It is our privilege to provide you with this Instructional Guide for University Faculty and Teaching Assistants. This guide is one of the many tools you can use to develop and strengthen your teaching effectiveness at Northern Illinois University. The information presented in this guide is general in content and broad in scope, and the guide is a work in progress as we plan to update it frequently and add more information. This guide is meant to be a quick reference and not a comprehensive guide on all teaching-related topics. Use this guide as a framework to build your teaching excellence and as a supplement to the help and support you may receive from your colleagues, mentors, students, and the Faculty Development and Instructional Design Center.

This guide is a compilation of information from several sources, including instructional guidebooks from other institutions, journals, and contributions from master teachers and academic support units at NIU. I would like to express my sincere appreciation to Faculty Development and Instructional Design Center staff for compiling the information and editing this guide. Without their effort and dedication this guide would not have been possible. I would also like to express my gratitude to all the contributors for their willingness to share their expertise and help us develop this guide.

Teaching is an exciting, challenging, rewarding, multi-faceted profession. As a teacher you also take on the role of facilitator, mentor, tutor, and advisor to students at critical moments in their lives. Your role as a teacher is the essential element in the path to success of every student you meet, as you engage them in the learning process, provide the feedback and guidance they need to improve their academic performance, and motivate them to pursue life-long learning.

This guide provides ideas and resources to help you explore new approaches to teaching and assess old ones. We hope you will find the time, energy, creativity, commitment, and enthusiasm to use what is presented in the guide and find the additional information you may need to continue to improve your teaching.

The Faculty Development and Instructional Design Center is proud to support Northern Illinois University’s commitment to excellence in teaching and we wish you the very best success and enjoyment in your teaching career.

Murali Krishnamurthi, Director
Faculty Development and Instructional Design Center
Getting Your Students to Read

Reading textbook and other required material prepares students to be able to answer questions and contribute to classroom discussions. Reading can also help show students the connections between lecture and what they have read. However, many students do not like to read, especially when it’s required reading! Although there is a direct correlation between reading required material and course grades, many students avoid reading. Some of the reasons students do not read range from their lack of understanding complex or new concepts and vocabulary, not knowing exactly what (or how) to read, and not seeing the connection between required reading and lecture material.

Often, instructors offer “incentives” to encourage students to read such as giving pop quizzes, revisiting the course syllabus policy on textbook requirements or sharing words of wisdom (or threats!) about being successful in class. But in the end, many students avoid what they consider to be the tedious and time-consuming task of reading.

Bean, as cited in Learning Resource Networks (n.d.), identifies a number of reasons why university students struggle with and avoid reading. You might want to address these issues by implementing some of the strategies presented in this article.

- Students today skim for information, similar to how they process information they read online
- Students often multitask while reading (watch television, scan the internet, listen to music, text friends)
- Students may not know how to organize their reading based on the structure of textbooks and articles
- Students can have difficulty understanding the content, language and vocabulary in college textbooks and research articles

In a special issue of Faculty Focus, Weimer (2010) compiled 11 papers that address the problem of students not reading required course material. The following list has been excerpted from this publication and provides strategies that can immediately be implemented to help students become more involved with reading required course material. Authors cited in the 2010 publication include Bandeen, Culver and Morse and Weimer. Further details can be found in the reference list at the end of this article.

1. State what you expect your student to do with the textbook and other readings.
   - Verbally announce and place in the course syllabus a statement about required readings and how they will be used in course discussions and assessments (exams and assignments)
   - Refer students to specific material in the textbook such as graphs, charts, lists and key words that relate to lecture material and assessments.
2. Provide an overview and introduction to the textbook and other required readings
   - Explain how the textbook is structured including chapter outlines, word lists, graphics and support material such as an online website and worksheets.

3. Connect the textbook and other readings
   - Show students how to underline key ideas and concepts and write them in the book margins or on paper. Then have students connect this information with lecture material by writing a few questions on identified key ideas and concepts.

4. Use graphic organizers
   - Demonstrate how students can summarize readings with graphic organizers, concept maps, charts or lists. While doing this, students can also scan chapter readings and make a list of headings, images, bolded words and graphics. They can then write questions that ask about the most important aspects of the chapter or how the chapter is organized. Students can submit the graphic organizers or concept maps for a few points each toward the final grade and/or be used to lead classroom discussions.

5. Assign reading journals
   - Assign students to create a reading response journal or activity in which each reading assignment is responded to with a question or comment that can be used in classroom or online discussions.

6. Suggest that students join a reading study group
   - Encourage students to join a reading study group in which a few students discuss required readings that focus on key ideas, terms or concepts after which a brief report is generated and submitted for a few points and/or to help lead classroom discussions.

