005). Because many faculty learned by reading and listening to lectures, the Millennials' learning style is often problematic for faculty. Professors tend to teach in the same way that they learned; the dramatic difference in learning preferences creates a disconnect between student and teacher. Table 1 highlights the generational differences and preferences (Oblinger, 2005).

Table 1
Generational Learning Preferences Differences

Baby Boomers	Generation X	Millennials
TV generation	Video games	Web
Typewriters	PC	Cell Phone
Telephone	Email	IM
Memos	CDs	MP3s
Family focus	Individualist	Online Communities

To put Table 1 in perspective, today's teenager has spent over 10,000 hours playing videogames, 20,000 hours watching TV, 10,000 hours talking on their cell phone, sent 250,000 emails and spent only 5,000 hours reading (Oblinger, 2005). A typical single day in the life of a Millennial includes multitasking in a number of online environments, as shown in Table 2. Those ages 8 to 18 spend more than seven and a half hours a day with electronic devices, and that does not count the hour and a half that youths spend texting, or the half-hour they talk on their cellphones. And because so many of them are multitasking — say, surfing the Internet while listening to music — they pack on average nearly 11 hours of media content into that seven and a half hours (Lewin 2010, Rideout et al. 2010).

In fact, Millennials' preference for multimedia environments and visual learning is often put to the test when they enter college and are asked to read copious amounts of material from textbooks, which they find boring and are unable to successfully process. Since they process information differently than their professors, parents, and just about anyone older than them, they often have a difficult time in college and this directly impacts their view of the professor, the topic, and the college environment itself.

Table 2
Media Usage: A Day in the Life of a US Teenager (Nielsen 2009)

Media Consumption of a Typical U.S. Teenager as measured by Nielsen			
TV 3 hours, 20 minutes	**PC** 52 minutes including applications	**Mobile Voice** 6 minutes	**Video on an MP3 Player** 1 in 4 watched
DVR 8 minutes	**Internet** 23 minutes	**Text-Messages** 96 sent or received	**Audio-Only MP3 Player** 1 in 2 used
DVD 17 minutes	**Online video** If they watched, watched 6 minutes	**Mobile video** If they watched, watched for 13 minutes	**Newspaper** 1 in 4 read
Console Gaming 25 minutes	**PC Games** 1 in 10 played, today	**Mobile Web** 1 in 3 used	**Movie Theater** Went once in the past 5 weeks

Random vs. Logical

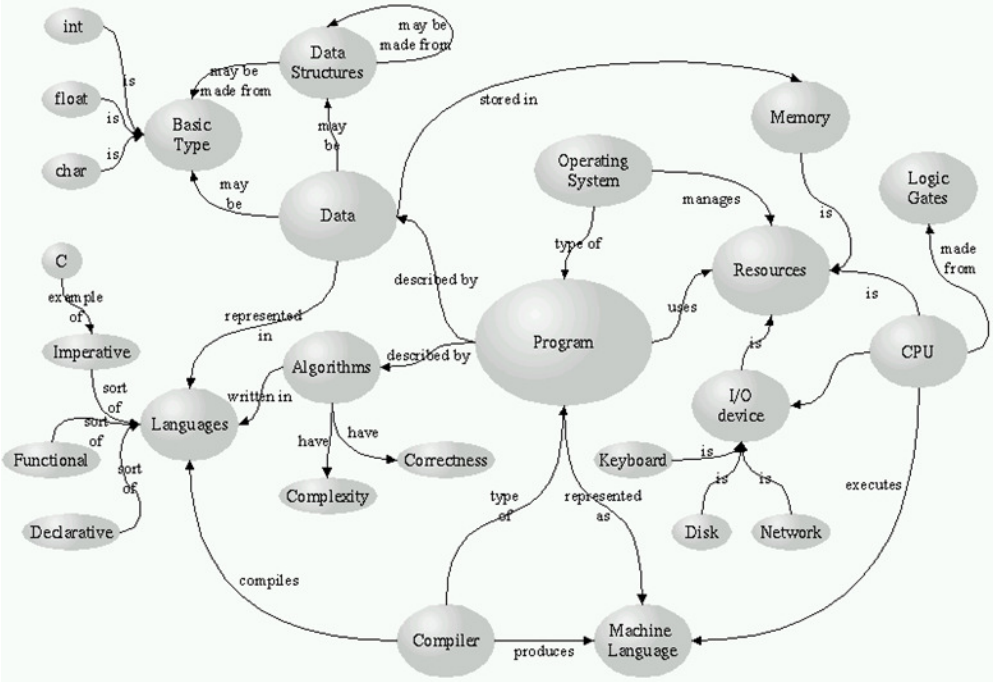
Millennials processes information visually and learn much differently from their Baby Boomer or Generation Y professors (Twenge, 2006; Jones, et. al., 2005). Their brains are "wired" differently than that of their professors, hence their development and experiences guide how they process information and experience the world. They process information using concept maps and visual cues while faculty generally process information linearly and logically. Table 3 illustrates several differences between students and faculty (Oblinger, 2005).

