Advanced Teaching Online

Fourth Edition

William A. Draves

"Draves knows how the Internet is changing the education experience."

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Rita Martinez-Purson, University of Arizona, Tucson, AZ

"Draves is the most savvy, non-techie Internet guru I have ever known."

Cem Erdem, ADC Telecommunications, a billion-dollar Internet company

"This book showed me just what to do to make my own online course enjoyable to teach and successful in the marketplace."

Ron Gross, author of Peak Learning

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"Information That Works!"

Dedication

Several years ago I discovered that my oldest son, Jason, was more computer literate than I would ever be. I began asking him questions, and then asking his friends questions. I looked over his shoulder at his chat room, watched him develop a part-time business on the Web, and saw him do his homework using the resources of the Web. Jason has been on the cutting edge of life in the Information Age, and I have learned much from him.

When Sammie Jackson came to live with us, I was bent on mentoring him through high school. In a few short months it became apparent that I would learn more from him than I could teach him. Sammie understood another culture, another way of thinking, another value system. He also believed that race and culture should make no difference; he judged no one by their color, and he asked the same in return. Sammie has been on the cutting edge of culture in the Information Age, and I have learned much from him.

When Willie was just two years old, I took him, his crayons and paper with me while shopping. The store keeper looked at Willie's drawing and told him he would be an artist some day. Willie looked up and firmly replied, "I am an artist." A child of the 21st century, Willie can envision space travel while I cannot. He can think about life a million years ago, or hence. He can also draw, make up jokes, and write a great fictional story. Willie is on the cutting edge of art and relationships in the Information Age, and I have learned much from him.

I dedicate this book to my three sons, Jason Coates, Sammie Jackson, and Willie Draves, representatives of the online generation who have taught me much about the 21st century.

Cover Artwork

The artwork on the cover of the book was done by Gina Capaldi of San Dimas, California. It first appeared on the brochure cover of the Los Angeles Harbor College Extension Program in Wilmington, Calif., Carla Mussa-Muldoon, director. Both the artist and the continuing education program have a knack for hitting on important themes in our culture. For this author, the drawing of the Scarecrow on the Internet connected the transition of the last century, as represented by the L.Frank Baum book *The Wizard of Oz,* with the current transition to the Information Age and learning online.

Acknowledgments

For this fourth edition of *Advanced Teaching Online,* I wish to thank the online authorities with whom I have the privilege to work.

They include online learning experts Dr. Rita-Marie Conrad, Rena Palloff, Keith Pratt, Les Howles and Mary Dereshiwsky. I also have enjoyed and benefited from the more than 6,000 faculty members who have taken my online courses, as they have contributed much, and dozens of their best ideas are included in the book.

And I am particularly indebted to my co-researcher and often co-author Julie Coates, whose work in gender, Asperger's, retention, and other areas of education is especially pioneering and brilliant.

The LERN staff, co-founder Greg Marsello, leaders and consultants continue to be supportive and the best team for which someone could ever hope. Chairs of the Board during this writing include: Paula Hogard, University Park, PA; Cheryl Green-Pozner, Quincy, MA; David Reilly, West Palm Beach, FL; Joe Miera, Albuquerque, NM; Perry Harker, Morehead, NC; and Sherry Kuehn, Morgantown, WV.

Production was carried out professionally by Stephanie Mason and Suzanne Kart.

Advanced Teaching Online

Foreword
Preface to the Fourth Edition

There is now a new sense of urgency and imperative in education. The demands of the new economy and our young generations require us to significantly improve learning success for the good of all. Post-industrial societies such as the United States and Canada are in a race with ourselves to move our economies to a knowledge-based economy. In order to do that, we have to improve our miserable 55% completion rate in higher education. We need to give at least half of our young people a four-year undergraduate degree. We have to retain and graduate millions of smart students being left out and who are so critical to a skilled STEM labor force.

That sense of urgency and imperative exists for online teaching as well. Online courses are at the heart of our education now in the 21st Century. But it is now time to ramp up our online courses and take them to the next level. We have to end the era of text-based online courses, and move into multimedia online courses. We need to involve our students more, we as teachers need to be continually engaged, and we have to include more visual and audio components in every unit in every one of our courses. We have to take care of the kids.

The Fourth Edition of *Advanced Teaching Online* is designed for both those teachers new to online learning and teaching, and for those experienced online instructors who want the best practices and latest state-of-the-art techniques.

It is a privilege to present the Fourth Edition. Since the First Edition was originally published in 2000 at the dawn of online teaching, this author has

been able to witness the growth, success and evolving of online courses. Ten years ago my co-researcher Julie Coates and I predicted that online learning will be half of all learning in this century, and that prediction is well on its way to becoming reality.

With this edition, we keep that which has proven to be successful. We have added that which has recently become successful. And we suggest what we as online teachers and educators need to do next to respond to our new economy, the needs of our students, and the prosperity of our society moving forward.

It is an exciting decade in which education must be, and is being, transformed. We are leaving the Industrial Age and the factory school model of the last century. We are becoming fully immersed in the Knowledge Society and new economy of the 21st century. It is time to prepare our students for the rest of the 21st century. We start now. We start here. Thanks for teaching online.

Chapter 1.
Lifelong Learning in the 21st Century

Throughout the 10,000-year history of humankind, no one taught on the Internet. Teaching online is still a relatively new experience. And it is taking place as part of an economic, social and education transformation of the way we work, live and learn in the Information Age of the 21st century.

Teaching online is not the same as teaching in-person. It is not simply being able to use a new technology, like a slide projector or fax machine. The Internet is not just a tool.

What we are seeing is that online learning is transforming education as a whole. Generation Y, the first generation of the 21st century, is more comfortable with technology than any previous generation in history (Coates). According to *Generational Learning Styles* by Julie Coates, members of Gen Y learn well by interacting with their colleagues, leading to innovative and effective collaborative learning techniques.

Student collaboration can also involve a different instructor role, such as using student engagement even in evaluating individual student learning. Engaging students in the evaluation process not only can save faculty time but also enhance the measurement of learning outcomes, according to Rita-Marie Conrad and J. Ana Donaldson, authors of *Engaging the Online Learner* (Conrad and Donaldson).

The economic transformation for post-industrial societies is from the industrial age of factories and offices to the information age of knowledge workers and professional services. Where is all this headed? Most likely towards more education.

The Internet also gives us as teachers an unprecedented opportunity to treat learners as individuals, helping them to strengthen their unique strengths and address their individual weaknesses.

It is clear that we do not all learn one way, at one speed, or at one proficiency. In preparing students to be knowledge workers, we are at our best when we can treat each student as an individual. That is one reason why the United Kingdom has set the pedagogical goal of "personalisation (sic) and choice" as a new guiding principle for education in this century, according to leading British educator professor Diana Laurillard (Department of Education and Training, United Kingdom, Laurillard).

Advanced Teaching Online shows you how to develop and teach your online course. If you are new to online learning, you will find this a comprehensive guidebook to the fundamentals of developing and teaching an online course.

If you are experienced in online learning, you will find advanced techniques and information you won't find anywhere else. There is advanced information about creating audio lectures, continuous engagement in maintaining the online conversation, using statistics to track patterns in student online comments, new assessment techniques, and much more. Then challenge yourself to the Best Practices Checklist and benchmark your teaching.

After reading *Advanced Teaching Online*, you will have the latest and most advanced information about developing and teaching an online course. You will know how the Internet is changing how we learn, how to plan your online course, how to develop content, interaction and assessment, how to teach online, and much more.

Welcome to the 21st century. Welcome to online learning.

The Story of Oz

The Wizard of Oz was written a little over 100 years ago, in 1900. The movie came out in 1939. The Wizard of Oz is about the transition society was going through at that time. Up until that time we were an agrarian society. Most people earned their living by farming.

L. Frank Baum saw that things were going to be different, that we were going to move into what would become known as the Industrial Age. He knew that life would be totally different.

Baum understood somehow that the attitudes and the values of the agrarian pastoral society, which people had known, and he had known, and were the height of civilization — all that was going to change. He was against that change. He thought the transition was awful. So he created the scarecrow and the tin man and the lion to represent the virtues of the agrarian society. In his time, Kansas was regarded as a land of prosperity and goodness. That's why Baum set his story in Kansas, because he was indicating that even in beautiful Kansas this awful transition was happening.

Now, 100 years later, we are going through another gut-wrenching total change in society. It's not just a new century to which we are witness. It is the moving from one age, the Industrial Age that all of us adults have grown up in and known, and moving into the next age, the Information Age or Knowledge Society.

That's why we chose for the cover graphic of this book the scarecrow on the Internet, representing the parallel transitions of yesterday and today.

Part I.
Learning Online

Chapter 2.
How the Internet Is Changing How We Learn

The Internet is the biggest technological change in education and learning since the advent of the printed book some 500 years ago. It is destroying the traditional classroom and replacing it with an even better way to learn and teach. And almost every learning situation is being totally altered, including training for business and industry, customer education, association conferences and meetings, continuing education, Sunday School classes, leisure learning, undergraduate and graduate higher education, and elementary and secondary school education.

Learners learn more over the Internet while working at their own speed, time and manner. There is more interaction among teachers and learners than traditional in-person presentations; daily quizzes can tell you exactly what you have mastered and what areas you still need to work on. Learners and teachers can come from all over the world , and they are able to form a virtual community that will kindle long-term relationships.

In the 21st century, online learning will constitute 50% of all learning and education. The rapid rise of learning on the Internet is occurring not because it is more convenient, cheaper, or faster, but because cognitive learning on the Internet is better than learning in-person. Of the growing number of experts seeing this development, Gerald Celente summarized it most succinctly: “Interactive, on-line learning will revolutionize education. The education revolution will have as profound and as far-reaching an effect upon the world

as the invention of printing. Not only will it affect where we learn, it also will influence how we learn and what we learn" (Celente).

As early as 1994, Starr Roxanne Hiltz wrote, "Results are superior in the Virtual Classroom for well-motivated and well-prepared students who have adequate access to the necessary equipment and who take advantage of the opportunities provided for increased interaction with their professor and with other students, and for active participation in the course."

For the past two decades, the research reported that online learning is equally as effective as learning in-person. More recent research shows online learning can be more effective than the traditional classroom, and that hybrid learning, the combination of in-person and online, is superior to both totally classroom and totally online learning.

It is still early in the development of online learning. But the outlines of the potential of online learning are already emerging. The best guide to the next century lies in history, and in examples of technological transition from the nineteenth to the twentieth century. The automobile and tractor were the driving forces for the Industrial Age. The tractor eventually was demonstrated not only to cover more acres than a horse-drawn plow, but to plow deeper (read: better) and thus increase productivity.

Some sectors of society clung to the horse-drawn vehicle, of course. The military still had a cavalry in 1939 to confront Hitler's tanks before the obvious mismatch was addressed (Davis). The tractor changed education for the 20th century as well. Prior to the tractor and automobile, one-room schoolhouses were placed every six miles so that a child would have to walk at most three miles to school. The one-room schoolhouse necessitated one teacher and multiple grade levels in one room. With the automobile, people moved into towns, and even rural residents could take buses to school, thus causing school consolidation and the eventual all-but-extinction of the one-room schoolhouse. In the State of Washington, for example, between 1935 and 1939 almost 20% of rural one-room schoolhouses were closed.

And when online learning is combined with a more interactive and facilitative in-person learning, it easily out performs today's outmoded one-size-fits-all traditional lecture delivery system. "Digital media and Internet communications will transform learning practices," noted Peter J. Denning of George Mason University in his classic piece *How We Will Learn*. Perhaps

the most dramatic change is how the Internet is changing how we learn. Distance has nothing to do with "distance education." By this I mean that even when the teacher is in close proximity to the learners, the quality of the cognitive learning and teaching is higher when the cognitive part of the learning is conducted over the Internet.

20th Century

90% Information Transfer

10% Integrative Learning

21st Century

100% Cognitive Knowledge — 2x Better

100% Integrative Learning — 10x Better

The Internet is breaking apart the traditional lecture or presentation style of teaching and learning. Two new formats are emerging: online learning, and a different in-person style of learning and teaching.

In this chapter I will outline what we already know and can forecast about how the Internet and online learning are changing how we learn. We know, for example, that the economic forces driving life in the 21st century are the microchip and the Internet, just as the automobile was the economic force for change in the 20th century. And we know that business will need workers to learn more, more quickly, and at a lower cost, to remain competitive. We will show that these market forces will create the need and desirability for online learning.

Information Transfer

For most of history, the standard educational setting has been an instructor (or teacher, leader, presenter, or speaker) standing in front of a group of people. This is the most common learning design in society, whether it be for college credit classes, noncredit courses, training in business and industry, high school instruction, or even a Sunday School class.

Basically, 90% of all education has been "information transfer," the process of transferring information and knowledge from the teacher's head into the heads of the learners. To do that, teachers have had to talk most of the time. And right up until today that mode of delivery has been the most effective, most efficient, most desirable way to learn.

But as educators, we know that the traditional lecture is not the only way to learn. We as learners learn in many different ways, at different times, and from a variety of sources. We also know that learning is not purely a cognitive process, but that it also involves the emotions and even the spirit.

The Internet is destroying the traditional educational delivery system of an instructor speaking, lecturing, or teaching in front of one or more learners.

More Feedback, More Consistently

My experience in taking online classes and in teaching them convinces me that students actually get more feedback, more consistently, in a forum such as this (online) class. I think there is a sense of anticipation on the part of the student to return to the online setting to see the responses to his or her questions.—**Mariana Russell**

The whole discipline of self-directed learning, variously called adult learning or adult education, has shown that the traditional delivery system is only one way to learn. The Internet represents the biggest technological aid helping people to learn in 500 years, according to many educators (Thieme).

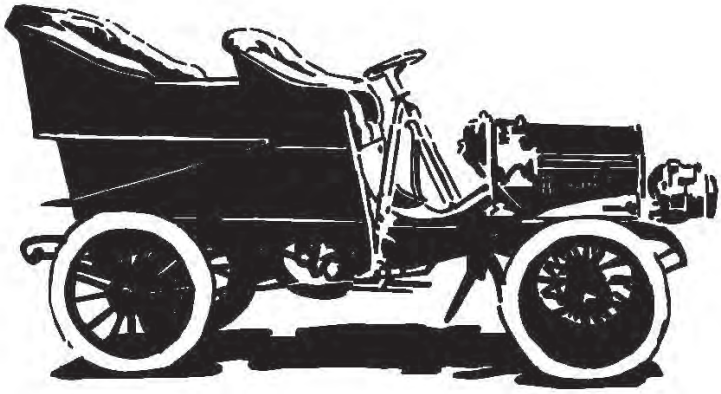
What the Internet is doing is exploding the traditional method of teaching into two parts — cognitive learning, which can be accomplished better with online learning; and affective learning, which can be accomplished better in a small group discussion setting.

Why Cognitive Learning Can Be Done Better on the Internet

Cognitive learning includes facts, data, knowledge, mental skills — what you can test. And information transfer and cognitive learning — even critical thinking skills — can be achieved faster, cheaper and better online.

There are several ways that online learning can be better than classroom learning, such as:

- **A learner can learn during her or his peak learning time.** My peak learning time is from 10 am to noon. My stepson's peak learning time is between midnight and 3 am. He recently signed up for an Internet course and is looking for a couple more, because as he put it, "I have a lot of free time between midnight and 3 am." With traditional in-person classes, only some learners will be involved during their peak learning times. The rest will not fully benefit.
- **A learner can learn at her or his own speed.** With traditional classes, a learner has one chance to hear a concept, technique or piece of knowledge. With online learning, a learner can replay a portion of audio, reread a unit, review a video, and retest him or herself.
- **A learner can focus on specific content areas.** With traditional classes, each content area is covered and given the relative amount of emphasis and time that the teacher deems appropriate. But in a ten-unit course, a given learner will not need to focus on each unit equally. For each of us, there will be some units we know already and some where we have little knowledge. With online learning, we as learners can focus more time, attention and energy on those units, modules or sections of the course where we need the most help and learning.
- **A learner can test himself daily.** With online learning, a learner can take quizzes and tests easily, instantly receiving the results and finding out how well she or he is doing in a course.



The Internet is like an automobile one hundred years ago. It is still being improved upon.

- **A learner can interact more with the teacher.** Contrary to some opinion, online learning is more personal and more interactive than traditional classroom courses. In an online course, the instructor has to create the information-transfer part of the course — lectures, graphics, text, video — only once. Once the course units or modules have been developed, there is need only for revisions later on. The instructor is then free to interact with participants in the course.

Learners can acquire the data and facts faster using the Internet. Officials at University Online Publishing, which has been involved in online learning more than most organizations, say that a typical 16-week college course, for example, can be cut to 8 weeks because students learn more quickly online.

Finally, technology has consistently driven down costs. With education costs in the traditional system soaring, technological innovations have the ability to deliver education more cost-effectively.

More Interaction Occurs with Online Learning

The heart and soul of an online course is not the lecture, the delivery, the audio, or video. Rather, it is the interaction between the participants and the teacher, as well as the interaction among the participants themselves. This daily interaction among participants, for example, helps form what John Hagel, author of *Net Gain*, calls a "virtual community," and what some educators call a "learning community."

The next time you are in a class, count the number of questions asked of the teacher during a one-hour time period. Because of the instructor's need to convey information, the time able to be devoted to questions is very short. In an online course, everyone can ask questions, as many questions as each learner wants or needs.

There is more discussion. In an online course, there is more discussion. If there is a group discussion with thirty people and six to eight people make comments, that is a successful discussion that will take up almost a whole hour. Almost everyone in the group will agree it was lively. Now if you go into an asynchronous discussion forum on the Internet, and thirty people are there, and six to eight are making comments, you will conclude that the discussion is lagging.

The same number of comments on the Internet does not appear to be as lively a discussion as when delivered in person because the capability and capacity of the Internet is that every person can make comments—at the same time. A transcript of a typical online discussion would take hours to give verbally. Online, we can participate in discussions easily, absorbing more information in a much shorter time and engaging in more interaction, not less.

Top Ten Reasons

To review, here are my top ten reasons why cognitive learning on the Internet is BETTER than traditional in-person presentations:

Number 10. You can learn at your own peak learning time of day.

Number 9. You can learn at your own speed.

Number 8. You can learn faster.

Number 7. You can interact more with the teacher and other participants.

Number 6. There are more topics and subjects online.

Number 5. Participants come from around the world.

Number 4. You can learn from the foremost authorities and experts.

Number 3. Online learning is less expensive and thus more accessible.

Number 2. Internet links provide more resources.

Number 1. You can form a virtual community.

The Forces Driving Online Learning

Online learning is popular and becoming more popular all the time. It has become a permanent feature of both formal education, training, and continuing education, promising to be a learning format for generations throughout their lives.

Tens of millions of people have taken online courses.

At the time of this writing, a generation of students who have had online courses in higher education are entering the workforce, where they are likely to continue to learn online. And online learning has now entered elementary schools and not just virtual high schools, but traditional mainstream high schools.

This is just the beginning. There are several forces that are driving online learning. They include:

Business. Business is the biggest force. Business now understands that in order to remain competitive and profitable, it will need employees who are learning constantly. The most cost effective way for this to happen is with online learning.

So business will require its people to learn online, and it will look to recruit college graduates who can learn online. Colleges and universities will quickly adopt online learning because business will demand that capability from their graduates.

Youth. Young people want to learn online. They understand the future, because it is the world in which they must work and compete. Young students will choose online learning.

Marketplace. There are enormous opportunities created by online learning. There are subjects previously unavailable face-to-face that can now be offered successfully online. There are people in various localities that have not previously been served who can now take online courses. Competitors and other educational providers looking for new niches and markets are another force driving online learning.

The Impact of Online Learning

Online learning is rapidly becoming recognized as a valid learning delivery system. The number of part-time students in higher education, to name just one educational system, now outnumbers full-time students. The

number of colleges offering online courses has soared. Online graduate programs and certificate programs keep growing. Online learning has grown exponentially in the business sector, according to Elliot Masie of Saratoga Springs, NY, one of the foremost experts on online training in the workforce. Surveys by the American Society for Training and Development (ASTD) see online training replacing much of on-site training.

Drop Rates

The interactivity is what distinguishes between a class and a correspondence course. We have both at my school. The interactive courses have drop rates similar to F2F classes, while the e-mail correspondence courses tend to run 60-85% drops.—**Mike Felker, South Plains College, Levelland, TX**

Online learning will do for society what the tractor did for food. A century ago food was expensive, in limited supply, and with very little variety. Today food is relatively cheap, in great supply in our society, and with tremendous variety. The Internet will do the same for education. More people will be able to learn more, for much less cost, and with a tremendous variety in choice of topics and subjects. It is something that societies of the past could only dream about. And it will come true for us in a very short time. What online learning will not do, however, is replace you the teacher. Every educational study shows that the most important factor in any person's learning is his or her teacher. Technology does not replace teachers. Instead, it allows us to teach in new and different and more effective ways.

Chapter 3.
The Brain and Learning

"Many teachers probably believe that the function of the brain is to learn algebra or to learn how to diagram sentences, or to be able to read and interpret great literature," writes Julie Coates in *Education in the 21st Century*. "Indeed," she says, "our brains are capable of all these tasks, but that is not why we have a brain. We have a brain for only one purpose, and that purpose is survival. The function of the brain is to allow us, as living beings, to understand and respond to our environment in ways that will assure that we survive and propagate our species."

Because our brain's top priority is keeping us alive, there are certain functions that have evolved over the thousands of years of our existence, and which are "hard-wired" in our neurological functioning. They are responses and reactions to the environment that occur when we find ourselves in certain types of situations. Certain parts of the brain can, and do, change fairly rapidly in response to a new environment such as Internet. Yet other parts of the brain still basically function as they have over the thousands of years of our existence. The interplay between these possibilities and realities makes helping our students to learn a much more neurological and biological experience than many of us educators have ever thought.

Myths about the brain

We have several myths about the brain. And these myths are particularly out of date and damaging for teachers to hold. In the last few decades scientists have been able to discover much more about the brain than we have ever

known before. Here are some of the myths we as teachers need to discard.

- **The brain is a muscle.** The brain is not a muscle. Extended mental work does not always strengthen the brain. Learning does not increase from doing more homework exercises, for example.
- **We use only 10% of our brain.** Neuro scientists agree we all use close to 100% of our brain. The idea that our students are not using their brains is simply wrong.
- **Left-brain and right-brain thinking.** There is no left-brain and right-brain thinking in the sense that one person might be left brained, and another person might be able to develop right-brain thinking. The left brain and right brain work together, communicate, and there is as much difference within one hemisphere of the brain as between the two.

What we need to do as teachers is to learn more about the science of the brain, because understanding how the brain works has practical and significant implications for how we can teach better.

The brain is plastic

One day Julie Coates, author of the pioneering book *Generational Learning Styles,* had her son come home from school and tell her that he had taken the Meyers Briggs learning style test and that he was an INTJ. She thought that impossible, since she was an INTJ and she and her son learned completely differently. That initial experience led to her research on how generations learn differently, and to understanding a basic principle of the brain: that the brain is plastic.

The brain changes over time. The brain can, and does, adjust to its environment. As the external environment changes, the brain can change to new conditions.

Thus, the brains of persons born in 1950 and 2000 are, in some significant ways, different.

Three areas of the brain

The cerebral cortex is a sheet of neural tissue that is outermost to the cerebrum of the our brain. It covers the cerebrum and cerebellum, and is divided into left and right hemispheres. It has gray matter, and also white matter. There are 3 areas important to our understanding of how we learn in the cerebral cortex.

1. **The rational brain.** The rational brain, the neocortex or neopallium, is devoted to intellectual tasks. This is the area we as teachers most often associate with learning. Unfortunately, many teachers do not understand that the functioning of the rational brain does not stand alone, and is not necessarily independent of other areas of the brain. Instead, the rational brain is impacted by two other areas of the brain. The rational brain functions best only when these other two areas of the brain are at their ideal states.
2. **The limbic system.** The intermediate brain, the limbic system, or paleopallium, is devoted to emotions. The limbic system structures are involved in many of our emotions and motivations. Those feelings include anger as well as pleasure. Certain structures of the limbic system are involved in memory as well.

Unfortunately, many teachers do not understand that the limbic system in a learner's brain has to be settled in layperson's terms, or comfortable. If the limbic part of the brain is concerned with negative emotions, or dealing with emotional issues, then it is difficult for the rational part of the brain to engage in intellectual learning tasks. This is a major area where teachers need to focus, to help our learners be comfortable emotionally. When we as teachers demand, enforce, penalize, or demotivate, we diminish (not enhance) a student's mental ability to learn.

3. **The primitive brain.** The primitive brain, the archiopallium, is devoted to self-preservation and aggression. When this part of the brain is activated, the person is practically unable to learn. The person's brain is virtually totally devoted to survival. Historically, that survival has been physical survival. But today, mental stress, verbal aggression, and other perceptions of attack in the modern world are just as real to a learner as a physical attack.

   Unfortunately, many teachers do not understand that we as teachers are perceived by our learners as powerful authority figures, and as such we can do damage to our students' careers, aspirations, feelings, and relationships. Teachers can and do put such stress on a learner that the student is functioning at the mental level of self-preservation. Whether intentional or not, we as teachers have to make doubly sure we are positive and encouraging with our learners.

   It is often with the areas of the limbic system and primitive brain where outstanding teachers shine the most in enabling their students to learn.

The brain's emotional chemicals

Learning, it turns out, is both stimulated and rewarded by emotional chemicals in the brain. Professor James Zull identifies three critical emotional brain chemicals (Keynote, 28th Annual Conference on Distance Teaching & Learning, August 9, 2012, University of Wisconsin, Madison, Wisconsin) that teachers should know about.

1. **Adrenalin.** You may know about adrenalin. It is a "fight or flight" emotional chemical. Stimulating adrenalin in your students, through unrealistic expectations, demands, negative comments, trying to "motivate your students," and other stress-producing experiences, rarely produces positive learning results. Instead, it usually produces

one or both of these reactions. A student will fight, defending him or herself, with body language, verbal comments, and sometimes behavior designed to protect. Or a student will engage in flight, emotionally shutting down, becoming more silent and less engaged. Lesson: we as teachers should not engage in words or actions that produce stress in our students.

2. **Dopamine.** Dopamine is an emotional chemical produced as a reward. It is good. In fact, dopamine not only is a chemical produced as a result of learning, such as passing a test or winning a video game. It also serves to help connect neurons in the brain, adjust synapses in the brain, making them stronger, says Zull.

   Zull says that the primary difference in a child's brain as it grows from being 6 months old to 2 years old is not the presence of additional neurons in the brain, but the addition of more connections, or synapses, between those neurons. So learning, he implies, is about creating connections in the brain. "Emotions play a key role in changing connections," Zull notes.

   When we learn, we mentally create movement, have a sense of having mentally moved from A to B, and dopamine is both a reward system and movement chemical. Lesson: we as teachers should seek to heighten reward and praise for our students learning, not diminish or fail to acknowledge learning. When we as teachers reward and praise, we support what dopamine does chemically to both reward learning and to stimulate further learning.

3. **Serotonin.** Serotonin is a mood chemical. It is involved with the regulation of mood, as well as some cognitive functions. When we as teachers create a safe online environment, that helps create a positive mood that then helps students learn.

Implications for teaching

In this section, we have seen how your teaching positively, or negatively, has a neurological outcome in the brain of each of your students. To summarize, much of our work in teaching is to help our students learn. Increasingly online, as to a growing extent even in the face-to-face classroom, transferring information becomes less of a need as our students have access to an ever-expanding universe of facts and data and information.

Instead, teaching today is more about a) making connections, helping our students to sort out and even dismiss much of the extraneous information and data, and helping them focus on that information which is critical and important and is relevant to their learning; and b) providing an emotional atmosphere which creates a learning setting that stimulates a student's learning and then rewards that student's progress and learning. The online environment is an environment where emotions are displayed, where you as an instructor can create emotions, and where you can help each student maximize his or her learning.

Chapter 4.
How Young People Learn Differently

Young people born 1980 and later, in general, have more online learning attributes than people born before 1965. It doesn't mean they will get better grades online, or that older adults cannot learn online. But it does mean that they come to situation with a better aptitude for the skills needed to learn online. Those born after 2000 already have these aptitudes built into their systems. For those of us who spent most of our lives in the last century, we will want to unlearn as much as we can and adopt new ways of thinking about our learning when we go online.

Julie Coates, in her pioneering book *Generational Learning Styles,* says that generations learn differently. There are currently five generations engaged in learning: Silent Generation (born 1930-1945), Baby Boomers (1946-1964), Gen X (1965-1980), Gen Y (1981-1999), and Gen Z (2000+).

Gen Y and Gen Z clearly learn differently than Baby Boomers and those in the Silent Generation. Coates says Gen X is a transitional generation and thus has a mix of generational learning styles. Some Gen Xers have the learning values of younger generations, some Gen Xers have the learning values of older generations, and some Gen Xers have a mixture.

Here are some of the learning characteristics of Gen Y and Gen Z, young people at the time of this writing, online:

1. **Technology is good.** Almost universally young people see technology as good. Adults often are cautious, wary or see the downside of the

Online communication is natural. For young people, online communication is more natural than for older adults.

Internet. For young people, the Internet is good. What the Internet can do might be scary, but one need not be afraid of the technology, nor see it as posing uncontrollable risks or dangers. Unquestionably, if one sees the Internet as good, then one will be more able to learn effectively online.

2. **Learn by discovery.** The "discovery" method of learning is different than how adults have been taught to learn. The "discovery" method is more immediate, more task- or outcome-driven, seeks relevance, and involves trial and experimentation (discovery). In one of my online courses, an adult participant exasperatingly exclaimed about the numerous participant comments in the discussion forum, "There's too much information here." That is exactly the point of why online learning is necessary: the world has too much information. And if you do not have any idea of what you want to learn, you will be deluged by too much information. To reiterate the Cheshire Cat's response to Alice: "If you don't know where you want to go, then any road will be fine." To cope with too much information, adopt the discovery method and find out what you need to know when you need it.

   If we expect to start at the beginning and wind up at the end, we will become hopelessly bogged down with too much information.

3. **Scan, don't read.** This is a skill we need to apply online when we begin to learn by discovery. We are actually very good at it when we read a newspaper. But somehow we don't apply the same approach to our learning. Online, scan, don't read. Use the built-in keyword search software capabilities to find what you are looking for. When you read a book, read. When you are on the Internet, scan.
4. **Every person is different.** They say in the last century there was dozens of jobs for millions of people. And in this century, there are millions of jobs for dozens of people. So for younger learners, they know they are entering a global post-industrial economy in which each person can distinguish him or herself in the workplace with unique or at least singular skills. They wanted to be treated differently from every one else, because they know each person is different and each learner requires different assistance in learning, so that each person can maximize his or her skills and compete successfully in a marketplace that is increasingly looking for niche, superior and unique skill sets.
5. **Netiquette is important.** Young people understand that in order to have successful conversations online, there have to be some rules, an element of politeness, and concern for others. Since they are young people, they may break those rules or test the limits, but they know when they are doing that as well.
6. **Learning is also visual, kinesthetic and auditory.** More than older adults who learn primarily by text, young people are more visual, auditory and kinesthetic learners. We are starting to see much more dynamic visuals, including animation and simulations, in online courses now, and increasingly online courses will be more multimedia and interactive.

Collaborative Learning Insight

When my 12 year-old is on the computer, she generally has a friend or two sitting next to her. How silly of me to set up a computer area with one nice chair by it for use. When I work on the computer, I am isolated and have the door closed. She comes in and chatters and I become frustrated. She becomes confused because she feels she is helping.—**Marlene Tucker, Salt Lake Community College, Salt Lake City, UT**

7. **Trust your judgment online.** There used to be 'gatekeepers' in the world of knowledge. They could tell you what was right, what was wrong, what was reasonable, what wasn't, what the most outstanding novels of a particular century were, and so on.

   But on the Internet, anyone can say or post or declare anything. The Internet is full of false or misleading information. It is full of opinion.

   There are a lot of intentional spoofs. And there are some heretical ideas that most of us would consider false today that in 25 years will be almost universally acclaimed as true.

   So who do you trust online? Primarily, you have to develop the skill and the assurance to trust your judgment online. This involves developing a few skill sets. A good technique, recommended in Don Tapscott's *Growing Up Digital*, is to "consider the source." Researching the source of the information is one such way to help you develop your online judgment.

8. **Face-to-face is good too.** Older adults tend to believe more in either/or. Something was either true or false, either yes or no, either right or wrong, either red or blue. Older adults often place technology and online learning in that either/or situation; online learning is either good

Interconnectedness is different. For young people, the Internet and online learning is more of a social experience than for many adults.

or bad; they see themselves as either online learners or in-person learners. Young people see technology as being in balance with face-to-face encounters and learning. For them, online and off-line is both/and rather than either/or. The virtual world for them is a real world, but so is the physical world a real world.

So face-to-face learning is valid, good, and has an important place in their lives. They are not spending 98% of their lives on the Internet. They see more balance in life than that.

Tips for Online Learners

"The day of the multi-age classroom is here, and the issues of how to manage diverse populations in the workplace are upon us," writes Coates. For teaching Generation Y, Coates recommends more experiential learning, lots of structure, using technology, incorporating games, offering multiple options for performance, and other teaching strategies relevant to Gen Y.

9. **Interconnectedness is different.** Older adults often view computers and the Internet as isolating individuals, and separating them. For them, face-to-face encounters establish relationships and interconnectedness. When I visited my home town recently, I went to the public library. Downstairs, in the adult section, there was one adult per computer on the Internet. When I went upstairs, to the children's section of the library, I found two, three, sometimes four young people on a computer on the Internet. While adults see computers as isolating people, young people do not experience or behave that way. The Internet is a socializing experience for them as well. They play together online. Likewise, they have a better sense of how we are interconnected on the Internet. We exist in relationships, in a community, relating to each other. It is a new way, an unfamiliar way for most adults over 30, but that interconnectedness is there. Young people see relationships and interconnectedness online.
10. **Learning is collaborative.** For adults, learning is very much an individual activity. For many young people, learning is something to be done with others. Young people are pioneering this more collaborative way of learning. Often one will see two or even three young people at a computer.

Face-to-face is good too.

11. **We learn from other learners.** Young people, more than other generations, are pioneering new ways to get knowledge and information from other learners. In sharing music files, this is often called peer-to-peer (P2P) file sharing. The concept of P2P easily can be transferred to the learning setting where learners learn from each other. Learner-to-learner activities are important online. Conrad and other educational experts also encourage students to learn from other students instead of always relying on the instructor.

Generational Differences

You as an instructor also teach based on the learning style of your generation. Many readers of this book are Baby Boomer or Gen X instructors teaching Gen Y and Gen X learners. Thus, understanding the generational learning characteristics of the generations you are teaching is important. It is even more so because of the generational sensitivity of the online environment.

Chapter 5.
Gender Differences in Learning

Gender characteristics are tendencies associated with one sex or the other. Scientists say that sex is almost always either/or. One is either male or female. Gender, however, is not either/or, as noted by Dr. Leonard Sax in *Why Gender Matters*. Gender characteristics are tendencies. When we speak of male characteristics or female characteristics, we are talking about tendencies. Not every female student will behave with entirely female characteristics, and not every male student will behave with entirely male characteristics. Nevertheless, most males will exhibit male characteristics, while most females will exhibit female characteristics.

Twenty percent cross-over

The twenty percent cross-over concept is the finding that about 20% of one sex will have the characteristic or activity generally associated predominantly of the other sex. There is nothing abnormal in this. It is fascinating that in looking at the statistics for an activity predominantly associated with one sex or the other, the percent of the other sex participating is so often close to 20%. For example, a University of Cambridge study found that 17% of men have a 'female' empathizing brain and 17% of women have a 'male' systemizing brain.

The Impact of Neurological Differences

The human brain becomes masculinized or feminized before birth as a result of being exposed to testosterone and estrogen, among other hormones. If the brain receives more testosterone in utero, it develops into a male brain,

and more estrogen will result in a female brain. The hormones are produced by the mother, based on the chromosomal structure of the developing fetus. There is no brain that is wholly masculine or feminine, but there is a huge spectrum of difference between the male and female brains.

What is most important to understand is that there are measurable, quantifiable differences in how most men and women respond to the same stimuli, and this is biologically based, not culturally determined.

The Female Brain

Simon Baron-Cohen in his book, *The Essential Difference: Men, Women and the Extreme Male Brain*, notes that there are measurable differences in the brain between females and males. Men have 4% more brain cells than women, and about 100 grams more of brain tissue. Men have more gray matter, but women have more white matter. Women also have more dendritic connections between brain cells. A woman's brain has a larger corpus collusum, which means women can transfer data between the right and left hemisphere faster than men. Some scientists believe that women score higher on spatial memory tests because of the larger size of their corpus callosum. Men tend to process more in the left brain while women have greater access to both sides. Women tend to use both sides of the brain to process language while men tend to process more often in the dominant hemisphere - typically the left side. This gives women a distinct advantage in language. Females can process visual and other signals at the same time more easily than men. Women have a larger deep limbic system than men. This gives them the ability to be more in touch with their feelings and to express them than men. Females, for example, score higher than males on tests measuring empathy.

The Male Brain

The male brain triggers behaviors and responses based on its structure and neurochemistry.

The male brain is lower in serotonin, a neurotransmitter that plays an important role in memory, emotion, sleep and wakefulness; lower in oxytocin, a hormone that is important to emotional behavior; a smaller corpus callosum than the female brain and a smaller language center. The amygdala are larger and have fewer neural pathways to the frontal lobes, and a smaller

hippocampus with low-range pathways to emotive centers. In the male brain, there is less cross-communication between hemispheres. There are fewer aural neurons, so loud noises are not a problem, for example. And males have significantly more testosterone than females. The male brain triggers behaviors and responses based on its structure and neurochemistry.

The Fundamental Difference

Overall, males and females are equal in intelligence. And they share most intellectual functions in common and to the same level. Young men and young women also test overall at roughly the same level.

But there are two significant differences in cognitive skills that greatly impact the learning of both female and male students.

There is so much scientific evidence, based on neurology and hormonal differences in the brain, that it is both impossible and counterproductive to ignore or rationalize these two differences.

Females are superior in language skills.

This includes both verbal and written language skills. It does not mean every female is superior to every male; but overall, most females have superior language skills than most males.

The research suggests that females process language information using both sides of their brains, while males use only one side of the brain. They also process information in different areas of the brain. At the same time, females also have better neural connections between the areas of the brain devoted to emotion and to language, thus making it easier for females to express emotion.

Males are superior in spatial skills.

It does not mean every male is superior to every female; but overall, most males have superior spatial skills than most females. Doreen Kimura, in her book *Sex and Cognition*, cites the evidence that spatial skill is linked to testosterone. She notes that studies have found that males receive three surges in testosterone levels. One surge is before birth, one in infancy, and one in the teen years. After each surge tests show males spatial skills increase over that of females' spatial skills at the same time.

Standardized tests administered by varying testing agencies over decades show this difference in cognitive skills between females and males on a consistent basis.

Males and Females Test Equally

The scientific evidence about these two significant differences is so compelling, and the implications for enhancing both the learning of your male students and your female students so clear, that we call these two ying-yang variations "The Fundamental Difference" in how and why your male students learn differently than your female students.

As we have just stated, overall, males and females - - men and women, young men and young women, boys and girls - - are equally intelligent. There is no credible study that shows otherwise. Researchers on gender and intelligence make a point that the two sexes are equal in intelligence.

Equally important, young men and young women also test overall at roughly the same level. In their classic work, *Gender and Fair Assessment*, Educational Testing Service researchers Nancy S. Cole and Warren Willingham state, "Based on a wide variety of tests and a number of large nationally representative samples of high school seniors, we see no evidence of any consequential difference in the average test performance of young women and men."

The Implications for Teachers

For every educator, it is essential to understand that learning happens differently for males and females. Only when this happens can we as educators assist both our female and male students to learn more and be able to perform optimally in school. The task requires setting aside some of our cultural myths, educating ourselves about the neurology of learning.