7. Communicate your expectations regarding the textbook and readings throughout the semester
   - Remind students to bring their textbook to class (if you will be using it for discussions and activities)
   - Explain to students what (and why) they have to read before class begins

8. Stress that textbook reading requires effort and skill
   - Explain the complexity of college textbooks compared to high school textbooks and other reading material
   - Clarify the techniques necessary for reading textbooks and other readings and that just skimming or just reading once will not be enough to grasp content

Assign students to create a reading response journal or activity in which each reading assignment is responded to with a question or comment that can be used in classroom or online discussions.
Share your own reading strategies to help students understand the effort necessary to fully understand complex information.

- Share your own reading strategies to help students understand the effort necessary to fully understand complex information
- Show students how to use a textbook for studying such as rereading, asking questions in class and asking for assistance

9. Choose the right textbook

- Select textbooks and reading material that support course topics and lecture material. Avoid textbooks just “because you have always required them in the past.”
- Consider developing a course pack to supplement and/or replace the textbook. There is a growing trend in eBook creation and some publishers can help you create a personalized book for your class.

10. Model best practice

- Be a role model by reading the textbook and course material and incorporating it in lectures, assessments and course activities. Supplement required readings by reading current events and supportive material from popular media such as the Internet, trade journals and manuals and online newspapers.
- Include an alternative reading list to supplement required textbook and other material and show how these readings can expand understanding and knowledge of course content (newspapers, trade journals and reports, magazines, other course textbooks).

11. Create an end-of-course reading list

- Provide an annotated reading list at the end of the course that is relevant but not specific to the subject to encourage “reading and learning beyond the classroom” (Dolence, 2004, p.13). This list can extend knowledge beyond the classroom and can help prepare students for subsequent courses in the discipline and employment in the field. The list can include movies, music, poems and popular media to which students would be particularly attracted.

Summary

Use the strategies described above as a starting point as you explore ways to help students read required textbook and course materials. Through example and careful planning, getting your students to read will become a beneficial learning strategy to which students look forward.

References

http://www.FacultyFocus.com
Learning Resource Networks, University of Wyoming (n.d.). LeaRNing Notes #1: *Teaching critical reading at the college level.*
http://www.uwyo.edu/learn/_files/docs/BrownBag_docs/LeaRNingNotes_01.pdf

Weimer, M. (Ed.), (July 2010). *Faculty Focus Special Report: 11 Strategies for getting students to read what’s assigned.* http://www.FacultyFocus.com
(Access this article through a free subscription at www.FacultyFocus.com)

**Selected Resources**


http://www.FacultyFocus.com
Millennials: Our Newest Generation in Higher Education

Years ago the majority of our students was about the same age and attended traditional face-to-face classrooms. Today, our undergraduate students can range from 17 year old high school graduates, to 28 year old “non-traditional” students, to 40 year old single working mothers who may be taking the same classes as their own children and can be involved in a variety of classroom settings. In this mix we find a group of students born between 1982 and 2000 who are dubbed the “Millennial” generation. Although not inherently different than any other student, the Millennial generation has characteristics unique to the digital age.

Born 1982 through 2000, Millennials are the most diverse generation we have had to teach, thus our approaches to teaching must be diverse. “Millennials expect to be engaged in their learning, they do not do well being passive learners. If you (as a teacher/university) do not have technology that will be part of their learning, they will go somewhere else where they can be engaged with, and interactive with, technology. Millennials perceive a sharp contrast between their comfort level of technology and the technology comfort level of their teachers” (Starlink, 2004). These technologies include the cell phones, computers and the Internet.

The trend toward Millennials using IPods and laptop computers rather than desktop computers reflects their preference toward a more portable learning environment. Millennials use texting and instant messaging (IM) to communicate with peers and set up meetings and use email to clarify course information and expectations. The Internet allows students to “express ideas that they would not have voiced in class” and is the preferred method of conducting research (Starlink, 2004, p. 10).

Traditional approaches to teaching may not address the learning preferences of the Millennial student. Lectures and traditional classroom and laboratory environments, albeit typical (and comfortable) from an educator’s point of view, can be enhanced through online and electronic modes. For example, MIT’s microelectronics lab that is available 24x7, where students can conduct lab work at their convenience and the University of Virginia’s interactive Web site “The Valley of the Shadow,” which allows students to draw their own conclusions about the Civil War through researching original material and data via a variety of sources (Starlink, 2004). Students can be more engaged and motivated to learn by providing authentic learning experiences instead of “lecturing” the facts. We should consider creating learner-centered classroom environments to engage Millennials.

