



The Educational Renaissance

As we continue to implement the School's strategic plan, it is important to revisit the goals we set out to accomplish. The Educational Renaissance initiative seeks to "transform the educational process to prepare professional and graduate students to enter into their profession and continue to develop throughout their careers" or, as stated in our last newsletter, to produce learning, not provide instruction.

Through this initiative we aim to improve student learning and thinking abilities (critical, creative, practical) by updating and clarifying

curricular goals and priorities; advancing active and evidence-based teaching, learning and assessment practices; and better using assessment data to enhance learning.

There have been two recurring questions about this initiative: Is the educational renaissance about technology? And who is involved in this initiative? First, this initiative is not about technology; it is just a teaching and assessment tool we are exploring to improve student engagement and learning. Second, as faculty in a major university, we all have some responsibility for

improving engagement and learning. Students come to us to learn through didactic and experiential education and faculty come to us to learn through scholarship.

This issue of the newsletter addresses this strategic initiative by discussing the upcoming generation of students, the millennials; appropriate uses of technology in instruction; and defining, developing and assessing critical thinking.

Point and Click: A Quick Guide to Using Educational Technology Effectively

Blackberry, iPod, Wii, X-box — millennials (and some faculty) love technology for communication and entertainment, but incorporating it into our teaching will only improve learning if it helps to engage the students. So how do we do it?

First, let's distinguish between technology in education, educational technology and educational innovation. Education has witnessed a myriad of examples of using technology in education over the past 50 years, yet the educational system has changed very little during this time. Perhaps that is because the uses of technology aren't truly educational technologies, i.e. those that apply sound educational theory and instructional strategies to create great learning environments

for students. Further, educational technology and educational innovation are not synonymous. An instructor can be innovative in her or his teaching without using educational technologies, and educational technologies can be devoid of true innovation. A given instructional strategy can be supported by a variety of technologies (old or new), and a given technology might support different instructional strategies. Some are just a better fit than others. Better to turn a screw with a screwdriver than a hammer; a dime may also do the trick, but a screwdriver usually works better.

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We Want Students Who Can Think Critically: How Do We Develop Them?

The acquisition and assessment of basic knowledge and skills is important and appropriate, but it cannot be our sole focus or the only means by which we judge the academic success. Developing thinking skills (critical, creative and practical) requires

instructors to understand how these skills develop and use teaching approaches that enable students to build these skills over time.

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Millennials, the Next Generation of Pharmacy Students

Students in the class of 2012 range in age from nineteen to forty-four years, representing two generations of learners: Generation-X (born 1960 to 1980) and millennials (born 1980 to 2000). Each generation brings unique attributes and challenges to the classroom, and we may be more effective educators if we understand traits common among these groups. This article focuses on millennials, who are quickly becoming the predominant generation of college learners.

Millennials (aka, Generation Y, nexters, echo-boomers) are influenced by technology, especially in communication. Because of their connectivity (Internet, cell phones, Facebook/MySpace, iPods) they have a larger sense of community. Most are very close to their parents, who have provided constant support throughout their lives. The involvement of these "helicopter parents" (so named because of their tendency to hover) in all aspects of their children's lives — school, extracurricular involvement, personal and academic successes — may well persist into the college experience. Millennials are

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Important Dates

- Mar 9 - 13: Spring Break begins
 - Mar 22: White Coat Ceremony
 - May 9: Commencement
- More important dates can be found on the faculty Blackboard page.

Technology from PAGE 1

Every few years a new technology comes along and is touted as the next big thing in education, and as often as not those technologies disappear in a few years. What remains constant are the basic principles of good teaching. Chickering and Gamson reported the seven principles of good practice in education in 1987, and revised them in 1996 to include technology aspects. Accordingly, good teaching:

- 1. Encourages contact between students and faculty.** Communication technologies (e.g. e-mail, chat rooms, discussion boards) increase access to faculty members and help them share useful resources. These technologies augment face-to-face contact in and outside of class and are available through Blackboard.
- 2. Develops reciprocity and cooperation among students.** Learning is enhanced through cooperation among students. With currently available technology, students can work in groups despite being in different physical or temporal locations.
- 3. Encourages active learning.** Active student engagement is crucial to their learning; students are increasing less tolerant of being talked at. Students need to practice, reflect on, discuss, write about, relate to past experience and apply to their daily lives that which they are learning in order to make it part of their working repertoire. Educational technologies can be effective if they facilitate this active engagement.
- 4. Gives prompt feedback.** This can be accomplished through items like immediate-feedback assessment techniques, classroom assessment techniques and even online quizzes in learning management systems like Blackboard.
- 5. Emphasizes time on task.** Nothing can replace time on task. Teaching strategies and technologies that help students learn when and where they want can help encourage time on task.