Specifically, you need to recognize that males, in general, have higher spatial ability than females, and that females, in general, have higher language ability than males. You need to be gender neutral in your teaching, developing specific strategies to create a more comfortable environment for learning for both our male and female students. And you need to make sure you are gender neutral in your grading, as males and females test equally overall at all levels in education.

Chapter 6.
Creating Hybrid Courses

This book is about teaching online. But it can serve equally well as a guide for creating a hybrid course, a course that has in-person class meetings complemented by material and activities online. Other terms for hybrid courses include blended, mixed-mode courses, and web-enhanced courses, but at the time of this writing the term hybrid has become the most commonly used term.

Almost every face-to-face (F2F) course will eventually become hybrid. This is because there is virtually no subject matter or learning situation which cannot in some way be enhanced by the resources of the web.

Elementary, secondary and post-secondary undergraduate on-campus courses will become hybrid for another reason, because more people will need those skills in the workplace, and education has always prepared young people for work.

Hybrid courses reduce costs and maximize time for instructors, save students both time and money in travel, and mean that institutions can hold roughly double or more classes in the same space, a huge cost savings.

And early research comparing hybrid courses to totally in-person courses, as well as to totally online courses, show that students learn more in a hybrid situation.

Learning in Person

In order to understand the potential of hybrid courses, as well as the full context in which online learning occurs in education, it is good to know something about how people can best learn in-person in the 21st century.

As we have noted, about half of all learning will occur online. That leaves the other half to be done in-person, but only a small portion of in-person will be the traditional delivery format that characterized almost all learning in the 20th century. Traditional lecture teaching will go into steep decline because information transfer can be done more effectively online. Most learning in-person should be very different from the traditional lecture format. In-person, or face-to-face (F2F), learning should be focused around what the Internet cannot do. It should be oriented around the integrational aspects of learning. It should be learner-centered.

We actually know as little about how people learn in-person as we do about how people learn online. That is because integrative learning, the kind that best takes place in-person, has not been practiced or studied much because teachers have had to spend most of their time on the information transfer of lectures, leaving precious little time for discussions, affective learning, unlearning, and other forms of integrative learning.

Most in-person learning should take place with the participants and teacher sitting in chairs in a circle for group discussion. This is the room arrangement most conducive to discussion and interaction. Other physical arrangements might be demonstrations, field trips, students working together, and open classrooms.

And we know what we want in-person classes and meetings to accomplish. Here are some of the things that we will want in-person classes and meetings to accomplish:

- Help the participants learn how to learn.
- Encourage each learner, provide positive feedback and motivation.
- Deal with the emotions of learning.
- Help each person integrate the cognitive knowledge gained into his or her own life, the learner's own context, relevancy, and meaning.
- Address the spiritual aspects of learning.
- Help learners unlearn old ideas; assist them in "grieving for their old ideas," as adult educator Jerold Apps puts it.
- Measure the integrative learning needs of the learner.
- Assess the integrative learning outcomes.
- Advise learners on their own learning directions, their best learning styles.

Posting course material

Perhaps oddly enough, my first-time use of Internet web pages to post course material came when the department's copier was highly restricted and each copy was charged. I knew that students had free access to printing at computer stations across campus, so my syllabus cost virtually nothing! Once I had this material on-line, I found that there were many helpful sites for students to use and I posted these in addition to the syllabus.—**Carol Ann Stevens, Buffalo State University, Buffalo, NY**

- Create dissonance, challenging concepts and helping to stretch individuals' minds and frames of reference.
- Help learners ask the right questions.
- Relate learning to action, assisting participants to incorporate their newfound learning into a change in behavior, either individual behavior or social change actions.
- Physically transmit a bonding between learner and other learners, or between learner and teacher, to facilitate and heighten awareness and that "teachable moment."
- Create new learning as a group that could not be accomplished individually.

I am using the term "integrative learning" to encompass all of the above. Integrative learning implies incorporating one's learning into a greater system of understanding, making sense of the knowledge, being able to master it — not simply repeat it — internalize it, and use it.

The kind of teacher required for in-person learning needs to have very different skills and abilities from the kind of skills most teachers possess today. A cliché has already been created to summarize the transition: "From the sage on the stage to the guide on the side."

In-person teachers need to know how to lead a good discussion, how to create dissonance and dialogue, how to summarize and bring things together, how to deal with the emotions of learning, how to advise learners, and most

importantly, be more focused on the learners than on the subject matter. The in-person teacher will be a moderator, facilitator, advisor, counselor, broker, mentor.

The adult educator Jerry Apps has been an early pioneer in exploring this kind of learning. Here's what he says, "I emphasize an approach to teaching adults where you, the teacher, engage your entire personality, how you think,

"Just for Fun" Section Helps Discussion

I have a section on my discussion board entitled Just for Fun that has links to wacky sites I find each week. It breaks up the class and provides a way to start a discussion. For example, this week's listing was a quiz: "What kind of dog breed are you?" They were guessing mine. It provided a rather lively discussion.—**Candyce Duggan, Southwestern College, Wichita, KS**

what you know and how you know it, and how you feel and why you feel that way. As a teacher, you ought to be prepared to help learners understand the meaning of what they are learning, help them explore and create, and help them critically analyze as well as think introspectively."

The best role model for the in-person teacher I can think of is the elementary school teacher. When my son was in grade school, each one of his teachers could sit down with his mother and me and spend a half hour talking about my son and his learning.

There is an old saying that "Elementary school teachers love their students; high school teachers love their subject matter; and college professors love themselves." That's probably not fair, but it does illustrate the strengths that elementary school teachers bring to their teaching. They do not pretend to be subject experts. Instead, they are focused on helping their students learn, and their greatest expertise is understanding the learners themselves.

Here are some of the ways you can use the web to enhance your face-to-face class:

1. Post homework assignments on the web.
2. Post quiz or test answers on the web.

Students' Online Comments

I find a couple of interesting phenomena: 1) students are very kind and supportive online; 2) students take more risks with their comments and observations online and are more inclined to illustrate their views with personal anecdotes or observations; 3) when somebody is struggling, the online group tends to come together to help; 4) when students have the opportunity to think before they speak (type), their comments are more clear and coherent. That makes them feel better about themselves.
—Dr. L.J. Tessier, Youngstown State University, Youngstown, OH

3. Post the course outline, bibliography, and syllabus online.
4. Have students submit essays and papers as e-mail attachments.
5. Post student work, such as a paper, on the web.
6. Provide links to useful and relevant web sites.
7. Post relevant articles online.
8. Produce recorded audio of some of your lectures and post it.
9. Hold online discussions in between your face-to-face meetings.
10. Establish student study groups online to assist them in studying for your final exam.
11. Post quizzes or preparatory tests online to help students study for a final test.

In fact, just about anything that can be done in an online course can also be done as a supplement or aid in the conducting of a face-to-face course as well.

Building Hybrid Courses

The first place to start with building a hybrid course is with posting assignments, course information, and grading or score information for each student on the web. This is usually the first place most hybrid instructors start with using the web.

From there, you can choose any or all of the other facets of online course features. I would suggest you build your hybrid course one feature at a time. Unlike a totally online course, which has to be entirely built before it can be

offered, one nice aspect of the hybrid course is that you can have just one feature online and your students can immediately benefit from that feature. Instead of trying to build too many features online at once, I would suggest you build one feature at a time, encourage your students to use it, and then begin work on the next feature. This will also give you the time and energy to improve or enhance your existing feature should you find you want to improve it before working on the next feature. In considering which of the features of an online course to build first, or next, you would want to consider:

- Which feature will benefit my students the most.
- Which feature do my students say they would like and use the most.
- Which feature adds most to the content or subject matter of the course.
- Which feature provides the most benefit for the lowest input of time, energy and resources.

Here are five areas of online features to consider, each distinct from the others in terms of the learning benefit, and each making a different contribution to the learning process.

1. **Content,** not just online readings, but also simulations, webquests, animations, and videos.
2. **Quizzes,** especially those that provide immediate student feedback and also provide you with information on how well each student is doing. Online quizzes are an excellent way to provide frequent testing, which has proven itself to be not only an assessment tool, but an aid that improves learning as well.
3. **Audio or video presentations with slides.** At this level you clearly move away from the traditional classroom delivery and provide your oral presentations online in an asynchronous format, allowing your students to access them during their peak learning times. You record your best presentation, and then- - except for minor changes at your discretion- - you can shift your instructor time to focus more on your students and on the in-class discussions rather than repeat lectures and information transfer.
4. **Online Discussions.** With hybrid classes, you clearly want to utilize your in-person class meetings for discussion, student presentations, question and answers, small group discussions, and other integrative activities. But online discussions, conducted in between class meetings, may provide an additional or supplemental avenue for communication

and dialogue. Some students tend to participate more in online discussions than in-person discussions. Some topics may lend themselves to online discussion better than in-person. While online discussion in a hybrid course should, in most instances, not replace in-class communication and discussion, it may serve as a tool for you to do some things you cannot do during class time.

5. **Activities and projects,** including collaborative student projects as well as individual projects, which can either be done online or are posted as completed projects online.

You begin building your hybrid course with one of the above features that has the greatest impact at the lowest input of time, energy and resources. And as you become more experienced as a hybrid instructor, you want to move to moving your lectures and presentations online. When you put your

presentations online, that is a turning point that moves you, your teaching, and your course to a whole new level of maximizing both online resources and the in-person environment.

If you are teaching a face-to-face class and interested in using the web to make your course hybrid, this book is equally relevant to the hybrid situation and the totally online course.

The rest of this book will provide more detail on each of the above web strategies that hybrid teachers utilize.

Part II.
Planning Your Online Course

Chapter 7.
The Technology of Online Learning

In order to teach successfully online, you do need to know how the technology works and how the Internet works.

However, you don't have to become a techie. Some online classroom software allows you to teach online with very little technical knowledge. Or you may decide to learn how to work with the technology. Or you may decide to have someone else with technology skills do the technical aspects for you.

In this section we deal with the information about technology that all online teachers should know.

History of the Internet

The Internet was created in the 1970s by a collaboration between the United States government and researchers and scientists in higher education. It started out as a military defense project and quickly broadened to the scientific community, then throughout the rest of the university, then to the private sector and the public. The Internet is a physical connection of millions of computers. So the Internet is millions of computers linked to each other, initially via phone lines. As the Internet grew in popularity, the government released various maintenance functions to the private sector to allow for the Internet's continued growth and usefulness.

The World Wide Web was created in 1991 by Tim Berners-Lee, who worked at a nonprofit scientific and research agency in Switzerland known

by its acronym CERN. The Internet linked all the computers together, but there was not a common language recognized by all the computers, and there wasn't a standard way to locate information on any given computer (server).

Berners-Lee invented the Uniform Resource Locator (URL), or the address system we use today, which begins http://, often followed by www.

He created HTML, or hypertext marking language, so that files and information could be put into a common language so all computers could read the information.

And he invented the hyperlinking system, where you and I can click on an underlined item and jump to another file on another computer.

Shortly thereafter an undergraduate student at the University of Illinois in Champaign-Urbana invented the first browser, software that allows us to search the World Wide Web for web sites and information.

Thus, the creation of the Internet and the World Wide Web was largely the result of work of those in the nonprofit and education sectors. At the core, the creation of the Internet and World Wide Web has less to do with commercial or business enterprise and more to do with information and services that impact the general public and the majority of citizens. Those in the nonprofit and education sectors are still at the forefront of Internet invention. An important and central aspect of the Internet and online culture is online learning and the development of online courses.

How the Technology Works

Specific information, including words, pictures, audio, and video, resides on a particular computer, called a server. You find that information on the server, and pull it over the Internet to your computer. Your computer is often called a "client server."

Some terms and concepts helpful to know include:

- **IP addresses.** Every computer has an address, called an IP number. It is a series of numbers. Your computer has an IP number.
- **Domain name.** This is the address for a particular web site. Since words are easier to remember than a series of numbers, a commission assigns words a specific IP address. So when you type in www.whatever, you go to the IP address assigned to 'whatever.'
- **Server.** This is a computer with files, information, or web sites on it. Most servers are powerful computers minus the keyboard and monitor. They are commonly stored on shelves at an Internet Service Provider (ISP), and continually connected to the Internet. Places with large numbers (hundreds or thousands) of servers are sometimes called server farms.
- **Client server.** This is your computer, or any computer accessing the Internet.
- **Cookies.** Cookies are identification tags which tell the server where you are, so it knows where to send the information you want. In order to participate in chats, forums, purchase online or engage in other interactivity, you have to tell the server where you are. Cookies do this.

You should know that when you make a comment in an online chat, you provide your IP address to the host server. So even though you may not sign

Student Tutorial

To help students with the technology of the online course, we created a student tutorial. We are requiring that students complete the Student Tutorial as their first assignment. We even give points to them for doing this. Of course we can't tell if they have read through all the material, but in order to get the points they have to complete two discussions and one five-item quiz.

As a follow up to the above assignment, I then have them post a home page, an introduction in the actual course site they are taking, and download and then submit a contract form that says they have completed the tutorial, read the syllabus, and understood the requirements for the course. The primary purpose of this latter assignment is for them to know how to save a document and then submit a document electronically. The home page and introduction are used to begin this creation of community.

One other thing I do prior to the semester starting is to send out an e-mail (and sometimes a letter) that provides the initial instructions on how to log into the course. I am finding that the first week is devoted to getting the students into the technology.—**Amy Finch, Ft. Hays State University, Hays, KS**

your real name to a comment, for example, if the people managing the host server wanted to track down a particular comment to a particular IP address, they could. Thus, your "anonymous" comment is far from anonymous.

- **Tube or Bandwidth.** Only so much information can go over a given line. Simple data, like words, take up less space or bandwidth. Sounds, pictures and video take up lots more bandwidth. And when everyone is using the same, there is congestion or heavy traffic.
- **Plug-ins.** Plug-ins are software needed to run a particular program. You download the plug-in to your computer.

Basically, your online course will reside on a server, usually your institution's server, although it can be on any server with good connections to the Internet. You will use an online classroom software, which also will reside on that server. You will post content in your online classroom. You and your students will access your online course on the Internet by going to a specific

address or URL on the Internet and entering a user name and password to gain access.

This book centers on the educational aspects rather than technical aspects of teaching online. In reviewing a number of books about the technology of online learning, if you want to know more about the technical aspects, I would recommend *How the Internet Works* by Preston Gralla. A few of the topics covered better there include:

- FTP and downloading files
- How CGI scripting works
- Video on the Internet
- Animation on the web
- How workgroup software works
- How intranets work
- How markup languages work
- How hypertext works, and much more.

Dealing with Technical Problems

The Internet is like a Model T horse-less carriage around 1915. It breaks down. It isn't perfect. It is a work in progress that will become more consistent, fast, and reliable over time. But like the users of the first cars, first airplanes, first radios, first telephones, and first television sets, you will experience technical problems your grandchildren will not.

A technical problem could occur at any one of the various components of the Internet. They include:

A. Your computer. Some 80% of technical problems are "user problems." That's you. Here's a tip to solve more than half of all your technical problems: reboot. Simply shut your computer down properly, and restart it. Another common problem for online users is that many people have not successfully downloaded a plug-in or software. Test any new plug-in or software to make sure it works before you attempt to engage in your online course.

B. Your organization's network. If you are part of an institution or company, your organization will probably have your computer connected to their network. Your organization decides what can and cannot be done on the network.

C. Your connection to the Internet. You gain access to the Internet by connecting to an Internet Service Provider, or ISP. That connection might experience traffic congestion; it could be affected by a storm; it could undergo some kind of maintenance, upgrade, or reconfiguration.

D. The Internet backbone. From your ISP, you go out onto the main lines of the Internet, called the Internet backbone. Traffic congestion on the Internet is a common problem. Things may load slowly. Audio or video may be garbled or incomplete. Or it may be frequently interrupted. The solution is simply to try later. Maybe fewer people will be using it. Maybe something will have been fixed. Maybe the gods will be with you next time.

E. Server. This is the computer where you are trying to gain access and retrieve information.

The most common problem is that a large number of people try to access the same information at the same time. This slows things down, or sometimes even shuts things down for a short while. Occasionally a server will go down completely and have to be restarted.

Servers go down, but not frequently, not regularly. Yet 'the server must be down' is often one of the first reactions when there is a technical problem. Here's how to tell if the server is down. If even one person, anyone, can access the information (web site, server), then there is nothing wrong with the server or web site. If no one can access the web site, then it could be down.

Hidden Stress

I think that the greatest stress added to everyone is the hidden element of technology. Almost all workers today know that they need to embrace technology in order to keep up in the workplace. However, a self-assessment would most likely reveal that a large majority of workers need to do something to increase their technological capabilities. Even those of us that are in the technological field find it very difficult to keep up with the rapid pace of technology, let alone trying to keep up and infuse the technology into our class rooms.—**Craig Shaw, Central Community College, Grand Island, NE**

One student taking one of my online courses repeatedly reported online, "We're not getting the audio here in Nebraska." The web site or server doesn't discriminate geographically. If the web site and server are up, then the problem is elsewhere (connections, client server, your ISP, etc.). If the web site/server is down, then no one can access it.

Problem Solving

Here are the most commonly used solutions to technical problems:

1. **Try it again.** Type the command, hit the key, press the button again.
2. **Reboot.** Shut down your computer and restart it.
3. **Wait awhile.** Wait an hour. Or less, or more.
4. **Check with your ISP.** Call your ISP and see if they are experiencing problems.
5. **Call your techie.** If the none of the first four solutions work, call your techie.

Get a Techie

Everyone needs a techie. Even techies have techies. Regardless of your level of technical ability with your computer, software, and the Internet, you will want a techie for those times when you are unable to solve a technical problem.

Here's how to find your own techie.

First, establish your level of technical capability. You don't have to know anything about your computer except how to turn it on. Don't listen to others who think you have to know how many rams, bytes, bits or megak you have. If you want to know how your computer works, fine. If you want to become more technically proficient, good for you. But you don't have to become technically proficient. Establish what you expect you can do technically first, so you know what to ask of your techie.

Second, look to establish a long-term relationship. A long-term relationship is one to two years. You need someone who can meet your time requirements (I need you now!) and your budget.

Third, look for someone you trust. I think that's the main requirement. I usually give a techie three tries to fix something. If she or he can't do it after three tries, I am leery of asking that person back.

Also, look for someone whom you trust as a person. Get someone with whom you get along. Get someone you like. Find someone who will be gentle with you, who will make you feel like everything isn't always your fault, and who will teach you a little.

Fourth, look for a student or young person. Most professional techies are very busy and require a good amount of money. You need someone who's available and who will work for very little money. So don't look for someone who makes her or his living from being a techie.

Instead, look for a student or other young person. College or high school students often know a whole lot about computers. They come at a price you can afford. Be generous, pay more than a burger joint, and you will get their loyalty.

Then look to reward your techie in non-monetary ways. Cookies and love are equally valuable to young techies. If you can provide some compliments, reassurance, and gratitude, this "love" will go a long way in gaining the loyalty of your techie. And perhaps you can do something for your techie, whether it be baking cookies or a job recommendation. The non-monetary rewards are important to all of us in any job.

High school and college students are in every community, almost on every block. You won't have to look far. Take care of your techie, and she or he will take care of you. It's a win-win situation.

Technology Assessment

For an initial assessment of your students' ability to use technology, have each student create a Word document about themselves. The primary purpose is to assess their technical ability. A secondary benefit is the sharing of information about themselves with everyone else in the class.—**Jerri Marsee, Union County College, Cranford, NJ**

When There are Technical Problems

When I first started teaching online, one of my biggest revelations was reading a book about online teaching that stated it is not "if" you have technical problems, but "when" you have technical problems. As an online

instructor, you should assume there will be technical problems and create a plan ahead of time for how to deal with your students when a technical problem occurs with your server or course.

One suggestion is to inform students before the course starts what to do if they experience technical problems. Provide a phone number or e-mail address for them to contact. Another suggestion is for you to have all the email addresses of your students so you can quickly e-mail them if there is a problem. And lastly, let them know they won't be missing anything important due to technical failures, that you will extend the time, or repeat the information so as not to create undue pressure on them.

Experienced Online Teacher Reports

Be prepared to deal with the technical issues at the start of your course. "I am finding that the first week is devoted to getting the students into the technology."—**Amy Finch of Fort Hays State University, Hays, Kansas**

Your Biggest Technical Concern

Your biggest technical concern as an online teacher is simple: losing your data and information. Online teacher and author Ken White advises, "The most important risk-management strategy requires copies of the electronic information on separate storage media. A hard-copy backup is the least technology dependent."

Make a backup copy of everything you write and produce. Keep one or more backup copies on separate computers, disks, zip drives, etc. and think about a paper backup copy as well.

Student Technology Orientation

First-time online students commonly experience frustration and problems using technology. A student technology orientation will aid greatly in your student satisfaction, retention, and participation in your online course.

Perhaps your institution has a technology orientation for students, or

your online classroom software company has developed one. If not, consider these options:

- Online student tutorial.
- Required activities and mandatory checklist (like testing audio, or posting a document as an attachment).
- A face-to-face student technology orientation.
- Assigning student technology mentors.
- A help line or phone-accessed technical support person.
- Opening your online course one week ahead of time for students to become acquainted with it.
- E-mailing instructions.
- Mailing instructions, sometimes as a duplicate or backup to the emailed instructions.

Chapter 8.
What an Online Classroom Looks Like

Your online course will take place in an online or virtual classroom. It is a password-protected web site where you will post your course content, discuss or dialogue online with your students, create quizzes and measure their learning.

Many online classrooms look very much alike, but not all online classrooms look exactly alike. So when your students enter your online classroom, they may not immediately be familiar with your online classroom if they have not used the same platform before.

Nevertheless, all online classrooms have three common elements:

1. Content
2. Interaction
3. Assessment

Here is what you and your students are likely to find.

You will be given a web site address where you can always find your online classroom. At that web site you will find a request for you to enter your "user name" and "password." Only people registered in your course are given user names and passwords.

When you enter your user name and password, you have "logged on" to the course. There is a record of each student logon, so you can find out how often your students have logged on, and when each student logged on most recently.

Your user name is you. Generally it is your name, your email address, or some form of your name. In some cases everyone in the course has the same password. Sometimes you can make up your own password. Often the password appears on the screen as ***** when you type it in so others won't see the password.

After you have successfully entered your user name and password, you have logged on.

Next, you and your students will likely come to a welcome page. Before the course, you will likely create a welcome statement as well as tips and instructions on where your participants should go online and what to do.

From the welcome page, you will see the links or buttons to the other areas of your online classroom.

Following are some common features in each of the three common components: content, interaction, and assessment.

Content

The content of online courses is delivered in at least three ways: 1) written and graphic; 2) audio; and 3) video, animation, and moving pictures.

At the time of this writing, too many online classrooms are still text-based in nature, with just words and very little other media. Not enough online courses are visual and multimedia in nature. In this book, we strongly recommend you create a multimedia online course with a lot of interaction, engagement and involvement.

Written and Graphic Technology

Written and graphic content is widely available and in use. It is also almost always technically available to anyone who can access the Internet, so you and your other participants should be easily able to use written and graphic technology without any extra hardware or software.

Here is a list of most of the written and graphic capabilities for online learning:

1. **Text, lecture notes, instructional presentation.** The presenter or instructor can upload her or his lecture notes, text, or instructional presentation and make it available to all participants at any time they want to access it. One advantage is that the participant does not need to take notes but can download and print any of the presenter's information. Another key is that the participant can view, or review, the

material anytime she or he wants and at the pace, intensity and time commitment that the learner wants.

2. **Readings.** Related text and lecture notes, readings, references, articles and other information for which distribution permission has been granted can be uploaded and made available to participants. Much more information can be made available to participants on a web site than can be found in books. The advantage of readings online, however, is the variety of information, not the length. Reading a lot of information at one time on the web is tedious and a chore. Online information should be chunked, or separated into one to three paragraphs of information at a time.
3. **Links to other web sites.** Providing links to other web sites and information is a delightful plus in online learning. The links can be in a reference section, but they can also be integrated into the class material and even online discussions or chats. For example, many college credit courses establish a relationship with an online library so students in the course can have access to a wealth of other reading materials.

Another illustration is that the instructor or participants can reference a technique, drawing, quote, or explanation on another web site and invite the rest of the participants to click on the address to see the reference immediately.

Audio Online

One of the most exciting tools for online learning is audio. Audio is delivered in two ways:

1. Recorded presentations or lectures that can be downloaded to your computer and then played whenever you want.
2. Live, real-time audio like radio.

Recorded audio presentations from you the teacher, along with visual slides, are recommended for all, with few exceptions, online courses.

Recorded presentations have tremendous advantages over listening to a teacher live or in-person:

- **Students never have to miss a lecture again.**
- **Participants can listen during their own peak learning times.** Each student can and should listen to your online lectures during his or her peak learning time, the time of day when the student is most receptive

to learning and able to participate fully.

- **Learners can skip ahead.** If a student already knows some parts of the online lecture, the student can skip ahead to other parts of the course where the person is either less familiar or wants to pursue more in-depth or advanced material. In this way, students can not just speed up their learning, but their time spent learning will be more interesting, involving, and of value.
- **Learners can repeat any part of the online lecture.** Some parts of the lecture a particular student may not get the first time or need more time to absorb. You can do that online. And some parts of an online lecture one might enjoy so much someone may want to listen again in order to gain deeper insights or learn something different the second or third time around.

I have listened to one online lecture where there are about 12 minutes that I have played and replayed over a dozen times. Each time I learn something new or reinforce an important point I want to retain.

There are several wonderful features of recorded online audio, including:

- **Time of presentation.** One can see how long the presentation is, thus enabling students to mentally gauge and plan their time.

○ Exit ○ New Messages ○ Search ○ Options ○ Logout/in
○ Users ○ Messages

▼ **STUDENT COMMENTS**
- ○ June 10/30 (2)
- ○ Chuck 09/22 (3)
- ○ Ralph 09/22 (6)
- ○ Betty 09/16 (3)
- ○ Susan 08/20 (2)
- ○ Bill 06/03 (2)
- ○ August 05/28 (1)
- ○ Sherri 05/28 (1)
- ○ May 05/28 (1)
- ○ April 05/28 (1)
- ○ Bob 05/28 (1)
- ○ Chuck T. 05/28 (1)

▲ **SUB TOPICS** (16)

▲ **REFERENCES** (5)
- ○ Subscribe to Thread

This is what a threaded bulletin board looks like.

Active threads from last 365 days: ○ New Thread ○ Refresh

- **Time status.** One can see how far into the presentation one is at any point in the presentation.
- **Cursor bar.** There is a bar that extends as you listen to the audio. You can put your cursor on this bar and move the bar forward or backward. Moving forward, you skip over parts of the presentation you may know already or do not need to hear. Moving backward, you can listen again to any part of the presentation you would like to hear another time.

In addition, your online lectures might also have a written transcript available. Students can use the written transcript of the audio lecture to clarify certain words or phrases, reinforce their listening, or find a particularly useful quote.

Audio is an exciting feature of the Internet and provides an important enhancement to the learning power of the web.

Multimedia and Interaction

Other kinds of multimedia are becoming more available. There are videos produced by others, which can easily be embedded in your course or linked to from your classroom, that enhance learning.

Some instructors, with the skills and resources to design and produce quality video presentations, are creating their own video presentations. Animation, simulation, drag-and-drop games, and then gaming are all good as well.

Simulations are virtual replication of activities, such as a chemistry experiment. Animations and simulations are becoming more common, and pose wonderful new opportunities for teaching and learning. In one molecular demonstration that this author has seen, students can interact with the simulation, controlling the temperature and the number of molecules, and seeing the resulting interactions, collisions and physical properties. This is a simulation that is not able to be seen or done in a physical laboratory, and thus interactive simulations online are a tremendous learning tool.

Online courses need to move from text-based courses to multimedia courses, responding to the ways that students learn.

Other kinds of content for online courses include virtual tours, webquests,

games and gaming. Some of these kinds of multimedia are optional rather than standard, but growing in usage by online instructors and certainly recommended. The overall direction here is from more passive to active interaction, with the more interaction and involvement from your students leading to greater learning.

We explore different kinds of content more in Chapter 13.

Live Chat (IRC)

Carl: Hi, welcome.
Sherry: Thanks, good to be here.
Carl: What's up?
Sherry: Nothing much. How are you?
Carl: I'm great.
Carl: So, what's the biggest issue for you and your organization?
Sherry: Well, that's a big question. Let me start by saying that...

Interaction

Interaction primarily takes place in asynchronous written discussion forums, where you as instructor and your students make comments and respond to others.

Asynchronous threaded discussion. One of the truly remarkable and breakthrough technologies provided by the Internet is the opportunity to have an asynchronous group discussion using what is called a "threaded discussion."

The technology allows any participant and the instructors to submit written comments, questions and responses to the discussion board, where everyone can read the comments.

"Asynchronous" means that the comments submitted do not have be done at a given time, and that people can read them no matter what time of day they log into the discussion.

Discussion boards are often composed of these features:

- **Forums.** A set of discussion threads under one central theme. For example, discussion for each Unit in the online course is often in a separate Forum. You as instructor create a title for each Forum.

- **Threads.** Each Forum has one or more threads, a series of messages and replies. Threads have titles and can be seen as conversations or topics within each Forum.
- **Messages.** Messages are posts from you and your students, made in a particular thread.
- **Replies.** Replies are responses made to messages, where students and the instructor can reply to a given message.

Email. Email, with some exceptions, is not recommended for class discussion. Email capabilities give the instructor and individual participants the opportunity to communicate directly, personally and confidentially.

Live chat rooms. Live chat rooms allow a given number of people to engage in a written live discussion. The experience of almost all instructors is that the asynchronous threaded discussion board is superior to live discussion for two reasons. First, not all students are generally able to participate at any given time. A rule of thumb is that about one-third to one-half of students participate in live chats. Second, the asynchronous discussion allows more thoughtful comments and responses, which is more supportive of their learning. While a number of instructors may continue to experiment or try live chats when they first teach online, most online instructors, again with some exceptions, use the asynchronous discussion board as the primary communication means for online discussion.

Assessment

The third component of an online course is assessment. Assessment can be done online, or it can be done offline in a face-to-face situation, depending on your wishes as instructor.

Some online assessment is apt to be a closed-ended question such as multiple-choice format where you click on the answers and hit a submit key. Student answers go to the server's computer, which automatically grades the answers and immediately returns the score and possibly preprogrammed comments for the learner's benefit.

This quiz-test-assessment technology can be used in several ways.

1. Learners can test themselves and get immediate feedback. This capability allows students to gauge their own learning progress. Frequent

testing also actually enhances learning as well. Thus, many online instructors create weekly or unit quizzes.

2. Instructors can gain access to a learner's test scores. You as teacher can see your students' test scores, helping you to then aid each participant in his or her progress in the program.
3. Surveys can be conducted. Surveys can be taken and that information can aid in the instruction of online programs.

Opinions, behavior, and other things can be surveyed and the results tallied and posted almost immediately, some of which you may decide to allow participants to see.

Chapter 9.
How Knowledge is Organized Online

Not only is learning online a different experience, but knowledge is actually organized differently on the Internet. This new structuring of knowledge changes the way we as teachers construct content for our online courses.

Four new principles of how knowledge is organized online are:

1. Exploration of knowledge goes deeper, not down.
2. Knowledge content units or objects become reusable.
3. Original sources are accessed more for content.
4. Online courses become permanent, like books.

There are several forces behind these changes. For one thing, there is a tremendous growth of knowledge and information. Today there is more information and knowledge than any one person, any group, any society, any organization could possibly acquire. And new knowledge and information is being created at a faster rate than ever before.

Adults born before 1965 grew up in a time when the amount of knowledge was more manageable, when one could start at the beginning and read to the end. So people growing up in the 20th century read left to right, top to bottom, start to finish. This is not how young people on the Internet read. Because there is too much information, reading on the Internet becomes a process of discovery.

A second and related force affecting how knowledge is organized online is the growing specialization and segmentation of knowledge and information.

New jobs are being created every day. New disciplines, subdisciplines, and areas of study are being created every day.

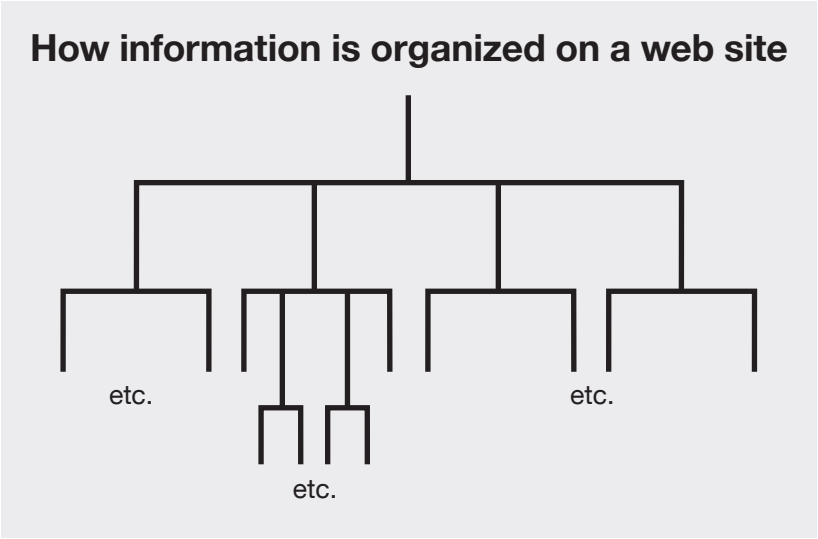
To cope, people in the workforce concentrate or focus on increasingly smaller areas of knowledge, or specialties. And people are segmented into narrower and narrower interest groups.

This increasing specialization means that one can take a course and divide it up into ten different parts and offer a whole course on each of the ten different parts. And then one can take each of the ten different parts, divide them again into subparts and offer a whole course on each of the one hundred subparts.

With so much information, so specialized, and changing so quickly, the Internet is becoming the primary source of information and cognitive knowledge. The Internet can store all this information, it can be updated, and it can be delivered instantly to anyone and everyone.

How Information is Organized on a Web Site

Information on a web site is organized like a complicated set of ladders, where you start at the top and go "deeper," choosing which ladder you want



Make Text Readable

Make your online text readability. Not only look at different fonts and font size, but also look at white space and at color to make online text more readable.—**Julie Rorabaugh, Butler Community College, Wichita, KS**

to use next. It is the very same method that students used to use to outline a report. The outline went like this:

I. xxxx

II. xxxx
  A. xxxx
  B. xxxxx
    1. xxxx
    2. xxxx
      a) xxxx
      b) xxxx, etc.

All items with the same type of designation (I, II, III, etc., A, B, C, etc.) have roughly equivalent importance and are distinct from each other. When items appear indented within a larger category (for example, B., followed by 1.2.) that means the items are within the same general category and are subtopics or specialized information.

How we organize knowledge is changing.

We used to think of a “course” as a single entity, a big ‘glob.’

This is how web sites are organized. My master web developer, Cem Erdem, designed a web site schema for me this way:

Home Page

I	II	III
A. B.		A. B. C.
1. 2.		1. 2. 3.
a) b) c)		etc.

IA.2.c) would probably be something more in-depth and specific in the whole area of whatever information I,A is about. A screen of copy for IA.2.c) would be "deeper" than I or IIIB., for example. IA. and IB. would be more closely related in subject matter than IB. and IIIB., for instance.

Later we will discuss how this organization of web site design impacts your learning online.

Course Information is Organized Differently

Course information is also being organized differently. Susan Kirshbaum, head of online learning products for Oracle, a large software company involved with storing data and information, says that a course used to be thought of as a single identity, a huge "glob" as she calls it. Adds Guenther Weydauer, Vice President for New Product Development at LearningByte International, a content development company, "the worst kind of course content architecture is a bunch of HTML documents thrown together."

That has changed.

Knowledge is now being broken apart and broken down. The once-whole glob course is now composed of units or modules or lessons. Each unit is a separate entity, with a separate focus or theme or set of concepts or skills. Taken together, the units make up a course. Broken down, each unit is itself an interesting, almost-independent entity.

Units can be broken down further into subunits. A subunit might be a page of copy on which there is a single central thought or idea. Subunits are arranged in a way that makes sense, and compose a unit. But subunits might be broken apart and each might be used again in a different course.

Here's how it breaks down:

• Curriculum (a set of related courses that compose the entire study)

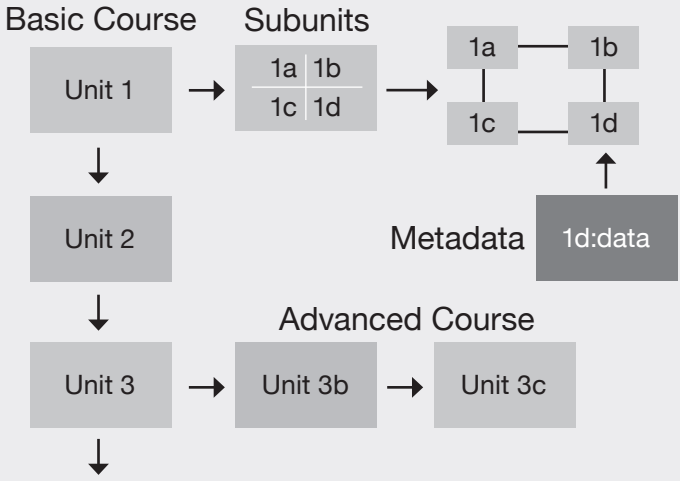
Open Up Your Information

Open up your information. Everyone should receive information. Develop a checklist for administration, learners,and teachers, such as when notifications about a given event or procedure went out. Communicate with everyone.—**Teresa A. Etter**

Online knowledge is organized by units or modules, and then broken up into even smaller subunits. page 41 of 2nd edition of *Teaching Online* — online knowledge

- Course (a complete course of study, with a beginning and an end)
- Units (from 5 to 15 independent and different lessons, each with a different focus or theme)
- Subunits (a smaller breakdown of knowledge with a single focus or concept)

Units and Subunits



Reusable Data

Instead of creating, rewriting, and reinventing pieces of data or knowledge, eventually researchers, authors, professors and others (including maybe you) will create subunits of knowledge or information.

Then anytime someone wants to use that subunit of information in a course, the information is available and can be used (probably for a price, but probably a pretty small price). Several benefits will then accrue.

- The best information and knowledge is available and widely used.
- It doesn't have to be recreated time and time again.
- It is presented in its best form, illustrated and conveyed in the best possible manner for maximum understanding and learning.

The reusable units of data are organized into learning objects. Another name is "shareable content objects," or SCOs. A learning object or shareable content object is content that is reusable and shareable, that is, can be used at different times in different courses sponsored by various institutions or providers.

According to Weydauer, a SCO:

- is 10-20 minutes of learning (in written, audio, video or other form).
- has 5-15 learning interactions taking place within it.
- satisfies a small number of learning objectives.
- has an inter-operability connector which allows others to access the SCO.

The Creation of Metadata

To help find, access, and determine the relevance of reusable data, a new kind of data has been created. This is data about data. It is called "metadata." This data might be hidden, or be visible, but it tells a person what the subunit or data is about.

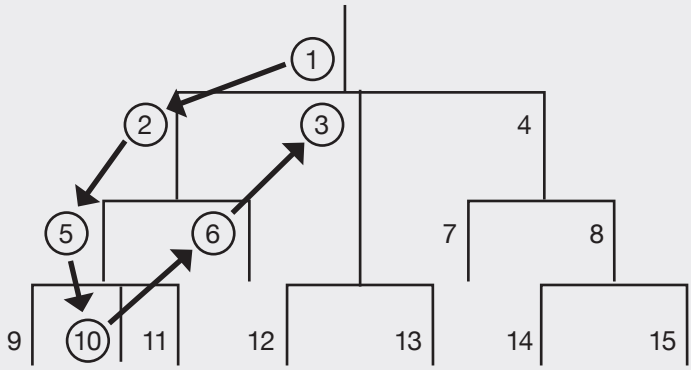
Weydauer says that metadata act like "a card catalog in a library." For instance, it could convey:

- what you should learn first if you don't understand this subunit or data.
- what you should learn next if you do understand this subunit or data.
- what other subunits or data this piece of data is related to.