Table 3
Student and Faculty Differences in Information Processing

Students	Faculty
Multitasking	Single or Limited Tasks
Pictures, Sound, Video	Text
Random Access	Linear, Logical, Sequential
Interactive and Networked	Independent and Individual
Engaging	Disciplines
Spontaneous	Deliberate

As a result of their learning style, Millennials do not gain much of their knowledge in the classroom, but rather outside it after they have had a chance to reflect on the information. Students need time to reflect on material they have learned and build it into their concept map (Figure 1). Because they do not like lectures or reading, they will quickly "tune out" if they are asked to sit through a lecture. Breaking a class up into 10-minute "chunks" with different learning methods (group discussion, hands-on exercise, brainstorming, etc.) will help students retain material, but only if they have time to process the information interactively and have a chance to reflect on it. As today's students have several new types of learning preferences, classroom innovations are necessary. They prefer self-paced learning, engagement from and with their peers, real experiences, time to reflect, and find relevance in "things that matter" to them. In fact, they might even ask you to clarify WIIFM? (Cao, et. al., 2009; Matulich, et. al., 2008).

Figure 1
A Computer Programming Concept Map



(Source: http://cs-alb-pc3.massey.ac.nz/notes/59102/mindmap.gif)

Meeting New Learning Needs

So how do we meet the needs of this new student generation? How can we make our classes more relevant and applicable? What teaching innovations can be applied to meet each learning need? The following section explores each learning preference of the digital millennial learner, and addresses what we as instructors can do to be more effective teachers.

Because Millennials are "any time, any place" learners, online environments such as Blackboard™ or Moodle™ make it easy to communicate with students who prefer accessibility of information on their terms (Cao, et. al., 2009). The ability to access course materials when they want—not just when class is in session—is important to Millennials. In fact, they do most of their learning outside of class and do little learning and/or studying during the day, save for attending their classes. Most of their work is done between the hours of 9 p.m. and 3 a.m., according to LMS access statistics.

Because Millennials prefer online environments for everything from lectures to assignments to homework to testing, faculty need to incorporate such learning into their courses (Latchem, 2009; Conrad, 2008). To accommodate the Millennials' learning style, all course materials should be posted and accessible online and preferably in portable formats like Podcasts and PDFs (Lonn & Teasley, 2009). Can your lectures be downloaded to an iPod? Are the course materials you posted compatible with a wireless handheld device such as a PDA or cell phone? Can students get information when they want? Do you use iTunesU? (McKinney, Dyck, and Luber, 2009).

So what happens in the classroom if everything is posted online? Remember that Millennials learn by doing and interacting, so class time should be used for interactivity, demonstration, and peer learning. It is a struggle for many teachers to put their lectures online,

as they then feel "useless" in the classroom. However, online lectures free up classroom time for debates, discussions, presentations, and other interactive activities. There are several inexpensive ways to record your audio/video lectures, including ScreenCorder™, Camtasia™, or Adobe CreativeSuite™. Students report higher satisfaction with out-of-class lectures, as they can watch or listen to them when they want and in time chunks suitable for their learning style. They like to "rewind" and repeat portions of these lectures – an option unavailable in a live classroom. Remember, these students learn visually (Matulich, et. al., 2008).

Role-playing is also a good way to engage students. Instead of simply discussing a topic such as business processes, use a simulation where students explore the roles of business functions and learn by doing. For example, the SAP University Alliances program provides the tools and resources necessary to teach students how technology can enable integrated business processes and strategic thinking. By using hands-on experience with SAP, students gain insight into how technology can empower a business to optimize key processes such as accounting and controlling, human capital management, project planning, plant and materials management, and sales and distribution; using enterprise resource planning (ERP) tools gives students the skills to add immediate value to the marketplace (SAP, 2009). They also love to compete against other student teams and put a lot of effort into "winning" the simulation!