6. Communicates high expectations. High expectations are important for everyone, but as we have previously noted, goals must be achievable. Significant real-life problems or conflicting perspectives can set powerful learning challenges that drive students to not only acquire information but also sharpen their thinking skills.

7. Respects diverse talents and ways of learning. Using different teaching strategies in and out of the classroom is beneficial. Students need opportunities to show their talents and learn in ways that work for them. Then they can be pushed to learn in new ways that do not come so easily.

When considering educational technology use, instructors should thoughtfully evaluate whether they promote one or more of these principles and are more likely to improve upon than detract from learning by current methods. When planning instruction it is of the utmost importance to ask the right question – “What am I trying to accomplish? What do I want students to learn? How can I help them achieve learning goals?” This approach puts the educational value up front (what I am trying to do) and allows for broader consideration of potential solutions which may or may not include technology. If you start with the question “How can I use technology?” you are not putting learning first, thus unnecessarily limiting the options considered to engage students.

Once you have clarified the learning goals of the course, keep these thoughts in the back of your mind as you consider the potential value of using technology:

- Technology is only as good as the instructor who uses it. Technology is a tool, like a book or piece of chalk. These things don't make instructors better teachers or necessarily make students better learners. Technology can be useful but it also can be detrimental (e.g. PowerPoint can be used effectively but too often is abused).
- Technology can be used to perpetuate old

models of passive learning (e.g. converting PowerPoint slides to an online, narrated video). Use the technology to be more interactive, more visual or to animate concepts that are not learned well through static means.

- What is the value added? Is the time spent developing technology going to add value? Is your time better spent developing other teaching tools such as note sets, your own book, or designing other active learning activities?
- Technologies come and go. What happens if you develop using technology that is no longer supported? (Remember Beta or VHS tapes, overhead projectors?)
- Developing technology is resource-intensive (time, man power and money). Are resources available to develop and maintain the technology? Will you be able to update it yourself or need a specialist?
- Beware of the sales pitch! Apple is great at telling us what we (should) want (e.g. the iPhone), but not necessarily what we need. Technology may be fun and attractive and a good company will try to sell you on a product's educational value. Putting the education question first and educating yourself about teaching and learning will put the sales pitch in perspective.

One final recommendation if you choose to use instructional technology: know what you are doing! Students have little tolerance for people who do not use the technology effectively. Our IT department and the Center for Educational Excellence in Pharmacy can select appropriate technologies to facilitate student learning in your course and help you learn to use the available technologies effectively.

For more information:

- <http://www.tlgroup.org/programs/seven.html>
- <http://www.nowhereroad.com/twt/>

Special thanks to Kim Eke (Information Technology Services) for her input in preparing this story.

Thinking from PAGE 1

What is critical thinking?

CT is difficult to define and more difficult to measure. When we're thinking critically, we're using our knowledge and intelligence effectively to arrive at clearly reasoned and justifiable conclusions, positions or solutions. In the literature, CT has many definitions, but we will define it simply as a reasoned and reflective consideration of evidence in a particular context in order to make a judgment. CT is self-directed, self-disciplined, self-monitored, and self-corrective thinking, though it may have external influences. It entails effective communication and problem-solving abilities.

How do we develop it?

Developing critical thinking can be difficult, but it is a teachable skill. While most educators have aspirations to help students develop CT skills, individual courses in isolation often fail to improve CT. In fact, most four-year undergraduate programs do very little to improve CT skills. Why? Because CT is best developed through integration of knowledge areas and through a scaffolding approach.

Integration allows students to build on previous experiences, provides developmentally appropriate opportunities for them to produce optimal performance, and lays a foundation for further development.