- what kinds of people (jobs, industries, interest areas) might be interested in this subunit or data.
- what kinds of courses this subunit or data might be used for.

Aiding in the creation of metadata is XML, or Extensible Mark-up Language, which has some advantages over HTML, or HyperText Markup Language. These new "set of tags on language" will make it easier to tag data in a variety of formats and delivery systems.

How the Discovery Method Works



Using the discovery method online looks like aimless "surfing" but when you diagram how someone might move from page to page on a web site, it makes sense.

An Example

Putting the concepts of subunits, reusable data, and metadata together, here is an illustration of how this will be used in practice.

Let's create two different online courses:

- The History of Baseball
- The History of Race Relations

Here's a sample of the outline for the History of Baseball:

- The Invention of Baseball
- The Early Years
- The Black Sox Scandal
- Babe Ruth
- Jackie Robinson and the Color Barrier
- The Yankees
- Baseball Today, and so on

Here's a sample of the outline for the History of Race Relations:

- Slavery in America
- The Civil War
- Race Relations in the Early 20th Century
- Eleanor Roosevelt and World War II
- Jackie Robinson and the Color Barrier
- The Civil Rights Movement
- Race Relations Today, and so on

Did you see "Jackie Robinson and the Color Barrier" in both courses? This is an example of a unit that could be used in both courses. This unit could have the foremost authority on Jackie Robinson compose and write it. There could be interviews with his children or grandchildren. There could be photos and film and audio. It could be the best and most complete narration and elucidation about Jackie Robinson and his impact on the color barrier. It can be used again and again. And since it is the best, it is the best subunit for you and me to learn from.

This is an illustration of how subunits, reusable data, and metadata will be used in online learning.

Original Sources are Accessed More

As a result of the ability to create reusable learning objects or SCOs and find them with metadata, one of the trends we are likely to see in the next few years is that original sources will be accessed more for content.

Instead of having an instructor talk about a prize-winning poem, for

example, the class will be able to access the poet talking about the poem.

There are at least two implications for you in developing your online course. One is to look for opportunities to access existing content. Look for high-quality content that already exists and thus reduces the amount of work or rework you have to do in developing your online course content. Secondly, look for original content in your own work which might become a shareable content object at some point. Original work online no longer has to be a book or a course; it can be a much smaller unit of knowledge.

Online Courses are Permanent

This new way of organizing knowledge on the Internet, and of learning objects, reusable data, and metadata, has changed the nature of courses and classes.

"All teaching becomes publishing," notes a copyright and intellectual property expert at a recent education conference. "Every class is now a published work."

So your online course is a digitally-fixed or permanent entity, unlike face-to-face classes which were transient and 'disappeared' after being offered. Your online course can be accessed before, during, and after the actual time of offering. The interactions and dialogue in the class become a permanent record. And your permanent online course now can easily be analyzed, compared and contrasted to other "published" online courses.

This is a fundamentally new way of approaching the development of a course, and it offers exciting possibilities for enhancing quality and serving students better.

Chapter 10.
Copyright and Intellectual Property Issues

Intellectual property and copyright issues related to online courses are complex, controversial, and present new challenges to everyone in education, noted a panel on the topic at an international education conference in Vancouver.

In one of their books, Palloff and Pratt make copyright and intellectual property issues one of the top issues in online learning.

On the other hand, most online faculty have reported little or no problems to our knowledge with intellectual property and copyright issues as long as they use and follow the Fair Use Guidelines for Educational Multimedia.

So while society and nations try to figure out these issues for the 21st century, you should follow the Fair Use Guidelines for Educational Multimedia, consult your institution's legal adviser if you encounter any problems, and not be overly concerned if you are observing existing copyright laws and standards.

The two most common questions related to copyright and intellectual property for online courses:

1. What and how much material from another source can a teacher use in an online course?
2. Who owns the online course, the teacher or the institution providing it?

The following was not written by a lawyer and does not in any way constitute legal advice. Consult your attorney for any legal advice. It is provided for information purposes only.

Limitations: How much can be used

Most online instructors use, and all are advised to follow, the Fair Use Guidelines for Educational Media. As long as instructors have followed the Fair Use Guidelines, there has not been any justification for being overly worried about copyright. To the knowledge of this author, there have been virtually no legal cases against online teachers who have adhered to the Fair Use Guidelines and have used the material in good conscience for educational and thus non-commercial purposes for the learning benefit of their students.

Here is the essential part of the Fair Use Guidelines for Educational Media on how much content you can use in your online course.

Portion Limitations: How much can I use? (The figures below imply whichever is less.)

1. **Motion media.** 10% or 3 minutes, whichever is less.
2. **Text.** 10% or 1,000 words, whichever is less.
3. **Music, Lyrics, and Music Video.** 10% but no more than 30 seconds from an individual work.
4. **Illustrations and Photographs.** Hard, because fair use usually precludes the use of an entire work. May use in one educational multimedia work: no more than 5 images by a single artist or photographer; no more than 10% or 15 images from a published collective work.
5. **Numerical data sets.** 10% or 2,500 fields or cell entries from a copyrighted database or data table.

Copyright Photos

A rule of thumb is if you do not have specific permission, preferably written, from the owner of a photo, you cannot legally display it on a web site or in your online classroom. Instructors are advised not to use photos with a watermark or copyright on them. These photos are generally for regarded as being off-limits for use without expressed written permission.

There are numerous sources of copyright-free photos. These collections or sites are clearly marked as being available for you to use.

Using Publisher Media

Many publishers of textbooks provide media, such as audio, video, slides, as well as quizzes and other resources, as part of the package when a teacher or institution orders textbooks for a given online course.

A number of online teachers have asked whether they can use the media provided by publishers.

In general, it is the intention of these publishers for you to use their media, given of course that you are using the publisher's textbook. If you have any doubt or concern, what other online instructors have done in this situation is to either: a) ask your organization's legal representative, or b) email the publisher and tell the publisher you are using the media sent to you by the publisher and to request someone to contact you if there is a problem with you using the publisher's media.

Use Links rather than Downloads

When using other material on the web, it is better to link to the original site than download the material to your site, says Stan Waddell of the University of North Carolina at Chapel Hill. He noted, "I work as an information security officer at a University and the majority of the take-down notices we get come from situations where content has been downloaded and is now 'hosted' by the university. I have yet to see a complaint due to a link to some material at its original site."

Online Videos

Sources of online videos, such as YouTube, often have an embedded code or link. In general, a copyright symbol on the video would suggest that you and your students can play or view the video, but you (or anyone else) just cannot alter it or use it as your own.

If you can embed, it's o.k.

If the site offers embed code to embed the content on your site, they are giving you permission to embed it, writes online instructor Rick Burkett. He notes that YouTube offers content providers a tech option to prevent embedding content on third-party sites, if they do not make use of that option, it is allowing it to be embedded. They can always take down the content if they like. Also, you can make a good-faith argument that you were following

Contracts

One of the suggestions that arose from the discussions with my students was for group members to develop a binding learning contract based on a script provided by the instructor at the beginning of the semester. The purposes of such a contract are to establish common behavior guidelines, establish interaction and communication protocols, identify member roles, and develop contingency plans. We've been doing contracts in my class ever since!—**Karen Murphy, Texas A&M University, Bryant Station, TX**

Downloading or Linking to Content

Archive.org is a great source for free audio. The have a hugh inventory of public domain music, as well as music licensed under creative commons or other "copyleft" means. I have gotten audio files for backing tracks for podcasts. I have used audio books for *Uncle Tom's Cabin, The Wizard of Oz,* and *Main Street* for my history classes. And, I have used some of thier speaches for my history classes.—**Rick Burkett**

copyright regulations by using YouTube video, as YouTube is known for being quick to act when a copyright claim is made. The content is pulled down if requested, though some copyright holders only want notices sent that lets posters know that content posted without permission has been noted by their agents and they are putting you on notice that they are not going to have it pulled down, but that they are not surrendering their rights as content owners. This latter portion only applies to posters of content, not those that embed that content.

Fair Use Guidelines for Educational Multimedia

Fair Use Guidelines for Educational Multimedia are a set of guidelines for educators, including educators working in an online environment. Ko and Rossen note, "They are guidelines rather than legal code because no formal amendment to the basic copyright law has been adopted. Nevertheless, an educator adhering to the Fair Use Guidelines is probably immune from liability in a suit."

Several considerations should be taken into account, including:

- **Commercial versus noncommercial use.** Teaching is noncommercial, and thus much less a problem. If you were to use material for a commercial use, then unauthorized use would be more of a problem.
- **Original versus factual.** One is less likely to encounter problems using material which is either factual or in the public domain. But original or creative work, especially if it is not in the public domain, is more likely to require permission for use.

- **A lot versus a little.** If you use a little information from another source, you are less likely to encounter a problem. If you use a lot of information or material from another source, there is more likely to be an issue with permission.
- **Financial harm versus little impact.** If your use causes the owner of the material little or no financial impact or loss of income, there is less of a problem. If your use denies the owner of the material financial gain or income, there is more of an issue.

The web site of the Fair Use Guidelines for Educational Multimedia offers these highlights and details:

- Beware license agreements. They may negate parts of fair use.
- The Guidelines apply to fair use for educational and scholarly uses of education multimedia projects only. They do not cover commercial projects for which you will need to get permission.
- The Guidelines apply to the use, without having to ask permission, of lawfully acquired copyrighted works (that means no illegal, pirated, or off-air copies, etc.) in educational multimedia projects which are created by educators or students as part of a learning activity by nonprofit educational institutions.
- Teachers creating teaching tools in support of a class at educational institutions fall under the Guidelines. Teachers may also incorporate their own material in with the copyrighted items.
- Guidelines support asynchronous distance learning if:
  1. The network is secure;
  2. The material can be password protected;
  3. The technology can restrict the ability of making a copy.
- If copies cannot be restricted but the network is secure, a multimedia educational project can only be used for 15 days after its initial use in class or 15 days after its assignment for self study. After the 15 days, a copy may be put on reserve in the library for on-site use only.
- Teachers may show their multimedia projects at workshops and conferences and may include them in their personal portfolios.
- Time Limitations: if the network is secure and copies cannot be made, the project can be used for two years after its first use in class. After that, permission is needed.
- Portion Limitations: How much can I use? (The figures below imply whichever is less.)

1. Motion media. 10% or 3 minutes, whichever is less.
2. Text. 10% or 1,000 words, whichever is less.
3. Music, Lyrics, and Music Video. 10% but no more than 30 seconds from an individual work.
4. Illustrations and Photographs. Hard, because fair use usually precludes the use of an entire work. May use in one educational multimedia work: no more than 5 images by a single artist or photographer; no more than 10% or 15 images from a published collective work.
5. Numerical data sets. 10% or 2,500 fields or cell entries from a copyrighted database or data table.

- Copying and Distribution Limitations: No more than two use copies, one of which may be placed on reserve. One copy may be made for preservation.
- Attribution and Acknowledgment: It is good form to credit sources and display the copyright notice and ownership information. Include author, title, publisher, place and date of publication. Copyright should show ©, year of first publication and name of copyright holder. Credits may be shown separately but graphics credits must be displayed with the graphic unless, such as in the case of an art class, this would defeat the educational objective.
- Alterations: Alterations to copyrighted works incorporated in educational multimedia projects may be made only if the alterations support specific instructional objectives. It should be noted that alterations have been made.

Online instructors often do the following:

- Wherever possible, seek or confirm permission. This is easiest done with e-mail. If no one responds, you at least have a record of your request.
- Consult your institution's policies and legal counsel.
- Pay royalties where that is clearly the law.
- Follow the established Fair Use guidelines.
- Serve your students' learning interests.

Who Owns an Online Course?

Another of the top issues among online teachers is who owns the online course, the teacher or the institution sponsoring it.

The short answer, and the correct answer, is whatever agreement you make with your institution.

Here are some thoughts about negotiating with your institution or host provider:

- **Request a nonexclusive clause.** Seek a clause of nonexclusivity so that you can teach another course, or even the same course, at other institutions. Many professors teach online courses with more than one institution.
- **Clarify the agreement length.** Clarify whether the agreement is for the life of your employment with the institution, or whether the online teaching portion of your contract can expire, and thus be renegotiated, after two to three years.
- **Determine who owns it.** Determine who owns it, and whether "it" is the course, or content, or learning objects used in the course. Your institution may have a standard agreement. However, these are unusual times, and you can be entrepreneurial in your approach. You can try to negotiate certain provisions. You can find out what your options are relative to teaching in-person, teaching online for another institution or provider, and developing content on your own.

Who Should Own It

The issue of who "should" own your online course, or content, or shareable content objects (SCOs), is a matter of much discussion, debate, and no clear answers.

It is often linked with the issue of whether or not you will be paid for the development of the online course. Using that schema, there are four alternatives:

1. You use your own time to develop the course, and you own it (reasonable).
2. You get paid to develop the course, and the institution owns it (reasonable).
3. You use your own time to develop the course, and the institution owns it (not in your best interest).
4. You get paid to develop the course, and you own it (not in the institution's best interest).

There are incidences of all four alternative ownership plans. At the time

of this writing, there is no clear front runner.

Another model being reported is that both teacher and institution have ownership rights, so that the teacher can take the course somewhere else, but the institution can also continue the course should the teacher (and course developer) leave.

Adding to this issue is whether the teacher is acting as an independent agent, or being contracted by the college, or is acting as an employee.

Contract Contents

I prompt my small groups with ideas to include in their learning contracts, things like:

- Who will be the group leader? Or will this task be rotated?
- Who will be responsible to post a given assignment?
- How will absences, failures to meet obligations, or other conflict be resolved within the group? —**Mary I. Dereshiwsky, PhD, Northern Arizona University, Flagstaff, AZ**

Marketing Online Content

A third related issue about copyright and intellectual property involves ownership with the intent to market or sell that content online.

Here's the dilemma in brief: If you own the content, I want to use it for free. If I own the content, I want to charge you to use it.

On the one side, corporations want to own information (intellectual property), have exclusive right over its distribution, and be able to charge others for using that intellectual property. Corporations are trying numerous methods to accomplish this goal, including writing encryption codes, proposing laws, seeking economic sanctions, creating industry-wide standards, and more.

Corporations are currently fairly adamant about this. "This whole concept of intellectual-property creation and being able to protect content or intellectual property is key," Intel chairman Craig R. Barrett noted in an interview with *The New York Times*, "If you don't have the ability to protect that which you create, society falls apart."

Walter Stewart, an executive with SGI, helped explain the private sector's keen interest in intellectual property. He says that in the Industrial Age, companies made money by making things. But in the 21st century companies are finding it harder to make money by making things. Thus, in the Information Age and our new knowledge economy, business is turning to producing information, knowledge, even education.

On the other side, a generation of boys, entrepreneurs, individual and civil rights advocates, academic freedom activists, and others would like intellectual property to be free and freely distributed.

They have been active as well. Web users have generally patronized web sites with free information, while those sites trying to sell information have had a more difficult time.

According to Stephen Downes of the National Research Council of Canada, the users will win the issue and companies will find it hard to win the online content ownership battle.

While companies are creating encryption codes and software to protect their intellectual property, students, professors and others are creating de-encryption codes and software shortly thereafter to negate the effectiveness of encryption.

The solution will have to be something that is economically sustainable, fair to users and the general public, legally enforceable, and morally and ethically acceptable to a majority of people.

One of the troublesome areas might be with "trade secrets." A trade secret is information that is not sold, but rather kept from the public. A company can buy the digital rights to content and then prevent others from having access to the content. Thus certain knowledge could be kept secret.

Educators such as yourself and educational institutions may be central to the resolution of this issue. Education is on both sides of the issue, wanting to use copyrighted material, and also engaged in producing it. Education serves the general public and has a mission to advocate for the educational interests of the majority of citizens in society. At the same time, education works with business and the private sector. And education has as deep and serious a self-interest in the issue as any other party. Whatever solution is adopted, it will need to enhance and further education and learning, an essential ingredient in the "Information Age" of knowledge workers and lifelong learning.

Chapter 11.
Planning Your Online Course

Below are a variety of considerations and things to think about in planning your online course. You should use them as brainstorming items. Discard those items which are known or a given to you. Don't worry about those items for which you have no control, or don't have an answer.

And do not spend too much time in the planning phase before you begin actual development of your online course. For most activities, I recommend as much planning as possible. But for online courses, you should spend an appropriate amount of time, but then move directly into developing your online course. Do not dwell on these items. Do not try to make your first online course perfect; it won't be. Your expertise as an online instructor is greatly dependent on your experience. As soon as you feel ready to move ahead, or feel as though you are getting behind, move into the development phase.

Before you begin to develop your course, here are some planning items to think about.

Development Time

Reports from numerous online instructors in numerous situations suggest that an online course, regardless of length, level or subject matter, is typically built between 3 months and 9 months, with 6 months a good average.

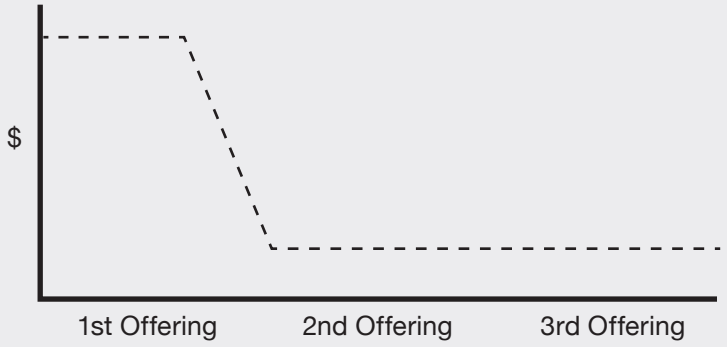
If you are trying to build an online course in less than 3 months, it will likely be a stressful experience unless you are an experienced online instructor and have built several online courses previously.

If you budget more than 9 months' time, you are likely to wait, not use the time fully, or not even get around to building the course.

An average of 6 months seems appropriate for a timeline.

Within that timeline, you can expect to spend about 120 hours of work spread out over those months. Almost all online instructors do not work full time building their courses. And most all online instructors can expect to build a better first online course by spreading the time out over your timeline.

Development Costs for an Online Course



As the graph illustrates, content-rich online courses will have a high initial development cost, but very little cost after that. This is another reason why high volume, repeatable courses will be economically.

Audience

Too often we as teachers assume we know who our participants will be, or we throw the doors wide open and indicate that anyone and everyone is welcome in our course.

The better online instructors try to determine who the audience will be, and then find out as much as possible about their online participants.

In college courses, for example, it is helpful to know the mix of age ranges, as you may have students from age 18 to senior citizens in your class.

Plan your course around the audience you will be serving.

Niche/Curriculum

Some instructors simply react and develop online courses based on current needs. The better online instructors try to develop an online course which will have a niche or fill a gap in a curriculum. By looking at the overall curriculum, you can plan your online course to establish a niche and meet a central need in the overall curriculum.

Calendar

A calendar is an excellent tool to help your students manage their work in your online course. Use the calendar for deadlines, notices of exams, changes, and instructions. Make your calendar open to students. When students have the ability to post on the class calendar, they use it more and will check it more often. Students can input their own small group activity deadlines, meetings and other functions.—**Dr. Maria Bonilla-Romeu, Inter American University of Puerto Rico**

Long-term goal

Where do you want your online course to be in three years? Where do you want to be in terms of your scholarship, teaching and research in three years? Where will the market, need or your discipline or field be in three years?

Many teachers create online courses for a present need. The better online instructors look to a longer-term goal both for their courses and for themselves professionally.

Length of course

Teacher-mediated online courses range from a few days to six months. The length is dependent on your subject and on the needs, flexibility and schedule of your participants.

For a 3-credit online course, higher education online experts recommend 16 weeks, the same as a traditional classroom course. While a 16-week 3-credit course could be done in half the time, Dr. Rita-Marie Conrad of

Duke University says that after trying a shorter course, she moved back to 16 weeks because it gives students more reflective time.

Student time expectations

Ballpark the amount of time you expect students to devote to your course. While some students will devote more, and some less, a rough average is helpful in determining the extensiveness and difficulty of your course.

For example, Dr. Conrad estimates that about 135 hours of student work go into a typical three-credit college course.

Title

Even in formal education courses, the title of the course is important. The course title can stimulate more people to enroll in your course, and the course title also indicates the emphasis or focus of your particular course.

Team members

If you are developing your course with the assistance or involvement of others, think a bit about who your team members are and what their roles will be.

In their excellent book, *Faculty Guide for Moving Teaching and Learning to the Web,* Boettcher and Conrad talk about development teams and about delivery teams.

Development teams may involve an instructional designer, web designer, graphic artists, technical support, and project manager. A delivery team, say Boettcher and Conrad, may involve an assistant, web support person, technical support staff, and administrative coordinator.

Team teaching

A variety of models are developing for involving more than one teacher, expert or discussion facilitator in an online course.

A single teacher is probably the easiest way to proceed logistically, and it may save time if only one person is in charge of the course development.

Team teaching "presents some unique challenges," caution Ko and Rossen. Some online experts, such as Ko and Rossen, warn against team teaching for online classes with fewer than 15 students, while other online

When Development Time Becomes Enjoyable

One of the things that helps me in terms of the time commitment of courses and the lack of time as a teacher is that the technical material is really interesting. It actually does take a lot of time, but it is challenging. When my software doesn't perform, it is challenging to problem solve my way out of it. When it finally works, I get the same satisfaction there as I do when I read a great book.—**Grace Epstein, Kentucky Wesleyan College, Owensboro, KY**

experts do not find problems with team teaching small classes.

A number of online courses have utilized the resources of an outside expert, author, faculty from another institution, or other "guest presenter" online. The guest presenter spends as little as one or two hours online interacting with students and presenting an added perspective.

Another interesting model is developing for leading online courses. A lead instructor develops the course and is the primary resource for subject-matter content, while co-instructors facilitate online discussion and student assistance for smaller groups of students (5-30).

While this is similar to traditional university lecture courses, in an online course there are more options for enlisting co-instructors, including:

- Faculty from other colleges and universities;
- Graduate students;
- Practitioners in the field;
- Teachers who focus solely on being facilitators and helping students learn;
- Students who have taken the course previously;
- Students who are currently taking the course.

Redesigning a course

If your online course is a redesign of a face-to-face course you have been teaching, Boettcher and Conrad note a "web-based environment provides the

opportunity to reassess the strengths and weaknesses of a course." In particular, they note "this is a good time to find ways to increase active student learning and collaboration."

Student management files

Your online classroom software may have a built-in student management system. Even so, Ko and Rossen write, "We urge you to become familiar with your software in advance, so that you can exploit its capabilities and compensate for its shortcomings." If a student management system is not built into your software, you will want to think about what records you want to keep, and how to create a system for file management. Ko and Rossen suggest teachers "create folders for student work on your computer and make sure that you've set up folders for student assignments in your e-mail program."

There may be only 2-3 of the above considerations which demand some planning in your course. To reiterate, budget your planning time, don't worry about solving all the problems the first time, and do not delay too long in beginning to develop your online course, as you will learn much from the practical experience.

Part III.
Developing Your Content

Chapter 12.
Our Ten-Step Model

Developing an online course is an exciting, challenging, and personally rewarding experience. Unlike face-to-face classes, online courses are completely developed before the course starts. To some first-time online teachers, this may seem like more work than a face-to-face class. But Dr. Rita-Marie Conrad, one of the foremost authorities on online teaching, notes that the workload is distributed differently. All of the developmental work has to take place before the class even starts.

To reiterate, there are three major components to a typical online course:

- Content
- Interaction
- Assessment

In this section, I will give you a Ten-Step Model or outline for developing your online course, followed by chapters on each of the three major components. Comments from many of the past readers of this book suggest that our Ten-Step Model is one of the most practical, how-to and helpful models for online instructors, especially those teaching online for the first time.

A Ten-Step Model

Here is our ten-step model to follow in developing your online course.

Step One. Course Goals, Title, and Objectives

Define and state your overall course goal. If you are teaching outside of

formal education, defining your audience at this point is important. Even if you are working within formal education, defining your audience will be helpful.

Select a title for your course.

Next write down the objectives, outcomes or knowledge skills you want your participants to have achieved at the end of the course.

Step Two. Select Your Readings

Next, select your printed readings for your online course. At the time of this writing, we have had a lot of teachers reporting that even though eBooks may be widely available, their students prefer print readings for intensive course study.

As we suggest, online readings are part of the online course, but from the experience of other online teachers, the importance of a written text or set of readings has become evident. There are at least three reasons for this:

1. Putting lots of reading and text online hinders learning. From the experience of thousands of online learners we know that it is difficult and ineffective for learners to read lots of screen text.
2. The printed text or readings are a valuable learning tool. A book or readings are portable, tangible, and currently are the most effective way for learners to read large amounts of material.
3. A book or textbook greatly reduces your development time as a teacher. Within those readings, mark the pages or sections that are:

   *** **Critical.** They must be read.

   ** **Important.** They should be read.

   * **Nice.** They could be read.

This will give your learners guidance to what you deem important. It will also give them the opportunity to pursue readings in those subject areas that are of particular interest to them. In the Information Age, the reality of the situation is that there is always more information to read than one can possibly read, no matter what the subject matter. This process also helps you determine what questions to put on quizzes and tests. Questions on tests should be covered in the readings that are Critical for your course.

Estimate the time it takes to read the critical sections or pages in the read-

ings. This will assist you in realistically planning how much material can be covered. And it will inform your participants how much time they should plan to devote to reading.

A rough measurement for reading time is 20 pages an hour for nonfiction, 10 pages an hour for extremely technical information, and 40 pages an hour for fiction.

If you expect your participants to spend ten hours reading nonfiction material, then you can allocate 200 pages of reading in your Critical category.

You have chosen your course title, written your goals and objectives, and selected your textbook or set of readings. The next step is to create your modules or units.

Step Three. Create Units

Divide your course or topic up into five to fifteen 'modules' or units. An average number of units per online course is probably around ten. Each unit will be a separate, interrelated, component of the course.

Each unit will have several knowledge skills or concepts associated with it. Each unit will have a given amount of text or reading. Each unit will have a separate discussion. Each unit will have a separate assessment or quiz function. Each unit will have a given time period or length of time during which you and your students are focused on that unit.

Illustration: Customer Service

As an illustration, if you were developing an online course in Customer Service, you might have these units:

1. Why customer service is important
2. Answering the telephone
3. Dealing with complaints
4. Responding to customer interest and inquiries
5. Writing correspondence to customers
6. Doing follow up contact with customers
7. Measuring satisfaction in customer service

Units can be sequential, beginning with the basics and then moving to

Mid-semester Evaluation

Do a mid-semester online evaluation form for the course. This is not a mid-term test. It is an evaluation of the online course.—**Kristina Macmillan, Pace University, New York, NY**

more advanced information. Units can also be entities unto themselves. That is, a unit in your course could also be expanded and developed further into its own future advanced online course. Units should lead somewhere — horizontally to the next module, and/or vertically to a more intensive and advanced set of units about the unit topic area. Units should also be able to stand-alone. That is, some of your learners will already possess the knowledge about a given unit.

This is where the importance of your textbook or set of readings becomes apparent. Ideally, the units of your course match up fairly well with the chapters in your textbook, or sections of your readings.

Subunits

At this point in time most online instructors do not do a lot of work consciously dividing their units into subunits. But most every online instructor actually has subunits in practice. Think of a few pages of reading, or an embedded video, or a specific audio presentation with slides. If you are an experienced online instructor, you might try dividing up your units into subunits to further your participants' mastery of different knowledge skills.

Length of time

Units should be roughly equivalent in terms of length of time spent in online discussion and time the average student would spend on the content. That is, you would not want to spend one day on a given unit and then spend four weeks on the next unit.

For a three-credit college course, for example, many units are one or two weeks in length. If you have a unit that is particularly short, you might consider combining it with another unit. If you have a unit that requires much more time, you might consider dividing it into two units.

As a practical matter, using weeks of time is a convenient and easily remembered way for your students to schedule their time and participate most actively. For that reason, one week is the most common length of time for a unit in an online course.

Step Four. Unit Content Development

For each unit, you will want to develop a set of competencies and outcomes, select readings, choose topics to be covered, and select online readings and links for further research.

Step 4a. Develop competencies and outcomes

For each unit, develop competencies and outcomes. These should be phrased in terms of knowledge concepts, skills, facts, or figures.

This goes hand-in-hand with the another step of developing your online course, designing online assessment.

Step 4b. Select unit readings

For each unit, select the readings in your textbook or set of readings that participants should read for each unit.

Online Debate

For an anthropology course I taught, I divided the students into groups who then researched a specific topic. The fun part came when they were required to debate their group's standpoint online with the other groups. I conducted this type of debate three times over the semester. The online debate was scheduled so all knew when to begin and when the end was. So, let's say the debate begins at 9 a.m. on Wednesday and ends at midnight on Friday. I limit the time frame for the debate because the number of messages can be large. I review the postings, strength of the argument, and the number of times each student posted and responded to others. I comment to keep focus on the debates, but also play devil's advocate to stir up controversy. This really gets them going.—**Michael Phillips, Canton College of Technology, Canton, OH**

Step 4c. Select online readings

If there are short articles, new research, updated material or other concise readings that are available only online, or are best read online, include those for each unit.

Step 4d. Select links and references

If there are links to other web resources and references, include those for each unit.

Step 4e. Unit welcome pages

For each unit, you will want an introductory welcome page of announcements, notes, and directions. This will be the first online screen each participant sees for each unit.

Step Five. Unit Audio Presentations

Produce your audio presentations for each unit. You may have a varying number of audio presentations for each unit. The number of audio presentations does not have to be the same for each unit.

Step 5a. Script or notes

Write your audio script or do notes from which to speak.

Step 5b. Create Slides with visuals

For every 30 seconds to two minutes of audio, there should be a different visual slide to illustrate your presentation.

Step 5c. Record your unit lectures

Either on your own or working with your technical person, record your unit lectures over the slides.

Step Six. Unit Self-Assessment

For every unit, create one or more quizzes using your online classroom software. It may be a weekly quiz, or even a 1-3 question daily or subunit quiz. You as the online instructor may want to get the results. But the primary purpose of the unit self-assessment quizzes should be as a learning tool to help your students understand their own mastery of the unit. In that sense, the self-assessment is not recorded for a grade but is purely a feedback tool to assist your participants.

Step Seven. Unit Interaction

For every unit, create one or more discussion questions or "rules" for online dialogue for you and your students.

Frequent Initial Contact Enhances Retention

What can't be over-emphasized is the importance of contact in the first days of the course. Our college actually offers students a 10-day preview of the course before sign up. During this time the student is contacted via e-mail by the program coordinator as well as the instructor and within the first two weeks the student also receives a phone call from the instructor. This has slowed the drop-out rate considerably.—**Sandy Sroba, Bow Valley College, Calgary, AB**

Step Eight. Unit Projects, Exercises, and Activities

Depending on your course subject and audience, you may or may not want your participants to engage in projects, exercises, and activities.

Step Nine. Course Testing and Grades

For many online courses, grading and testing is determined less on a single test or paper, and more on a set of standards, including individual projects, online comments (both quantity and quality), online and offline tests, and papers, often involving peer review and/or collaboration. You will first want to create your set of standards for a course grade, and then develop any final tests or exams.

Step Ten. Course Evaluation

Spend just a little time thinking about how you will evaluate your online course, and how you will want to gather and measure participant feedback, suggestions, and evaluations for your action of the online course for his/her own future teaching. It's a partnership where everyone gains!

Chapter 13.
Building Online Content

For an effective online course, content is only one of three main components to your online course (the other two being Interaction and Assessment). Do not think of your course as merely delivering content online.

Nevertheless, content is a key element. As we gain greater expertise in teaching online, content will be delivered in ever-higher levels of sophistication, quality, interactivity, and multimedia. As increasing numbers of younger generations of 21st century students become online learners, the demand for quality, interactivity, and multimedia images in content will grow.

You can build online content in one or more of these ways:

1. Written online text
2. Visual graphic presentation
3. Virtual tours and WebQuests
4. Audio lectures
5. Video
6. Animation
7. Simulations
8. Music and sound clips
9. Drag and drop
10. Games
11. Gaming
12. Other variations and content delivery methods

Written Online Text

Written online text should not constitute the primary way you deliver content to your participants. A textbook or hard-copy set of readings is better for large amounts of reading.

Online text is particularly useful for:

- short articles,
- new or updated material,
- material where there are accompanying links to other web sites, interaction, or accompanying visuals or simulations.

Chunk your copy. The overwhelming primary recommendation in writing online text is to "chunk your copy." Expert after expert repeats this phrase. It is still the single most important guiding principle.

Online text should be no longer than one or two screens in length. A learner should not have to scroll down the page. If that is happening, the copy is too long.

Instead of making scrolling down the page necessary, provide links to the additional copy, taking your online learners "deeper" rather than "down." Think of your online text as a web site where the single entry page, or home page, leads to several more pages, and those pages have links to even more pages of information.

In this way, you can write more in-depth, intensive and comprehensive online text without straining your students' physical or mental capabilities.

The more visual, interactive, graphically-pleasing and linked the online text, the easier to read and the more interesting for your learners.

Music Online

I can ask students to listen to the bass line and know that retention is minimal. But with a file (online) I can isolate the bass line, or simply amplify it so it stands out, and have a pop-up appear when the song reaches the bridge, and so on. I'm very excited about this, because I believe it will make the music far more meaningful to motivated students.—**Michael Campbell, Western Illinois University, Macomb, IL**

Visual Graphic Presentation

The more the better. Create pictures, graphs, charts, and other visuals online, accompanied by either text, or verbal presentation, or both. There is a variety of software available to help you create good visuals.

Think of the pictures as online overheads or slides. The best visuals are not merely words enlarged or put into color. The best visuals are usually true pictures or graphics.

There is a small but growing art and science of creating a new kind of visual which combines a picture with words to convey a concept better than either words or pictures could do alone. Julie Coates, Vice Presiden of Information Services for the Learning Resources Network (LERN) is one pioneer in communicating in this form.

Think of different ways in which to create visuals, including:

- photographs
- drawings
- clip art and cartoons
- charts and graphs
- primitive line drawings
- demonstrations
- maps

We know that some kinds of students learn better visually. Visuals are not merely diversions or interest getters, they assist in the learning process. Photographs and visual images are not merely "bells and whistles" for younger learners. They are an integral and essential learning mode. We have critiqued hundreds of online courses, and not found one that has too many photographs and visual images. Use as many photographs and visual images as possible.

Use more color

Too many online courses are colorless. Use more color on your web pages. Pay special attention to making that first 'home' page of your online course colorful and stimulating. If you can, ask the advice or assistance of someone from Generation Y on what colors to use, and how. Use colors your students appreciate.

The technology of online courses becomes more user-friendly and easier for faculty. In this example of an online classroom platform, notice the area for copying and pasting embedded code for posting a YouTube video.

Virtual Tours

Virtual tours are guided tours of other web sites where you as instructor create a "trip" to a series of web sites. You write an accompanying script to tell your participants what to look for and why the site is important or of interest.

Virtual tours are useful, and distinct from simply referencing URLs, in that they guide a student and also create a sequence that puts together knowledge and information.

Virtual tours are a no-cost way to build content online and serve as an excellent learning resource and are recommended to you.

WebQuests

WebQuests are a marvelous educational aid involving using the web to help students explore and work with online projects. In a WebQuest the student is given a series of URLs on a specific topic, such as Mayan temples, and an assignment. The quest can be to visit specific web pages and gather specific information, or the teacher can more broadly define it with web sites and more flexibility and creativity in the assignment.

There are more than a thousand WebQuests already created and available on the web. You can create your own WebQuest as well.

Audio Presentation

Every Unit of everyone of your online courses should have an original audio presentation with slides from you, the instructor. Audio presentations online are effective, efficient for both teacher and student, help build community, help in the learning process, and enhance greatly the learning in your course.

The time for text-based courses is over. Your current student generation, and all future generations in this century, learn with multimedia. The lack of such multimedia is one of the top reasons why students may not like online courses. I strongly encourage you to integrate audio presentations into your online course.

You prerecord your oral presentations. Prerecorded presentations have these advantages and characteristics:

- They allow you to present your best shot, both content and delivery-wise.
- You only have to deliver the information once. Thereafter, you can conserve your time and energy for interaction with your participants or developing new information and presentations.
- Your participants can listen to your presentation at their optimal time of the day.
- Your participants can review and re-listen to portions of your presentation.

As with your text presentations, chunk your audio presentations. Devote 5-20 minutes per audio presentation. The ideal length for an audio presentation is from 10-15 minutes. The maximum length for a single audio

presentation is 20 minutes. In the next chapter, we explore in more detail the educational aspects of creating audio presentations.

Using Video Clips

Every online course can, and with few exceptions should, now have some video clips.

Thanks to YouTube and other sources, there now are millions of video clips you can use in your online course. And you should use embedded video clips in your course.

There are basically two educational uses of video clips produced by others:

1. Supplemental quality information.
2. Engagement, brain refreshers, and other mental readiness stimulation.

Videos for supplemental quality information

Use videos for supplemental quality information when a video has one or more of the following characteristics.

- **Authoritative.** Video clips from experts and authorities, and/or authoritative organizations and other sources, carry importance and weight that can add to your information in a convincing way.
- **High quality.** Video clips with high quality visuals, voice, animation, and illustrations add to your information in a nonduplicative manner, providing a higher quality video than you could produce.
- **Unique.** Video clips with unique information or personalities complement your information and teaching.

Videos for mental stimulation

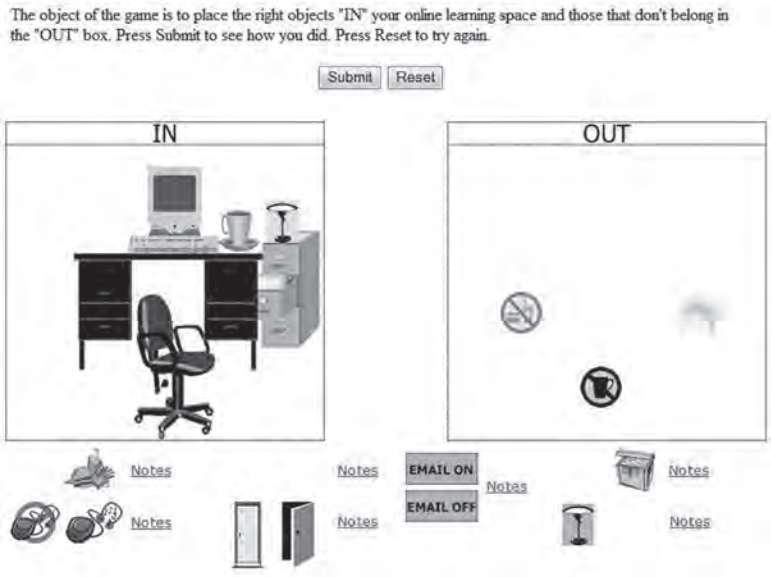
Using video clips for fun, entertainment and diversion has a legitimate learning purpose to engage or re-engage your students, clear their brains, keep them motivated, tell a story, and even make a point.

There are several points in an online course, including the beginning, the quarter point, half-way point, and three-quarter point of the course, when re-engagement and re-motivation aids help your learners to remain active learners.

The underlying pedagogy:

- When we study hard, we exhaust our brains, and then we reduce our ability to store more information and continue learning. A diverting mental exercise, including watching a video unrelated to the subject, has the effect of clearing out the brain, refreshing it, and allowing it to resume working and learning.
- When we are engaged with the content and the online course, we are more apt to learn more than if we are more passive in our learning. A video unrelated to the course serves as a kick-start to engage or re-engage learners.
- Keep them motivated. Videos with a tangential message to your course can help you make a point while being entertaining, thus serving to motivate or re-motivate your students to tackle the learning ahead.

Use videos for mental stimulation consciously, intentionally, and infrequently. Overuse of videos for stimulation, engagement and motivation can diminish or eliminate their effectiveness. When used sparingly, and at appropriate intervals, they work wonders.



Early drag-and-drop game created by your author to demonstrate what should be "in" and "out" in the physical space for an online learner or teacher.

