

# Establishing Curriculum Delivery Preferences of the Net Generation

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Construction management programs across the United States are currently educating students that are part of the Net Generation. Born between 1980 and 2000, this generation has transitioned into the college classroom and beyond. Research on how this generation learns indicates that it is very different from previous generations. Traditionally, building science classes have been delivered by an instructor who delivers knowledge by lectures and/or Powerpoint® slides. Such lecture based models do not match the learning style of this generation, and many academicians are predicting a shift in the teaching paradigm for higher education. Our research seeks to determine if the desires of Building Science students in the McWhorter School of Building Science at Auburn University (BSCI) regarding delivery of class material match what the available research tells us about the Net Generation. This paper provides the background and methodology for the proposed study and presents preliminary findings of the research. Results presented focus on areas of strong agreement and areas of divergence when Building Science student are compared to the established research on the Net Generation.

**Key Words:** Curriculum, Net Generation, Millennials, Student Preferences, Teaching Strategy

## Introduction

The McWhorter School of Building Science at Auburn University (BSCI) is in the process of reviewing the curriculum required for an undergraduate degree in Building Science. This process is being done for re-accreditation by the American Council for Construction Education (ACCE) and to update the curriculum for shifts in industry including addition of the relatively recent topics of Building Information Modeling (BIM) and Sustainability. Input on course content has been obtained from faculty and the construction industry. Those factions will determine what classes the program offers as it moves forward into the second decade of the new millennium.

If professors within the school are to truly motivate students to excel in the classroom, the school must look beyond “what” is taught in classroom and consider how the curriculum is delivered and assessed. Much of the current curriculum is delivered in a lecture style, authoritarian manner. PowerPoint® lectures are often the norm. Written tests on dates announced at the beginning of the semester dictate how the majority of grades are determined. Should our new curriculum be delivered in a similar manner, or are new delivery models required?

If we are to get the best out of our students, then how we meet, deliver, and assess learning objectives and content needs to synchronize with the way students learn best. Many published articles have acknowledged that today’s student learns in different ways when compared to previous generations. Across academia, a shift in the teaching philosophy is predicted for education based on the way Net Generation students learn.

Known as “Millennials”, the “Net Generation”, or “Generation Y”, the current university student was born between 1980 and 2000. These students are identified by iPods®, cell phones, web surfing, text-messaging and blogging. These students were the “teens of Columbine”, September 11th, and the children raised by Hillary Clinton’s “It Takes a Village”. Totalling 70 to 80 million people in the United States alone, this population represents 30% of all those in the U.S.(Ciocco and Holtzmann, 2008).

Several author's (Brown, 2000; Frand, 2000; Howe & Strauss, 2000; Merritt, 2002; Oblinger, 2003; Skiba, 2006; Tapscott, 1998) have described the desired needs of the Millennials in the classroom. Ten themes were used by Tapscott (1998) to describe the typical Millennial student:

- Fierce independence.
- Emotional and intellectual openness.
- Inclusion.
- Free expression and strong views.
- Innovation.
- Preoccupation with maturity.
- Investigations.
- Immediacy.
- Sensitivity to corporate interest.
- Authentication and trust.

Students who value the above traits may not respond to or learn as well from the traditional delivery methods of the "authoritarian" method.

Previous literature regarding student preferences of delivery has focused on student populations in aggregate. This research study focuses specifically on students within the Building Science program at Auburn University. Focus groups composed of current students were used to determine how the students prefer their courses to be delivered and assessed. Possible outcomes include the students do indeed match the research on the Millennial generation published by others. However, Building Science students are very different from the average college student in several ways. They have essentially entered one of the few University degree fields with a close tie to industry. Construction management programs are applied, practical, detail oriented programs that prepare a graduate for a very specific career field. It is possible that students are different from the typical university students and prefer more traditional forms of classroom delivery. Our research hopes to aid construction educators in determining how Millennial students learn best within the construction management classroom.

## *Background*

### *The "Sage on Stage"*

Ciocco and Holtzman (2000) report that the average age of faculty in the University environment is over fifty years. Many received college degrees in the 1970s in a culture very different from the one the net generation college student experiences. Faculty from earlier generations often served as master and commander of their classroom. The delivery styles were "text-based", focusing on a logical sequence of knowledge in a "content-focused" learning environment (Oblinger 2005). Information was delivered through lectures and Powerpoint® presentations. Items like memorization and repetition were emphasized. In sum, much of the focus was on fact based learning.