Scaffolding provides a layered support mechanism through which students initially receive greater assistance to complete tasks. As their proficiency increases, that support is gradually removed so that students take on increasing responsibility for their own learning. Scaffolding provides clear directions; clarifies purpose; keeps students on task; offers assessment to clarify expectations; points students to worthy sources; reduces uncertainty, surprise and disappointment; delivers efficiency; and creates momentum.

Within a given problem, there are developmentally grounded, scaffold steps that could be used to help students think about problems:

1. Identify and define issues or problems.
2. Determine the kind of information that is relevant to solving the problem or resolving the issue.
3. Gather, judge and connect the information.
4. Generate hypotheses, construct arguments, make inferences.

5. Test hypotheses, make counter-arguments.

6. Evaluate the results, possibly revisiting earlier stages of the process.

How do we measure critical thinking?

Measuring CT is not as easy as assessing content knowledge. The most meaningful way to assess thinking skills in the classroom is to assess both the answer to the problem AND the process by which the answers are arrived at. It is important to differentiate between mistakes in process and content knowledge deficits. Rubrics are available to help guide assessment of CT skills (see IDEA paper #37 and Resources at <http://www.wolcottlynch.com>). Again, it is best to scaffold the developmental process, assessing each step before moving along the framework.

As an example, if students are given a clinical case study they would be assessed on their responses to items such as: problem recognition, reporting and evaluating essential data, differentiating urgency, developing and initiating an appropriate intervention, anticipating relevant follow up or medical orders, and providing relevant rationale. For basic science material, students might be assessed on items such as the quality of evidence to support the conclusion, providing specific examples illustrating a concept, providing the next step in a process, or developing a concept map linking a basic science principle to a clinical situation (see http://cord.org/txcollabnursing/onsite_conceptmap.htm)

What else should we know about critical thinking?

There is more to CT than just the ability to solve a problem; it is about being both *willing* and *able* to think. While we tend to focus on thinking abilities, the willingness goes more to motivation and intellectual maturity. Thinking takes a concerted effort and thus is the harder path to take (it is easier not to think). While most instructors and students value CT, valuing is not enough to motivate. There is a large body of literature on motivation (see IDEA Center paper #1, #41 or Motivation in Education by Schunk and Pintrich). One way to motivate and encourage CT is through modeling which requires instructors to display thinking skills correctly, consistently and in an enthusiastic manner. Scaffolding also will help build motivation by building confidence.

Instructors who do not understand how thinking skills develop may overestimate student skills and assign unreasonably complex coursework. Without adequate support, students become

Do You Consider Yourself an Education Scholar?

The AACPE Education Scholar program is a Web-based tool developed to advance and improve teaching skills and professional scholarship. The program has a few introductory videos, but most of the information is obtained through reading the online modules with links to articles. The assignments are reflective and individualized in nature, allowing participants to use their own course as an ongoing project. The assignments call on participants to work on necessary instructional design components and appropriate assessment tools for their courses and results in a useful finished product and relevant application for the learning objectives.

There are currently six individual modules offering instruction in topics such as facilitating learning, improving outcomes, problem-based learning and assessment of instructional effectiveness. Each module can be approached and paid for separately to meet the level of experience and needs of the participant. Certificates of completion are generated upon completion of each module. Access to the modules can be renewed annually to provide additional time for completion or as an ongoing teaching reference. For more information, please visit www.educationscholar.org or contact Jennifer Robertson (Jennifer_Robertson@unc.edu) who has completed the modules and can share her experience.

overwhelmed, perform poorly and will resist further efforts. When expectations are too complex, instructors may become frustrated with students' performance and revert to low complexity coursework that fails to promote student development of complex thinking skills. As stated earlier, undergraduate education often fails to increase thinking skills, in part because educational experiences have provided limited and inconsistent support for skill development and for optimal performance.

For more information

- <http://www.wolcottlynch.com/resources.html>
- <http://www.theideacenter.org>
- <http://www.criticalthinking.org/starting/index.cfm>
- <http://wsuctproject.wsu.edu/ctr.htm>

Special thanks to Wendy Cox for her input in preparing this story.

Millennials *from PAGE 1*

often described as confident and optimistic. This short list of generalized attributes and related implications for teaching, gathered from the literature, may help you.

Millennials feel they are special.