Incorporating Math Symbols into Web Pages

1. Use MS Word to create your math pages, and then save them as HTML. Your math expression will be rendered as GIF files. 2. Use MS PowerPoint to do the same thing as in 1. This makes the math a little easier to read on the screen. 3. Produce your documents in a web-compatible program like Scientific Notebook or TI Interactive!. The drawback here is that the client must also have this software.—**Don Davis, Lakeland Community College, Mentor, OH**

How many videos

Every online course (with few exceptions) can and should incorporate one or more third-party videos. There are millions of them for free, publicly available, and there is surely one or more that would add to the quality of your online course.

If a video can deliver higher quality information, visuals, or help a person's learning more, you want that video as part of your course. Your objective is to help your students learn. If a given video helps do that, use it.

But at the same time, you have to remember that the most important factor in any person's learning is the teacher - - you. So your course has to be primarily your course, not someone else's.

Your imprint on a student, your teaching, comes primarily in three ways: your online discussion, your individual student feedback and interaction, and your presentations, especially your verbal presentations.

At the time of this writing there is great discussion and opinion about how much of an online course should be original to the instructor, and how much can or should be borrowed or used from other sources. At the time of this

Virtual Dissection

"Have you ever done a dissection virtually? I have the equipment (software) to do that and it is awesome, especially for the squeamish."—**Katy Deffe, Great Falls, MT**

writing there is no definitive answer. As your author, I am going to suggest that from 75% to 90% of your online course audio (including video) presentations should be original to you the instructor, using your own voice.

You certainly want to have something in your course from another source; there are just too many outstanding and unique contributions out there that can enhance the learning of your students. On the other hand, if too much of the verbal presentations are from another source, it reduces your role in teaching, as well as diminishing the perception of your students that you are the best person to help them learn. There are exceptions, of course; there are almost always exceptions. But for most of us as teachers, and most of our learners as students, you and I are the most important factor in their learning, and therefore our voice should be the one most commonly heard by our students.

Your Own Video

Some instructors are creating their own original videos. To be sure, for the majority of online instructors, audio with slides is the top priority concerning multimedia. Audio with slides is now a "must."

Creating your own original video is still optional. If you are doing audio with slides, you do not have to create your own video. Create your own video if it makes sense and you can do it well, avoiding the 'talking head' video.

Animation

Animation is here and it is being used by some. The best illustrations of animation online are short, maybe 30 seconds to 2 minutes long.

Animations are often cartoons which illustrate a point, technique, or concept. The Brain Pop animations at www.brainpop.com are an excellent example of this kind of animation.

Some animations are short moving picture clips illustrating a technique or activity, such as Ed Stephan's animations showing the baseball player Ted William's batting swing, or an animation showing the origin of motion pictures.

Other animations demonstrate how to do an activity, such as animations for tying different kinds of knots.

If you are an experienced online teacher, consider incorporating an

animation or two into your online course. Animations will become a common feature in online courses in the future.

Simulations

Simulations are animations with interactivity. They are commonly used in science courses, such as illustrating a chemical reaction, or how molecules interact, or how an engine works.

The first example of an online simulation I saw was in a presentation by Peter Cochrane of British Telecom at the University of Wisconsin distance learning and teaching conference. Cochrane showed molecules in a container, and then showed what happens to the molecules' motion and speed when the temperature is increased or decreased, and when more or fewer molecules are in the container. This amazing simulation illustrated a central advantage of online simulations: in many cases they are able to demonstrate something that cannot be as adequately demonstrated or shown in a physical laboratory.

Computer screen of a nursing simulation being built by graduate students at Norfolk State University in 2011. Photo by William A. Draves.

More online teachers are becoming interested in developing visual interactive simulations on the web. These multimedia presentations involve motion, color, pictures and images, and sometimes audio. The best simulations are interactive, so that the student can manipulate processes or variables to redirect the simulation and discover the outcome.

Pollination of plants, dance techniques, molecules in a container, and the functions of a gas turbine engine are all examples of simulations. "Give the user as much control as possible," says online teacher Dr. Dan Lim, formerly of the University of Minnesota at Crookston. Not every simulation has to be an original creation for every online teacher. Think about borrowing, sharing or collaborating with other online instructors in creating and utilizing simulations that can be shared. Simulations are an example of the incredible potential of online courses. The simulations both involve the student in the demonstration, and also illustrate something that is more difficult to do in a physical setting.

Keep Animations Short

For animations, make them short. We do four animations in five minutes.
—**Karen Levy, Franklin University, Columbus, OH**

Again, the vast majority of online teachers are not using simulations at the time of this writing, but they are likely to be a common feature in online courses in the future.

Music and Sound Clips

Music and sound clips are being used in a variety of ways in online courses. Music often can illustrate a point or concept better than words. Sound clips can be integrated into audio lectures, or used as separate references, providing original oratory or historical impressions. And some music, like the specially recorded music by the Lind Institute of San Francisco, create a background that enhances a person's receptivity to learning.

And music and sound can also be used to illustrate concepts. Michael Campbell, a music professor at Western Illinois University in Macomb, Illinois, for instance, explained to this author that he can dissect chords and certain parts of a score or music in order to focus on that particular aspect of the music. He can do this better, and with more variation, detail and effectiveness, online than he can do it in a face-to-face class.

There is an abundance of sources for music and sound clips for online courses. Some of it can be used following the Fair Use Guidelines for music. Some music is copyright-free. And some music and sound clips can be used by paying a small royalty to the owner.

Music and sound clips are low cost and available. We know they enhance learning. I would encourage you to use them in both your audio lectures where relevant, and as separate files where appropriate.

Six sources of music

Here are six sources of music:

1. Use up to 29 seconds of copyrighted music for educational purposes under the Fair Use Guidelines.
2. Ask for usage of an original song from a relative, friend or kid.
3. Purchase or download a special CD composed, and advertised, of copyright-free music.
4. Ask a friend to play some music that is old enough that the copyright has expired.
5. E-mail a relatively unknown artist, or musician from another country, for the right to play their music in your online course and offer a donation or some other trade.
6. Check out web sites with copyright-free music, such as government archives of folk music.

Drag and Drop

Drag-and-drop exercises are another excellent learning tool. In a drag-and-drop exercise, the student uses the cursor to move an online object around on the screen. The goal is to “drop” the object in the correct place. According to online expert Bill Horton, the physical movement involved in using the cursor increases the learning over simply reading or even listening about the subject

matter. Examples of drag-and-drop exercises include puzzles, and placing countries in the correct geographic location.

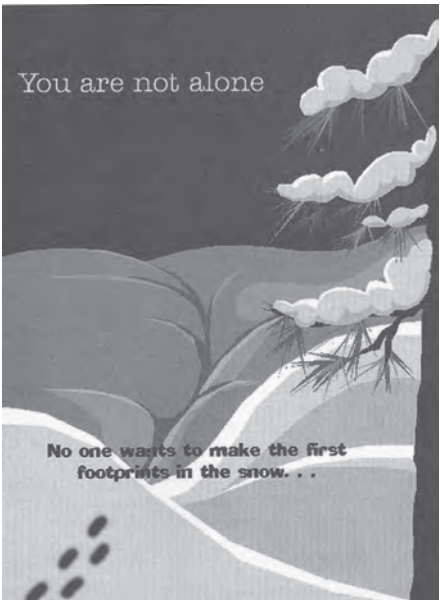
Games

Games such as Jeopardy and crossword puzzles are another way to present content in a manner that is more involving to the learner, increasing retention.

Gaming

"Gaming" is different from "games" in the online environment. Games could be Jeopardy or an online scavenger hunt. Gaming is a whole different world. Gaming involves your student interacting in a virtual world. Sometimes the world is a game, such as conquering an opponent. Sometimes the world is a cooperative creative environment, such as the medieval world of Evergreen. And sometimes the world is simply other people (their avatars actually) engaged in everyday activities, such as Second Life.

Probably the first course created entirely as a game is an education course developed by education professor Rod Riegle of Illinois State University. In



professor Riegle's online game, there are no lectures, discussion, or tests. The entire course is the game. All information, communication and assessment is done in the game. Riegle says it took him ten years to create the online game/course.

For most faculty born before 1964, the gaming world will probably be very unfamiliar, strange and difficult. For most students born after 1980, gaming is a real, if virtual, world that teaches essential 21st century skills.

At the time of this edition, there were few gaming courses in schools and colleges. One of the big issues is the cost and time of developing a game to the level of sophistication necessary for today's students. Another major challenge is that many if not most teachers are not naturally inclined toward playing, much less creating, online games.

For the latest on gaming, check out the annual Games, Learning and Society conference sponsored by the University of Wisconsin, Madison. Web site at the time of this printing was www.glsconference.org

Your author is suggesting that gaming in education emerges as a growing medium around 2016. Departments, schools and colleges should begin now to plan for gaming in their disciplines and the creation of your own original game. Having one's own game for a particular discipline may very well be a competitive advantage.

Gaming in education will become a significant learning strategy for generations of the 21st century. It is a growing and fascinating field. It is good for you to be open to online gaming and to understand what it is. You will see more teachers becoming engaged in gaming every year.

Development Revisions and Updates

Conrad succinctly but eloquently states, "There is no such thing as a canned course. Every online course must be upgraded, and is changing and alive."

Indeed, after every time you offer your online course, you will want to make some changes, improve the quality, or create new features. The amount of revisions, however, as well as the time and cost involved for those revisions, is up to much debate among online teachers.

Only a few teachers indicate that revisions take as much time as the initial course development, and this online teacher would maintain that there is

some kind of weakness in planning an online course in which such major revisions are required.

More teachers would estimate that revisions account for about 5% to 10% of the original online course development.

With online course development, there is one major initial development time and cost incurred, and then subsequent revisions and updates require substantially less time and cost. This has been this online teacher's experience.

It has also been my experience that many revisions are improvements or additions to the course, increasing the quality of the course. The best time to decide on your revisions for your next offering is right at the end of the current online course offering. The best way to proceed is to choose 1-3 revisions based on these criteria:

- Student input and feedback. Your students will point to the major weaknesses in your course from their standpoint.
- Centrality to the course content and student learning. There are numerous design and minor corrections that can be made to any course. Consider what revisions will substantially improve the course content and student learning.
- Feasibility. In terms of time and cost, what is feasible and realistic? Choose only a few revisions each time based on the criteria above. Do not overload yourself with more work. If you want to try something new, take only one new risk each offering.

Work Time for Online Courses

One of the ongoing issues for online faculty is the issue of work and time devoted to online courses. What we can say for sure is that online courses, as well as the learning requirements of the 21st century, have changed the dynamics of your use of time as an instructor. Exactly what the ideal new time requirements should be is not yet clear. But here are some observations.

- **Time spent in online discussion is good.** Being engaged in online discussion is time well spent. Online discussion enables your students to learn more, be more involved, more motivated, more stimulated by your course. Devote as much time as you can to your online discussion.

- **Development time is up front.** The development time for your course is all before the course starts, so it "looks" and "feels" like you are spending more time. In reality, you are shifting your time.
- **Dump time input as a standard.** Faculty members of the Baby Boomer generation (born 1946-1964) value time input from their students, and believe the more time spent, the better. Until this standard changes from time input to performance outcomes (what is learned) faculty will be in a double bind of requiring greater time input from students, then having to cope themselves with the same time constraints.
- **We don't know how to save time.** In general, adults are only beginning to discover ways to save time. From using software to changing lifestyle choices (such as where to live, or work), many adults have yet to implement time-saving techniques in their daily work and personal lives. A National Center for Education Statistics study found that professors indicated they spend just 55% of their time teaching. One instructor negotiated with his administration to teach more classes provided he did not have to serve on any faculty committees. He was able to double his teaching load by eliminating committee time from his schedule.
- **Student engagement can be win-win.** Conrad and others suggest that engaging students in an increasing variety of class activities, from leading discussions to evaluating peers, is good pedagogy. It also saves faculty time. As more faculty members engage students in more class activities and leadership, this represents a significant way in which good pedagogy supports saving faculty time.

Web Accessibility

Do a search for web accessibility or check out the Web Accessibility Initiative of the World Wide Web Consortium at www.w3.org/WAI/. The w3 site, for instance, can help check your web pages to see if they are accessible, and will have links to other web sites on being accessible.

The Trace Center at the University of Wisconsin has another good web site devoted to making technology accessible to everyone. Check out trace.wisc.edu.

There are some general web design principles related to color and design to make your pages easier to read.

For the deaf and people with hearing disabilities, the most important thing to do is to provide a transcript for every audio message. A transcript is also a helpful learning aid for some people without hearing impairment, so the transcript serves two purposes. Next to each audio, have a link to a written copy of the audio script.

For the blind and people with visual disabilities, an important thing to do is to have ALT tags for each image or visual in your online course, say Alice Anderson and Blaire Bundy of the University of Wisconsin-Madison. People with a visual disability use a screen reader to read copy on the Internet. The screen reader converts the written word into verbal copy so the person hears the copy.

A screen reader such as JAWS cannot read an image, only words. When the screen reader encounters an image and there is an ALT tag on it, the screen reader then reads the copy on the ALT tag. The copy on the ALT tag describes the picture or visual.

Thus, when you have pictures or images in your online course, write short copy (256 characters maximum) for the ALT tag for each image, note Anderson and Bundy.

Bundy offers these guidelines for testing your online course for accessibility for the blind:

- Turn off the images on your browser.
- Turn your mouse upside down and don't use it. Use the tab keys to navigate the links.

He says that if you can navigate and read the copy without images and without using a mouse, that is the experience a blind person will have with your online course.

Another good technique, says Bundy, is to have someone with disabilities use your web site. Ask someone with a disability to check out your online course.

Chapter 14.
Creating Audio and Video Presentations

Audio and video are now essential and integral for your online course. We know that people learn in different ways. Some people learn by listening. And we know that learners each have a particular peak learning time. We know that generations in this century learn with multimedia.

Every Unit of every one of your online courses should have an original audio presentation with slides from you, the instructor.

One of the advantages of recorded online audio is that each learner can listen at his or her own peak learning time, at his or her own speed, replaying some parts to reinforce their learning.

It is possible that recorded online audio presentations will make the traditional classroom lecture obsolete, and even replace live lectures in face-to-face classes, allowing both teacher and students to spend more time in discussion and on advanced topics or in-depth study.

For you as instructor, there are some things you can do with your voice that cannot be accomplished in other ways.

With audio, you teach in two ways. You teach by what you say, and you also teach by how you say it. Your tone of voice can induce enthusiasm, passion, concern, understanding, reassurance, confidence, conviction, motivation and encouragement.

You may start creating audio presentations by redelivering your in-person

lectures, and that is fine. But you will then move beyond replicating in-person lectures, and begin to see online recorded audio presentations as having many more possibilities.

The Move to MultiMedia

The major shift with online courses for the rest of the second decade of the 21st century is the move from text-based to multimedia courses. Text-based online courses should and must be replaced by online courses with multimedia and more interaction.

At the time of this writing, the majority of online courses were still text-based, and students are not dissatisfied. By the end of the decade, almost all online courses will be multimedia and more interactive.

Students are increasingly not satisfied with text-based courses. We know this from observations of administrators in higher education running online

Most new technologies look back instead of forward. Movies originally were just a camera set up in front of a stage play, and 100 years ago began losing their bored audiences. So online courses have been imitating the textbook as "online text courses."

Beginning in 1913, movie producers improved movies by including scenes unique to the movies, such as the famous train coming at the audience. Audiences then came back to the movies.

programs. But we also know it from learners. For example, in 2012 LERN researcher Julie Coates worked with an association providing continuing education to its members. She and the association surveyed association members who had taken an online course previously, almost all certainly while in college, to ask if they would want to take an online course for their continuing education. Coates and the association found out that around 37% of the survey respondents said they would want to take an online course again; around 37%, an equal percentage, said they would not want to take an online course again. And then 25%, a huge percentage, said they would take an online course again provided that the online course had multimedia and interaction such as simulations and gaming.

The dissatisfaction and even abandonment of a new technology happened once before, 100 years ago. New technologies often start out by imitating the past rather than offering a new experience. Movies, a new technology

then, imitated theater plays, with basically a camera set up in front of a stage. Audiences grew bored and weary. So beginning in 1913, one saw the first movie scene in which someone was tied to the railroad tracks and the train came straight at the audience, causing audiences at first to think the train was coming right into the movie theater. From then on, movies created an experience that was new and different, and the movie industry has been secure ever since.

And so text-based courses must necessarily yield to multimedia courses with more interaction. Specifically we mean audio presentations with slides from the instructor, video clips, animation, simulation, drag-and-drop games, and finally gaming. Along and throughout, student-generated content assumes an important role in online courses in addition to teacher or third-party-generated content.

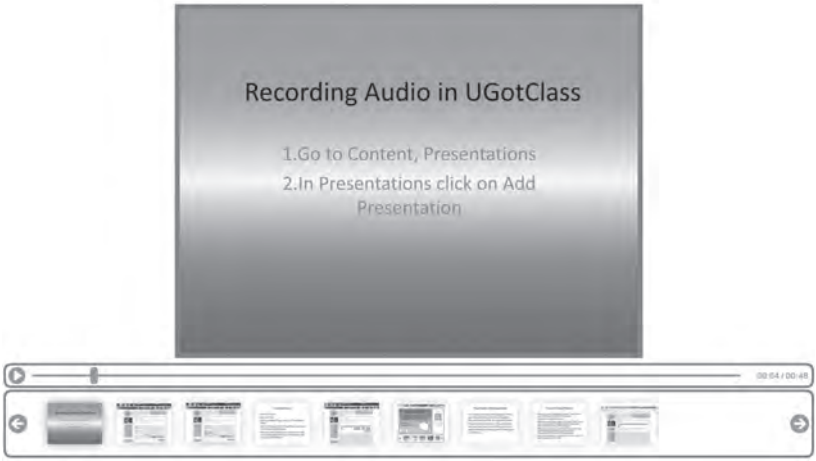
The place to start for every online course is with instructor-produced audio presentations with slides. Every Unit of every online course must now have at least one instructor produced audio presentation with slides.

Videos can take the place of audio presentations if, and only if, they are produced with the same or higher level of visuals and quality delivery.

Creating Audio Presentations

There are several different approaches and kinds of material that can be delivered in audio presentations:

- **New material and updates** Since the publishing date of the text for your course, there may be new material and updates which can be talked about in your audio lecture. There might also be some information you deem important which was not covered in the text, and that can be incorporated into your audio.
- **Anecdotes, examples, illustrations** Your audio lecture can complement the text, providing anecdotes, examples and illustrations that are not in the text, come from your personal experience, or are better delivered by listening rather than reading.
- **Your perspective** As teacher, you may want to add your own perspective, research or opinions to the information your class participants receive. Your audio lecture is a way for you to do that.
- **Summary of important points** You can use your audio lecture to summarize the important points in the readings and in the course,



Visual slides, with the instructor's comments in his or her own voice, is essential for each Unit of every online course.

using it as a verbal underlining so your students understand what you deem to be most important.

- **Emphasize certain information** You could also use your audio lecture to emphasize certain information or aspects, spend more time where you think it is warranted, or go more in-depth on certain topics.
- **Pep talk or instructions** Your audio lecture may also be a pep talk, a motivational and emotional stimulus for your participants. We know that learning is not simply cognitive, that learning involves emotions. So this is a legitimate use of an audio lecture.

  Or you may use your audio lecture to underscore your instructions to the class. "Here's what I want you to do…" "I want you to…" can come across as a personal, positive encouraging pitch when delivered verbally to your class. In the 1930s the U.S. president Franklin D. Roosevelt used his radio fireside chats both as a pep talk and to give his nation instructions. Many of those listeners felt as though he was talking to them personally and individually.
- **Quotes and excerpts from others** Quotes and excerpts from other authorities often reinforce or add new perspective and insight to the course, and incorporating them into your audio lectures is a valuable approach.

- **Storytelling** Storytelling may be one of the most effective uses of audio lectures, as many stories are better told than read.

  The great 20th century short story writer Eudora Welty (for whom the popular e-mail program was named), provides a clue as to why stories are well received, and also how to begin to create your own stories:

  "Long before I wrote stories, I listened for stories. Listening 'for' them is something more acute than listening 'to' them. I suppose it's an early form of participation in what goes on. Listening children know stories are there. When their elders sit and begin, children are just waiting and hoping for one to come out, like a mouse from its hole."

How to Record Audio Lectures

Here are some tips on how to create your audio lectures.

Length

Audio lectures should be "chunked" like online text, which means each audio segment should be short. Most experts recommend a range from 5 minutes to 20 minutes in length. The ideal length is 10-15 minutes. The maximum is 20 minutes.

Thus, instead of doing an hour lecture, you break up your hour lecture into six ten-minute audio segments.

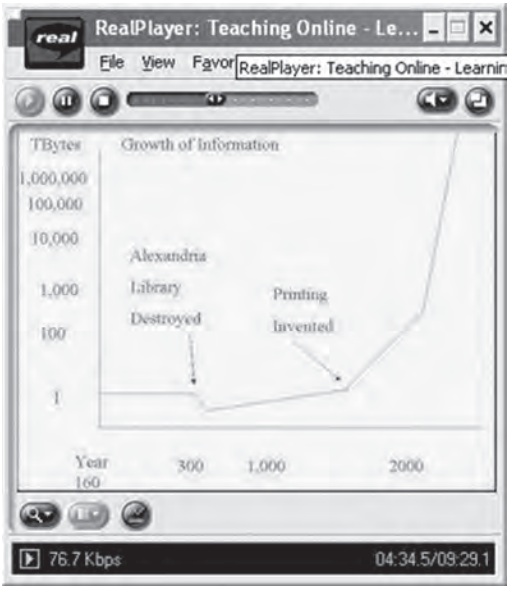
You will also find that an online recorded audio lecture compresses your live lectures, and that you can get the same amount of information in about half the time using a recorded online lecture. So your hour lecture might very well be accomplished in three ten-minute online lectures.

Script or notes

Online teaching experts differ on whether it is better to speak more extemporaneously from notes, or to use a written script.

The advantages of using notes are that your presentation comes off more informal, less rigid or forced, the language is conversational and more natural to speaking. The disadvantages are that you will have more wasted words, some "ums" and "ahs," it will be harder to slot the slides in appropriate intervals, and harder to stick to a prescribed time limit. So it is "looser."

The advantages of using a script are that you can compress more information into the time, waste not a single sentence, make sure you include all your points, stick to your time limit, and you can work the script so that your slides rotate at regular intervals, providing ongoing visual stimulation. The disadvantage to reading a script is that most of us read the script in a more rigid, less emotive, and less conversational manner and tone.



An early version of the software for a Real audio player (circa 2002), it nevertheless is a good visual demonstration of the characteristics and capabilities of audio software. Note:

- *in the lower right-hand corner the player tells you how long the audio lecture is (right of the slash) and where the listener is currently (left of the slash).*
- *the bar near the top, below "Presets," can be moved with the cursor forward or backwards, so the listener can skip sections, replay sections, and thus use the listening time to best advantage.*
- *the box on the right, with the Real logo, is where PowerPoint slides or other visuals appear, supplementing the audio.*

You pick whatever works for you. This online instructor began with notes, moved to a script, and is now working on reading that script in a more conversational, emotive, style.

Transcript

Whether you use a script or not, there are two reasons why an accompanying transcript of your audio lecture is helpful. One reason is that learners often like to refer to the written copy of your audio presentation, as it is a learning tool, even just checking on the spelling of a particular term. Another reason is that hearing-impaired people can use the transcript to receive your audio lectures. Your transcript can be a simple posting of the copy of your lecture.

Structure

In each 10-15 minute audio segment, I would suggest:

- **A title.** It is good to have a title for each audio segment or file. This helps your participants focus on the topic.
- **Theme.** Concentrate on 1-4 concepts in each audio segment.
- **Summary.** For many lectures, an effective learning device is to state at the beginning what you are going to talk about and then summarize or reiterate those major points at the end of the audio segment for reinforcement.
- **Break.** This online lecturer has a 30-60 second break in the middle of each audio segment, often accompanied by music. The break allows my learners a little time for reflection. It signals that I will be transitioning into another concept or major point. And it helps maintain attention by telling the listener that we are half-way through the audio segment.
- **Three to five teaching techniques.** As you become more accomplished and experienced in delivering online lectures, you will want to incorporate 3-5 different teaching techniques in each audio segment.

You Won't Like Your Voice

One of the reasons faculty tell me why they are reluctant to do original audio presentations is that they do not like the sound of their own voice.

Let's deal with this quickly. No one likes the sound of their own voice. However, this is not about you. This is about your students and their learning. You speak in your face-to-face classes with no reluctance. People have listened to your voice for years. Even if you have an accent, your students still want to hear you. Just turn on the microphone and talk.

Teaching Techniques

As in effective face-to-face lectures, you will want to incorporate 3-5 different teaching techniques into your online lectures.

In the section above, a number of different approaches to what to say all constitute different teaching techniques. So you can use this list as options.

In addition, you can use these additional teaching techniques to enhance your students' learning:

- **Skits and role play.** Using one or more colleagues or students, you can create simple little skits or role plays to convey concepts or points.
- **Humor.** In written online conversation or text, humor is difficult to convey. When you are speaking, it is easier to use humor as a teaching technique. Humor is not necessarily jokes or funny stories; it can also be a smile, upbeat enthusiasm, and friendly inflection in your voice.
- **Music.** Music is a powerful learning tool that can now be used much more easily and frequently when teaching online. Use music excerpts following appropriate copyright and usage guidelines.
- **Poetry.** Probably the most underused teaching technique, there are poems or at least rhythmically pleasing prose that address a wide variety of topics and subjects. Poetry is a wonderful verbal learning aid.

Delivery Techniques

For your first audio presentations, just talk. Don't worry about your delivery techniques. But if you are an experienced online instructor and want to enhance your audio presentations with a few vocal tips, here are some ways to vary your delivery techniques.

The key for all of these is to use each briefly, generally from a few seconds to 30 seconds max. each. Overuse will kill their effect.

1. **Speaking more quickly.** For content that your students can easily absorb, speak more rapidly. People can listen at three times the speed someone can talk. Now there are people who regularly speak too

fast, and this tip does not apply to them. But for normal conversation speed, try speaking more quickly for 20-30 seconds.

2. **Speaking more slowly.** For content that you want your students to view as being very important, try slowing down a bit as you deliver the important point.
3. **Whisper.** Only for a few seconds, only for effect, like when you tell them the "secret" of multiplication, or Serbian geography.
4. **Speak lightly.** The tone of your voice suggests you are having fun. It's a good technique in connection with describing a picture or particular slide, for example.
5. **Get emotional or passionate.** "I love this…" or other words combined with a more emotional tone of your voice. You would need to make this authentic. That is, you do really need to be passionate about what you are talking about for this technique to work. Your students can pick up on inauthenticity pretty easily.
6. **Read.** Tell your students you are reading and quote the source, and then read a sentence or two.
7. **Laughing.** If you laugh, or can laugh, feel free to do so. It humanizes you as "the teacher."
8. **Your choice.** You might think of another delivery technique, give it a try.

Make your slides visual. Visual slides are a meaningful and effective way to communicate in a way different from text and your voice.

Techniques you should avoid are speaking too loudly, feigning anger, threatening, demanding, laughing at someone or something that might offend, or anything else that might be perceived as negative.

What we are doing here is you are still natural, you are not acting, but you are using different delivery techniques to highlight and vary your talk to keep your students engaged. Use a different delivery technique sparingly, and for just a few seconds.

Creating Your Slides

Your slides, whether you are using PowerPoint, Prezi, or another slide software, should be visual in nature and of course complement your audio presentation.

Where to start

You can develop your audio lecture first and then develop an accompanying slide presentation to go with it, according to Les Howles of the University of Wisconsin, one of the nation's foremost authorities on synchronizing audio and slides.

For some subjects, says Howles, you will want to start with your slides and then develop your audio lecture around your slide presentation. And for still other situations, you may want to develop them together, going back and forth, working and reworking the presentation with the interplay of slides and script.

Make slides visual

The primary consideration is to make your slides visual and graphic, not merely words on a background. Putting words on a background is probably the most common mistake. Use pictures, graphics, clip art, demonstrations, but avoid having all your slides be words on a background. When you do use words, try incorporating pictures and artwork in with the words.

Types of visuals

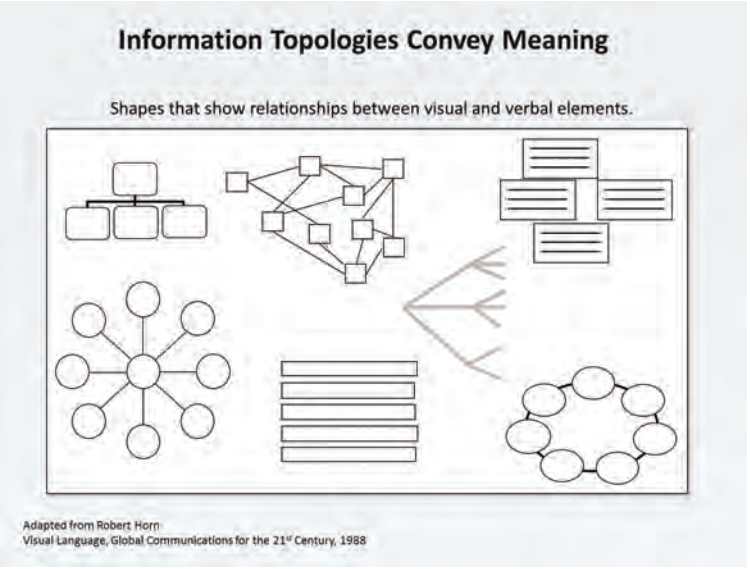
There are many different types of visuals you can use for your slides, including:

- Clip art

- Photographs
- Charts
- Graphs
- Demonstrations
- Line drawing
- Cartoons
- Color mixes
- Screen shots from web sites, and more.

Create information topologies

Les Howles, in his presentations for the Certified Faculty Developer (CFD) program, suggests representing data with shapes that show the relationships between the elements. These information topologies show cause and effect, phases in a process, procedure, sequence, related concepts, and items connected to a central element, among other meanings. The visual information topologies include sequence visuals and other charts and graphs



The Ability to Pause

The on-line audio/video, discussion groups have one common appeal to me: the ability to pause. I've always had trouble getting through a traditional lecture without some presented point sparking a chain of thoughts, and consequently a gap in my attention. Now I can pick up where I left off. The opportunity in discussion to stop and formulate a response encourages critical thinking in a way that F2F sometimes inhibits for those of us who are slow to find the right words.—**Lee Tarpley, Texas A&M Ag Research and Extension Center, Beaumont, TX**

that show a relationship. Mandellas, trees, networks and network trees are just a few of the topologies. And ready-made templates built into your slide software are not always bad, Howles reports.

Storyboards

Storyboards help in thinking about your accompanying slide presentation, says Howles. A storyboard is created by taking sheets of paper and drawing a line down the middle. On the left side, you put your script, what you will say. On the right-hand side of the line, you put a description of your accompanying slides opposite the script copy when the slide will appear.

Intervals

An appropriate interval time between slides is a minimum of 20 seconds to a maximum of two minutes. We might set an ideal or target as 30 to 60 seconds. Not every slide has to rotate at the exact same time interval. Shorter than 20 seconds, and there is not enough time for your students to focus in on the visual while listening. Longer than two minutes, and your participants may be bored looking at the same slide for that long.

Who does your slide presentation

If you are able to do a slide presentation, then you should create the slides to accompany your audio lecture. It will take less time and be more what you want it to look like.

If you are not proficient in doing slide presentations, don't worry. In addition to your institution's technical and graphics staff, there are students and other low-cost but cheerful techies, often with some creative and artistic suggestions (at no additional cost), to help you.

For Your First Online Audio Lecture

For your first online audio lecture, it is unlikely you will be able to incorporate all of the above tips and suggestions. Don't worry about it. Just do it. Just record your first online audio lecture. In subsequent audio lectures and revisions, you will begin to incorporate more of these recommendations. You will gain much from your own experience and from practicing the craft of creating online audio lectures. Enjoy the experience.

Turning Audio with Slides into Videos

You can turn your slide show with audio into a video if you wish. You create your slide show and record your audio over each slide. You then upload it to YouTube or another video web site, either public or private. The site converts your slide show with audio into a video. You can then embed the video in your online classroom.

Podcasting

One day, a faculty member in one of my online courses told everyone else that he had downloaded my audio lectures to his iPod and listened to them while walking in the woods. That anecdote illustrates that podcasting is a simple concept as it applies to online courses. Podcasting your audio lectures simply means that your students download your audio lectures to a portable device like an iPod and listen wherever they want. If you have audio lectures posted, just check with your techie and ask whether your students can download them. If they can, you don't have to do anything.

For news programs and other newly created podcast programs, there is also something called RSS feeds. RSS stands for Really Simple Syndication. The RSS feed option gives students the additional ability to have your new weekly lectures automatically downloaded to their computers. As you probably have them all recorded already, the RSS feed option is likely neither necessary nor desireable. Consult your institution's techie and others about the necessity of RSS feeds.

Students Post Audio

It happened in my online class one day. A faculty participant from the University of Wisconsin-Madison recorded a two-minute message specific to our class and posted it in the class discussion area. I was pleasantly surprised. When I asked our techie, he said our server has been set to allow participants to post audio.

This is another great learning tool. With a $10 microphone, your students can record and post their verbal presentations, comments and other ideas in audio form in your online classroom. The more variety, the better. The more involvement from your students, the better. Students posting audio is another good technique to enhance their learning.

Creating Video Presentations

Like a warning label on a product, creating video presentations comes with several caveats. Yes, recording your own video presentations can make for stimulating, visual and energizing presentations. On the other hand, video poorly done can be boring, fail to increase learning, and even expose and spotlight inferior and substandard online teaching.

By poor video, we primarily mean the pedagogically poor 'talking head' video, not technically poor video. At the time of this writing, your Gen Y and other younger students value authenticity and genuineness in video as much, or more, than they value movie-quality production, staging and visual effects.

While you may not be able to produce a video to Hollywood standards, your students are not asking for that, so while some basic technical quality is certainly needed, your video should focus more on content, pedagogy and teaching than camera angles or color hues.

Video Instead of Audio Presentations

Every online instructor can produce an audio presentation with slides all by him or herself. Most online instructors should not attempt to make video lecture presentations without professional production assistance.

Instructional designers and multimedia professionals should be encouraged to work with selected faculty to produce video clips for selected content objects for selected courses.

If you are going to set up a camera and record yourself lecturing at the proverbial chalk board, or any other similar "talking head" setting, just forget about it. This is a video disaster, and more importantly, an educational disaster.

As one British Open University online instructor said when he first saw some newly released video clips of American Ivy League professors lecturing, video may just show how educationally inadequate and inferior some courses and instructors are.

If you are thinking about creating a video instead of audio presentation of you speaking, remember your voice is more important than your face, and (this is not personal) your slides are more important than your face.

Unlike audio with slides, which almost always is perceived by online students as enhancing the quality of their online learning, video is a two-edged sword. Video, well done, can enhance the quality of a course and learning. Video, poorly done, should be replaced by audio with slides.

Video with Live Audience

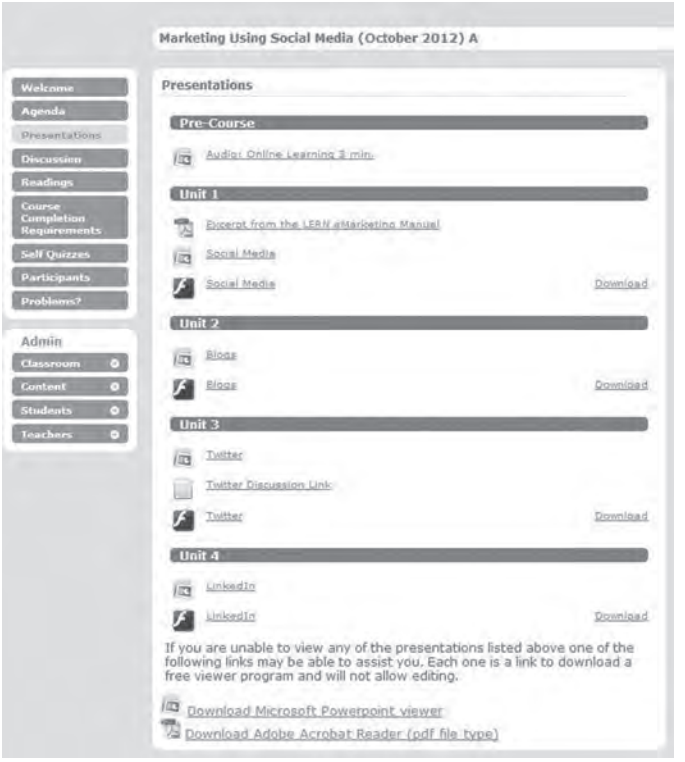
You speaking in front of a live audience can be a stimulating experience with video. Or it can be absolutely a boring, inferior killer of learning. What makes a video with a live audience effective are usually one or more of these aspects:

- Short length
- You as instructor, because of the live audience, are more animated and your voice more energetic than if you recorded it without a live audience.
- Storytelling. Stories are often best told with a live audience.

The pitfalls for video in front of a live audience are numerous. Here are just a few of the common reasons for video failure.

- The presenter has a lack of motion, not moving around enough.
- The presenter has lots of "ahs and ums."
- There are comments intended only for the live audience ("Take your seats now. The handouts are coming around.")
- The presenter takes too long to say something that if scripted could be done in half the time.

- The presenter has no visuals.
- The presenter looks primarily at the audience, excluding frequent glances straight into the camera.
- The presenter is not smiling enough.
- The presenter's voice is more a monotone, with little variation.
- There is only one camera angle.
- There are comments (microphone does not pick it up; or "Go Jayhawks") understood only by the live audience.
- The video is too long, really too long, far too long, longer than it needs to be. Too long to retain the viewer's attention.



There should be one or more audio or video presentations created by the instructor and the instructor's voice for each Unit of every online course.

These are some of the problems for the instructor doing a video. Of course there is another whole list of lighting, camera, sound, production, and editing pitfalls.

Video with action setting or activity

Videos with you as instructor in a non-classroom setting, such as outdoors, or in a factory, or in a lab, or in another country, are another kind of video that works well for educational purposes.

Sometimes an instructor will shoot a video in another location, such as on a bridge or in front of a statue, for effect. OK. This is more visually stimulating than in your library or office. But I'm not really impressed. Much better is to have an educational purpose in shooting a video in another location. Shooting in a chemistry lab for a chemistry subject, on a river for a biology course, in a factory for a manufacturing demonstration, all have inherent educational sense. Videos of computer screens demonstrating computer functions are common and good.

Instructor video with slides

This is a similar learning experience to recording audio over slides. It is a format that is almost universally applicable, almost always engaging, almost always concise and producing 'tight.' We hereby recommend it wholeheartedly.

The slides, of course, are visual in nature, communicate visually with the learner, help the student learn with a visual medium. And they are large. The slides should take up the bulk of the video screen, around 75% of what the student sees. The video of you, the instructor, is relatively small, around 25% or even less of the screen, and off to one side. You are not the visual focus. The slides are the visual focus.

Sometimes there is a screen area for a transcript of your words. This is a highly effective format.

Video with instructor narration

Video with your narration is another excellent format. These are videos with activities, examples, role playing, animations, history, situations, interviews and so on, but without you on camera. This can be an effective format,

especially if you as instructor are narrating the video. If you are producing a video for your own course, you should be heard, if not seen. If you are neither heard nor seen, it becomes a third-party video, which is fine, but loses some of the appeal and effectiveness that a video with you, the instructor, has.

Videos with more than one format

Videos with more than one format are excellent, but often involve professional or at least highly skilled production, camera and editing. If you have the resources to produce such a video, do so.

But at the time of this writing, your students need and want authentic educational concepts and practices delivered in a multimedia format; they do not require the highest Hollywood quality. The important "must do" is to move your course and every online course from text-based to multimedia.

Part IV.
Creating Assessment and Grading

Chapter 15.
Designing Online Assessment

The third major component of an online course is assessment. Assessments are most often thought of as tests and quizzes, but on the Internet the whole nature of tests and quizzes changes, enhancing learning and contributing positively to the learning experience. Doing assessments is not necessary for an online course, but it is such a valuable tool for learners, so easy to implement, and full of so much potential that doing assessments for your online course will be a great addition to your teaching.