### *Are we creating significant learning experiences?*

In a presentation entitled "The Joy and Responsibility of Teaching Well", Dr. L. Dee Fink (2007) stated that there was evidence that students were not having significant learning experiences. References used included studies from employers and from the Department of Education. In his 2005 book, "Our Underachieving Colleges", Bok wrote specifically about this issue. Ciocco & Holtzman (2000) indicate that a course with "significant learning" experiences has students remembering key concepts, applying the content, relating the information to others, understanding personal and social implications of the subject, valuing the subject, and creating a desire to continue learning.

### *What are the traits of today's student?*

Millennial students are "smart but impatient" often expecting results immediately (Carlson, 2005). Students have no tolerance for delays. The world is 24x7x365 (Fraud, 2000). In addition to being time crunched, students are multi-taskers. Many of these students carry a wide assortment of electronic devices where portability of the device is key. Raised in a structured environment with a lot of information, today's student is able to juggle a text message

conversation, surf the Web, and complete a reading assignment for homework at the same time. Students feel pressured to study hard and take full-advantage of the opportunities presented to them (Howe, 2005).

One upside of today's student is that they are typically willing to work very hard to earn any kind of credential possible (Teaching the Millennial Generation, 2008). The same study reports that 80% want a clearly structured academic path and clarity in their assignments especially in regard for what is required for exams.

Richard Sweeney, university librarian at the New Jersey Institute of Technology reports that Millennials expect to "be able to choose what kind of education they buy, and what, where, and how they learn" (Carlson, 2005). Students want the academic environment to customize a program for them. They have had greater opportunities for learning offered by the Internet and are often more confident, articulate, experienced and knowledgeable than early generations. One study indicated that Millennials are much more comfortable speaking with their professors than the previous generation (Teaching the Millennial Generation, 2008). Almost 60% of students feel comfortable asking for special treatment (Teaching the Millennial Generation, 2008).

One key to instructing Millennials is "taking a personal interest, connecting with them one on one, being open" (Teaching the Millennial Generation, 2006). Millennials are searching for teachers with honesty and integrity (Raines, 2002). Howe and Strauss (2005) described additional needs of Generation Y including a need for group activity, emphasis on extracurricular activities, fascination with new technologies, and focus on grades. Net learners have a "bias toward action" (Brown, 2000). They are first person learners who want to be presented with the material and then have an opportunity to immediately apply that knowledge. Students' quest for experiential and hands-on learning correlate well research that indicates that such learning is "more significant" than traditional cognitive learning (Rogers and Freiberg, 1994).

### *Does everyone agree that the curriculum should be delivered as the millennial student desires?*

Some educators refute the shift toward a more customer driven content delivery approach to education. Naomi Baron, a linguistics professor at American University, says she feels pressure to "shorten lectures, increase group-discussion time, and ignore the 'multitasking' student who is e-mailing his friends in the back of the room" just to satisfy the needs of the current generation. The Generation Y student is an information broadcaster-a blogger, a podcaster, or a website maintainer. Listening in such an environment is distant and foreign to many students. Ms. Baron states, "At some point, what we are doing is killing higher education." (Carlson, 2005)

### *How does technology affect how we deliver the curriculum?*

For Generation Y, computers are not technology, they are "part of it" (Ciocco & Holtzman, 2000). Millennial students grew up with technology. Born around the time the personal computer was introduced, almost all students used a computer by the time they were sixteen years of age (Ciocco & Holtzman, 2000). They will not tolerate substandard technology (Rothberg, 2006). Such an atmosphere and mindset is a clear dichotomy with many faculty.

Student surveys show that simulation technologies are especially effective (Skiba and Barton, 2008). Such a technique provides the interaction they desire with the feedback they need in real-time activities. Blogging and internet chat rooms are also popular as they allow active discussion and contribution by multiple students creating "online excitement" (Skiba, 2005). Essentially, these activities are connecting with students by providing an authentic learning experience that links learning with doing. Technology needs to be interactive and engaging and not just static information dispensing (Skiba and Barton, January 2008). Students want to be challenged to learn in different ways and want multiple media sources (Oblinger and Oblinger, 2005).