Games and simulations can “help learners visualize complex systems” such as magnifying an environment otherwise not possible in some situations. For example, “seeing” the inside of a cell, changing the speed of chemical reactions,
Considering the fact that many of our students are working full- and part-time jobs while taking classes, we may need to “repurpose” our teaching practices.

or visualizing an acoustical environment can help students better understand the environment (Starlink, 2004).

Considering the fact that many of our students are working full- and part-time jobs while taking classes, we may need to “repurpose” our teaching practices. Similar to the ways students may have to juggle time committed to work and studies, so too, faculty may need to approach the classroom with new and inventive ways to impart learning. To address these new approaches, faculty can offer deliberate and meaningful learning experiences and opportunities where students can see the connections between new material and real world applications.

Millennial Student Attributes

The following list includes several attributes of students who have grown up with technology that may influence the way you teach (adapted from Frand, as cited in Starlink, 2004):

“Computers are not technology.” Computers, the Internet, and the WWW are as much a part of Millennials’ lives as telephones and television are to previous generations.

“Reality is no longer real.” Original images can easily be changed using digital technology and receiving email from an address may not come from the owner of that address.

“Doing is more important that knowing.” Knowledge is no longer perceived to be the ultimate goal (the half-life of information is so short). Results and actions are considered more important than the accumulation of facts.”

“Learning more closely resembles Nintendo than logic.” Nintendo symbolizes a trial-and-error approach to solving problems; losing is the fastest way to mastering a game because losing represents learning.”

“Multitasking is a way of life.” Students are comfortable engaging in several activities simultaneously. Working on homework with music in the background while talking or texting on their cell phone is typical of how Millennials get through the day.

“There is zero tolerance for delays.” Millennials were raised in a just-in-time, service-oriented culture. They expect and demand quick turn around in today’s 24x7 culture and do not easily accept delays.

“Consumer and creator are blurring.” In a file-sharing, cut-and-paste world, distinctions between creator, owner, and consumer of information are fading. The operative assumption is often that if something is digital, it is everyone’s property” (Starlink, 2004, p. 10-11).
Summary
As we learn more about the needs of all of our students, from the Millennials to the Gen X’ers, to the 50 year-old Baby Boomer, let’s consider how we can meet their needs and “expectations for service, immediacy, interactivity, and group activities” (Starlink, 2004, p.15). It is not necessary to abandon traditional lecture or other tried and true instructional strategies but adapting them to suit the Millennial and other students is crucial to effective teaching and learning. Our students represent backgrounds as diverse as the subjects we embrace and scrutinize the way we teach, the way we communicate, and the way we interact with them. Let’s be at the forefront of those who will meet the needs of the ever growing, digital students.

References

Suggested Resources


Teaching First Year Students

With anticipation each fall, we look forward to a new year on campus: new courses to teach, new teaching strategies to try, and a whole new group of students. In addition to the returning students whom we have not met, many of the new faces we see each new semester are college freshmen, otherwise known as first-year students. Although first-year students differ in age, experiences, traditions and backgrounds, the majority of them are between 18 and 22 years old.

According to 2009 Beloit College Mindset (Nief & McBride, 2009), students today are different than those of just a decade ago and include some of the following demographics. More students:

- are older than 25
- are working while taking classes
- are veterans
- need remedial classes
- are part-time students
- are from single-parent or step-parent homes
- have a minority or immigrant background
- have English as a second language
- have a learning or physical disability
- have taken college courses while in high school

Connect with First-Year Students

Make connections with students despite age, values and experiential differences. When discussing new or controversial course content, bring in examples to which students can relate. For example, use a reverse-debate format in which students take opposing side to what they believe. Here are a few tips for interacting with first-year students in the classroom from Carnegie Mellon University (1997):

1. Ask lots of questions in class that stretch students’ thinking. For example, begin with simple recall questions such as, “List the” and “Who did” and increase the complexity of the question to those that challenge students’ higher order thinking such as “Which ______ is the best? Why do you think so?” and “Give and justify your opinion on ______.”

2. Mingle with students as they work in groups to encourage dialogue and interaction.

3. Toss a Koosh ball to students. The student who catches the ball is expected to answer the question. Students can then toss the ball to another student, and so on. This interactive nature of questions and answers can lead to more engaged learning. The activity can also relieve stress, especially at the beginning of the semester.

4. Have students write responses to questions on flip chart paper or white board using colorful markers.

As part of the non-instructional course objectives, teach first-year students how to prepare for assignments and exams.
5. Use games and simulations to help students “visualize complex systems” such as simulating an environment otherwise not possible in the classroom. For example, provide color-enhanced images of the inside of a cell or show a video of chemical reaction. Each of these strategies can help students better understand the environment (Oblinger, 2004).