Before we discuss ways to design and implement assessments, we need to talk a little about how outcomes, measurements, and evaluations of learning experiences will change in the Information Age and online.

In the Industrial Age, the 20th century, a major part of assessment was based on attendance, just being there. As Woody Allen is purported to have said, "90% of success is just showing up." Many measurements of education are based on attendance. For example, take continuing education units, or CEUs, one measurement of continuing education for adults. A CEU is earned by attending an educational program of ten hours.

But online, attendance is both difficult to measure and irrelevant. It is not difficult to measure the number of times a person logs on to your course. But what the person is doing while logging on is much harder to determine.

New technologies may solve the problem of measuring participation, but the bigger issue is that attendance, or putting in one's time, is now irrelevant. What matters now are outcomes and results — whether you or I have actually learned something. It matters much less how much time we put into the

effort. You may learn Unit 1 in half the time I do, and I may learn Unit 2 in half the time you do. Every person putting the same amount of time into the same subject matter, regardless of previous experience, aptitude for that subject, or ability to learn, no longer makes sense.

And so we are moving towards outcomes and results as a measure of learning. If you pass the test, you know the stuff. It doesn't matter how much time you put in, or how many times you logged on; if you pass it, you know it. And if you don't pass the test, you don't know it.

This change in desired outcomes in learning from attendance to results is causing a change in the way we do tests and evaluations as well. We are moving towards more core questions, more questions dealing with the central ideas and skills of the course.

What this means is that online, both teacher and learner can reap enormous benefits from the new possibilities of doing assessments. Here are three different kinds of assessments to consider for your online course.

Pre-Course Assessment

One of the most exciting developments in assessment is the emergence of online instructors creating pre-course assessments for students to take before they begin the course. Use a pre-course assessment in two ways: first, to help prospect participants determine whether your online course is right for them; and second, to determine the level of knowledge of each of your participants before they begin your course.

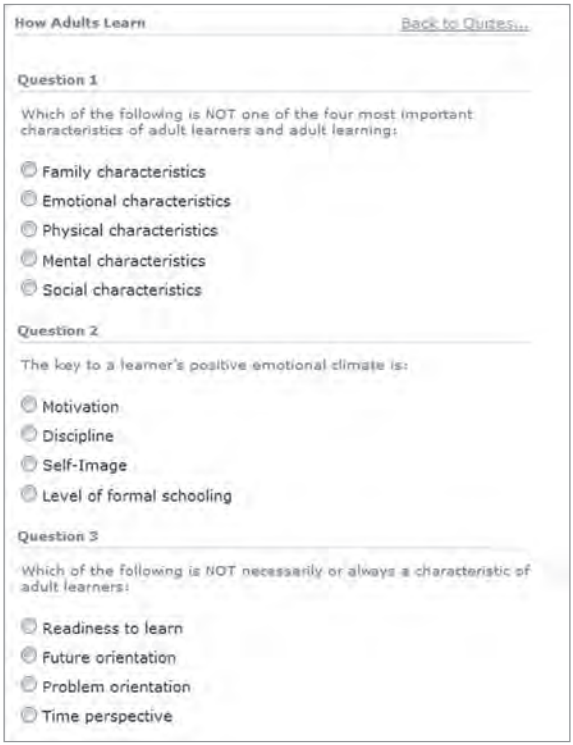
Here's how to do it. Create a ten-question, multiple-choice quiz. Ten questions are enough to get a good sense of the knowledge of the person, but short enough that most people won't be deterred from taking the quiz. The questions should be ones that people will be able to answer at the end of your course. In fact, they could even be the questions from your final exam, assuming you have a final exam.

For prospective participants determining whether your online course is right for them, the pre-course assessment is helpful in several ways:

1. **It tells them about the content of your course and what they will learn.** The questions on your quiz will reflect what they can expect to learn. If this is not the subject matter they were hoping for, it is better for them, and you, that they not enroll. So this information is helpful to them.

2. **It tells them how much they already know.** If, for some reason, they know all the material already, then they may not need the course. This rarely happens. What usually happens is that people do poorly on the pre-course assessment, and the quiz helps show them how much they will learn by taking your course.
3. **The quiz establishes a benchmark for both you as a teacher and the individual learner.** By measuring how well a person does before taking your course, you are now able to measure progress and demonstrate how much that person gained from the course by comparing his or her pre-course score with the final evaluation score.

Another benefit is that you as instructor have a good idea what your participants know, and don't know, as they come to your course. This will help you emphasize certain content areas, spend less time on the things they already know, and in general help you teach them better.


How Adults Learn

Back to Quizes...

Question 1

Which of the following is NOT one of the four most important characteristics of adult learners and adult learning:

- Family characteristics
- Emotional characteristics
- Physical characteristics
- Mental characteristics
- Social characteristics

Question 2

The key to a learner's positive emotional climate is:

- Motivation
- Discipline
- Self-Image
- Level of formal schooling

Question 3

Which of the following is NOT necessarily or always a characteristic of adult learners:

- Readiness to learn
- Future orientation
- Problem orientation
- Time perspective

The results of the pre-course assessment should be made available immediately to the person taking the quiz. The results should be stored so that you, as teacher, can have access to them to assist you in preparing your course and in benchmarking the person's pre- and post-course scores. No one else need know the quiz scores.

Progress Assessments

A terrific new opportunity for learning now exists online in helping your participants measure their progress on a weekly or even daily basis. While it is possible that some teachers may have given weekly or daily tests using paper and pencil, it has not been common nor easy. Now it is so easy that progress assessments will be a great learning and teaching tool.

Unit quizzes enhance learning as students receive immediate feedback on what they know.

Once again, you devise a ten-question, multiple-choice quiz. Once again, it does not have to be exactly ten questions. You post the quizzes in your online classroom. There are several technical software programs to make this quite easy to do, and the major online classroom software providers have this feature built in already.

The correct answers are immediately given back to the participant, so she knows how well she has done. The person can then review some material she missed, or move ahead if the scores look pretty good. These self-quizzes are not part of the student's grade.

You as an instructor then have the option of getting the progress assessment scores, or not. If they are helpful to you and if you have the time, you can review them and adjust your teaching. If you have a large number of participants in your online course, or more limited time, you don't have to review the scores.

If you are interested in monitoring the progress of each participant more closely, the progress assessment quizzes will help you do that. If a person scores low on a series of quizzes, then you and that person know there is some special effort that has to be made. If a person does not even take the quiz, then you know something as well.

Progress assessment quizzes are great learning tools. They will speed up the learning. They will refocus the learning around the areas that need attention for a particular learner. And they will inform you as teacher how well folks are doing, and whether you need to be more advanced, back up, repeat some material, or move more quickly in your instruction.

Student Evaluations

The third use of an assessment is to evaluate your participants and how much a student has learned by the end of your course.

Some kinds of participant evaluations take place online. Other kinds of student evaluation can take place offline, in the manner of a traditional face-to-face classroom. If you are uncomfortable with online evaluations, then use traditional offline kinds of evaluations.

More experienced online instructors use multiple kinds of assessment instead of a single evaluation method such as a test. By designing a set of assessments, you as a teacher may get a better picture of how well an individual

participant is doing in your course. We also know that, just as we each learn in different ways, different learners assess differently, some doing better on tests, others doing better with group projects, and so on.

Thus, we provide you with a list of options for student evaluations. All of the options provided below have been used by one or more online instructors. There do not appear to be certain kinds of evaluations that online learning experts deem better than others. Tests, online comments, papers and projects are probably more common in online courses than other kinds of evaluations.

The one theme or direction we can point to for participant evaluations in online courses is the use of multiple assessments, and this diversity in evaluation methods is enriching the practice of evaluations for both teachers and students.

The Essentials

Every teacher, every class, should have grades posted online and all assignments posted online.

Post Grades Online

Be sure to post project, test, assignment and other scores online in the student's own secure web area. Companies providing online grading systems report that student grades go up 8% on average when scores are posted online, simply because students know where they stand at any given point and can adjust their studying accordingly.

Post Assignments Online

While it may be a given that assignments in an online course are posted online, there are two important things that need to be said. First, understand that in the 21st century, verbal and handwritten instructions are simply too imprecise, too subjective, and too susceptible to misinterpretation. Online instructions are a must for students (and workers) to ensure precision and mutual understanding. Second, make your assignment instructions as detailed as possible. Leave no assumption unaddressed; state or restate everything for maximum clarity. Generation Y, and succeeding generations in this century, require detailed instructions that are understood and documented. Posting assignments online represents a significant and positive shift in communication for the learning and work places.

Good practices in Assessment

Here are three good practices in assessment that online education authorities recommend to online instructors.

Start with Assessment

Kevin Lewis of the University of Wyoming begins with assessment in building his online courses, and recommends that other professors do so as well. By starting with assessment, one starts with the knowledge and learning outcomes desired. Curriculum, content, and discussion then are formulated around what you want your students to know at the end of the course. Evaluation should not be an afterthought, or last thought, but the place to begin.

Engaging Students in Evaluation

Your students benefit when they participate in the evaluation of themselves and other students, say Rita-Marie Conrad and J. Ana Donaldson (Conrad & Donaldson, 2004, page 27). Students can be engaged in the assessment of:

- Online discussion. "In an engaged learning environment, peers often have the best perspective on whether their teammates are providing valuable contributions to the learning community," write Conrad and Donaldson.
- Projects. "By including team assessments as part of the project grade, the instructor can emphasize the importance of collaboration," say Conrad and Donaldson.
- Self-assessments. "Reflection and self-assessment are important components for empowerment in any learner-focused environment," note Conrad and Donaldson.

More and more faculty are engaging students in assessment activities, changing the way evaluations are being conducted. Engaging students in the process helps them analyze their own learning achievements, is a learning process in and of itself, contributes to collaboration, may give you as instructor a different perspective or new information, and can help restructure instructor time to focus more on assisting your learners.

Enact frequent testing

Another positive contribution to education that online instructors have

made is to have computer-graded, usually multiple choice, online tests for every Unit of their online courses.

Students almost universally love the immediate feedback of finding out where they stand, what they know and do not know.

Frequent testing actually increases learning. So Self-Quizzes for every Unit, whether graded or not, are great ways to increase the learning of your students.

The research was reported by Henry L. Roediger III, a professor psychology at Washington University in St. Louis (February 17, 2012 issue of *The Chronicle of Higher Education*).

"Psychology and the Real World: Essays Illustrating Fundamental Contributions to Society" (Worth Publishers); a related study, by Dr. Roediger and Jeffrey D. Karpicke, was also published in the journal *Science*.

Do the findings suggest that standardized testing improves student performance? In an interview in *The New York Times,* Dr. Roediger says he doesn't take a position on policy debates. But then he adds: "The bottom line is yes."

Allow extended time

Extended time is one of the best ways to help students who have mastered their learning and knowledge to demonstrate that learning. We all learn at different rates of speed, and sometimes a student benefits from having a different testing time. Some students benefit from an early quiz, others benefit from extended time. While in the last century of the factory, teachers felt they were treating everyone equal if everyone was treated the same, today we know that is counterproductive, that students are not the same, and that in this century our goal is to maximize each student's learning and success. Extended time is a terrific tool to boost completion and document learning.

Grading Online Discussion

Many, perhaps most, online instructors require students to make comments every week in the Discussion bulletin board area. There are three items you should make sure are done in the grading of online discussion: 1) Clearly state the requirements for online posts and the criteria for scoring them; 2) Make sure the grading of online discussion is gender neutral, meaning that overall, the cumulative or average discussion scores of your male students

should be equal to that of your female students; and 3) Have an alternative assessment available for those students who are otherwise acing the course but are reluctant or poor in their written communication.

A 'Discussion Rubric' is a common way for online instructors to attempt to outline the criteria for scoring student comments, replies and responses. In developing your criteria, avoid criteria that are subjective in nature, such as "thoughtful and insightful comments."

On the following page is one good model developed by Donna E. Scribner, PhD | Director, First Year Experience, American Public University System, and used here by permission.

Notice that quantity of comments is specified. Notice how the quality of comments is specified in terms that are less subjective, such as "demonstrates an understanding." And also notice how the wording of the Rubric is positive and encouraging, using such terms as "emerging" and even "not yet."

Cheating Online

At the time of this writing, the issue of cheating was a popular topic of conversation. The issue is fairly complex.

Older generations almost always perceive younger generations as less moral or correct. In 1957, the Harvard student newspaper reported on a study that found that at least 40 percent of students at large colleges admitted to frequent cheating, according to an article by Rebecca Harrington (*The New York Times,* September 15, 2012).

As we move from one economic age into another, different sets of behavior are necessary in the work world. Your conduct would almost certainly be regarded as immoral by your great grandmother of the agrarian age. And your sense of "showing up on time" is tied to the factory of the industrial age of the last century, while your students' lack of regard for showing up on time is related to telework and peak work time in the knowledge society of this century.

There are individual opinions on what is cheating. This author, for example, believes it is cheating when faculty (who ought to know how to spell) demand a spell check function in his online classes.

And then of course, if we all agree on a particular standard, there is actual cheating.

	Exceeds (3)	Meets (2)	Emerging (1)	Not Yet (0)
Initial response to discussion question: Demonstration of understanding	Initial response demonstrates an understanding of the concepts presented in the lesson by providing evidence from first-hand experience AND references to the readings.	Initial response demonstrates an understanding of the concepts presented in the lesson by providing evidence either from firsthand experience OR references to the readings.	Initial response demonstrates an understanding of the concepts however does not provide evidence to support the ideas shared.	Does not post initial response or does not answer the question.
Reponses to others: Demonstration of understanding	Responses to others advance the learning by including least two of the following components: • offering advice, • posing a question, • providing an alternative point-of-view, • acknowl-edging similar experiences	Responses to others advance the learning by including least one of the following components: • offering advice, • posing a question, • providing an alternative point-of-view, • acknowl-edging similar experiences	Responds to others but does not advance the learning in a substantive way.	Does not reply to others.
Grammar and sentence structure	All responses are grammatically correct with no spelling or punctua-tion errors.	All responses include no more than two unique grammatical, spelling, or punc-tuation errors.	All responses include no more than four unique grammatical, spelling, or punc-tuation errors.	There were no submissions OR the responses included five or more unique grammatical, spelling, or punc-tuation errors.
Following directions	The learner does more than is required as demon-strated by the total number of times responding to peers and the timing of the submissions.	All directions are followed, including responding to the assigned number of learners and responding on time.	The number of responses is fewer than required OR submissions are not completed on time.	There are no submissions OR there were fewer than the number required and the submissions were not completed on time.
TOTAL POINTS				

While we each might disagree on what is, and what is not, cheating, we should agree on what our pedagogical response should be. As teachers, our obligation is to focus on learning and completion. Our task is to help students learn, and our evaluative task is to assess whether that student has learned.

If you are concerned about cheating online, use traditional offline evaluation methods. A number of instructors use this strategy.

A few tips with regard to online cheating:

- Although online cheating is a hot discussion topic among teachers, as a practical matter we do not hear about many online instructors spending significant amounts of time or resources on determining or preventing cheating.
- Online cheating is seemingly no easier than cheating in a traditional course, and it may very well be harder if the instructor uses multiple assessments.
- Technology will soon provide an efficient, if somewhat frightening in its privacy implications, solution to identifying computer users online.
- Do not create a trust issue between yourself and the vast majority of students who will participate in your course honestly and with full integrity.
- Call a suspect student and simply ask him or her a question or two that was correct on a recent test. A person deserves to be treated as honest until proven otherwise.

The best response to a concern about cheating online is to build in a variety of evaluation measurements and activities into your online course that also are positive learning tools and experiences. It is also recommended you not spend too much time and energy on this issue until it becomes a problem.

Chapter 16.
Multiple Assessments

If we learn differently, do we also test differently? The answer is yes.

Your students differ in their ability to demonstrate learning and knowledge based on the type of assessment being given.

Thus one of the pioneering advances in education that online instructors have already made is to create multiple assessments for grading purposes. Grades in online classes often consist of four or more different kinds of assessments.

Using a number of different assessments allows students to better demonstrate their knowledge and learning, as one measurement in learning does not fit all students. The four most common assessments in online courses appear to be tests, essays or other written assignment, online discussion, and projects. You should be as creative as you need to be in developing your own mix of assessments.

Eventually, there will be an individual contract between the student and teacher on how the student will be evaluated. The evaluation will be based on the student's strengths, not weaknesses. The goal of assessment in this century is to assess what a student knows or has learned. Multiple assessments are a great advancement that can be primarily credited to online instructors. Here are just some of the different assessments online instructors use in their courses.

Essays and papers

This traditional evaluation method is used fairly commonly in online

courses. There are a few enhancements and variations to the essay or paper in online courses. Essays and papers can be e-mailed as attachments to you, or posted in the online classroom, which helps you coordinate and save time on paperwork. You can require a certain kind of format, such as Word, to make the analysis and grading easier. Some teachers require essays and papers to be submitted in a markable format, so that the instructor can easily make comments on a draft document and return it quickly to the student for further work.

Online comments

Both the quality and quantity of individual student comments are commonly used as evaluation criteria in online courses. A standard requirement for online postings is one comment a week for each student. For credit courses, making online comments mandatory has been successful.

A number of experienced online instructors have developed point systems for online comments. For instance, Collison, et al, provide an illustration in which an isolated or unconnected comment is given .5 points, a response to another comment is given 1 point, and a response that integrates multiple views gets 2 points.

Timed online quizzes

While not a commonly used assessment method, several online classrooms have a built-in feature for timed online quizzes. During a certain time period, any time a student logs on to your course, a short quiz (usually with 1-5 multiple-choice questions) will automatically pop up. The student will have a set amount of time to complete the quiz, such as five or ten minutes. The quiz results are then forwarded to the instructor.

Few online instructors report using timed online quizzes.

Proctored tests or exams

A number of online course instructors use proctored tests or exams. The exam is mailed to a proctor, an individual located near the student, who administers the exam and verifies that the student alone took the exam, there were no outside materials available, no other person was present, and the time of starting and ending. Instead of an individual proctor, some instructors

have used commercial testing centers to administer exams.

Individual projects

Some individual projects are all online, where a student engages in an online project using the web and the results are posted online. Other individual projects are offline and involve traditional project methods.

Group projects

With the need for collaboration in the workplace growing, we may see more group projects in online courses as they help students prepare to work collaboratively. We already know that younger students often learn better collaboratively, which provides another rationale for using group projects as an evaluation tool.

Online group projects provide the least problems logistically. Offline group projects in which people need to get together face-to-face may pose some problems for some students.

Group project evaluations may involve assessing how the group functioned as well as the project outcome. And there is also the issue of assessing individuals within a group who may have performed above or below the level of the group as a whole.

Online tests and quizzes

Online quizzes are heartily recommended for your online course, especially Unit quizzes. Online quizzes offer immediate feedback to the student, and immediate results to you as instructor. There is almost no subject where some kind of online quiz would not be helpful to both students and teachers.

Your online classroom software will have a test or quiz capability built in. There are options for true-false, multiple choice, matching, fill in the blank, and short-answer questions. Some software have a feature where you can post pictures, drawings or other visuals as part of the question (for example, name the planet in the picture). They may have a feature for online essay questions. A computer can instantly grade online tests and quizzes, with the exception of essay questions. Be careful about short answer and fill-in-the-blank answer grading as well. Online tests can be given for each unit, and/or as a final test.

Mentored practice

Mentored practice has been used in certain classes in which skills, such as clinical skills, are involved. The instructor finds an experienced practitioner in the geographical location of the student and this "mentor" then assists the student in developing and practicing the set of skills. The mentor then evaluates the student or confirms that the skill level has been achieved.

Continuous Assessment

Rita-Marie Conrad of Duke University is perhaps the leading authority on multiple assessments in online teaching Conrad and Judith Boettcher, are co-authors of *The Online Teaching Survival Guide.* Boettcher and Conrad praise continuous assessment, noting "Continuous feedback and assessment means that assessment grading usually brings few surprises. Students should have a fairly clear idea of how they are doing throughout the course." (*The Online Teaching Survival Guide,* by Judith V. Boettcher and Rita-Marie Conrad, Jossey Bass, 2010, page 160.)

Conrad offers these additional options for evaluation:

Individual presentations

An online presentation could be done in text, leading an online discussion,

responding to questions in an online discussion, as a specially constructed home page or web site, as an audio file the student records and e-mails to you, or as a videocam report, either live or recorded.

Group presentations

Group presentations have mostly been accomplished with text or online discussions. Guidelines could be established to present a "panel" of comments, responses, or debate in your threaded discussion area.

Analysis of case studies

Students take one or more case studies and do their own analysis of the case study, providing not only suggested outcomes or resolutions in the studies but also documenting their resources and how they arrived at those conclusions.

Reflective journals

A more personal, sometimes chronological, analysis often involving the learner's own growth and development, attitudes and beliefs, or changes in behavior.

Debates

You establish the rules, how points are scored, the subject, and the teams. Be sure to give the debate enough time (between 3-7 days might be an appropriate range) so all participants have a chance to be fully involved.

Role plays

One kind of online role play involves you providing a hypothetical scenario and assigning different roles to each of your students (for example, the stressed-out housewife; the truant teenager, etc.). Another kind of online role play involves an historical era in which each of your students becomes an historical figure (for example, Napoleon, Josephine, the Russian general, the English general, the Pope, etc.).

Tests as Games

An excellent technique is to turn your self-assessments from tests into games, says online learning expert William Horton.

Horton says that the number of participants who take the knowledge tests will increase if they are created as games rather than tests, and that the anxiety level of the students will decrease as well. Game formats for quizzes include the "Jeopardy" format, the "Who Wants to Be a Millionaire" format, crossword puzzles, and drag and click placement of certain objects. Horton recommends different difficulty levels, just like in games, for positive reinforcement and support.

Audio feedback in scoring

Several online instructors have reported that they save time, and provide better advice, when they create an audio message or critique for each student on assignments, such as essays and other written papers.

There may very well be another aspect to student feedback, rework and learning by hearing the voice of the instructor, the intonation in her or his explanations and advice, in addition to the actual words spoken by the instructor.

Alternative Assessment Measures

Consider using an alternative assessment measure when needed. Students with learning differences (sometimes labeled disabilities), different native language or culture, gender, or even age may require an alternative assessment measure to accurately measure their learning. Here's an example of an alternative assessment measure. Willie's class had to read a book. To determine whether each student had read the book, the instructor gave a short quiz. Willie couldn't answer any of the questions. Instead of giving him a failing score, the instructor engaged Willie in a verbal conversation. In the conversation, Willie explained why he thought there was no one hero in the book (one of the questions), but many possible candidates, and in several other ways demonstrated that he indeed had read the book. By using an alternative measure, the teacher was able to make a more fair assessment, and respond to the individual learning (and assessment) differences of his students.

Assessing critical thinking

Critical thinking skills are universally applauded by educators, usually noted as a sign of advanced learning, and teachers can and should advocate

them and try to help students build their critical thinking skills.

The problem is in assessing critical thinking. Two of the biggest problems in assessing critical thinking:

Subjectivity on the part of the teacher

Too many papers and other reports supposedly meant to measure critical thinking skills simply wind up being measured based on the opinion of the teacher rather than any objective criterion.

There have been studies showing that different teachers grade papers very differently. My son, while in a private and excellent high school, received an 'F' for a paper he wrote, by a smart teacher who had graduated from an Ivy League institution. We asked a neighbor, a university professor for his opinion and he thought the essay pretty good. So as an experiment we submitted our son's "F" paper as his college submission essay. He was admitted within two weeks to the university based on his "F" paper.

Gender bias against males

Much of critical thinking is assessed using language, usually written language. Males, while having critical thinking skills equal to females, have lower language skills than females due to the gender differences in the brain. Males also tend to write fewer words than females. Some instructors unintentionally reward papers based on length and language ability rather than cognitive thought and critical skills.

How to assess critical thinking

My education co-researcher Julie Coates has determined an objective and unbiased way to measure critical thinking skills. You simply count the number of words a student knows. High school students on average know only 35,000 words, while college graduates know on average 75,000, according to David Crystal, a leading researcher on vocabulary. (*Words Words Words,* by David Crystal, Oxford University Press, 2007)

To measure the number of words a person knows, Crystal "suggests taking a sample of about 20 or 30 pages from a medium-sized dictionary, one which contains about 100,000 entries or 1,000 to 1,500 pages. Tick off the ones you know and count them. Then multiply that by the number of pages

and you will discover how many words you know." (Interview with Caroline Gall, *BBC News Magazine,* April 29, 2009).

At the time of this writing, measuring vocabulary for your students may not seem feasible. But with online tools and increased societal demand for better student learning measurements, measuring vocabulary will become more common, and of course more valid and valuable as a measurement for gauging critical thinking skills, in the years ahead. Until then, instructors would be wise not to use subjective or gender-biased measures to evaluate critical thinking skills.

Chapter 17.
Grading in the 21st Century

The way teachers grade has to be changed. Higher education now must produce a society in which 50% of its young people have four-year college degrees in order for our society to be prosperous in the 21st century.

And with a miserable 55% completion rate, one major improvement has to be in the way grading is done.

To be blunt, you get an F in your correctness in grading.

Faculty grade a student appropriately less than 50% of the time, according to a study by Nancy Cole, who was then president of the Educational Testing Service, and Warren Willingham. That's failing. You and other instructors get an F in grading your students.

According to their study, based on thousands of tests and millions of students, female students are given a grade commensurate with their test scores about 47% of the time, and male students just 44% of the time. About 28% of students, 33% of females and 20% of males, are given grades significantly higher than what their test scores indicate they know and have learned.

And another 28%, some 36% of males and 20% of females, are given significantly worse grades than what they have learned and know.

In this chapter we explore how grading is changing in the 21st century and what you can do now in your online course to give your students grades more appropriate to their learning and knowledge.

1. Measure outcomes not time

Measuring time is now obsolete. In the first two decades of the 20th

century, the current system of grading and assessment was created largely in response to the need for education to prepare students for work and life in the factory and office.

The Carnegie Foundation took a leading role in the creation of time as a measurement of educational attainment. By 1910, nearly all secondary institutions in the United States used the "Carnegie Unit" as a measure of secondary course work.

The Carnegie Foundation contracted with Morris Llewellyn Cooke to explore ways to measure education at the higher education level. His resulting work, "Academic and Industrial Efficiency," was published in 1910 and became the basis for the Student Hour used by colleges and universities. (1)

Again, the motive here was to standardize educational measurement and faculty workloads. Cooke established the collegiate Student Hour as "an hour of lecture, of lab work, or of recitation room work, for a single pupil."

Today your students are not going into the factory, and they will be evaluated by their employers based on their outcomes and productivity, not on time input. In fact, in this century workers are rewarded when they spend less time getting a desired outcome, not more time.

What you can do as an online instructor is to evaluate your students based on their learning outcomes, not by the amount of time they put in.

2. No grading on the curve

Grades also served the interests of the factory, and helped solidify the factory school model of the last century.

The grading system of A (excellent), B (good), C (average), D (below average) and F (failure) was based not on objective scores, but on a comparison with other students (sometimes referred to by students as "the curve"). This was helpful to the factory, where a major personnel issue was the assignment of people to various levels of jobs within the factory. Thus, a student who was a "C" student, and thus average, became a factory worker on the assembly line. A student who was a "B" student and above was more likely to be able to become a foreman or supervisor in the factory. And the "A" or excellent students went on to college and became the managers and professionals in the factory and office.

In terms of college and university, society deemed that only around 25%

of our nation's youth needed to be college graduates, and thus part of higher education's mission in the last century was to keep 75% of the youth out of college.

Today the objective of higher education is not to keep people out of college, but to get as many as possible to complete. We need everyone to know English, everyone to be able to do math.

In your online course, set a benchmark for passing and help all of your students to complete and succeed.

3. Enact Gender-Neutral Grading

Since 1980, higher education has had a gender bias against males. The result is that millions of smart males — a smart male is one who tests at the same or higher level as those in college — are not admitted, are not retained, and are not graduated from college. And in every college and university, males are given lower grades than females even though they learn as much.

The consequence of what a recent OECD study called "The Reversal of Gender Inequalities in Higher Education" (See "The Reversal of Gender Inequalities in Higher Education: An On-going Trend", by Stéphan Vincent-Lancrin, Higher Education to 2030, OECD, 2008, ISBN 978-92-64-04065-6) has created a crisis in society. It has resulted in millions of smart students not being admitted to college, not being graduated, and not being admitted into graduate school. Consequently, in the United States we will have a shortage of 14 million skilled workers by 2017, according to Anthony Carnevale, the nation's leading training researcher.

The shortage is particularly acute among science, technology, engineering and math professions, the now well-known acronym STEM, as STEM professionals are central to a post-industrial economic and social prosperity for advanced countries.

The consequences of graduating millions of mediocre students and sending millions of our smartest students to WalMart and McDonald's is now staggering and economically unsustainable.

What we know is that male and female students test equally. We know males learn as much as females. And Richard Arum's classic study, *Academically Adrift,* found that graduating males tested at the same level as females and had the same level of success in the workplace several years later. And

yet even the highest achieving males in the top quintile of both work success and testing scores were given grades lower than females with the same test scores. Faculty and institutions have to follow Title IX, which prohibits discrimination on the basis of gender.

The bottom line is that you have to stop your gender bias in grading, and start grading on a gender-neutral basis.

4. Test when ready

Tests will be given when the student is ready to take the test. As Mike Baker, Education Editor for BBC News writes, "Instead of preparing pupils for the high stakes tests at the end of each key stage, teachers' focus would be on assessing when a child is able to move up one level in the national curriculum grades. When they think a child is ready, they can put them in for a test that will be set and marked outside the school. They will not have to wait, as now, until pupils reach the end of a key stage at seven, 11 or 14. This will mean 'several shorter, more focused, and more appropriate tests' for each child, rather than one big test at the end of the key stage.

5. Grade learning, not behavior

An immediate problem in education is to eliminate grading based on behavior. All students should be graded solely on their learning and knowledge, not behavior. Grading based on behavior has detrimental effects for both female students and male students.

Currently grading is not based solely on learning and knowledge. Instead, grades are assigned to a great extent by behavior instead of learning and knowledge.

Graded behavior includes:

- Attendance.
- Turning homework and coursework in late.
- Not doing assigned homework or coursework.
- Taking exams and tests late.
- Behavior deemed inappropriate by school authorities

You are not teaching responsibility, otherwise the gender GPA gap would close over time. And you are not preparing your students for the workforce,

because studies show that males are very responsible in the work place.

The role of schools and colleges in the 21st century is purely, entirely and totally about learning and knowledge, not about behavior. There are no beneficial effects from including behavior in grading. The negative effects are numerous and troubling.

In summarizing grading and assessment for the 21st century, the way learners are assessed in this century needs to be transformed. Focus your grading and assessment only on learning and knowledge. Make your testing and assessment more objective, exclude behavior as a criterion, and employ multiple assessments. Pedagogically, best of all better grading and assessment becomes integrally part of the learning process. Good assessment doesn't just measure learning but actually enhances each student's learning.

Part V.
Interaction:
Teaching Your Course

Chapter 18.
Creating Online Interaction

The heart and soul of your online course is not content, but interaction. This is where real learning and education takes place. It is the interplay between participants and you as teacher. And it is the interaction among the participants themselves.

Palloff and Pratt state unequivocally, "In the online classroom, it is the relationships and interactions among people through which knowledge is primarily generated. Key to the learning process are the interactions among students themselves, the interactions between faculty and students, and the collaboration in learning that results from these interactions.

"It is where your course comes alive. It is where your learners get excited, the adrenaline starts to flow, eyes widen, brain cells explode with new information, lights go on, fun happens."

"Online discussion areas offer many advantages you won't find in face-to-face settings," state Collison, et al, in *Facilitating Online Discussion*.

Only in an online course can you have people living in all corners of the globe participating at the same time. Only in an online course can you have everyone in the course talking at the same time. Only in an online course can you have so many participants you can divide up into small discussion groups based on special interest groups. This is what makes learning online so incredible.

This is also what distinguishes education from training. Training is generally a one-way street, with content delivered by an instructor, and absorbed by the participant. Education is more a two-way street, with the learners

contributing ideas and experience, learning from each other, and sharing.

Asynchronous Threaded Discussion

An asynchronous discussion forum, often called a threaded bulletin board, allows you and your students to make written comments online for everyone else in the class to see. The comments can be made any time day or night. They remain readable unless you decide to delete or archive them.

This will be your central meeting place on the Internet. This is where your participants will come to hear what you have to say, read your latest comments, ask questions, and have a group discussion.

This software feature is built into most if not all online classroom software. All you need to do is to use it.

Here you want to have an ongoing plan for interaction with your participants. Here are some tips and techniques in developing your interaction plan for your online course:

1. **Organize the main discussion area by unit.** Every unit in your online course should have a corresponding online discussion about that unit's topic.

   How long the discussion should last for each unit is dependent on how long the course lasts. If you have a ten- to sixteen-week online course, then each discussion might last for a week. If you have a one-week online course, then each discussion might be for one day. For sure the discussion should be open around the clock, 24 hours a day. This does not mean you have to sit in front of your computer all day. But it does allow your participants to make comments any time they wish.

2. **Create a discussion topic or theme.** Online teachers have found that the most successful way to generate online discussion each week is to outline or suggest a topic or theme. You as teacher begin each unit's discussion to get it going, as well as demonstrate your ongoing involvement in the discussion. Some instructors create an initial question. Often, the initial question is meant to get the discussion started. At other times the instructor makes it mandatory for the student to respond in some way to the question.

3. **Prepare for your online discussions.** They won't just happen. There will not be a spontaneous outpouring of great insightful comments and questions from your participants. Initially, there will be 'dead air'

as they say in the broadcasting business. So you will want to create the discussion, get it started, and give it momentum.

Here are a few tips related to planning your online discussion.

- Do 1-4 comments at the beginning of each unit discussion. Prepare them in advance.
- Try to line up participants or guest commentators to make initial comments or questions early on in the discussion to get the ball rolling.
- Inform your participants of the upcoming discussion with an email. A daily e-mail to them is a great idea.

4. **Secondary discussion areas.** A number of online instructors have a secondary discussion area. Some instructors have a discussion area for non-course chat among students, like a student union or water cooler area. Others have an "Open Discussion" area for those topics that do not fit neatly into the main unit discussion. Still others have small group discussions, where students are divided up into small groups for online discussion. And of course a number of instructors simply have one area for discussion.
5. **Saving and archiving the discussions.** One very positive and useful aspect of the asynchronous discussion forum is the ability to save and archive the discussion. By saving and archiving the discussion, your participants can view and download the comments at any time in the future, as long as you want them to have access to it.

Other Uses of Threaded Bulletin Boards

Threaded bulletin boards are wonderful tools with many uses. In addition to using your threaded bulletin board for online discussion, you can create

Open Ended

Post an open-ended question that asks students to describe the online class experience. I ask them to suggest a metaphor or offer a one-word description and then expand for 1-2 paragraphs. I allow anonymous posts for this discussion and I get some really interesting answers! It allows the students to debrief and vent some of their feelings.—**Sue Stewart, University of Illinois, Champaign, IL**

additional areas for other uses. Your online classroom software may already have some of these functions built in.

Here are some things you can do with threaded bulletin boards:

1. **Message or comment board.** If you want your participants to make comments on a number of different topics, a threaded bulletin board is a good way to go. Each thread would be a different topic, and your participants would post their comments on the appropriate thread.
2. **An individual record.** If you want each of your participants to post information, homework, or comments, you could set up a threaded bulletin board. Each thread would be the name of a different person in your class, and the person would post her or his comments in his or her own thread.
3. **Weekly question.** Every week, you could ask a different question and have all your participants respond. Each thread would then be a separate date, along with the question of the week.
4. **Directories, references, and much more.** There are many other uses for threaded bulletin boards. They are used as directories of individuals. They are used to store references to other information, books and links. They are used as an online "classified ads" section, with people buying and selling products or just posting ideas. Use a threaded bulletin board if it is useful for you.

Real-Time Chat Rooms

A real-time chat room, sometimes called an IRC (Internet Relay Chat), is a synchronous chat room, which means the discussion takes place at a given time.

First-time online teachers and students often think of online interaction as taking place in real time. However, the vast majority of online teachers use the asynchronous threaded bulletin board for discussion.

We don't know how to talk online yet

Some online instructors use real-time chat occasionally as a secondary means for dialogue or just to maintain communication with the class. Many online education authorities, such as Palloff and Pratt, do not recommend using the real-time chat room at all. Venture into real-time online chat at your own risk. If you want to use this device, you set up a time of the day for a chat

and invite or encourage all your participants to get online at the same time.

There are two challenges with real-time chat rooms for online classes:

A. Time differences. If your participants are all in the same time zone, then there is no problem. But more and more online courses will want and benefit from having participants in many different time zones, and thus scheduling a time when everyone is awake, much less available, becomes difficult.

B. Short comments. A real-time chat room only has the capability for short comments. Longer comments do not work well on a real-time chat room because of the time it takes to post them, and because comments scroll up and out of view so very quickly.

We Don't Know How to Talk Online Yet

Real-time chat rooms may have a place in your online course. But again, there is the problem of trying to get everyone on at the same time, possibly dealing with different time zones.

Some online instructors use real-time chat for office hours, so that students can communicate with them in real time about any issue.

Online assignments

Specific assignments are needed for basic learning in the course, but my best discussions lie in creating assignments that are not very specific in how to do something. These assignments have very specific goals established for students. But by creating a discussion revolving around the path that needs to occur to get to that goal, students learn more about my subject. I mix specific and non-specific assignments to give a deeper knowledge and exercise critical thinking. I have found that this also results in very good discussions as students truly explore the material.—**Kevin Lewis, University of Wyoming, Laramie, WY**

E-mail

E-mail is a wonderful tool and has many uses. Use e-mail to:

- Contact everyone in the course at various times, update them on changes in the course, or simply encourage them to participate online.
- For strictly individual-to-individual comments, including dealing with a learner's problems, e-mail is the only way to go.
- Use e-mail autoresponders to send information to prospective participants for an upcoming course.
- E-mail test scores or evaluative comments to your participants.

E-mail should NOT be used as the central discussion or dialogue mode of communication. E-mail does not allow others to participate or benefit from learner questions, comments and sharing. And communicating with your students via e-mail is very time-consuming. But for many other communication issues, e-mail is a great tool.

Preparing Your Online Discussion

Online discussion won't just happen. You will want to prepare for your online discussion. Here are some items to plan in advance:

Number and types of discussion areas

For classes with a small number of participants (fewer than 30) you may

want to have only 1-2 discussion areas. For larger classes (more than 30), you might want 2-3 discussion areas. You get to decide.

Almost every online course has a discussion area for teacher-student dialogue, where you communicate with your students, and where they dialogue with you as facilitator.

A number of online instructors have found additional discussion areas useful. Some types of discussion areas include:

- **Student-only discussion.** In this threaded discussion, you as teacher do not make comments. Only your students make comments.
- **Virtual water cooler.** In this area, your students can chit-chat about things other than your course.
- **Small group discussions.** For classes of 10 or more students, a number of instructors divide the class up into small groups, each with its own discussion area.
- **Special interest groups.** You can create optional special interest groups where students with particular specialty interests can pursue those topics more in-depth than the rest of the class might.
- **Guest speakers or experts.** Guest commentators or experts might dialogue with your class in your main discussion area, but you might also set up a separate area for their comments and interactions.
- **Exercises or projects.** If your course involves certain exercises or projects, you could establish a separate threaded bulletin board for students to work or report on their projects.

Rules for discussion areas

For each different discussion area, you should create certain rules or guidelines. The guidelines should include who posts there and what kinds of comments or postings are made.

Number of comments

Most instructors let their students know that they expect a minimum number of online comments in a given time period, which is usually a week. And instructors teaching for credit often require a minimum number of comments per week, which is a sound educational practice online. Few if any online instructors set a maximum number of comments, and many online

learning experts view online discussion as "the more, the better."

The minimum number of comments per week per student that online instructors expect or require ranges from one to three. Some instructors encourage 2-3, but accept one as the minimum.