## *What is the Ideal Class Delivery Approach for the Millennial Student?*

The era in which the students have grown up has shaped their expectations for the college classroom. Students expect education to be entertaining. Students have grown up using learning approaches geared toward “teamwork, collaboration, critical thinking skills, classrooms with learning pods/subject corners and individualized options, and learning projects” (Training the Different Generations, 2007). The strengths of this generation include multitasking, goal orientation collaboration, and positive attitude (Ciocco & Holtzman, 2008). These life experiences and common traits lead to learning preferences where material in the classroom is geared toward teamwork, experiential activities, structure, and the use of technology (Ciocco & Holtzman, 2008). The pace of the classroom would be quick with increased interaction and visual examples (Ciocco & Holtzmann, 2008).

### **Methodology**

This study investigated whether students in *Auburn University* Building Science program accurately reflect the views of students at other universities in other fields regarding how students would like the curriculum to be delivered and assessed within the classroom. The research used a qualitative approach employing focus groups of current students in the BSCI program. The study was specific to the University where the study occurred. Students were recruited and selected on a random basis and were generally representative of the school by race, sex, and class. Each student selected had taken classes within the BSCI program at Auburn University.

#### *Focus Groups*

Four focus groups were used to obtain the opinions of the students. Students were recruited from a database that included all the students who were enrolled in BSCI program at the time of the research. An information letter was distributed to selected students with a request for students to respond to the request as to whether or not they were willing to participate in the study. The request for participation and information letter explained the project, indicated a requirement of 1.5 hours for each student, identified that personal information would not be collected, and gave the students a chance to back out at any time should they choose to do so.

All focus group meetings took place in the “Student Activities Room” of the BSCI’s facility building. A set of pre-defined questions were developed by the researchers and used as a guideline during the meetings. Also, a short survey was presented individually to the students at the beginning of the meeting in order to collect information about the classes they had taken in the BSCI curriculum and their construction work experience. Table 1 summarizes the focus group meetings.

Table 1

#### ***Summary of Focus Group Meeting Times and Participants***

<b>Meeting</b>	<b>Date</b>	<b>Time</b>	<b># of Student Participants</b>
#1	04/15/2009	12:00 – 1:00 PM	8
#2	04/22/2009	12:00 – 1:00 PM	13
#3	04/29/2009	12:00 – 1:00 PM	7
#4	07/06/2009	12:00 – 1:00 PM	13
<b>Total</b>			<b>41</b>

Figure 1 below indicates the student distribution by class and construction experience respectively.

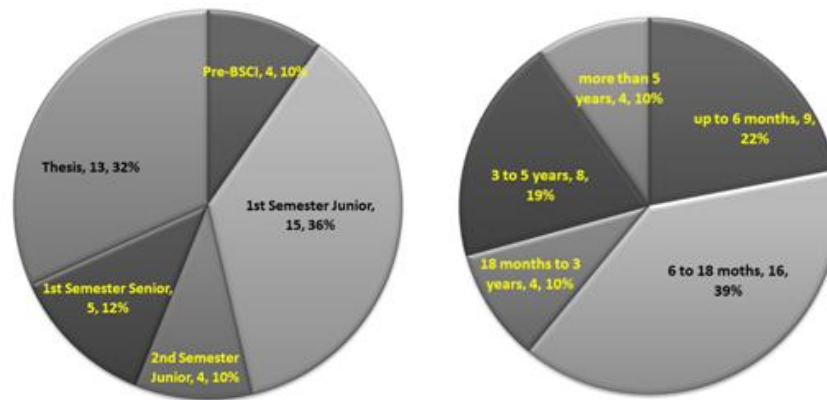


Figure 1: Student Participation Distribution by Class and Amount of Construction Experience

All focus groups were led by one of the main researchers on the team. A formal introduction of the research team was given, and the purpose of the research was identified. Once this brief introduction was complete, the focus group moderator moved directly into the individual questions (see Table 2 for the questions). Due to group time constraints and sensitivity to participant's time commitment, responses to each question were limited to approximately five minutes for all groups.