Catered to and sheltered by those overprotective parents, they may have had few opportunities to make their own decisions and mistakes. While more respectful of authority than their Gen-X predecessors, they may not take criticism well and may demand special attention.

Advice to instructors: Show students you care about their success. They are looking for mentors to provide the kind of support they have had from parents. They respect and will follow rules they perceive as equitable; setting explicit behavioral ground rules may curb their special demands. Provide constructive performance feedback as quickly as possible as this will satisfy their immediate gratification needs and reinforce their learning.

Millennials are pressured, high achieving, confident, and driven by goals and action plans.

They are achievement oriented and associate success with effort and planning. They equate success with hard work and may become extremely frustrated and need guidance when their efforts don't lead to success in every area. They feel it's the end of the world if they don't achieve something. Their perfectionism can lead to procrastination and excessive focus on grades. They are accustomed to highly structured time and extra-curricular involvement and often don't have much free time. Personal reflection may be a foreign concept. They tend to be very serious students and are willing to lay the foundation for something that comes later, but want to "get something" out of college.

Advice to instructors: Show students relevance in what they are doing; draw correlations between foundational concepts and future applications. They perceive their time as precious and will revolt if they think you are wasting their time with busy work. They are accustomed to high grades, so the experience of a highly competitive professional program may take some adaptation on their part. Remind students that grades are neither personal judgments nor the point to learning.

Millennials are team-oriented and are more tolerant of others.

They have large circles of friends and enjoy being connected to others.

Advice to instructors: Using group work and collaborative learning strategies may help students learn. As with any group work, make sure students clearly understand their individual accountabilities to prevent social loafing.

Millennials grew up in a technology era, constantly stimulated by information and activity.

Between their overly structured time and constant connection to technology, millennials have little quiet time and thus may lack the ability to be spontaneous, introspective or reflective. Most say they can multitask, though the others say they cannot. In surveys, millennials may report more than twenty-four hours of activity in a day, because they can (or try to) do multiple things at once.

Advice to instructors: This has large implications for learning and the need to keep students actively engaged and focused. Students may be good multi-taskers capable of web-surfing and paying attention, so you may need to curb your urge to abrade students for surfing the web during class. However, there are times when multi-tasking is not acceptable. Set clear rules about using laptops or PDAs in class to deter distracting behavior and keep students actively engaged. While millennials are technology driven in their social connections, that does not directly translate to their needs or demands for technology in their learning. They want to be engaged and desire interaction with their instructors. For those that use technology, they have little patience for instructors who can't make it work. They do like technologies that allow them to access information at anytime (e.g. Blackboard). Also, because much of their communication is through technology, they may lack interpersonal skills (e.g. verbal skills, e-mail etiquette); setting ground rules will help. Finally, coach students about how to reflect on their learning, since they will have had few expectations or opportunity for this in the past.

Millennials prefer doing rather than knowing.

Millennial students learn best through trial

and error, where persistence pays off and reading the manual isn't necessarily helpful. Technology, along with other factors, has convinced many students that "point and click" is easier and more efficient than taking time to problem solve.

Advice to instructors: Engage students with "hands-on activity," whether its case-studies, projects, experiential or laboratory activities. Using experiential learning models will be advantageous (see Kolb's model in the For More Information section). Briefly, the learning cycle can begin with a concrete experience like a patient case. From the case study they make inferences to understand the various parts of the case. Then they can form a hypothesis or a plan based on those inferences. Finally they can test that hypothesis or plan which restarts the cycle by providing another experience.

Knowing these characteristics can help you plan instruction, but remember, you must treat students as individuals and not as a stereotype.

For more information:

- <http://www.cofc.edu/orientation/millennial.html>
- Coomes, MD & DeBard, R Serving the Millennial Generation, New Directions for Student Services, Number 106, 2004
- Howe, N & Strauss W. Millennial's go to college, 2007
- Oblinger DG & Oblinger JL Educating the Net Generation www.educause.edu/educatingthenetgen/
- Mangold, K. Nurse Educator, 32(1): 21-23, 2007.
- www.gentrends.com
- Kolb's Model: <http://www.learningandteaching.info/learning/experience.htm>

Special thanks to Sara Dawson (PY4) and Mollie Scott (Mountain AHEC) for their input in preparing this story.