Discussion questions and starter comments

For each module or unit, you will want to create some discussion questions or starter comments to get the discussion going. The type of question or comment you initially make at the start of each unit or week significantly influences the direction the discussion takes, and also the level of discussion.

So spend some time in advance of your course planning what discussion questions you will ask for each unit to create the kind of online dialogue you want from your course.

Points per Unit

I have 3 points per unit for completing the learning activity (case scenario analysis, discussion questions, etc.) And two points per unit for responding a minimum of once per each thread. I tell the students to go through the postings, find an "ah ha" and respond to it with their own experiences or knowledge or with a thoughtful question.—**Veronica Taylor, University of Wyoming, Laramie, WY**

Orient your students.

In your orientation for your students, you will want to make some remarks about the importance and value of the online discussion in your course, as well as make some preliminary comments about how you and they can create a "safe" online learning environment so everyone can share their ideas.

In your orientation, tell them:

- Your expectations. Let them know exactly what you want to have happen, including how many times they should make a comment during each unit.

- What to do. Tell them what to do, including the characteristics of a good comment or posting.
- How to read and write comments. Give them some technical pointers, such as how to use "Find in page" on their browser. Tell them the different ways to read comments (for example, by chronology, or by thread, or by participant). Give them some tips on how to write a comment, such as HTML language to create a link within a message. This can be just one paragraph of information. Make it positive, enthusiastic, and encouraging.

Some questions teachers ask about creating online interaction

Q1. Can I get to know my students online?

A1. Yes. Here's what online teaching authority Dr. Rita-Marie Conrad says, "I love being in cyberspace and my learners love being in cyberspace. We share a lot of things. I get to know them, their joys and tragedies and about their families. We are a family in an online community."

Q2. Aren't written comments impersonal and anonymous?

A2. No, online interaction is very personal.

Q3. What about shy people online?

A3. Often people who are shy in face-to-face interactions are more apt to be able to speak out online and express themselves.

Q4. How can I facilitate a discussion when I can't see body movement and facial expressions?

A4. You will discover other cues in your students' comments. You will be able to detect a student's level of confidence, interest level, depth of reflection and other individual learning behaviors in his or her comments, which are very revealing.

Q5. Can you teach critical thinking online?

A5. Yes. Collison, et al, in *Facilitating Online Learning* have an excellent section on questions you can ask to stimulate critical thinking, which they adapted from Dennis Mathies's work on critical thinking called *Precision Questioning* (1991).

Other Discussion Tools

There are some other discussion tools, almost always used as complementary to the main threaded bulletin board discussion. Some of them are built into your online classroom platform. They are optional, so use if they make sense for your course and your students.

Wiki Technology

Online communication expert Debbie Weil notes that one of the big trends that has become a part of 21st century culture is that "customers create content." For you, your customers are your students.

Having your students create content is another online technique to both engage your students and enhance their learning. Wiki technology is one tool in which you can do that. Wiki pages are web pages in which anyone can change the words. Words can be deleted, changed, added, and so forth. At the time of this edition, Wikipedia was the best-known wiki web site.

Wiki pages is just another option in your online teaching tool kit. If you are interested, ask your techie how to create wiki pages.

Blogs

Weblogs, or blogs for short, are a popular way to communicate your thoughts for a simple but very good reason: blog creators have made it so easy to use, and so attractive for your readers to view.

Some blog functions are built into your online classroom platform. If not, when you subscribe (currently fairly inexpensive) to a blog creator, you get your own blog to do with what you wish.

The most popular format for a blog is to use it as a diary, journal or other personal entry, with the added feature that your readers can then make comments in response to your postings. Other features make blogs attractive, like the addition of pictures, links to other web sites, and the ability to write them in advance and schedule the day and time of posting.

Think about getting a little creative with your blog. For example, think about:

- Multi-class blog. Do one blog for several classes.
- Collaborate with other professors. Do one blog in conjunction with other professors and classes.

- Partner with other colleges, or countries. Partner with instructors in other colleges who are teaching the same subject matter. Think about whether a teacher or college in another country would add an interesting perspective for your students.
- Ask professionals. Ask professionals to be guest bloggers and submit some columns for your blog, giving your students other views and experiences.

Chapter 19.
Establishing the Learning Environment

Establishing a positive online learning environment is one of the most important things you do as a teacher to help your participants learn online. This process starts when you are developing your online course, and includes how you create your online classroom, construct your agenda, welcome your participants, and initiate online conversation in the first critical week. By creating a learning community, you enhance the learning of all your participants.

Constructing an Agenda

A week or so before the beginning of your course, your participants should have an agenda. The agenda should tell them:

- **What technical requirements** or software they need in order to participate in your course.
- **The course goals and objectives.**
- **An outline of the content** — topics or modules — included in your course. After each topic, you will want to include the readings, audio, links, and other content available pertaining to that topic or module.
- **The schedule** for interaction, dialogue, discussion forums, or chats.
- **The pre-assessment quiz,** or instructions on completing it, if you have one.
- **Rules or guidelines for participating** in the course. This might include:

1. Expectations, such as the number of times a person should get online, or noting that participants are expected to make comments during the discussions or chats.
2. Procedures, such as how and when to e-mail the instructor, the format in which a paper should be submitted, or how and when to communicate with other participants.
3. Ethics, such as using your real name rather than a made-up name online, not presenting others' work as your own, or not getting help or assistance on the tests.

- **Participants list.** The list can be basic, including name, address and so on. Or you could enhance the participants list in a variety of ways to encourage people to get to know one another and interact in and outside of your online course. You could:
  1. Provide e-mail addresses, so participants can communicate with each other.
  2. Have a short biography. Participants could each write one paragraph, which you post on your site, about themselves. It could be biographical, or it could be about their interests and experiences in the subject matter of your course.
  3. Picture. Participants post pictures of themselves, or have a link to other sites where their pictures are posted.
  4. Web site link. Many people have their own web sites, or are part of organizations with web sites, and you could provide the URLs to your participants' web sites.
- **Where to go and pre-course activities.** You should tell participants how to get into your online course. And you might want to have them test your site out a day or two before the course starts to make sure they are comfortable with navigating your site.
- **Problems or questions.** Always have some address, place, or person to contact in case a participant has a problem or question. It could be your e-mail address. It could be your webmaster's e-mail or phone number. It could be a toll-free phone number. Reassure your participants by giving them a contact in case they encounter a problem or question.

Team Meeting

I have my students meet face-to-face before the online class starts. We form teams of 4-5 people, and each team is responsible for selecting questions from the readings to submit to the teacher, as well as a course project. The teams have jelled so quickly and so well, I am convinced that part of it was the face-to-face meeting at the beginning.—**Allan E. Pevoto, PhD, St. Edwards University, Austin, TX**

The agenda, along with a nice welcome from you as instructor, should be sent to participants. It could go out at the time they register for your course. It could be sent a week before. You could mail it, or e-mail it.

Creating a Learning Community

Dr. Rita-Marie Conrad notes, "We no longer deliver courses. Instead, we create 'knowledge environments'." Palloff & Pratt, in *Building Learning Communities in Cyberspace,* also see the "learning community" as a central concept, goal and practice in the online classroom. Hagel and Armstrong call it a "virtual community," and indicate that we may want to help create learning communities whose lives extend beyond the length of our courses, assisting in the mission of lifelong learning.

While you plan your learning community in the development of your online course, the creation of the learning community takes place from the student's first contact with the course at registration to about the second week of the course. So from about two weeks before your class starts to about two weeks after the course has begun is when you build the foundations of your learning community.

Boettcher and Conrad suggest several class activities to build a learning community, including:

- Student introductions, spending some time the first week having each student introduce herself or himself online.
- Pre-interaction, such as introductory exercises or getting to know the technology.

- Interactive activities, such as online projects or other activities in which two or more participants work together.
- Collaborative activities, such as small group discussions.
- Cooperative activities, such as role plays and team projects.

Another community building technique is to have a threaded discussion area for students to chat about things other than the course. Many online teachers use this technique. Palloff & Pratt offer several different titles for this cyberspace water cooler area, such as Cyberspace Sandbox, the Coffee House, the Lounge, and Important Stuff.

Student Orientation

Every institution reports that retention has improved, with fewer student drop outs and greater achievement and satisfaction, as student orientation has increased. That is, the solution to online retention and satisfaction is to have more student orientation.

Student Orientation consists of two parts: technical orientation and learning orientation. Don't forget to include how we learn online and the learning aspect of an online course in your Student Orientation. Generally, the requirement is to pass the Student Orientation test, with the other meetings voluntary, optional or alternative benefits.

What works. It all works. Practitioners have reported success with all of these techniques, including:

- Week-long student orientation.
- Face-to-face student orientation for online classes, in addition to online orientation.
- Quizzes for students to take to "pass" orientation, or for their own benefit.
- Real-time chats as one option and opportunity.
- Requiring completion of online orientation before receiving password to the course.
- Student mentors or peer tutors.

Welcoming Your Participants

Your greeting may only be two or three sentences. It may only take three

minutes. But it is very important that you welcome your participants. Tell them you are glad they are participating. Reinforce that they will get something valuable out of the course. Express your pleasure at the quantity or quality of the participants who are involved. Convey your excitement about them contributing to the course. Reassure them. It is very important you set the stage before you begin your course. As Jerry Apps once said, "Make them believe."

A few ways to break the ice online:

- On the first minute of the first hour of the course, type in your discussion forum or chat room a short one-paragraph comment welcoming people to your course.
- Invite all participants to simply type their names and indicate they are logged on that day.
- Invite all participants to make short statements about who they are, why they came, or their previous experience in the subject area. Make it an easy task, something people do not have to think too much about, and something that tells a little something about each one as a person.
- Tell people if they are having problems or questions, to contact you immediately.

However you do it, welcome people to your course. It will put them in a positive frame of mind about their involvement in your course.

The First Day

The first day of your online course is the most important day of the course, regardless of how long your online course will be. If the first day goes well, you are off to a good start. If the first day goes poorly, you have damage control to do, and some courses never fully recover from a bad first day. If something goes wrong on the fifth week, they will forgive you. But if something goes wrong on the first day, their enthusiasm will be dimmed, they will expect further things to go wrong, and they will begin to question whether they made a good choice.

Here are some things to think about to make your first day online go well:

- **Technical back-up.** The Internet goes down. Wires get overloaded. Computers get glitches. Things happen. Do whatever you can do to ensure that things go technically well the first day. You should be at

a computer with good connections. Try not to be traveling, on the road or working from a hotel on the first day. See if you can get your technical person to be "on alert" and immediately available on that first day.

- **Solve problems.** As best you can, find out if any of your participants are having problems. The problems usually come early in your course.

Muddiest Point

I created a "Muddiest Point" discussion board where students can post questions about the week's readings. At first, the students didn't seem to think it was helpful. As the semester progressed, they were checking in often. It seemed to offer confirmation that they weren't the only ones struggling with a concept or idea and made them feel less isolated.—**Sue Stewart, University of Illinois, Champaign, IL**

If someone has a problem the first day and it is not fixed until later, it will have seriously negative influence on that person's learning, participation, and satisfaction with the course. So anything you can do to find out about problems, and then address them, is positive. Even if it is a technical problem with the person's own computer and totally out of your control, your response or understanding will be helpful to that person.

- **Recap the goals or objectives.** Begin by telling people what will happen in the course. Do this in a summary fashion. The complete goals and objectives and schedule will be in your agenda. But rephrase what will happen, make it pointed and forceful and positive. This will help people focus or refocus.
- **Invite interaction immediately.** As soon as you can, invite your participants to participate and contribute. Whether it is just putting in their name, or filling out a quick survey or question form— the sooner they are involved physically (typing, making a comment), the sooner they are involved emotionally and motivationally.
- **Give 'em your best stuff.** A rule of thumb for people attending conference sessions: If the session is not good in the first five or ten minutes, get up and walk out to another session, because that session

is not going to get any better. You want to make a good first impression with your online course. The way to do that is to start off strong. Here are some tips for starting off strong.

A. *Jump right into the content*. The best way to start off strong is to get right into the content. Give them something to chew on immediately. Too many courses dilly dally around, talking about what people "will" learn in the rest of the course, without getting right to the matter at hand. Spend as little time as possible on the formalities, guidelines, and so on. Jump right into your content.

B. *Give them your best stuff.* Your first module, content or day online should be as strong or stronger than the rest of the course. If you can make a good impression on the first day, you've got them. If you don't, you could lose them. If you can bring out some of your best points, or a sample of the good stuff, that will get people excited. At a minimum, make the quality of your first day's content the same level as the rest of the course. And if you can add a little extra something that first day, do it.

- **Begin your dialogue.** Get into your discussion forum or chat room. Make a few comments. Get things going.
- **The more planning, the better.** The more planning, even rehearsing of the first day, the better. You don't need to rehearse or plan details for the rest of the course. But the first day of your online course is so important that it is worth writing out in advance your online comments, preparing a little bit more, doing a little bit more, for that first day.

Make that first day good, and you will be going downhill from there. If that first day doesn't go well, it will be uphill the rest of the course. The first day is important. Make it a good one.

Online Icebreakers

Online instructors report excellent success with online icebreakers at the start of the course. Here are some of the latest new online icebreakers teachers have shared:

- "Find someone who…" Give students a list of 10-20 items someone may have, and have them find a person with each of the items.
- "What you have always wanted to do." Each person shares his or her

thoughts.

- "Find 3 things in common." Break the class into small groups and have them find three things in common.
- "Pair off — ask odd questions." Pair up participants. Prepare a list of odd questions for them to ask each other.
- "Crazy characteristics." From a list of 20 crazy characteristics, each student tries to find someone with that characteristic.

Weekly or Unit Welcomes

Do a separate and different "welcome" for each unit or week of your online course. It doesn't have to be long. It does have to be positive, enthusiastic and warm. The weekly welcome constantly involves your students, tells them there is something new, and solicits their enthusiasm.

Making Content Comments

It will be very helpful for you to make content comments in your discussion forum. The content comments from you help to tie things together and create a flow with your online course. They also tell your participants what information you value highly and what aspects of the subject matter they should explore fully.

Here are some tips on making content comments in your discussion forum or chat room:

- **Make your comments short.** From 6 to 8 lines of copy is a good rule of thumb.
- **Just do one thought per comment.** Don't try to string together more than one thought, concept, or idea in a comment. Focus each comment on just one thought.
- **Use highlighting techniques.** Feel free to underline some of your copy, boldface a few words, create a headline, or otherwise highlight parts of your comments.
- **Don't think online.** Don't try to do too much thinking online while writing your comments. Composing a well-constructed paragraph of comment takes some forethought, and you should have a good idea what you want to say when you write it.
- **Feel free to do a draft.** Sometimes I type a comment and revise it

before entering it online. Feel free to do a draft of your comments.

- **Focus on important issues.** Keep your comments oriented towards the important concepts or ideas in your course. Obviously you could go on and talk about a lot of issues online, but time and space is limited, so focus your comments on the most important ideas you want to convey.
- **Be careful about humor.** It is much harder to express humor online. Be very open about humor. For example, "This is a joke:…" Trying to be subtle with humor online will only confuse some of your participants.
- **Present new info.** If you have new or current information not contained in your prepared content or readings, using the discussion forum or chat room is a good way to deliver that recent or new information.

Opening Rituals

I think "opening rituals" are also important to building community. Each individual reflects on and responds to the question. For example: "Fill in the blank: the thing I fear most about this class is…"—**Chris Bakkun, University of Wisconsin, LaCrosse, WI**

Initiating Interaction

As an online teacher, you will be making two kinds of comments in your discussion forum: 1) content comments; and 2) discussion comments. It is important you understand that discussion comments differ in style and substance from content comments. Content comments are meant to deliver information. Discussion comments are meant to encourage your participants to interact.

Here are some tips on initiating a discussion online:

- View the discussion as a conversation. You are a moderator or discussion facilitator. Keep the comments coming. Encourage people to interact.

- Get one or two people to make some initial comments or questions. If you just "open it up" to questions, you will see a blank screen for an awfully long time. Instead, arrange ahead of time for one or more participants to enter a comment or question to get the discussion going. Once you get two to four comments in there, you have a discussion going.
- When getting a question, first compliment the person on the question. Tell her or him, "Thanks for asking;" "Good question;" "Glad you asked that." Encourage people to ask. It is difficult to ask a question online — the person has to compose the question carefully and thoughtfully, and has to feel confident enough to post it.
- Allow others to respond to questions and make comments. Don't shut off discussion by making too authoritative a comment.
- Make sure someone responds to every comment. Every time someone makes a comment online, someone else should respond to it. Don't let thoughts or comments dangle unresponded.
- Look for connections. Try to connect several of your participants' comments or questions, citing similarities, or differences, among them. This creates a conversation, helps the line of thinking, and helps your participants put together a more cohesive reading of the discussion.

Moderating

Moderating a discussion online is one of the key and critical skills you will want to develop as an online teacher. Online, as in person, you will want to "listen" to your participants.

Here are some tips:

- **Look to create "door openers."** When someone makes an initial comment online, ask if they would like to follow up with more information. "Tell me more." is one way to put it. Or you can ask a follow-up question.
- **Be neutral and nonjudgmental.** Russell Robinson, in *Helping Adults Learn and Change,* makes some good points we can adapt to the online learning situation:
  1. Try to understand what is meant when the person makes a comment.

2. Don't try to contradict or refute a person's ideas too quickly.
3. Put aside your own views when responding to others.
4. Expect the participant's language to be different from your own.
5. Avoid negative feedback.

- **Help insecure learners.** Learners who lack confidence in themselves are common in adult learning. A good teacher needs to make the learning environment secure for these people. Building their confidence is not condescending; instead, it keeps their desire to learn alive.
- **Offer rewards.** Look for ways to reward your participants. The reward could be a positive comment. It could be an information 'gift,' such as a reference to a new link or site. Or it could be a physical gift, such as a free report or article mailed to the person. Rewards are positive reinforcements for the person and for everyone else in class as well.
- **Have expectations of your participants.** Australian Philip C. Candy, in his book *Self Direction for Lifelong Learning,* has this to say about enhancing security: "Educators who hold high expectations for their students tend to convey these through complex and subtle patterns of interaction, which commonly result in the learners living up to these expectations, and in the process, developing a more positive image of themselves."
- **Help with frustration.** Sometimes learners will demean themselves, professing inadequacy, frustration or outside interference. When the learner is unhappy about some situation, focus on how the student feels about the external situation, not the situation itself.

  When someone expresses frustration or inadequacy:

  a) don't contradict the person's views;

  b) don't use logical explanations;

  c) don't ridicule the person's view;

  d) convey your positive regard for the person.

- **Encourage shy participants.** Some participants prefer to be quiet and "lurk" and learn that way. Privacy deserves respect, but there are some overtures you as the teacher can make without intruding. Patience, invitations to make comments, and other strategies, like devising group exercises that involve making comments, can involve quiet learners without embarrassing them.

- **Avoid negativity.** Some of your participants will do or say things that are wrong. When someone does something wrong, don't punish that person by calling attention to the wrong comment or by embarrassing the person. This is punishment and it is counterproductive. Punishment has inhibited more learning in a person's lifetime, and indeed throughout history, than any other single factor. Instead, use positive encouragement.
- **Steps in positive teaching.** In *Yes, You Can Teach,* Florence Nelson outlines the four steps of encouragement to maintain the learning climate throughout the class. Encouragement is not always effusive praise. Providing encouragement can be a subtle art, and it is a changing process depending on the needs of the learner. Nelson points to a four-step process that helps the learner become self-directed while lessening the role of the teacher. It illustrates that the best teachers are those who can step aside when the learner is ready. These are the four steps of encouragement:
  1. The fundamentals. In the beginning, effusive praise like "great," "wonderful," "keep it going."
  2. Pleasing the teacher. As they advance, let them know, "it is coming along well," "now you've got the right idea," and so on.
  3. Pleasing the teacher and themselves. Still further along, encourage them with comments like "Yes, that's it… how do you feel about it?" or "I can see some progress here, what do you think?" or "I'll bet you're proud of yourself."
  4. Pleasing themselves. And finally, when the learner is well along, you can say, "When you need help, just let me know."

Continuous Engagement

Mary Dereshiwsky, a professor at Northern Arizona University, has pioneered the concept and practice of "continuous engagement" as it relates to instructor involvement in online discussion. She writes: " 'Being there' is an important aspect of the instructor role. It includes actively engaging with your students. Students will know when they log in that we have been there if they find a welcome message in their e-mail, announcement postings to get them started comfortably, and an updated syllabus for them to download.

"Continual engagement means keeping a close eye out for student requests for help. I create a *Questions and Answers* posting area in my online

classroom. I encourage students to use it to post any questions about the course, syllabus, readings, and assignments. Just as in a traditional live and in person classroom, if one student has a given question, chances are that other students have the same question.

"In addition, continual engagement includes active instructor participation in discussion areas. You should regularly jump in with follow-up questions, quick summaries of emergent student thoughts on that issue, or even sharing your own experiences with that topic. If you care enough to get involved in the discussion regularly, your students will, too.

"Such continual engagement also means finding other creative ways to 'talk to' your students. Many of us post a weekly wrap-up announcement. I call mine Taking the Pulse: Week X. I also look for fun ways to 'talk' and 'be there.' One way I do this is by posting a cluster of interrelated positive-thinking stories, poems and quotes on a given theme twice a week.

" 'Being there' also includes prompt feedback on assignments. It's important, if possible, to tell them what they did right, as well as provide coaching-type comments on any areas that need improvement. Such continual engagement — taking the learning material in smaller, more manageable bites — makes the learning more understandable and likely to 'stick.' This is particularly true with relatively complex learning material such as research and statistics.

"Because of greater student engagement and continual learning, they will be more likely to complete their course and less likely to drop out in frustration."

By practicing such continual engagement in your online classroom, you are creating conditions for a maximally beneficial learning experience for your students, concludes Dereshiwsky.

Revitalizing Your Course Mid-way

Even the best online courses can experience complacency and boredom halfway through the course. "Keep up the momentum" urges Roberta Ross-Fisher of St. Louis, an online professor with Walden University.

Some of Ross-Fisher's top ways to revitalize your course mid-way:

- For one week, post a quote of the day and have students find quotes.
- Provide some clues, then have a "mystery guest" join your discussion

board for a week.

- Create and host a jokes thread for a week.
- Create a mini-webquest for the week.

Chapter 20.
Facilitating Online Discussions

Online, participating in discussions is not just good or helpful or positive to learning. Participating in online discussions is critical. It is essential. It is a must. And so a critical, essential online teaching skill is facilitating online discussions with your students.

In their excellent book, *Facilitating Online Learning,* George Collison and co-authors note, "An online community exists only if its members are active and posting. As a facilitator, you must draw all participants in and guide and focus the class discussions along constructive paths to learning."

Palloff and Pratt also point out that many instructors express frustration with student and teacher discussions online.

Netiquette

Netiquette is etiquette (good manners, acceptable behavior) for the Internet. In order to have a good discussion online, we have to have some guidelines, some boundaries, for conducting that discussion in order for the online conversation to be successful.

The problem is, we really don't know how to talk online. It is a totally new experience. Netiquette is a start at helping us to develop the skills to talk online.

So when your students go to make a comment during your online course, you will want them to follow good netiquette. From several different sources, here are the best netiquette rules I can find relevant to learning online. Feel free to copy or post them for all your students. Netiquette rules for online classes:

1. **Think of your comments as printed in a newspaper.** This insightful rule comes from Conrad and Crowell and is cited in Palloff and Pratt's book *Building Learning Communities in Cyberspace*. Sometimes we think our online comment is like a verbal comment on the street. It won't be remembered and no one else is listening. On the contrary, everyone is listening. Your online comments can and are saved, so they can be remembered long after you have made them.

   This isn't meant to discourage you from making online comments. Most comments you make won't be printed or distributed or used to embarrass you. But sometimes discussion online gets heated. If that happens, before you make an emotional or outrageous or sarcastic or personal attack comment online, think about whether you would care if it was seen in your local newspaper.
2. **Do not get emotional.** It is fine to express emotion. It is great to be passionate. But when your emotion overtakes you, take a step outside, take some deep breaths, and then return to your computer. Don't be overcome by your emotions.
3. **Sign your real name.** When you are in a chat room on the Internet, and who knows who is there, it is fine not to use your real name. But when you are in an online course, you will need to use your real name. You probably won't have a choice; your online classroom software may automatically identify you when you post a comment.
4. **Avoid self-centered comments.** If you have an idea, great. If you want to contribute to an ongoing discussion, terrific. But don't just tell others about your problems ("I'm frustrated;" "My audio doesn't work today") unless it contributes in some way to the class.
5. **Avoid negativity.** You can disagree. You should disagree. You can challenge and dissent about ideas and the course content. But avoid becoming negative online. It will impact you negatively, hinder the class discussion, and may give the wrong impression of you to others.
6. **No flaming, no all caps, !!!, ???** There is no need to be aggressive online.
7. **Comments should be polite, understated, and use positive language.** Online we are very sensitive. We will get your point. Using bold, frank, overstated language conveys an emotional aggressiveness that hinders your message. Online, be polite. Understate rather than overstate your point. Use positive language. Your ideas will get a better reception.

8. **Disagree politely.** When you disagree politely, you stimulate and encourage great discussion. You also maintain positive relationships with others with whom you may disagree on a certain point.
9. **Don't disrupt.** If there is a dialogue or train of thought going on, join in. Participate, add to it. But if you have something entirely different to bring up, wait or post it in another area. Online dialogue is like conversation.

Wait to Respond

If I jump in and respond to a posting because I am as interested in interacting as the next person, I see the responses just end. There is an intimidation factor to being the instructor. However, if I stay an observer awhile, most likely other participants will make the point that I wanted to make. And it is heard and understood much better coming from them than from me.—**Sue McCullough, Southwest Texas State University, San Marcos, TX**

Teacher Netiquette

There are also some guidelines for you as a teacher in making comments online. Here is my list of teacher netiquette:

Make sure someone replies. Make sure someone replies to comments. You, as teacher, do not have to reply to every comment, but make sure someone in the class has replied. If not, wait an appropriate amount of time, then reply yourself to those postings with no reply.

Praise people for comments. Praising your students for making comments will encourage them to make more comments. Your praise does not always have to be effusive, and your praise does not have to indicate you agree with the substance or the comment. "Interesting perspective, Carlos" is a neither effusive nor expressing agreement, but it is definitely positive reinforcement. Dissent politely. Even more than your students, you will need to dissent very politely. As the teacher, your words "weigh" a lot more than your students'.

The space between the lines is also a lot wider, so students may be trying to "read between the lines" more than with another student. Thus, very gently dissent using subtle facilitation language.

Never blame or punish verbally. While I hesitate to use the word "never," this teacher netiquette rule is so very important. We unintentionally blame or punish in very subtle ways, and teachers need to constantly keep on the look out for this very common online mistake. Students take blame and even minor direct criticism very personally and acutely. Our job is to flame the fire of learning, not douse it. Be very careful here.

Encourage. Human beings hardly ever feel as though they are encouraged or praised enough. On the other hand, we usually think we encourage and praise others regularly. The lesson here is that we as teachers need to overdo the encouragement.

Encouragement can be expressed in many different ways, to individuals, to groups, and to the class as a whole.

Take the high road. There may very well be instances when you as the teacher are criticized in your online course. And there is a good chance you may perceive one or more comments as criticism when they are not intended to be so.

Either way, when there is debate, dissension, disagreement, criticism or things go wrong, it is very important for teachers to remain nondefensive and positive, to not return criticism or engage in negativity.

The Importance of Making Online Comments

Making online comments is an integral part of your students' online learning. There are many reasons why making an online comment helps your learners. Here are two reasons:

- **We learn from ourselves.** We know your students learn from other. And from you the teacher, of course. But we also learn from ourselves. The next time you are in a discussion, think about it afterwards. Try to remember what you said. Most people can remember what they said. Then try to remember what others said. You will remember more about what you said than about what others said. We learn from ourselves. By making a comment online, your students will be learning from themselves.
- **Group learning.** In group learning, a discussion builds, a number of

different people contribute and all of a sudden, a new idea, concept or thought emerges. No one person came up with the new idea. No one person could have come up with the new idea. Yet, there it is. It emerged, it was created, by the combined energies and thoughts of everyone participating in the discussion. Your students' comments, even one encouraging the discussion or agreeing, or rephrasing someone else's comment, contribute to group learning. And every once in awhile, a new idea will emerge that will excite and amaze everyone. Each learner commenting will have done her or his part in creating that new idea.

Kinds of online comments

There are many different kinds of comments your students can make online. Not all comments have to be brilliant, original, or brilliantly original. Here are different kinds of online comments. You may want to let your students know in advance what kinds of comments you value.

- *Content comments*. These are comments focused on content originated by the person making the comment. They include original comments and additions to comments.
- *Original comments*. These are statements that are, or appear to be, original with the person making the comment. We usually think of these kinds of comments as being the only valid comments in a discussion, but in fact only a small proportion of comments need to be original in a good online dialogue.
- *Additions to comments*. These are statements that modify, expand upon, or add to an original comment.
- *Responsive comments*. Responsive comments keep the discussion moving. Some kinds of responses are content-related, while others facilitate the discussion. Both kinds are very valuable.

Treasure Hunt

For productive cybersurfing, do a treasure hunt or scavenger hunt online. Find an object or fact.—**Merlin Wittenberg, formerly of Southern Adventist University, Collegeville, TN**

- *Supportive comments*. You don't have to respond to a comment with another great idea. It is helpful and positive just to make a supportive comment. You could write:

  "Great idea, John."

  "Very nicely worded comment, Charlene."

  "Ramon, thanks for making that contribution."

  In making your 'supportive' comment, you do not have to agree with the substance of the comment. Here are some neutral supporting comments:

  "Very interesting point of view, Carlos."

  "I had not thought of that, Cem."

  "I wonder what other people think about that, Theo."

  Supportive comments are very important in online discussions. Anyone can make them. Your students should be encouraged to contribute by making a supportive comment. It really does encourage others and keeps the dialogue going. And often it shows more knowledge, understanding and skill to make a supportive comment than a content posting.

- *Connecting comments*. Now these are really great comments. Your students should get extra points for making connecting comments. A connecting comment ties together two comments that were made at different times. That is, the two comments aren't right next to each other.

  Here's an example:

  "Interesting thought, Isabella. Your idea might also relate to what Thomas was talking about yesterday when he said....."

  You tie together two (or more) comments that are made at different times and often made about different points or topics. When you do that, you create a whole new perspective, idea or insight. Nice job. You can do it. So when you are reading comments and another comment made previously comes to mind, try making a connecting comment. It is fun and interesting and great learning. And the folks who made the two comments will be pleased too.

- *Responses*. This is when you respond to an 'original' comment by adding to it, making another 'original' comment, or politely disagreeing with the first comment. Keep your thoughts positive. Make only one to two points in your response. Speak to the idea, not the person or the way it was said.

- *Follow-up questions*. This is where you ask the person making the 'original' comment to clarify, expand, or rephrase their statement. This is a great technique. Some examples:
  "Could you tell us more about that, Chuck?"
  "How would you do that, Lisa?"

Initiating comments

These are comments designed to initiate or get the discussion going. Many times the teacher will make these kinds of comments, but you may want to encourage your students to help initiate discussion as well.

- *Introductory remarks*. Usually done by the discussion facilitator or leader, but sometimes students can help the discussion early on by making an introductory remark. "Boy, I really enjoyed yesterday's conversation. I'm looking forward to today's discussion." is an example.
- *Discussion starters*. Blatant appeals to get the discussion going. Usually done by the teacher or facilitator. "Okay, let's start by talking about…"
- *Transition comments*. These comments come during an online conversation when a person wants to turn the discussion in another direction and uses previous comments to do so.

How to Disagree Online

You will probably want to encourage your students to disagree online. A big part of dialogue is disagreeing. But no online comment should be disagreeable. Tell your students:

E-mail Experts

Have students e-mail experts and ask them a question or their side of an issue. You don't even have to ask for permission in advance. Many people are flattered to be asked.—**Tom Conklin, Ottawa Carleton College, Nepean, ON**

- Do not provide a negative statement about another comment.
- Do not make a negative statement about another participant.

Instead, politely and nicely disagree. If you cannot disagree nicely, don't disagree at all.

Here's examples of how to disagree online:

- "My experience suggests…"
- "On the other hand…"
- "Looking at it another way…"
- "You may have a point, but…"

If your language, culture, or age group uses other words to disagree that are uniformly and universally understood to be "polite" and "nice," go ahead and use those words. Just make sure everyone knows you are not being hurtful.

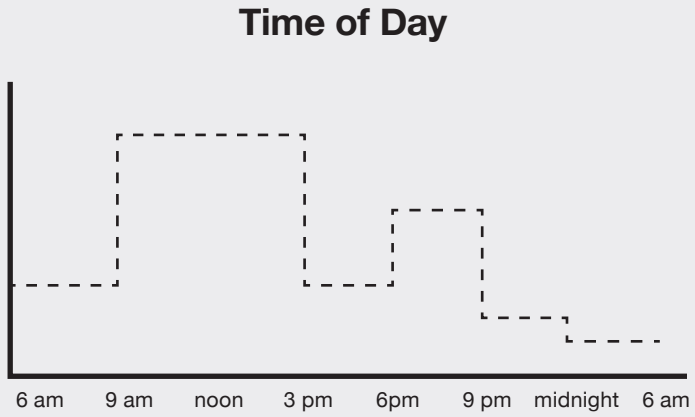
Student Rules for Online Discussions

YES Rules

- Yes, you can ask any question you want.
- Yes, you can reply and respond to any comment you want.
- Yes, there are no stupid questions.
- Yes, there are no right answers, and no wrong answers.
- Yes, you can politely and nicely disagree.
- Yes, every comment is valuable.

NO Rules

- No negative statements about other comments.
- No negative statements about other participants online.
- Be careful about using humor.
- No acronyms that not everyone would understand and know.
- No 'inside' comments or clique communication.
- No using false identities unless everyone does.



Sometimes there is a pattern to the hour of the day when other students and your instructor make comments online. Your course pattern may differ from this illustration.

Emoticons and Acronyms

Since it is difficult to convey emotion or tone in written comments, emoticons and acronyms have evolved in chat language. Collison, et al, define an emoticon as a keyboard symbol used to express a participant's emotion. An acronym is a form of abbreviation for a commonly used online phrase.

The most well-known emoticon is probably :) which turned on its side is a smiley or happy face, representing the person making the comment was happy. Other variations include :-) and :^) or = :). A frown is :(or :-(while a wink is ;-)

Some common acronyms include:

- LOL. Laughing out loud.
- BTW. By the way.
- IMHO. In my humble opinion.
- BRB. Be right back.

What is important for you and your students is to make sure everyone understands the emoticon or acronym. Create a glossary where everyone can add their favorites, or link to an emoticon web site.

Increasingly, you are likely to have students from different age groups, demographic groups, and different cultures. We embrace diversity, and we also have to minimize cliques, in-groups, and misunderstandings.

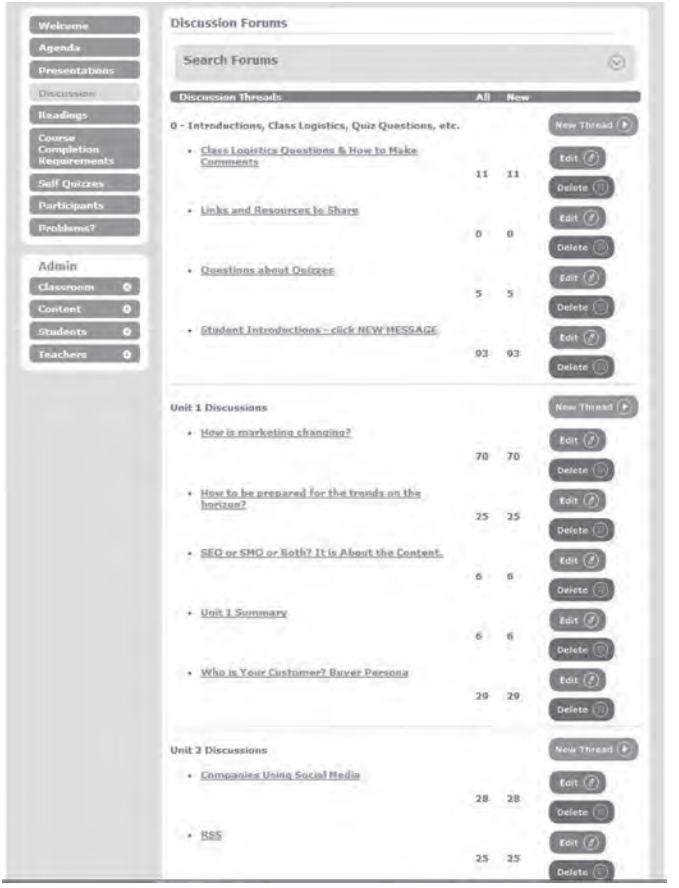
Here's an example. In all the books I've reviewed about online teaching, many have talked about and illustrated emoticons. But the examples have come from the authors' perspectives, which are almost exclusively adults over age 40. My 14-year-old son's most commonly used emoticon, therefore, does not appear in any of the books I've reviewed. His most commonly used emoticon is ^5, which stands for "high five," an expression meaning "way to go" or "I'm with you on that." Now his favorite emoticon is (_8u(l) which is Homer Simpson, a popular animated TV personality. His friend Bryn's favorite emoticon is ;-(or winking frown, which means "pretending to be sad." To reiterate, be inclusive and learner-oriented by making sure everyone knows what the emoticons and acronyms mean.

Key Facilitator Roles

In their comprehensive work, *Facilitating Online Learning,* George Collison and co-authors offer six different roles for you as an online moderator, the "guide on the side."

They are:

1. **Generative guide,** where you "lay out a spectrum of current or possible positions taken to indicate avenues of questioning that have remained overlooked or unexplored."
2. **Conceptual facilitator,** where "key concepts in activities or readings may have been omitted, misconstrued, or overemphasized."
3. **Reflexive guide,** who "restates or recrafts… carries a sense of nondirective interaction, as… though the dialogue itself is goal-oriented."
4. **Personal muse,** where "you hold your own beliefs up to question. There is a fundamental commitment to pragmatic, rather than argumentative, dialogue; there is no 'winner'."
5. **Mediator,** when "you redirect discussion away from defense of hardened positions and toward goals that are central to the interests of all parties."
6. **Role play,** when "you assume a voice appropriate to one of many roles… so, you can highlight or introduce, through characters or tales, key points that were omitted or that need reinforcing."



Discussion is often organized by Unit, with threads created within each Unit discussion forum.

The authors also point to the weaving in of an online tone, such as nurturing, humorous, neutral, curious, or informal. The tone, almost always positive but varying in terms of approach, is determined by what you judge to be most appropriate and effective at that particular moment. Collison, et al, argue against perceived negative tones, such as sarcasm or even saccharine comments, including playing devil's advocate, which they maintain can be better achieved through another more positive tone.

In the ideal online discussion, comments move from isolated posts to more of a conversation and dialogue among students and the teacher.

Discussion as Conversation

Online discussion can also be approached as a conversation. This author, for example, advocates discussion as conversation because it (a) leads to greater knowledge and (b) enhances collaborative learning.

In moderating an online conversation, one attempts to encourage multiple messages exploring the same idea or topic, what Palloff and Pratt call a "volley of views." The more comments related to the same topic, and equally importantly, responding to and playing off of others' comments, the more

likely the participants will enhance their skills in collaborative learning. At the same time, there is a much greater likelihood that the conversation, unlike individual postings, will lead to some new understanding or observation, as the whole (the online conversation) is greater than the sum of its parts (individual comments).

Facilitating online discussions at this point is both art and science. Palloff and Pratt point out that many instructors express frustration with their student and teacher online discussion. One reason for this frustration is that the study and practice of facilitating online discussions is so new. Because online facilitation is so new, we have much to learn about it. What seems clear, however, is that online discussion facilitation is an important and central skill for online teachers.

Time and Number of Comments

All online experts suggest that your students log on to the course several times a week. There is not one number that is standard, although 2-3 times a week would probably be the most common number of days online teachers recommend or mandate their students log on.