The physical environment in which students learn is also important since these "any time, any place" learners prefer informal learning spaces to more formalized ones. Because technology is what they do, Millennials demand a wireless environment where they can connect to the Internet and share information in the form of email, instant messaging, blogs, and the ability to just search for information on the web. Flexible classrooms with moveable chairs and even walls help to diminish the visual barriers and enable group interaction (Skipton, et. al., 2006).

Collaborative Learning

Millennials also prefer collaborative projects and group tasks. Why do you think they are always asking you if they can "work together" on an assignment? (Papp et. al., 2008; Cao, et. al., 2009). They frequent online discussion boards and love to blog or write in web logs or journals (Black, 2007, Borja, 2005, Krause, 2005). In fact, some of the most popular learning environments today involve the use of Wikis (online editable web encyclopedias) and Blogs (McGee, et. al., 2007, Jakes, 2006). This generation is a culture that is very social and thrives in online communities, and having a presence in MySpace or Facebook is also a helpful tool for communicating with students and just learning about them and their interests (Aviles, et al. 2005).

Use the same technologies the students like in your classes. Have them develop a Wiki of terms and then use an online quiz to test their knowledge. Encourage them to discuss topics in class using blogs and journals. Most course management systems have both Wiki and Blog features that you can incorporate in your classes. Online discussions, complete with ratings, engender great discussions that are not always possible in the classroom; some of the most "vocal" students in an online environment are the most shy in the classroom yet feel more confident to express their feelings online. Finally, have students create public e-portfolios of their work for viewing by others students and employers (Clark, et. al., 2009). There are many ways to have collaborative learning experiences both inside and outside the classroom (Dykman, et. al., 2008a; Dykman, et. al., 2008b).

For larger projects in the class, such as a research papers, websites, or strategic analyses, put your students into groups. Just be sure that peer evaluations can be used to reduce the "free rider" effect of groups (Bassam, et. al., 2007; Koh, et. al., 2009; Zhang, et. al., 2009).

Realistic Experiences

Because Millennials need to be engaged visually, courses should incorporate multimedia as well as kinesthetic experiences. Students prefer realistic experiences; role-playing and simulations are excellent ways to accomplish this. As mentioned earlier, using software such as SAP provides them with a realistic view of how business operates and provides them with experience in a skill that is in high demand by virtually every industry. What better way to learn the consequences of making a bad business decision than having your company perform poorly for a quarter while other companies (student teams) move ahead? Students also take simulations seriously and their competitive nature (a result of growing up playing video games) makes for an exciting classroom experience. Such scenarios also enhance student learning and much of the WIIFM questions go away—they engage and see the value immediately.

Programs that require internships are also particularly valuable to students, as are field trips and guest speakers. Partnering with organizations such as the Association for Computing Machinery (ACM), Microsoft and SAP enable students to acquire software, skills and possibly future employment too. Local partnerships with area businesses can help build bridges; the University of Tampa has partnered with the Tampa Bay Technology Leadership Association (TBTLA) whereby industry leaders work with students to make presentations and share ideas (Veltri, et.al., 2009). The partnership also provides great networking opportunities for students.

To further engage students, have them perform research projects, build programs and websites, or conduct strategic analyses for real-world clients who will see the final products. Live cases bring a sense of accomplishment to the student at the same time they are applying information systems concepts for a client who needs the help. If your course is case-based, have your students role-play the decision makers. If your students are completing an assignment, see if you can make it "real world" by having them evaluate a real-world firm's use of information systems.

How can an entire class be interactive at the same time? One method involves engaging the students—often. As Millennials have a very short attention span, technologies like Audience Response System™ ("clickers") can be used to assess their comprehension, interest, and opinion (Baker, et. al., 2007). If they feel as if you care, they are more likely to learn and will be more engaged. They also like playing with "digital toys" like the clickers or the hand-held PDAs (Drake, 2009; Gauci, et. al., 2009). Audience response systems can also be used for games, with automatic team or individual scoring.

Reflection

Millennials need time to digest the information they are processing. Online learning management systems are an excellent way to provide for reflection as online discussions can begin before the class session does and/or continue long after the class is over (Cao, et. al., 2009; Cragg, et. al., 2008; Jones, et. al., 2005). Blogs and Vlogs (video logs via cell phone or PDA) are also useful reflection tools. Remember, these students learn by building concept maps and they may not "get it" in the classroom, but rather later on after they have reflected on it (Chen,

2005, Peltier, et. al., 2005). Allow your students to build concept maps and turn them in for a grade and/or use them for study tools for exams. Matchware's Mindview™ allows concept maps to be built either from scratch by students for their own use or by instructors for their students. In fact, a traditional outline format can be created and then converted to a concept map. The product is also excellent for websites, presentations, and general note taking by students. Remember, this method of learning is what they prefer best—"show me and then get out of my way!" Because students need time to reflect, it is important to allow sufficient time between assignments or class days, and provide online opportunities for reflection that keep students engaged and on task.