Table 2

**Summary of Questions Asked of Student Focus Groups**

Category	Question
General info.:	Participant's year/class in the program?
	Participant's construction experience?
Class delivery:	What do you like and dislike about the way course material is currently delivered?
	What do you like and dislike about the way you are assessed for current courses?
	What would make your learning experience better?
	What experiential activities would enhance your learning experience?
	How much flexibility would you like to have in selecting the courses you take? How do you feel about electives or specialized tracks of study?
	Do you think that online learning should be added? If so, what types of areas should be considered?
	How can you be motivated to learn?
Communication & interaction:	What is the best formats of media (textbook, lecture, video, etc.) that can help you learn?
	What is the best way for you to communicate with instructors and classmates regarding course content?
Working in teams:	What are your views of working and being assessed in groups or teams?
	How do you feel about working in teams with people from other disciplines?
Technology:	How could the use of technology enhance content delivery and assessment?

This study focused on the Building Science curriculum at *Auburn University* only. No other University environment was considered. The study only took into consideration the personal opinions of students selected for the trial and may not be representative of the entire student population.

The students involved in the focus groups identified issues key to them as individuals for each question asked. The researchers collected the data and sought trends and common points among the comments made by participants.

## **Preliminary Results and Discussion**

Results indicated general agreement with established literature regarding student preferences for classroom delivery. Several areas emerged where students strongly matched established literature. Other areas were less decisive. In one area, students appeared to refute the established millennial generation literature. This paper focuses on areas of strong agreement and areas of divergence between Auburn University Building Science students and established research on the Net Generation. See Figure 2 for graphical representation of results.

### *Areas Where Students Strongly Agreed with Established Literature*

Students expressed a strong desire for “hands on” learning. They want presentations integrated with labs or service activities. Essentially, their vision of the perfect delivery system is to be presented with a topic one day in a lecture environment and then have an activity or lab the next day where they can directly experience or apply the concept taught the previous day. Several students felt so strongly about the experiential component of learning that they specifically stated that Auburn University should consider a required “construction experience” away from the University prior to graduation. Students expressed emotional attachment and indicated personal growth through work on service learning construction projects done by some classes within the Building Science program.

Students also expressed enjoyment and strong learning experiences from visiting job sites through class field trips. Not only did this allow them to apply the concept, but it allowed them to connect that concept with the “working” world and something that they may use to earn a future wage.

Students expressed disdain for textbooks but liked multiple sources of information. This matched directly the published research on the net generation which indicates student desires for the media use to be “interactive, offer group activities, require multi-asking, and provide access to information in an expedient manner” (Ciocco and Holtman, 2008). Students liked classes where smaller handouts targeted toward the learning objectives were employed. They also commented that receiving a copy of the professor’s notes was sometimes helpful. Students suggested consideration of online videos and e-text.

Published literature indicates students’ expectations for instant access and instant response (Sikba and Barton, January 2008). The focus groups mirrored this recognizing communication through various tools as appropriate depending on the communication needs of the specific situation. E-mail was the dominant form of communication for the students surveyed. Direct and quick contact with professors and classmates was expected. Students appreciated faculty with “open door” policies. They also like Blackboard communication tools used in various classes like the calendar and discussion boards.

While group work was popular with both established research and the focus groups, all data indicated a desire for students to work with their friends. Millennials want to work with people with whom they “click” (Raines, 2002). Students expressed reservation about working with other disciplines due to diverse interest and priorities.

### *Areas Where Students Generally Agreed with Established Literature*

Other questions directed to the focus groups indicated only general agreement with established research. Areas of general agreement included curriculum delivery methods, assessment techniques, learning experience, flexibility for students, motivation to learn, teamwork, and technology to enhance learning. These responses are not addressed as part of this study but will be addressed in a forthcoming journal article.

## *Area of Divergence between Students and Established Literature*

Auburn University is a destination school. Remote or web-based classes are essentially non-existent here. Classes are delivered in person by the assigned faculty, and a close connection exist between the faculty and the students. The students clearly identified that this program is best prepared to deliver the material in a classroom setting. Students were especially focal on how poor their experience had been with online education. One student stated, “I did not learn anything in my online classes.”



Figure 2: Items that existing literature on the “NET Generation” & BSCI students strongly agree & strong disagree

## *Summary*

In summary, a customer focused approach to curriculum delivery requires a new and fresh approach to today's millennial student for both the University classroom as a whole and Auburn University Building Science students. Students want a clear foundation of knowledge and then the ability to do something with it. They favor fast paced classrooms with increased interaction, more visual examples, and less text based learning. The Net Generation student demands options and the integration of different technologies within the classroom. At a minimum, faculty must understand these learners, their expectations, and their learning needs as we prepare our future curriculum.

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