Most experts say students in a credit course, where online participation is or can be mandatory, should make a minimum of one comment a week and preferably 2-3 online comments a week.

Many online instructors want students to reply or respond to other students in the online discussion, in which case they create discussion and grading expectations that involve more than one comment a week.

Most online teaching experts recommend you, as the teacher, should get into your online course and check on the dialogue a minimum of three different days a week, and generally a maximum all five business days of the week. You can choose whether you log on over the weekend. Most online experts suggest online instructors take a couple of days off each week and not feel obligated to log on every day of the week. This author, and many other online experts, suggest that you should make a comment most times you log on, even if it is just a word of encouragement or acknowledgment of student posts. It takes just a minute or two to make a comment, but the positive for your students is that they realize and appreciate that you as instructor are present in the Discussion.

Thus a minimum amount of time spent online for you as instructor is 15 minutes a day. As to the number of comments the teacher should make, most online authorities agree that the teacher's comments should be in the minority, leaving the majority of comments to the students. One of the biggest issues right now in teaching online is the amount of time a teacher spends online in dialogue. A few thoughts on that issue:

- If you are using e-mail for communicating with students, stop and instead use the threaded discussion software.
- Online discussion is good and positive and we should not do anything to limit or discourage our students from online dialogue and conversation.
- This issue is related to the issues of development time and teacher pay for online courses, especially for adjuncts or part-time teachers. If teachers received adequate pay for teaching online, the amount of time spent would be a lesser issue.
- There are ways to limit your time online, such as writing a response only once, developing a prepared list of responses to the most commonly asked questions so you can cut and paste when appropriate, engaging graduate students or even instructors from other colleges as discussion facilitators, and using your students to respond to questions and even help facilitate the online discussion.

Chapter 21.
Evaluating Your Online Course

Now that there are hundreds of thousands of online courses and tens of millions of people learning online, an emerging issue in the field is how to evaluate an online course.

Because making improvements and enhancements for your succeeding course offerings is imperative, evaluation is a significant process in the teaching of your online course.

Here in this book we provide the latest Best Practices in teaching online, the standard used in the Certified Online Instructor (COI) designation.

In the second decade of this century, and probably extending into the first half of the third decade, we are in a period of rapid change as all of education, including online learning, is transformed to meet the needs of the new economy and knowledge society of the Information Age. The imperative is, and will continue to be for another ten years from the date of this edition, for online courses to be ramped up in quality every two to three years.

What you as an online instructor will continue to experience for several years is a changing environment in online teaching in which these characteristics will be present:

1. **Outdated standards.** Most of our evaluation standards for education are based on the needs and environment of the last century, the Industrial Age. Thus many commonly accepted standards may not necessarily be relevant for the 21st century and the Internet Age and the new knowledge economy.

For example, few standards committees or organizations other than the Learning Resources Network say that each and every unit of every online course should have an audio or video presentation with slides from you the teacher. At the time of this writing, more than half of all online courses are still stuck in an outdated text-based mode that has caused considerable dissatisfaction among online students.

2. **Online learning is still evolving.** We have been practicing face-to-face education for hundreds or thousands of years. We have only been practicing online learning since 1994. This is still the first generation of online teachers, and we continue to learn and grow in our understanding of what a model online course should be.
3. **Rate of change.** Online learning is still changing rapidly. If Moore's Law indicates that computer power and speed double every two years, online learning changes significantly every two years. If we did a review of the last ten years in online learning, we certainly would see major changes occurring every two years during that time span. Moving forward, you will read about this author's research on the emergence of new features in online courses, such as gaming and learner data analysis.

Thus, while we want to have quality assurance and standards for online courses, it is still premature to look for permanent standards by which to evaluate your online course.

You can, and should, look internally at your own online course for direction in improving the course. You can also look at other online courses for comparisons and helpful tips.

Colleague Meetings

Create your own small group of professors who are teaching online. This group tries to meet once a month to discuss issues/ideas regarding what is and isn't working. Because of this group, our university came to us and asked us to create a student tutorial for Blackboard.—**Amy Finch, Ft. Hays State University, Hays, KS**

Continual improvement

Every course should be in a continual state of improvement and quality enhancement. This does not mean you will need to redesign or redevelop your online course every time it is offered. You will probably want to improve 5% to 10% of your course each time it is offered. You will want to shore up weaknesses, but you will also want to respond to new technology and to continually raise the quality level of your course. And as you enhance the quality of the course, student satisfaction goes up, and then you are able to gain more institutional approbation as well. As Dr. Mary Moretto has noted about her experience teaching online, "Once they see a success, they all want to be a part of it."

Three-year review

An online course should last three years. But best practices in online learning continue to change, be created, and be improved. So your course may need some substantial modifications or enhancements every three years. Best to check. Every three years, give your online course a thorough review.

Quality progression

Hopefully, you feel your first online course was "pretty good." But judging by the experience of experienced online teachers and experts, a retrospective look at online course quality progression is likely to be: first offering, awful; second offering, not so awful; third offering, not too bad; fourth offering, pretty good.

If you feel your online course is "really good," you probably are kidding yourself. The really good online teachers do not say their courses are "really good." The really good online teachers say they have a lot to learn and a lot to improve upon.

Select 1-3 improvements

You cannot improve everything on your online course all at once, nor should you. You have a limited amount of time and resources. The best time to think about what improvements you will want to make for your next offering is right at the end of your current online course offering, just before it ends.

Select from 1-3 things to improve, expand upon, create, or add for your next offering. Look at those things which a) will make the most impact on student satisfaction and participant learning; and b) are logistically feasible given time and technical resources.

If you select the top 1-3 enhancements each time you offer your online course, you will soon have a superior online course of which you can be very proud.

Value experience more

In receiving feedback, whether it be from your students, from other teachers, or from administrators, it is important to keep in mind that first-time online learners/teachers/administrators differ in some significant ways from more experienced online learners/teachers/administrators.

First-time learners and teachers often reflect views that are a result of their initial experience, and can be more a statement about the initial learning curve with online courses than about the course itself. For that reason, value the thoughts of experienced online learners, teachers and administrators more than those of first timers.

Evaluation Methods

Here are a number of methods teachers use to evaluate their online courses.

Student feedback

You will receive a number of impressions, reactions and suggestions from your students every time you offer your course. Be open to initiated student feedback. If three students independently provide the same feedback or offer the same observation, take that feedback seriously. It probably means many other participants also share that same view. On the other hand, if only one person has a given perception, it very well may be only that one person and not reflective of others in your class. Your students are probably the best source of clues to enhancing your course, and student feedback is an excellent evaluation tool.

Student behavior

Often overlooked, but even more important than what people say, is what people do. Analyze your student behavior online. Look at what they do, when they do it, how often they do it, and how they do it. Then study what they do not do (and try not to speculate too much on why they do not do it). Actions speak louder than words, and when you start studying your students' actions online, you learn a lot.

Some of the student behavior you can analyze: when they log on, how often they log on, what pages they most commonly frequent, the nature of their comments, participation rates in certain online activities. Student behavior online is one of the most important ways of evaluating your online course, and you should do some kind of analysis of what your students do for each and every course offering.

Student evaluations

Many online teachers conduct student evaluations of the course, either online or with a mail-in survey. Student evaluations should be done near the end of the course, but not more than a week after the course is over. The questionnaire should be short, not more than one page in length. Responses should be anonymous, with possibly an option for the student's name if there is a reason for knowing the student's name.

Do a few closed-ended questions (yes/no, Likert scale, etc.) followed by 1-2 open-ended questions such as "What did you like best about the course?" and "What would you suggest I change about the course?" Thank them at the beginning and end for responding.

Do not go on a fishing expedition with your evaluation. Instead, know what you need to know. Select 1-3 things for which you want their opinions. When you get the answers to your most important questions, feel free to change the questions and ask something different in succeeding offerings.

If you really want to use the best evaluation ever, here it is. It is one question: "Overall, were you satisfied with the course? ___ yes ___no"

You then follow up that question with "Comments (optional):" followed by enough space for students to write comments.

The optional comments section gives you better quality feedback than most any question you or I can think of. You find out what you did well, which

is very important, as well as suggestions for improvements. You discover some things you would never know to ask about.

Student evaluations are a common evaluation method for online courses. Every online course should have student evaluations. And every online instructor should take them seriously and base improvements for your next offerings on student evaluations.

Mid-course feedback

Mary Dereshiwsky and other online experts enthusiastically support a quick and generally open-ended solicitation of student feedback around half way through the course. This gives you time to make adjustments. It gives you feedback from your current students before it is too late. It also shows them you care about their online experience and making it the best it can be.

Your own perceptions

At any point during the course, but particularly near the end, jot down some notes and thoughts about how the course went and what to change for next time. It may also be very important to write down what went well, and what not to change. Do not wait until the course is over to do this; even one or two days after the course, the demands of your schedule will intrude and diminish your recall.

Teacher perceptions are a regular evaluation method for online courses.

Take an online course

One of the best ways to evaluate your own course is to take another online course. You will see similarities and differences. You will see what you like and what you don't like. You will experience online learning from the learner's standpoint. There are numerous low-cost online courses, many of short duration.

Teachers who take other online courses report the experience to be one of the most helpful in improving their own online courses.

Peer review

Ask another online teacher to take a peek into your course, either before you offer it, during the course, or even after it is over. An experienced online

teacher will provide positive and supportive comments, as well as make suggestions on where to improve.

Expert review

A number of organizations and consultants, such as the Learning Resources Network (LERN), do online course reviews as a consulting service.

Our Best Practices Checklist has been used by thousands of faculty as a standard or guide for improving online courses. It is the standard for the Certified Online Instructor (COI), in which every online instructor has at least one online course critiqued using the LERN Best Practices.

Since many online courses offered by your institution will be similar in nature and attributes, the review of one or two online courses will likely provide recommendations and analysis that are applicable to the rest of the online courses being offered by your colleagues in your institution.

For that reason, getting an expert review might be a good use of resources and a win-win situation for both teachers and administrators in your institution.

As we mentioned at the start of this chapter, there is a critical and immediate need for standards committees and organizations at every level to upgrade their standards and recommendations to respond to the need for all online students to hear the voice of their instructors, and then to continually ramp up standards and recommendations to meet the needs of our learners.

Critique It F2F

Have students meeting F2F critique the online course. Then have your online-only students critique the course.

Student advisors

There will be a few students participating in your organization's online offerings who are experienced online, knowledgeable, and enthusiastic about online learning. An excellent way to improve your course, and those of your colleagues, is to engage 5-10 of those students in conversation several times a year. Your conversation may be done individually. You may want to take them to lunch, or buy sodas later in the day. If you set up a "focus group" or

"advisory committee," keep it informal with few if any rules or formality. You don't need any extra work, but you can benefit enormously from talking several times a year with a few experienced and supportive online learners.

Your report

Regardless of whether your organization requires it, you will quickly enhance your course if you do a quick and short, no more than one-page, report for each online course offering you teach. Use the report to document the success of the course, record testimonials, report on class data and participation, and provide observations and recommendations

Best Practices Checklist for Online Courses

From the Certified Online Instructor (COI) program and designation of the Learning Resources Network (LERN), the leading organization for faculty development in higher education, at TeachingOntheNet.org

1. **The online course is organized by Units.** A "Unit" has a central concept or topic that distinguishes itself from other Units. Online courses should not be organized by weeks, chapters or other categories.
2. **There is a warm welcome to the course.** A warm welcome helps with orientation and helps create a safe trusting online environment critical to online course success.
3. **Expectations, including grading assignment expectations, are clearly stated.** Teachers should make it explicit, in writing, each and every expectation, and that expectation should be posted well in advance and in a highly visible location, preferably reiterated as needed and with the teacher taking some responsibility for making sure each student understands the expectations.
4. **Announcements and updates are posted.** Updates and announcements, even just repeating a welcome, are important for each unit or week, help remind students, and keep clarity and communication open.
5. **There is a different Welcome Page for each Unit.** There should be a different Welcome Page for each Unit, with new images or visuals, a slightly different warm welcome to the new Unit, and new information that helps maintain student interest and involvement.

6. **There is a discussion rubric where points or guidelines for discussion comments are clearly stated.** Expectations for online comments, responses, questions and other online dialogue should be clearly stated so every student knows what is expected.
7. **There is some, but not too much, online text provided.** Some online text is provided, but not too much online screen reading is required. Use print text books, audio lectures, slides, videos, pictures and other ways to convey information in addition to online text.
8. **There are plenty of pictures, charts, color design, artwork and other visuals in your Welcome Pages, readings and other web pages in the online classroom.** While Baby Boomers (born before 1964) are used to just text, your students learn using media. Visuals are low- or no-cost ways to increase the learning of your students. Visuals are not "bells and whistles;" they are an integral part of communication and work in the 21st century.
9. **There is at least one visual slide show per Unit, ideally with the teacher's audio presentation integrated with the slides.** As visual learning is one of the most common learning styles, especially among learners born after 1980, visual slides shows are a positive delivery method for content, providing a visual complement to the instructor's audio presentation.
10. **There are one or more audio or video presentations from the instructor for each Unit in the course.** Your students learn in many ways, including by hearing their instructor. And your students don't just learn from your words, they also learn from your voice, the tone, the emphasis, the energy, the authority, the engagement of your voice.
11. **There are one or more activities for students to do in the course.** The activities can be online or offline projects. When students engage in activities, including creating content, the interaction increases their learning. Activities include but are not limited to PowerPoint presentations, online collaborative projects, role playing, debates and more.
12. **Online discussion is organized by units.** Online discussion, with few exceptions, should be organized by units, with a different thread or area for each unit discussion. This helps students integrate the content and discussion in each Unit. In addition to threads by units, other kinds of discussion organization, such as small groups, or an informal 'water cooler' thread, are all good as supplements or additions.

13. **The teacher is consistently and constantly involved in the online discussion.** The most important aspect of any student's learning is the teacher. The teacher should be involved in the online discussion. In most cases the teacher responds to questions, provides encouragement, initiates new discussion topics, and identifies students who might need additional assistance. Whether the teacher makes a few or many comments, students need to feel the continual presence of the teacher in the online classroom and discussion.
14. **Participants or students make a sufficient number of comments each week and unit.** While no specific number is recommended, it should be evident that participants/students make a sufficient number of comments each week or unit. Teachers may, or may not, require online comments, but even if comments are required, there should be evidence of voluntary student interest and involvement in the online discussions.
15. **There is sufficient evidence of replies and responses from students in the online discussion.** It is important that some voluntary reply/response comments from participants/student are evident. Online dialogue is another important way that we learn, so remarks should not simply be comments as isolated postings.
16. **There are one or more ungraded self-quizzes for each unit.** One or more online self-quizzes that are not part of a student/participant grade are good learning tools. They also serve as good feedback tools for both participants and the teacher.
17. **There are some good visual design elements to the course.** There should be a good overall visual design of the course. From color to design to lines, borders, clip art, photos, color design, the visual design helps learners as part of design/navigation of the course.
18. **There are more than three assessments used in grading.** We each not only learn differently, we also test differently. Multiple assessments help both the student and teacher. For the student, multiple assessments help respond to learning styles, but also aid in the student's learning. For the teacher, multiple assessments give the teacher a better picture of how well each student is learning, and how the teacher can enhance the online course to increase learning. Assessments should be norm referenced, based on learning rather than behavior, and not be biased, including no gender bias.
19. **There is intuitive navigation, making the course easily navigated by students.** The course is organized or structured with a main or

welcome page, and other aspects of the course are easy to find from that central main page.

20. **There is another good feature to the online course.** There is an obvious benefit or good feature to the online course that is not mentioned above. The feature may be dependent on the content and/or audience. Some examples include animations, simulations, drag-and-drop games, virtual tours, webquests or offline activities.

    Bonus best practices online course feature. We all are in the process of enhancing our online courses. We recommend that every online teacher make 1-3 improvements each time you offer your course.

Part VI.
Advanced Online Teaching Strategies

Chapter 22.
Best Practices in Online Teaching

In this section, we discuss advanced online teaching strategies. As we have tried to emphasize in this Fourth Edition, we are now in a period when online courses must be ramped up to the next level.

At the time of this writing, there are four critical areas in which online courses need to be and can be improved:

1. More multimedia, in particular audio lectures with visual slides from the instructor for every unit
2. More student interaction with the content
3. Continual engagement in fostering online discussions
4. Enabling learning and completion

In the next chapter, Mary Dereshiwsky, the creator of continual engagement, discusses some of the important aspects in continual engagement, following which we tackle the emerging urgent issue of enabling learning and completion.

In this chapter your author offers his top picks for best practices in teaching online, as of the time of this writing.

Welcome Pages

Welcome pages are very important. They are what the student sees first. First impressions are important. Here is what a good welcome page should contain:

When different Welcome Pages are created for each Unit in the course, students remain more engaged and stimulated as they see new and updated messages from the teacher for each Unit.

- **New welcome page every Unit.** Every time you have a new unit, which is normally every week, you should have a new welcome page to welcome your students. The new welcome page gives the message that there is something new this week, your course is not static, and that their enthusiasm and interest should remain high.
- **Visual design.** The welcome page should have color, pictures, white space, some headlines or boldfaced copy, and not too many words. In short, it should have a visual design. For this author's welcome pages,

I find that 3 images makes the page visual and interesting to look at.

- **Warm welcome.** Every time, every week, every unit you want to re-welcome your students and tell them over and over again that you are glad they are there.

  If you are a quarter of the way through the course, half way, or three quarters of the way through, encourage them by noting how far they have come already.

- **Something new.** Every time, every week, every unit, you need to have something new. Just repeating the same words as on the last welcome page lowers interest. Tell them what new concept or idea you will address this unit, a new activity they might be engaged in, or an interesting new fact.

The more visual the Welcome Page, the more visual stimulation and interest is generated. Here a YouTube video is embedded in the Welcome Page, there's a picture, copy in different ink colors, and short information chunks.

Employ 3-5 audio techniques

In every audio presentation, try for 3-5 different audio techniques. Audio techniques help your students learn by providing variety and stimulation.

Three is sufficient. More than five might be too gimmicky and take time away from the content. So 3-5 is a good average.

You have so much from which to choose. There are *illustrations*. Examples of illustrations include stories, skits, guest expert or authority comments, music, historical recordings.

There are *speaking techniques,* such as encouragement, passion, even skepticism if that's appropriate, pleading.

And then there is *vocal variation*. Whisper a few sentences, speak slowly for some important sentence or concept, speak rapidly for those sentences where it makes sense.

Quality original Video

More and more professors are producing quality original video clips. These are less than five minutes and utilize some good camera angles, good staging, and good microphone and voice level. Many have several different scenes.

We are going to see more original video produced by online instructors. The priority here is to have a few quality videos rather than many poor quality videos.

Drag and drop

The technology of "drag and drop" has the potential of being another common and positive feature in online courses. This author predicts that by 2016 there will be common drag-and-drop software available so that instructors can create their own drag-and-drop games for their own subject matter and level. Drag and drop is yet another way to both engage students more, and move to multimedia online courses.

Involving students in teaching

Involving your students in various aspects of 'teaching' the course will enhance their learning, and your teaching. With online courses composed of content, interaction and assessment, your students can be engaged in all three.

- **Creating content** This will be a major emerging feature of online courses that will be quite exciting and take online courses to a new level.

  Younger and future generations will not just want but need to create content. Creating content is what they already are doing on the web. Creating content is one way they learn. It is also what most of them will do for a living.

  Creating scenarios where students create content also will enhance your teaching. Some of the ways students can create content include creating slide shows. audio presentations, videos, webquests and virtual tours, animations, simulations, and more.
- **Leading interaction** We learn by sharing. We learn by teaching. Your students can lead online discussions. They can lead small online discussion groups. They can lead discussions by topic, or days. They can be encouraged to create new discussion threads.
- **Assist in assessment** Students do not issue grades, but they can be involved in assessment. They can provide feedback on their own progress. They can provide information on other individuals in a small group. They can write test questions. They can evaluate or critique the first draft of another's essay.

Weekly quizzes

We have made the case before. Because of the beneficial nature of weekly quizzes in enhancing learning, we re-emphasize it here. Mary Dereshiwsky adds that frequent quizzes may also be helpful in reducing the stress that students experience because they more regularly understand where they stand, another positive facet of how frequent quizzes can enhance student learning.

Multimedia Readings

Les Howles of the University of Wisconsin-Madison and the leading expert in online course media, reports that online instructors are now designing multimedia online readings. Within the online readings, instructors are inserting charts, pictures and other visuals, videos, one- or two-question quizzes, pop-up glossaries, and other engaging interactions that make online readings multimedia.

Options for Content

Howles also says we are now experiencing the first online courses that give students different content paths and choice for accessing content. Rather than assigning one path of content (for example, a reading, an audio, a video) some instructors are now creating different paths of content, and then offering their students a choice of what form of content to access in order to master the material.

Emails

This instructor sends out an email to students every week. Other instructors use social media, Twitter, blogs and other forms of communication. The purpose of the email is to provide praise and enhance motivation, as well as a sense of belonging to a group. The emails are short, with a reference to what has happened recently in the course discussion, a note on what new is coming up, and an overall reinforcement and encouragement.

The era of text-based online courses is almost over. We are in an exciting period of time when online courses will be taken to another level of multimedia, student engagement and interaction.

Chapter 23.
Continual Engagement

Being engaged with your online learners throughout the course is both one of the three biggest weaknesses of online teachers, and also one of the three biggest ways to take your online course to the next level, making it a superior learning experience for your learners.

Mary I. Dereshiwsky, COI, is a leading authority on online teaching and creator of the concept and practice of 'continual engagement' in teaching. She has taught thousands of faculty about teaching online, has critiqued hundreds of online courses, and heads up the advisory board of the Certified Online Instructor (COI), the leading designation for online faculty in higher education. This author has had the benefit and pleasure of co-teaching with her online. There is no better authority, so here are excerpts from her book *Continual Engagement: Fostering Online Discussion*.

The primarily text-based nature of our interaction means that we need to find different ways to signal our presence to our students. This idea is at the heart of an online best-practice concept known as *continual engagement*.

The best way to think of continual engagement is simply *making your presence known* to your online students. As we know, though, you can't walk into an online classroom in the same visual way as you do in a face-to-face class. They also can't hear you speak to them the way that you would in live and in person class session. You also won't be able to see or hear your students in the same way you would if you were all located in the same physical classroom together. For this reason, you won't be able to respond to them with the same visual and verbal cues when they contribute something to the class session.

Why Continual Engagement Is Important

Your work is not done when you have created the online course content. Instead, it is just beginning. Your students will show up to that course content, but then it's up to you to set the pace of how they work with that content." In other words, to quote the classic movie line, you can't just "build it and they will come" and think your job is complete. In fact, it is just beginning. They need to see you come right along with them…and keep coming in a way that they can see.

There are alternative ways to keep the lines of communication open with our students on a regular basis. This continual engagement can win over many initial skeptics, as my own experience has taught me. They can come to realize that while the form of interaction may be *different,* it is no less "real" than talking and listening in a face-to-face class.

Finally, continual engagement on your part can set a good example for your students. If they see you "showing up" regularly via a clear trail of your presence in the online classroom, they will learn that they benefit from doing the same. You as the instructor have a valuable opportunity to be a positive role model for your students with regard to "coming to class" if you show them that you are doing it regularly.

How Continual Engagement Can Ensure Your Students' Success

As the course gets started, we want to keep things going smoothly for our online students. Our continual engagement in our online course can be a helpful role model for our students in this regard.

What are some ways that continual engagement can help our students succeed? For one thing, it can help them with *managing their workflow.* We know that it's much easier to catch up on one or two days of discussion postings than a whole week's worth. Some students, particularly working adult learners, may think they are being more efficient by being "weekend warriors." They tell themselves, "I can concentrate better by setting aside the time on a weekend when I'm not at work to catch up on my course work." At the same time, we all know that feeling of logging in and seeing a ton of postings! It's too easy to become overwhelmed and miss something when faced with an avalanche of information like this.

In contrast, making the time to log in every day or every other day means less to catch up on. There will be fewer postings and announcements waiting when students make the time to peek into their course regularly during the week. As a result, they are less likely to feel stressed and more likely to notice important information that their peers are getting.

Students can quickly learn that such continual engagement does not have to mean setting aside massive blocks of time during the work week. Even a brief 10-to-15-minute check-in to look for posted announcements from their instructor or group members can be amazingly productive. They can also learn to make the most of those unexpected "gifts" of time: e.g., a cancelled appointment. These blocks of time can be applied to logging in to their course room, particularly if they have their laptop handy even while traveling.

The same benefits apply to *managing group work responsibilities*. Group projects and assignments basically add a second layer of expectations and due dates to keep track of. For example, if a group project is due in two weeks, students will need to negotiate interim deadlines and check-ins with their fellow group members to assemble the assignment and review it before the final submission deadline. Staying connected to updates from their group members helps avoid the dreaded 11th-hour pile-up and risk of missing the group assignment due date.

In like manner, *improved study skills* are the result of such continual engagement. We know that studying something requires more intensive and repetitive focus than simply reading it. For example, for the statistics courses I teach, it means rereading, rethinking, and reflecting, especially with the worked-out examples in the textbook. In order to be able to solve a statistics problem in your assignment, you'll need to understand how to go from each step to the next step in the worked-out examples in the textbook.

Finally, continual engagement helps your students *resolve problems before they grow*. No course, whether online or face-to-face, is guaranteed to be trouble free. Questions and problems will invariably arise. But the sooner we are aware of them, the sooner we can get them resolved. In the online classroom, for instance, it may involve road-testing the student's ability to download an article in PDF format, in order to read and apply the content of that article to an upcoming related assignment. Suppose the student waits till the weekend before the assignment is due and then discovers that for

whatever reasons, he/she is unable to download and open the article. This student risks being late in submitting the assignment as a result. Compare this scenario with trying to access the article as soon as possible after the assignment is announced: perhaps at the start of the week. This allows time to work with tech support on any access issues much more comfortably, and with far less stress, as well as ample time to resolve the problem and complete the assignment on time.

We are all eager to do whatever we can to ensure our students' success. This strategy of "being there" known as continual engagement can help our students have a maximally beneficial and minimally stressful learning experience in our course.

Starting Your Course with Continual Engagement

Your online students may be entering your classroom with some trepidation, particularly if this is their first online course. They will have questions and concerns about how to get started comfortably. If they see you there, responding promptly to their questions, they will feel reassured. As a result, they are more likely to hang in there during the invariable start-up speed bumps…and less likely to drop the course.

- **Share a bit first.** This recommendation is akin to a teacher standing in the doorway of the classroom on the first day, warmly welcoming each new student who enters. Most of us will have a discussion thread where we have introduced ourselves and encourage our students to do the same. I invite them to share a little bit about their professional experiences, and any personal information they wish to share as well. This can include what region of the country they live in, hobbies, children, pets, and anything else they'd like us to know about them.
- **Reply to each student's introduction.** I recommend replying to each student's self-introduction post. I look for common ground when I craft this message. For example, if I have visited their part of the country, or if I share one of their hobbies, I include this information in my reply posts. This reply doesn't need to be elaborate; even a sentence or two will do it. This note will convey the personal touch and indicate to them that you "heard" their self-introduction in their text-based posting. It creates a positive first impression.
- **Post brief announcement.** In like manner, a day or two after the official kick-off of the course, I post a brief announcement telling the

students that it's great to see everyone coming aboard so well. This, too, conveys to them that I am there and watching as they enter my classroom. It seems like a great way to "catch them doing something right!" In this way, too, they learn that announcements aren't always bad news. They can be positive and affirming!

- **Alert them to glitches.** As your course starts up, you should start to be on the lookout for any glitches so that you can alert the students to them. For instance, you have ideally checked all of your external embedded hyperlinks prior to the start of your course. Invariably, though, one or more of them will go dead. This can even happen at the start of the term, and just when students are feeling most jittery about getting their bearings in your course.

  By posting any such updates in an announcements discussion thread, you are providing this information in an efficient way. It's easier for you to type it once and ask all students to check for such updates, than it is for you to respond privately to multiple individual student email inquiries on the same topic. You can quickly defuse any student concerns of "Am I doing something wrong? Is the problem at my end of cyberspace?" Your students will appreciate that you are keeping a careful eye on the problem and notifying them of any solutions.

Continual engagement as the course gets underway

Now that things are rolling along in your online course, how can you continue to maintain a visible profile to your students? At this point of the term in particular, you have a prime opportunity to express your individual creativity.

- Read-only discussion forum. I do it by creating a read-only discussion forum called "More Words to Lead By." This is a play on words of my departmental affiliation (Department of Educational Leadership and Research) at Northern Arizona University's College of Education. Twice a week, I will go in and post a cluster of positive-thinking stories, poems and quotes on a given theme. I collect these items from various sources. I also try to come up with a catchy title for each posting. For instance, towards the end of the term I post a cluster of items dealing with time management with the subject line: "It's About Time." The interesting thing is that I never mention this "More Words to Lead By" discussion forum or its contents in my syllabus or other announcements. I simply begin to post items there. Before too

long, I start getting nice fan mail from students telling me how much they enjoy these collections of positive-thinking themed items, why a particular piece meant something special to them, and how they are sharing these items with others (family, friends, fellow students).

Cartoons and postings convey our presence to students in fun, creative ways. They come to anticipate the next posting and look forward to enjoying it.

- **Share good news.** Another way to boost your presence as well as create a sense of learning community is to do something like my "Winners' Circle." Sometimes students will privately email me with some good news (e.g., a new job, a new baby). I ask if I may share this good news with the class by showcasing them in a "Winners' Circle" announcement post. They are delighted to see other students also reading these posts and sending them messages of congratulations. By doing this, I am indicating that I "see" my students in my mind's eye as individuals even if I can't see them in real time. It also boosts the sense of connectedness of the online community when other students notice and respond.
- **Email individual kudos.** I will also privately email students who get a perfect score on a quiz with a brief message of kudos. This, too, lets them see that I'm paying attention by catching them doing something very right. They often reply with surprise and delight that I noticed their exemplary performance.
- **Q&A forum.** It's a great idea to create a "Questions and Answers" discussion forum in your online classroom. It's so much more efficient to reply once to a question that other students may also have, than it is to answer the same question repeatedly by private email. Even if you copy and paste a boilerplate response in such repeated private email replies, it is still time-consuming in nature. On the other hand, by creating this "Questions and Answers" forum, and by responding promptly to posted student questions, you are showing the whole class that you are on top of any concerns. It's the equivalent of a live and in person class where one student may have a question, but others may realize that they have the same question and also benefit from your response.
- **Weekly wrap-up.** A final way to stay visible in your course as the semester gets underway is by getting into the habit of posting a weekly wrap-up and preview message. I call mine "Taking the Pulse – Week X" where "X" is the upcoming week. If your week starts on Monday,

you might post this update Sunday afternoon or evening. In this post you might briefly summarize the content that everyone has covered during the preceding week. Then you can bridge to the preview of what the class will be doing during the upcoming Week X. Students have told me this helps them see the big picture of what they are learning about: where they've been and where they're going. They come to anticipate your update in the same way that they anticipate the kinds of creative touches (e.g., cartoons, positive-thinking postings) discussed earlier. Just like seeing their teacher walk into the classroom to start the lesson, this provides your students with a feeling of security that you are present with them.

How to demonstrate continual engagement in group work

The online classroom environment adds some challenges to the usual communication and coordination issues that your students may experience with regard to group work. They may be located in geographically dispersed regions which can rule out in-person meetings. Different time zones may also make it difficult to coordinate conference calls. As a result, the group members may find themselves communicating primarily online to get their tasks done.

You can establish your presence to them, as well as help them get started on the right foot, by asking the group members to negotiate a contract of mutual group expectations as their first task. I treat it as a non-graded "housekeeping" assignment. It lets them get started on communicating with one another. In addition, it helps them to think through some potential communication issues that may arise and hopefully prevent them from happening.

Specifically, I advise group members that a workable, effective group contract will include, but not necessarily be limited to, the following issues:

1. How they will communicate with one another (e.g., posting in their group discussion forum, chat room, email mailing list, text message, telephone or in person if feasible);
2. How often group members will be expected to check in for updates from group members;
3. How long to allow for a response to a message (update, question, partial draft of assignment) done by a group member;

4. Will there be a designated leader of the group; and if so, will the leader be permanently appointed, or will this position be rotated somehow (latter to be determined by the group members);
5. What specific initial steps the group members will take to try to resolve any intra-group conflict that may arise in good faith. I tell them to think of me as a "higher court of appeals!" I am happy to step in but I will also need to see what they have done to work the issue out. Often this is as simple as referring to a provision they have built into their contract.

I always review the contracts and post my thoughts to the group members in their individual group contract discussion forum.

Most online classroom systems will also allow you to access each group posting area to observe the interactions. You can do this discreetly by periodically checking in to skim the group postings and see how it's going. This way you are letting the group members work together but at the same time keeping an eye on things to be ready to step in if there should be any problems.

How to demonstrate continual engagement in individual work

There are a number of time-tested ways that you can similarly make your presence known in your interaction with individual students. The one that I use most often is to jump in randomly throughout the discussions to ask a follow-up open-ended question that piggybacks off what someone else has posted. For one thing, this keeps the flow of discussion going. Students can see that I as the instructor was paying attention to what was said, from the way that I've crafted my follow-up question to build upon these earlier student comments. They know I'm listening: that I'm paying attention to what they are saying. This can also revitalize a lagging discussion by introducing a spin-off topic for students to share additional thoughts.

- **Early feedback.** In addition to discussions, your online course will invariably include some forms of assessment of individual student work. Most schools require you to provide some feedback to individual students on how they are doing in the course relatively early on in the term. Usually there is a stipulation of how many days or weeks into the course the first point of feedback from you is required.

Such initial feedback doesn't have to be lengthy or involved, such as an exam or full-form term paper. You can actually use this required first evaluation checkpoint as a way to begin to build rapport and individual presence with each of your students.

- One-minute papers. The way I do this is by having limited-scope quick assignments called one-minute papers. They are intended as brief applied checkpoints of what the students are learning about. For example, in my introduction to research course I might ask the students to share two examples of an ex post facto research question at the end of our lesson on this topic. It gives them a quick checkpoint of their understanding of this concept. It also allows me to provide them with quick individual feedback on their one-minute paper submission.
- Ungraded assignments. You can also devise some brief, focused ungraded assignments. They allow you to begin to establish an ongoing communication partnership with your students with regard to their work. In addition, this option removes the fear and worry of grades for students. They can relax knowing that the sole purpose is to let them check their understanding of the current course concepts.
- Comment when done right. The preceding two ideas also lead into another way to signal your continual engagement with regard to student assessment. We have all heard the classic adage: "Catch them doing something right." When I review student assignments I like to comment even briefly on something they have done correctly, and why. They may be pleasantly surprised to discover that you are also noticing, and commenting on, what they did correctly. In addition, it provides a quick reinforcement of the learning concept that they got right, when they see you restate it in your own comments to them.

I hope that this has given you some ideas about strategies for continual engagement in your online teaching. I encourage you to brainstorm and explore additional ways that you can make your presence known to your online students throughout the term. Doing so will increase their learning and satisfaction with the online instructional experience. You will also enjoy a greater sense of bonding with your online students as a result.

Making Online Course Expectations Manageable for Your Students

The start of any new course can be a bit overwhelming for incoming students. I like to tell my students that "The first week should count as a

month's worth, at least!" In addition to getting ready to learn new course content, they are also learning the process of their course. The latter includes what their instructor expects of them and how the course will work.

Learning this process can be especially challenging in online courses. Students will not have real-time interaction with you as in the traditional face-to-face classroom. They may also be new to online courses in general. Figuring out how to get and stay on track with their course expectations can be a bit daunting at first.

What can online instructors do to make the overall learning process more manageable for students? Here are some suggestions.

- **Subdivide assignments.** A number of online universities carefully subdivide major online course assignments so that students are working on them throughout the course. In other words, the end-of-course final paper is not a whole new stand-alone assignment. Instead, the students have been working to assemble it step by step throughout the course.

  Doing this is a great stress reducer for students. They get a chance to get feedback from their instructor and peer learners on each of those steps. This in turn lets them still make any corrections or revisions to it before resubmitting it as their final paper.

- **Summarize key concepts in periodic announcements.** Another way to help make the online learning journey manageable is to post a periodic announcement to your students. In it you can summarize the key learning concepts just covered in the past week or so.

- **Group work.** Group work is another way to make the overall course material manageable. Your online students can learn to divide up the task at hand—e.g., a presentation, a case study, or a paper, for example—among the members of the group.

  With regard to individual assignments, a quick checkpoint I have is called a "One-Minute Paper." It lets you do a focused assessment of a given learning concept to see if students truly understand it before moving on to more complex ideas.

  Strategies like these reinforce the value of sticking with it, of continual engagement with the learning process throughout the term, rather than slipping behind and trying to catch up in massive single study sessions. As a result, your online students are less likely to give up, become overwhelmed and even consider dropping the course. The end result will be a more positive and productive online learning experience for them.

Strategies for Online Collaboration

Group work online can be particularly challenging. At the same time, you can do some things to help your students have a positive collaborative learning experience. Here are a few tips for successfully facilitating group interaction for your online students.

Let students have a say in who their assigned teammates are.

Some students in your online class may know one another from prior course work together. Or they may be part of locally based intact cohorts such as we have throughout Arizona. Most online classroom software such as WebCT Vista will let you form the groups either randomly or through student sign-up sheets.

By allowing students to have some say in who their teammates are, you are capitalizing on inherent established patterns of communication. Of course, you also need to have a stipulation that all groups will agree to accept anyone who may be unassigned to a pre-existing group because he/she does not know anyone else in the class.

Encourage groups to start with a contract.

This can be the first group activity. Such contracts help prevent misunderstandings among group members. Cue students that some points in the contract can include:

- Who will be the point person for posting which group assignments
- Who will be the group leader
- Whether or not that leadership role will be rotated and if so, how
- In what ways group members will communicate with one another (e.g., email, instant message, chat room, fax, telephone or other);
- How often group members will be expected to check in with one another
- Provisions to cover for the fellow group members in case of illness, job-related travel or other contingency
- Ask them to post their final contracts for you to review

Indicate that you will be a "higher court of appeals" with regard to any conflict resolution.

As part of the contract stipulations, advise students to think through in advance how they might resolve any potential conflict that may arise. If they object that "this would never happen to us," gently remind them of the real-world analogue of purchasing insurance just as a safety net.

Indicate that it's a good idea to decide ahead of time what they will do in case of any within-group conflict, disagreement or miscommunication. Tell them that you will be happy to step in only if and when they document to you specifically what they did to try to resolve the conflict among themselves. This will be a valuable real-world skill for them to master and apply down the road in their personal and professional lives.

Get them started with non-graded group activity.

This removes the worry about grades and points. It also lets them begin to establish a pattern of communication with fellow group members. This ungraded activity could be the negotiation and posting of the above group contract. Alternatively, it could be some sort of ice-breaker such as asking each group member to team up with, get to know and post a mini-bio of a fellow group member.

Create separate group posting forums (folders, discussion areas) for each group and each assignment to be graded.

This constitutes a convenient house-keeping tool for group members to organize their interaction on any given assignment. I create separate group posting areas for each module and assignment that carries a graded activity. These posting areas are private access: accessible only to fellow group members and me as the instructor.

Maintain a high profile within the group posting areas.

Check in regularly, and occasionally post an encouraging message on how the group interaction is progressing. This does not mean "looking over their shoulders" or micro-management. Instead, it's intended to reassure them that you are there and accessible in case they run into any problems. It's akin to face-to-face class breaking into small groups to practice whatever has

just been discussed as an entire class. The teacher often discreetly circulates among the groups, ready to step in and assist any individual group upon the members' request. The same principal applies with your continual visibility and accessibility to each group.

Keeping the Momentum Going in Your Online Course

Your course is now well underway. As your course got started, you very likely noticed that 'curtain-up' spark in your incoming students. They were eager to get going! Now you are well into the course. You may be noticing some energy flagging in some of your students. What can you do to recapture that spark? Here are some ideas.