WIIFM—What's In It For Me?

Students want to know how what they are learning will help them in the future. Market your course and major by bringing in articles or guest speakers to support your message. Because students value skill-building with applications, teach them how to use software, simulations, or other tools to complete an assignment, and remind them to put that skill on their resume. Students particularly find real world projects to be useful resume builders; these projects can act as a substitute internship, and also have a tangible outcomes for a prospective employer. Students often see even more value in doing these consulting projects for not-for-profit organizations as a way of serving the community. Being able to double-count a project both for volunteer service work and for computer skills is more valuable to a student for their own internal motivations as well as their resume (Preiser-Houy, et. al., 2006; Wei, et. al., 2007).

Expectations

Students must be engaged using the three H's: Head, Heart, and Hands. Most students do not question the instructor's knowledge on the subject—to the contrary—they expect the instructor to be an expert in the topic ("head") and be able to pass that knowledge on to them. Recall that Millennials have been sheltered and coddled most of their lives, so they need to feel that the instructor has a heart and cares for them, including responsiveness and empathy for them and their problems. It also includes an enthusiasm for the topic and teaching in general. Finally, good teaching skills are necessary. Use of the "hands" to convey ideas at the right level, in a clear and systematic manner, which stimulates their interest and learning, is vital (Matulich, et. al., 2008; Twenge, 2006).

Today's students expect to receive "new" forms of content that cater to their needs. However, it is important that an instructor reach a balance of "legacy" content and "future" content (Prensky, 2001). "Legacy" content includes reading, writing, math, logic, and understanding the writings of the past – all of our "traditional" curriculum. It is of course still important, but it is from a different era. Some of it (such as logical thinking) will continue to be important, but some (perhaps calculations of price markups) will become less so. Table 4 illustrates how teachers should strike a balance between legacy and future styles of learning.

Table 4
Balancing Teaching Delivery Methods

Action	Reflection
Visual	Text
Social	Individual
Process	Content
Speed	Deliberation
Peer-to-peer	Peer review

"Future" content is largely technological, but this digital content also includes ethics, politics, sociology, and ideologies. This "future" content is extremely interesting to today's students. But how many Digital Immigrants are prepared to teach it? "As educators, we need to be thinking about how to teach both "legacy" and "future" content in the language of the Digital Natives. The first involves a major translation and change of methodology; the second involves all that PLUS new content and thinking. It's not actually clear to me, which is harder – 'learning new stuff' or 'learning new ways to do old stuff.' I suspect it's the latter" (Prensky, 2001).

Innovation

Adapting to the Millennials is important, but a new type of learner will be here tomorrow, one that most likely has differing expectations and views technology even more uniquely. As instructors, we need to acknowledge and adapt to new learning styles, lest students "tune us out" and find the material irrelevant. Millennials have grown up with technology and think nothing of it—it's a part of their everyday lives. Instructors need to become more comfortable with technology and incorporate it into the classroom and into their courses. Course delivery methods should employ technology where appropriate and offer the student several learning options. Find multiple solutions and engage students. Read about the newest technologies and attend conferences to learn about what's new and on the horizon. Modify your classes to include activities such as brainstorming, peer exchange, debate, concept mapping, case involvement, and an authentic project. A multidimensional approach is the path to success.

Nevertheless, some learning outcomes remain over time such as communication skills, critical thinking, problem solving, and collaboration. Focus on these more, add technology to the mix and your classes will be more relevant and interesting to students. College is the place to allow students to learn and explore new ideas and topics as they prepare for a future that has never been more uncertain, but also one that has never had as many possibilities. College teaching is a process of continuous improvement, not one of finding a single teaching method and staying with it forever, but exploring new paradigms and technologies to make your classes even better.

So the next time your students ask you WIIFM?, you can respond to them using technologies and pedagogies they are comfortable with and use daily. Furthermore, if you incorporate many of the pedagogies and technologies discussed in this article, you will most likely be seen as a *Digital Native* and not as a *Digital Immigrant*. And while students will always try to "make deals," at least you will hold the keys in that you know what's behind the curtain—a sound pedagogy to prepare them for an exciting albeit uncertain future.

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