- **Extra credit.** Extra credit seems to be a universal incentive for students. They may be eager to bank some insurance points, especially if they have tests or quizzes coming up. You might post an announcement inviting students to email you with "Found It!" in the subject line for a small point reward. This will reward them for continuing to ready your online course announcements.
- **Scavenger hunt.** Another thing you can do is create a web-based scavenger hunt. Put students in teams and ask them to find creative examples of URLs that link to your current course topic of focus. If you like you can turn this into a contest where each team presents its finds to the entire class. The top-voted team gets bonus credit.
- **Continual communication.** Continual communication is vitally important in an online course. Students cannot see or hear other cues. Therefore, they depend on your outreach to show them that you are paying attention. I send congratulatory private email messages to all students who get a perfect score on our first syllabus and announcements quiz. Students seem pleasantly surprised that I took the time to commend them on "what they did right!" Something as simple as this can be highly motivating to them.
- **Interactive learning.** I marvel at the variety and creativity of the interactive learning activities that have been created for public access – even for the 'tough stuff' subject matter such as math. Students may find such learning activities a welcome supplement to their 'book learning.' As I like to tell my students, often another source will magically explain a concept in a way that just clicks for them – and that their regular course learning materials may not.

- **Student audios and videos.** You can even take this a step further and invite students to try their hand at creating audios and videos of their own that deal with your course subject matter to share with the class. Again, this should be offered as an extra credit if it was not originally part of the course syllabus. They are reinforcing their applied understanding of the particular learning concept that is the focus of their audio or video.
- **One time extension.** Finally, a fellow instructor shared this tip in one of our online courses. We've all heard how a 'time-off day' can be a re-energizer in itself. This colleague recommends creating a 'get out of jail free' pass for students. It can be used for one time extension on an assignment, or maybe a missed quiz or discussion item. If not used, it can be redeemed for extra credit at the end of the semester. Having choices and know it's OK to recharge your learning batteries without penalty if necessary via this free pass can make all the difference in terms of positively persisting in the course.

Continual Engagement at the End of the Course

We all know it's important to be highly visible in our online courses at the start of the semester. Our students appreciate knowing we are there for them as they learn to navigate their new online course.

At the same time, we may need to make our presence known as the semester draws to a close. There are a number of benefits to our being continually engaged as our online course draws to a close.

- Post review materials. You have probably noticed your students asking for some hints on any upcoming exams. You can post review materials for your students to work through. You can create a separate question-and-answer discussion forum that is devoted solely to final exam preparation questions. By separating it from your regular questions and answers discussion forum, it will be easier for students to find quickly. Likewise, you will be able to target it first thing when you log into your online course, so that you can provide quick responses to any posted student questions.
- **Connect regarding pending assignments.** Another reason for connecting a bit more frequently towards the end of the term has to do with pending assignments. Some students may have posted some assignments past the original due date. Or you may have offered opportunities for redos of some assignments in the spirit of mastery learning.

- **Offer to visit.** You can also maximize the opportunities for end-of-term continual engagement by offering your students the opportunity to visit with you one on one by telephone or instant-message office-hours chat right before the exam.
- **Share next course info.** You might want to share advance information on course syllabi, textbooks and other minimum prerequisites for the related upcoming content courses that students will need to sign up for. You can also create a posting area to answer their questions on these future course materials. Doing this conveys your interest in them beyond the boundaries of your particular current online course. You are showing them how to see the big picture of how their upcoming courses will build upon the knowledge of their current course. With the additional stress of the upcoming final exam and end of the term, your online students are likely to notice your caring about their overall academic success in this way.
- **Log in after end date.** Many schools require that online instructors continue to log in after the end date of the term. You will want to post an announcement to let students know approximately when their final grades will be released. This post (which you can also send out by email to your students as a convenience) can also include instructions on where and how to access their final grades. Of course, you will also want to keep an eye out for any errors in computation of final grades that your students might report, so that you can make the necessary corrections as soon as possible.
- **Farewell posting.** Finally, a farewell posting is a nice touch. You can wish them well and indicate your pleasure in getting to know and work with them. It leaves a positive final impression and further conveys the human touch that we all know is entirely possible in online instructional interaction.

These avenues of continual engagement will help connect you to your students during the hectic closing time of the course. By making your presence known to them in your online classroom, you are easing their stress as they prepare for their final exam or other final course requirements. They are likely to remember, and appreciate, that you were especially there for them as your course drew to a close.

For more tips on implementing continual engagement, see the book *Continual Engagement: Fostering Online Discussion,* by Mary Dereshiwsky, COI, available from the Learning Resources Network (LERN).

Chapter 24.
Enabling Learning and Completion

Most of us as instructors have to get better at enabling learning and completion. The reason is quite simple: in the United States, institutions of higher education have a miserable, and unacceptable, rate of completion of just 55%. That is failing, failing our students, failing financially and failing society economically.

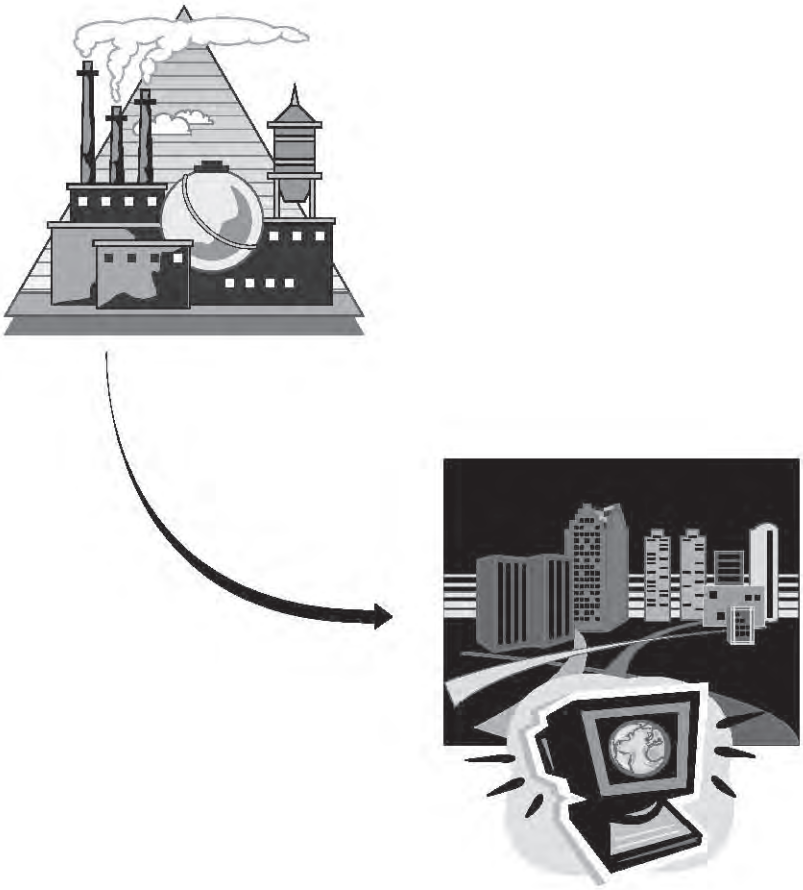
As a result, America has a shortage of over ten million educated skilled workers. In Canada, the UK and other post industrial nations, the challenge is the same: to have 50% of our youth possess four-year undergraduate degrees so they can fill the knowledge jobs that make and keep a post-industrial country prosperous.

Here is a true example of how an online instructor failed to enable learning and completion.

Willie signed up for an online course at his college. The teacher did not allow students into the classroom until the first day of the course (first mistake). On Monday, the first day of the course, students then found out what the textbook was for the course (second mistake). Willie also found out that the college bookstore did not have the textbook. On the second day of the course the teacher gave an assignment, which involved the textbook, due on Friday. The teacher also said no late work, no excuses (third and worst mistake). On the third day of the course Willie was forced to accept his only reasonable option, and he dropped the course.

Afterwards I wondered how much more it would have cost the college, cost the taxpayers, cost society for students like Willie to have completed that

Industrial Age to Information Age



Our society is moving quickly from the Industrial Age of the 20th century to the Internet Age of the 21st century.

course, or any other course. The student had gone through student advising, registration, orientation, tuition payment, enrollment, and online classroom invitation and records. My guess it would have cost the college, taxpayers and society zero dollars, nothing extra, for him, or any other student forced to drop a course, to complete.

We noted at least three unacceptable teaching practices and policies in this real-life true illustration. But in addition, there is also the unacceptable financial waste.

Now here's a positive illustration of enabling learning and completion.

Willie was doing well in his college math class, right up until a week before the final exam, when his best friend died suddenly. Willie did not want to tell his instructor, because in middle school when his mother was diagnosed with cancer and he was worried about losing his mother, his teacher said no late work, no excuses. But he finally emailed his instructor with the message, "Something has come up." His math instructor emailed back, "Well, this better be more important than math." Willie then visited the instructor in person and explained the situation. And then his math teacher said and did something amazing, something wonderful, something that is unfortunately all too uncommon. His teacher said, "This is more important than math." With that one simple sentence Willie was given permission to grieve for his best friend and attend the funeral. Neurologically, what happened was that the student's limbic system in the brain was settled and assured and felt 'safe,' knowing that grieving for his friend was seen by his teacher as important. And then, and only because of that one simple sentence and action from his teacher, Willie was able to do what you know is coming next: he not only completed the course by taking the final exam, he aced the final exam.

Our jobs as online instructors are changing from pedagogy to andragogy. Pedagogy is the study and practice of teaching. Andragogy is the study and practice of how we learn. The educational cliché, which is more often said than practiced, is that we have to move from being the sage on the stage to being the guide on the side. But behind the saying is a set of actual teaching practices we have to stop; and actual teaching practices we have to start.

We have to change the predominant teaching style.

Here's a positive illustration of how we can change our obsolete practices and habits and enable learning and completion.

Lynn Mack, in addition to her administrative responsibilities as Dean of Instructional and Grant Development, taught a math class at Piedmont Technical College in South Carolina. An African American young man failed to show up for the final exam. But Lynn Mack really wanted him to pass, so she took the exam to the testing center and told them if he showed up within a week to give him the exam. The testing center called two weeks later and said the young man was there. Just give him the test, Lynn Mack said. The young man took the test and got a 94. He aced the exam! Now 99% of faculty probably would have flunked him, but Lynn Mack helped him to complete with no cost to the college and no negative impact on anyone, with a simple time extension. Society needs people with good math skills, not to mention more African American graduates, not to mention more male graduates. In enabling the young man to complete, Lynn Mack not only served the student but society and certainly taxpayers.

We can do this. We can enable learning and increase completion rates. And most of it can be accomplished with little or no additional time or effort involved on your part, and little or no cost to your institution and society.

Stop

Here are some of the things we can stop doing and enable learning and completion.

Stop Stressing out students.

Julie Coates analyzed the memories of the 1971 class at Carleton College, arguably people from an elite college where one has to be academically successful just to get admitted. Coates found the most common memory was nightmares about school and college. That suggests students are being stressed in school and college, even more than at work. As we have noted earlier, neuroscientists say increasing a student's stress level inhibits learning. Stress in no way motivates someone to learn. Stress prevents learning.

Stop disrespecting students.

From comments faculty make in our online courses over the last ten years, we estimate that only about 15% of teachers disrespect their students. Most faculty respect their students. And yet the 15% of teachers who disrespect their students is way too high, meaning that a student will encounter such a teacher in 1 of every 7 courses.

Administrators clearly need to tell all faculty that it is simply unacceptable for faculty to disrespect their students.

Stop preparing students for the 'real world.'

You and I, if you were born before 1980, have no idea what the real world will be like for our young people. For example, if you think your students will need to "show up on time" at work, you are wrong. Employers and your students know telework is on the increase, teleworkers are 25% more productive than office workers, and that companies are more profitable when people work at their own peak work times, not during specified hours. You and I understand the real world of the last century, not this century.

Stop preparing students for the workplace.

Most often instructors use this phrase and the accompanying set of bad instructional techniques as an excuse for poor teaching. There's no big

problem in the workplace society needs you to solve, that you can solve.

There's no big problem with irresponsible engineers in the workplace. The big problem is we don't have enough engineers in the workplace.

Stop penalizing your students, which is gender-biased, for turning in work late. There's no problem with males showing up on time in the workplace, and there's no problem with males turning their work in on time. Ask any employer (we did) and she will say male employees perform at the same level as female employees.

Stop policies that prevent or inhibit learning.

Many policies are carry-overs from the last century. They are designed either to serve the interests of the institution, or to actually help weed out students from completion. Some policies get created for that once-in-a-lifetime incidence and hurt everyone else. Other policies can be replaced by technology. Policies can be changed without cost and without time.

Stop punishing students for behavior.

Behavior has nothing to do with learning and knowledge. By punishing students for behavior, we deprive society of valuable business people, professionals and leaders. If Winston Churchill had been prevented from attending university because of his behavior, who would have won WWII? Thousands of people owe their lives to the work of Robert Oppenheimer, who actually tried to poison his teacher in college, but was given probation and counseling rather than expulsion. Mark Zuckerberg was forced out of college for behavior and made it. But what about the thousands of other students forced out for behavior who could otherwise now be scientists, technology professionals, engineers, and mathematicians?

Stop justifying bad teaching by blaming students.

Faculty members have not been trained to do what they do everyday — teach. The emerging field of faculty development is here to stay. All of us as teachers need to keep learning about effective teaching techniques. The time is coming when governments and societies will enforce teacher accountability. And if you and I continue our professional development, we have nothing to worry about.

Stop treating students like military recruits.

Treat your students as both adults and children. Treat them with respect as adults, and with care as children.

- If a student is under the age of 30, she and more likely he still is not neurologically mature; there are still synapses that simply and biologically have not, and cannot, be connected yet.
- Students of any age will have feelings of inadequacy and less-than-positive self-images, and part of your job is to make every student of every age feel able to learn. Take care of your students.
- Not so long ago colleges understood they needed to take care of their students, with 'en loco parentis,' fulfilling the role of parents. Even in a world, back then, when most 18-year olds went to work rather than to college, when age 18 was the age of majority, colleges understood they needed to take care of their students as a parent would.

And treat your students with respect as adults. Many if not most of even young students have part-time jobs, some family responsibilities. Some are asked to fight, many are asked to vote. They deserve to have their thoughts and opinions respected.

Start

Here are some of the things we can start doing to enable more learning and improve retention and completion rates.

Start treating each student differently.

Treating each student the same is to treat them unequally. You treat each student equally when you treat each one differently. It might be different projects, different assessments, different learning speed. Create a set of options. Be open to responding to each of your students in a way that increases her or his learning.

Start allowing extended time.

Extended time, whether for assignments or even tests, is one of the most effective tools at your disposal to increase learning and completion.

Start encouraging students to redo quizzes.

Encourage students to take quizzes over until they have mastered the learning.

Start encouraging rework.

Encourage and even build-in rework phases in student assignments. We learn by failure. There are some educators who maintain we only learn by failure. Rework enables a student to turn failure into success. The goal is to reach the benchmark and to learn, not weed out or compare.

Start more frequent testing.

In the online environment, that is easily done with weekly self-graded quizzes.

Start allowing collaboration.

Students working with each other, even during tests, has been shown to increase learning. In this century, workers who collaborate are more productive, and students who collaborate learn more.

For example, Laura Taylor, as a math instructor at North Carolina State University, had her students do 'open neighbor' tests. While they could not look at the book during the test, they could talk to another student. What Taylor found was that students who did 'open neighbor' tests performed higher in the final exam, which was neither open book nor 'open neighbor', than students who did not do 'open neighbor' tests.

Give your smart students equal attention.

Every student deserves your attention. But most instructors teach to the average, the median, and sometimes even lower.

Yet the big problem in society is we are not graduating enough smart students. Smart students go into STEM. Smart students invent stuff. Smart students hire other people. Your smart students are often overlooked and underserved. Give them the same, but different, attention.

In a recent online course, a faculty member asked for tips on teaching the talented and gifted. Here's what we said.

Ramp it up.

Make it as intellectually challenging as possible. Smart students thrive on challenging work. Push them intellectually, and let them push you intellectually.

Rely totally on testing, not on homework.

No busy work. Smart students want and need the intellectual challenge, but not the boring repetitive simple stuff. Challenging is good, more work is not.

Allow quiz outs.

If they know it, let them prove it and move on. We want our smart students to go as far as they can. Let them quiz out and move on to more challenging work.

No penalty for behavior

If you grade based on attendance and penalize for late work and other behavior not related to learning and knowledge, your smart, and really smart, students will drop out, mentally if nothing else. If you would have flunked Steve Jobs, Bill Gates and Mark Zuckerberg, don't even try teaching the gifted and talented.

Let them teach.

Let them teach others. Let them share their knowledge. Let them create content. All the research says that we learn more by teaching. And many instructors have reported that the other students benefit from having the smart students share their knowledge as well.

Let them go.

Forget your control urges, and if they go off on a tangent, let them. It's called a "teachable moment" when you lose control and it's almost always the most exciting time of the course for both students and you.

Get ready to have a great experience.

Teaching smart students is a remarkable and rewarding experience. Enjoy it.

The Top 10 Solutions to increasing completion rates

Inform your institution about our Top Ten Solutions to increasing completion rates. There may be other ways to enable learning and completion, and we would support them as well. These are our Top 10 Solutions, many unique

to this author and my colleague Julie Coates, and almost all involving little or no expense on the part of your institution nor little or no additional time on your part as teacher.

1. **Make all face-to-face classes hybrid.** Every in-person course at your institution should, and eventually will, be hybrid.
2. **All assignments are made online.** All progress and scores are reported online. Each student has a record online of assignments completed due and completed, as well as grade completion and other progress.
3. **No teacher is to express verbally, or in writing, a negative comment about students.** This extends to expressing negative comments about students made to other faculty, administrators or any other person in a work or public arena.
4. **Increase outcomes, reduce 'work' requirements.** Increase assignments and assessments based on learning outcomes, rather than work or time inputs.
5. **Do not allow behavior to be a part of grading** This includes attendance and late work.
6. **Allow extended time.** Allow and encourage extended time for taking tests and turning in assignments and course work.
7. **Allow quiz outs.** Allow and encourage students to quiz out of Units where they have demonstrated a mastery of the content.
8. **Provide alternative assessments.** Provide options for assessments, particularly for essays and papers not associated with writing courses.
9. **Revise policies.** Revise institutional, departmental and other policies which prevent retention and completion.
10. **Retakes and transfers at no cost.** Any student can retake a course without paying additional tuition. Any student can transfer into another offering of the same course at no additional cost.

Chapter 25.
Social Media, Mobiles and Beyond

Online media expert Les Howles noted in 2011 that new software for online learning is now coming out monthly. In this book we obviously talk about technology, with these cautions.

First, the pedagogy or teaching aspect of online teaching is far more important, and far more difficult, than the technical aspects of online technologies.

Second, we are reluctant to name most technology brands as leaders, also-rans and newcomers change so rapidly that any naming of brands or specific products would be out of date within a month or two.

Third, we discuss technology that is, or should be, used by a majority of online teachers. We focus on best practice for the majority of online teachers. There is not enough room to discuss all the technology available, all the possible instances in which a particular technology might, or might not, be relevant.

Social Media

The best definition we have seen for social media is also the simplest, social media are online media for social interaction.

As such, at the time of this writing the foremost and leading social media for online learning is your asynchronous discussion board. This is where you and your students meet to share, dialogue, converse, and create in:

1. **a closed environment,** reserved just for you and your students;
2. **a safe environment,** where your students are able to express their

thoughts and feelings with others in a caring environment; and

3. **an educational teacher-facilitated environment,** where the focus is on your students' learning and where, based on all the research, you as the teacher is the most important element in your students' learning.

From this author's perspective, social media should be assessed for your online course on two criteria:

A. Whether the particular social media adds to and enhances, not just duplicates, features already available in your online classroom;

B. The extent to which the particular social media supports and maintains your closed, safe, and educational teacher-facilitated learning environment.

At the time of this writing, there are no universal or even dominant social media technologies being incorporated in most online courses by successful online teachers. That being said, there are numerous social media technologies being incorporated in some online courses by successful online teachers depending on the subject, audience and teacher's judgment and experience about the value of that particular social media. Some are built into some online classroom platforms, some are open to others outside the class, some are private or closed to just your students.

From various sources and this author's online courses for teachers on advanced teaching online, here are some of the social media some online instructors report using.

Facebook and Facebook-like social media

Facebook and Facebook-like social media is being used by some teachers to extend online interaction or enhance it, in some cases with participation just for your students, sometimes with their students interacting with people not in the course.

For example, education instructor Torria Bond reports, "Integrating social media in a course is great. The purpose of one of my Facebook groups was to have students share what was happening in the fieldwork classrooms with respect to course content -- i.e. what examples of behavioral teaching

strategies did you see, what examples of culturally relevant instruction occurred this week, etc. They also used the group to ask each other logistical questions about due dates, assignment expectations, share ways to overcome hurdles related to locating a fieldwork classroom." Instructor Annalisa Buerke offers another use, "to create a page in Facebook for students for them to know me and for me to know them outside of the class context." And teacher Henny Breen has used social media in still another way, noting, "I have encouraged student nurses to look at a social website for nurses if they want to find out what other nurses are thinking about in relation to a certain topic. I have also encouraged them to participate in the discussion on this kind of website and then to discuss their experience with the class. "

Twitter

Twitter, with tweets and followers, provides a different format for communication. One instructor using Twitter says that limiting a message to 140 characters is a positive way to force students to make an "absolutely central point." (from "Incorporating social media in your online course," 5:26 minutes YouTube video by Dr. Torria Bond, California Baptist University.)

Blogs

Blogs are being used for student journals, self-reflective comments, and thoughts as they progress through the course, for feedback and comments, and other uses.

Mary Finley-Brook says, "I use blogs regularly for group assignments. I have the students present their research in this on-line format (with tight block text, links, visuals, etc.). I have found that it works really well for comparative analysis because while you can't ask students to read 5 15-page research papers during a week you can have them read and assess five blogs (these are interactive but largely static websites using a blog platform). I require them to comment on each other's websites. I also have the blogs tied to exam essay questions where they need to spend some time with the blogs to prepare the analysis for their answers."

Other instructors, such as Norman Wohlschlaeger, report that when blogs are built into the online classroom, they are very easy to grade.

Wikis

Wikis are web pages developed collaboratively by a community of users, allowing any user to add and edit content. Wikis are being used for group reports, group projects, and for peer input.

Dorothy Jones, who uses wikis for student writing says, "My students have enjoyed using this tool especially for peer editing."

YouTube Video

YouTube and YouTube-like video sites are being used for students to create and upload presentations. James Oudard notes, "We use Youtube and Vimeo (with private links) to share presentations."

Again, social media and any particular social media is not being used universally, and each has its share of teachers who have used that social media successfully, while other teachers have not found the same to be true. So you decide. What we can say is that a number of instructors have embraced social media, some with enthusiasm. When asked if he uses social media, Vincent Tucker replied, "I sure do! I created a Facebook, a Twitter, a YouTube and a gmail account for my students. . I send messages through them, link them to my phone, etc. I did it just to be able to engage them where they are and in a different way."

Mobiles in Online Learning

In terms of education, mobiles are here. Mobiles will increasingly be used to access online classrooms. Online classrooms are being redesigned for access and screen views with mobiles.

But at the time of this writing, the principle use and impact of mobiles for your online course is ease of access and access location, says online learning expert Julie Coates. The technology of mobiles itself may not provide any enhancement or features not already found in the online classroom.

By access location we mean that students no longer have to be at a desktop or laptop location or be limited by Internet or wifi access locations. Instead they can access your classroom while on the move, with cell phone connections in addition to Internet connections, making it possible for students to access your online classroom more frequently and from almost any location. Whether this impacts student attention, concentration and thus retention is an

issue teachers are talking about.

Mobiles have other uses in education.

- Instructors can text students with reminders, notes or personal messages.
- In the world of face-to-face learning, the use of mobiles in the classroom has clearly changed the face of the classroom as we have known it. Mobiles in the classroom provide dual and simultaneous access to both the teacher and class and also the resources of the web. It changes how face-to-face instructors teach and interact with students. It also changes how students engage the content, their fellow students, and communicate with their teacher.

Beyond Web 2.0

Social media tools, sometimes referred to as Web 2.0, are here and have made their impact on education. Beyond Web 2.0, here are the major next big frontiers in online learning.

1. **Gaming.** Draves and Coates have predicted gaming will be one of the major next big frontiers in online learning.
2. **The Internet becomes physical.** Internet pioneer Robert Stephens, founder of the Geek Squad and former chief technology officer for Best Buy, sees the Internet becoming physical, creating a world in which the physical and virtual are not separate, but one in which the physical has the virtual embedded in it.

   This will include contact lenses that tell us information about the person we are talking with face-to-face. Phones will control our physical environment, for example home, train status, movie tickets, purchasing, and much more. We will use the web for predictive analytics (what are the odds the line at the restaurant will disappear by the time we get there).

   It will include holograms and telemersion. It will include virtual smelling, tasting and feeling

   Of the five physical senses, we can currently see and hear online. It seems almost certain that in the next five to ten years, we will also be able to smell, taste and feel online. One likely possibility is that one's mouse, mouse pad, peripheral, screen or other aspect of the device itself will contain the physical properties (smells, tastes, surface texture) that will enable a user to experience that actual sense when

activated online.

The implications for online learning are fairly obvious and important, adding more dimensions to student learning and experiences online.

3. **Learning and teaching data.** We can now track what learners do online, and what teachers do online. The combination will be an ever greater accumulation of data about an individual's learning, what ways individuals learn best, and what ways teachers enable greater learning.

In our book *Education in the 21st Century,* Draves and Coates outline the major new developments in education for the rest of this decade. Here are two of those new developments which will undoubtedly have a major impact on online learning and teaching.

Gaming

Gaming in education will become a significant learning strategy for generations of the 21st century. It is a growing and fascinating field.

Gaming is different from games in the online environment. Games could be Jeopardy or an online scavenger hunt. Gaming is a whole different world. Gaming involves your student interacting in a virtual world. Sometimes the world is a game, with winners and outcomes. Sometimes the world is a cooperative creative environment. And sometimes the world is simply other people (their avatars actually) engaged in everyday activities.

Probably the first course created entirely as a game is an education course developed by education professor Rod Riegle of Illinois State University, created in the 1990s and early 2000s. In professor Riegle's online game, there are no lectures, discussion, or tests. The entire course is a game. All information, communication and assessment is done in the game. Riegle says it took him ten years to create the online game/course.

Three events occurred around 2005 that made it clear that working, and thus learning, in virtual worlds would be central if not essential in the 21st century.

The first event was the first person to purchase a virtual island in a virtual world, with real money. Some $22,000 was paid by the Australian young man for the island. What he did with it is now obvious, but at the time it was

quite astonishing. He divided up his virtual island, sold real estate property on the beach, built virtual houses for people on their virtual beachfront property, and within a year had recouped his initial investment. One unexpected source of income was renting land for virtual hunting of virtual wildlife. With this move, he was the first person to demonstrate that virtual worlds are both "real" and economic or financial places. So the virtual world is now an economic reality.

The second event was a study conducted by Dr. James Clarence Rosser, a New York surgeon. The headline in *The New York Times* was a classic pedagogical revelation, "We have to operate, but let's play first."

We have been teaching faculty to teach online since 2000. While there is a little resistance to the idea today, in 2000 there was much reluctance, doubtfulness, and challenging of online teaching. A professor would log on and say that you can't teach French online. And then another faculty member would log on and say that actually she teaches French online, and you can do these wonderful audio clips. Then an instructor would log on and say that you can't teach music online. And then another professor would log on and say that actually he teaches music online, and you can separate the treble from the bass online. And then a bunch of faculty would pound out the definitive declaration, "well, I wouldn't want to be operated on by a doctor who learned surgery online." That, supposedly was unassailable and undeniable. Well apparently…..

So Dr. Rosser plays video games in between doing surgery. Apparently patients do not rupture their organs in a timely sequential manner, so surgeries cannot always be scheduled in a row all day; thus there is downtime for a surgeon. Dr. Rosser plays video games because it increases his manual dexterity, although we also believe there is something positive in addition going on that enhances his surgical skills. Then Dr. Rosser decided to do a survey of other doctors who play video games. He discovered that doctors who play video games make 37% fewer mistakes than doctors who do not play video games. Lesson number two is that playing games in the virtual world increases productivity, accuracy, and skill sets.

The third event was the making of a new airplane by a French airplane company. Apparently up until then all new models of airplanes needed to have a prototype, a physical replica of the new plane. The prototype was built

before the first real airplane was constructed, in order to work out the bugs and problems in advance.

The French airplane company built its new airplane without a prototype. Instead, it built the new plane totally in cyberspace. Virtual people worked in the plane to see how that went. Interior decorating designs were created and evaluated. And the plane even "flew" in cyberspace, testing such things as wind speed, banking and every other aspect of flying a plane.

Then, they built the first airplane and flew it. The test pilot reported after the first flight that it flew just like in cyberspace. The advantage to the French company in building the plane in cyberspace and without a prototype is that the company was able to cut its development costs in half, a savings of hundreds of millions of dollars. Lesson number three is that gaming in the virtual world is profitable.

The final lesson is for individuals and organizations that do not do gaming in the virtual world. You cannot compete with individuals and organizations that do gaming in the virtual world, because they will have lower costs and greater productivity or accuracy.

Throughout history, play has always been a rehearsal for life as an adult. Once again, video game, online gaming, and virtual world activities demonstrate this axiom.

So knowledge workers in the 21st century will rehearse with gaming in virtual worlds before they perform the actual activity in the physical world. Lawyers will rehearse the court trial in cyberspace, making all kinds of stupid assertions and getting overruled, because when they walk into the real courtroom they will be better able to win the case. Doctors, accountants, artists, and every other profession will engage in the same kind of preparation and rehearsal.

Even teachers will teach in cyberspace, rehearsing techniques to figure out which ones will work with which learners, what will enhance the learning, and what actions will be a big mistake with other kinds of individuals.

We will need to distinguish between cyberspace that is meant for practice and rehearsal, and virtual worlds where real people are interacting with each other. We do not practice on avatars, because avatars are real people, with emotions, feelings, and mental states that can be negatively affected.

We will practice in cyberspace with 'bots, mechanical preprogrammed

virtual characters that do not represent real people.

For example, some teachers will go into cyber classrooms with bots as students, unreal characters who perform according to a set of data. Teachers will practice saying something to a student by trying it out on a bot to determine whether, based on the experience of hundreds of thousands of teachers with millions of students, a certain phrase or action works with a particular kind of student. Instead of experimenting on a real person, trying something out with a bot will help teachers prepare for live interaction with real students, especially for those new situations that even the most experienced teacher may encounter. Cyberspace won't make the real world perfect, but it will greatly reduce risk and boost the chances for success.

For most faculty born before 1964, the gaming world will probably be very unfamiliar, strange and difficult. For most students born after 1980, gaming is a real, if virtual, world that teaches essential 21st century skills.

At the time of this writing there are numerous educators, institutions and for-profit organizations engaged in creating online gaming for education. The Games+Learning+Society Conference at the University of Wisconsin at Madison has been held annually since 2005. So far we are in an experimental phase for educational gaming. Educators appear to be waiting for a common technology to be developed, for that technology to provide one or more templates for educators to build their own games, and for the price of that common technology to come down to an affordable level.

What we see is that gaming will begin to blossom in the second half of this decade. We see the technology being ready at that point. So now is the time for educational institutions, subject specialists, and others in education to begin planning for building your first online game. At the time of this writing, the first continuing education organizations have just begun to plan for introducing gaming as a continuing education format in the second half of this decade. From there on, games will be built for just about every occupation. In fact, having 'The' game may be key for dominating training in a given subject or skill area. Without 'The' game, other educational institutions will not be able to compete in the subject or skill area.

Advanced online instructors, in conjunction with their institutions, departments, and/or partnerships with other organizations, should be planning from an instructional design perspective for building your first online

game, anticipating the break-out time for educational gaming sometime in the second half of this decade.

Learning data

There are certain frontiers of learning and education that are exciting new areas of exploration in this century. The neurology of learning is one. Online learning is another. Another one is certainly going to be what we call "learning data." "Traces are now computable," says Swiss author and educator Etienne Wenger.

We suggest that learning data will be an ever-greater accumulation of data about an individual's learning. Think of it like that huge bulky manila folder with medical data about you that the doctor opens up when you have a doctor's appointment. That huge bulky folder with medical data about you is, at the time of this writing, in the process of going online.

Online medical data will have many beneficial effects, but here are two.

One, you will be healthier. When you are travelling or in another location, you will want another doctor or hospital to have access to your medical records, so they can better treat you for some illness or injury. That's the first thing most people think about when it comes to the benefits of online medical records.

But there's more. One, you will have access to those records, and you can assist in your own diagnosis, behavior modification, and self-treatment by having access to all of your medical data. Having had many experiences with doctors, illness and treatment over a lifetime, Julie says she - not any single doctor - knows the most about her own health because she has spent the most time studying it. She has proven that to every physician who has become her primary doctor. Now Julie and her doctor work together on her health.

So too will the learner be seen as the single person with the most understanding of that person's learning. By accessing your own learning data, you will better be able to enhance your learning, professional and personal development. And every student will be able to do the same.

Two, others will be healthier. The second major benefit of putting medical records online is that others will become healthier. When the medical records of millions of people are put online, cumulative data emerges that could not be foreseen by simply looking at millions of individual medical records.

So your medical data goes into a huge pot of data, and others benefit. You also benefit from the medical records of everyone else, because trends and patterns emerge. Your medical records, for example, could be partnered with the medical record of someone half way around the world with the same identical medical history and condition.

For those readers concerned about privacy, we are moving into an economy and world where information becomes more transparent and available to all. It is not just that information becomes more available to all, that information must become available. To go back to our medical records example, it is simply not acceptable in our interconnected world to have someone with a contagious disease be able to conceal that information from society.

At the same time, laws will be enacted to prevent anyone or any entity from using that information in a way detrimental or harmful to you. Likewise, the learning data of every student will be protected so that information cannot be used to harm a student.

At this time learning data is in its infancy, if not prenatal condition. There is so little learning data available. Few learners have learning data records like we all have medical records. There is no ability to access learning records. The laws preventing misuse of learning data have yet to be enacted. And only a few people are studying and analyzing learning data.

Nevertheless, the experience with customer data, medical records, and online behavior tracking points to an exciting and emerging field of learning data, learning records, and learning data analysis.

We were talking with a limnologist living on the lake where we summer. He said he got started in limnology as a young person excited to pick up rocks and find craw daddies and other live creatures along the shore. Now, he said, he spends almost his entire day in front of a computer looking at Excel spreadsheet data about water clarity.

Our limnologist friend still walks the shore and still enjoys getting outdoors and on the lake. But he is more productive, and the taxpayers funding his work benefit more, when he is looking at Excel spreadsheet data. The reason: that's where the answers are.

A story in *The New York Times* on statisticians points to it as a growing new field with job opportunities for those with statistical analysis skills. While data analysis has always been a valuable activity, the immediate

financial rewards and implications became clear with search engine optimization and other online economic analysis.

The New York Times story notes, "Traditionally, social sciences tracked people's behavior by interviewing or surveying them. 'But the web provides this amazing resource for observing how millions of people interact,' said Jon Kleinberg, a computer scientist and social networking researcher at Cornell." The combination of software invention and return-on-investment of the analysis of the data produced are sure to make data analysis a critical component of numerous occupations and endeavors.

We only have a glimmer of how this will happen in education. But we do know it will happen. Here are some indications.

- **Tracking online interactions.** There is now software that can and does track online behavior, plotting and graphing online interactions among people. By tracking interactions of people on Facebook and other social networks, certain patterns emerge. Students also learn by interacting with others online. Learning data software will be able to track online conversations and interaction, and then - based on one's own individual characteristics - suggest patterns of online interaction that will enhance the student's learning.
- **Predicting future likes.** Netflix and other organizations are perfecting the algorithms and software to enhance the success of future choices based on one's past experience. As many people know, the online movie rental provider Netflix encourages people to rate movies they have rented. Then, based on the individual's ratings and preferences, Netflix is more likely to be able to predict and suggest other movies the individual might like. The system does not work perfectly, but it works in such a significant way that it is superior to other ways of judging movies, like movie reviews, box office sales, and testimonials.

So learning software will also ask learners to rate their experiences with games, readings, audio tapes as well as various kinds of content, and then also be able to assist learners in finding additional resources and ways of learning to enhance their academic achievement.

What we envision as happening is that software will be developed that will record both the learner's online activity and the learner's test scores, and then provide data for educators to analyze about the correlation and possible cause-and-effect of certain learning actions with better test scores. In-person

behavior and activity will also be tracked, either using manual or software methods. Some possible learning data:

- **Online content interaction and test scores.** When a particular student accesses online content, which forms of content delivery (text, audio, video, simulations, animations, pictures, etc.) are tied to better scores, and which combinations and lengths of time spent with each kind of content yield better scores?
- **Which behavior the student prefers.** Which learning activities does the individual student prefer, and do those preferences lead to higher test scores?
- **Interpersonal interaction.** With what kinds of mentors, peers and others does the individual student interact, what are the demographic or psychographic characteristics of those people, and which combinations and kinds of interaction help the individual student to learn more?
- **Rest time and breaks.** How often should the student take a break, what kinds of non-learning activities (games, television, physical activity, shopping, play, jokes, cartoons, games, chat, food, naps) correlate to better test scores?

These are just some of the kinds of learning data that software will be able to retrieve and then match with test scores, giving the student, his or her parents, and teachers a better guide as to improving learning and maximizing the individual's time in learning.

But collecting the data will be the easy part. "But the big problem is going to be the ability of humans to use, analyze and make sense of the data" notes Erik Brynjolfsson, an economist and director of the Massachusetts Institute of Technology's Center for Digital Business.

Teacher performance can also be analyzed by data analysis. The data will find good and bad teachers of course. But beyond that, the data will also find that a poor teacher may actually excel with a certain kind of student, and that a very good teacher may not be able to help other kinds of students learn. This level of data analysis will maximize both learner and teacher performance.

The area of learning data is likely to become an entire specialty within education, with learning data analysts, software developers, and school and college specialists working with learners to interpret their own learning

data. The emerging field of learning data will be a major way that enhances teaching, increases learning, and makes it possible to personalize learning for each student.

Summary

Online courses are at the heart of our education now in the 21st Century. It is now time to ramp up our online courses and take them to the next level. We have to end the era of text-based online courses, and move into multi-media online courses. We need to involve our students more, we as teachers need to be continually engaged, and we have to include more visual and audio components in every unit in every one of our courses.

It is an exciting decade in which education must be, and is being, transformed. We are leaving the Industrial Age and the factory school model of the last century. We are becoming fully immersed in the Knowledge Society and new economy of the 21st century. It is time to prepare our students for the rest of the 21st century. Thanks for teaching online. And take care of the kids.

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About LERN

The Learning Resources Network (LERN) is a nonprofit international education association with 5,000 members in over 1,000 organizations in the United States, Canada and several other countries.

LERN specializes in practical, how-to information. Areas of specialty include faculty development, online teaching, and continuing education. We are the leading information and consulting organization in the world in the field of continuing education.

LERN works with faculty and staff in a variety of institutional settings, including universities, community colleges, public schools, recreation departments, associations, and other nonprofit organizations.

Services include consulting, publications, seminars, online courses, training, software, conferences, research and more. Areas of expertise include teaching, learning, marketing, programming, finance and budgeting, market research, needs assessment, faculty development, online teaching, pricing, and more.

Some of the certifications LERN provides include the Certified Online Instructor (COI), Certified Faculty Developer (CFD) and Certified Program Planner (CPP) designations. We have partnered with the University of South Dakota to offer a graduate degree in adult and higher education.

LERN has a staff of around 20 people. In 1998 we became a virtual organization, with staff and consultants now working in at least eight states and two countries. Founded in 1974, LERN is governed by a Board of Directors.

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He holds a master's degree in adult education from The George Washington University in Washington, DC. With co-author Julie Coates he has also written *Education in the 21st Century,* and their classic work *Nine Shift: Work, Life and Education in the 21st Century.* He is also author of *How to Teach Adults and Energizing the Learning Environment*.

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