6. Learn students’ names. Students are more likely to interact when called upon by name.

7. Relate required reading to lectures and course discussions. Ensure course assessments (quizzes, exams, and assignments) include material from required readings.

8. Arrange students to work in groups to encourage out-of-class interactions.

9. As part of the non-instructional course objectives, teach first-year students how to prepare for assignments and exams. Provide previous exams and samples of graded papers so students get a feel for how course work is graded.

Sprinkle in a bit of humor now and then to reduce the formal nature of class.

Be Personable
Share some personal experiences, such as how your interest in the subject started or stories from your college days. You can let students know that you can be trusted and that students can share feelings and questions. This is especially helpful for first-year students seeking to establish a place in the university community. Sprinkle in a bit of humor now and then to reduce the formal nature of class.

Make the Course Content Relevant
Relate what may be new course content to many first year students, to their knowledge and interests. Show students the importance of the content, how content relates to required readings, and how content can actually be used.

Give and Receive Feedback
Provide ways to give and receive feedback throughout the semester and use rubrics to help students understand expectations and methods of assessment. Grade assignments and exams quickly so students can use feedback to prepare for new content and future assessments. Give meaningful and timely feedback and solicit feedback to add credibility to your teaching approaches. Some examples are:

1. Give frequent quizzes – Blackboard is an easy-to-use venue for low-stakes assessments.

2. Use email to set up appointments, clarify course expectations and communicate with students. Establish email protocols such as how quickly questions will be responded to, if questions will be responded to over the weekend, how you would like to be addressed and if using complete sentences and proper punctuation (instead of “texting” language) is expected.

3. Give short assignments that increase in complexity to measure comprehension of course content.

Give meaningful and timely feedback and solicit feedback to add credibility to your teaching approaches.

Northern Illinois University, Faculty Development and Instructional Design Center
facdev@niu.edu, www.niu.edu/facdev, 815.753.0595
4. Use “One-minute-papers” to get a snapshot of student comprehension of ongoing content. These papers allow students to quickly reflect on content just covered in class and will help identify areas that might need further review.

5. Ask questions such as, “What was the clearest point in today’s class?” and “What the muddiest point was in today’s class?” Ask students to write their responses on note cards and submit before leaving the room. Incorporate student responses in the next lecture or address them directly in class.

Believe in Students
Begin each semester with the assumption that all first-year students come to class eager to learn. Although it is expected that you are an expert in the discipline, students should be allowed to express their points of view. Listen to what first-year students have to say, allow discussions that diverge from the planned lecture and invite students to help devise course policies and rules related to projects and assignments. Students who have a voice in their own learning will find a more rewarding learning experience.

Summary
It is essential that you help first-year students successfully adjust to new living and learning environments. By understanding what it means to be a first-year college student and recognizing the demands first-year students face while transitioning to the university community, you can provide engaging, challenging and supportive learning environments.

References


Documenting Your Teaching and Research and NIU Teaching/Research and Grant Awards

Documenting your teaching and research efforts can be useful as a way to reflect on, improve and direct your teaching and research activities. Keeping good records of both teaching and research also serves to help facilitate faculty service reports and tenure and promotion processes. The NIU community recognizes and supports faculty who excel in the practice of teaching, research and engagement through several prestigious awards. These awards are presented below.

Evidence of teaching can be derived from your own records as well as records from others while evidence of research is made apparent by publications and other activities. Most of your teaching and research documents can be stored electronically for easy access and flash drives provide storage that is both portable and secure.

The lists below highlight a range of teaching and research evidence but should not be construed as the required documentation for all department or school personnel committees. Please discuss with your department or school chair or director about those requirements necessary for applying for tenure and/or promotion.

**Evidence of Teaching from Oneself**
- Courses taught
- Course syllabi
- Exams, quizzes and projects
- Reading lists
- Handouts and worksheets
- Student accomplishments
- Teaching goals and innovations
- Course and laboratory development
- Theses and dissertations directed
- Independent studies directed
- Curricular and programmatic contributions
- Instructional workshops
- Teaching philosophy
- Self evaluations and reflections
- Online course development

**Evidence of Teaching from Others**
- Student evaluations of courses taught
- Peer evaluations
- Reports from classroom observations
- Collegial comments and mentoring
- Teaching honors, awards and grants
- Invitations to speak and interviews on teaching
- Feedback from students

**Evidence of Research, Scholarly and Creative Activities**
- Published research articles in national, international and state professional journals
- Exhibitions, installations, productions, performances or publications of original works, design, electronic media, film, journalism, literature, music, theater and visual arts
- Book with major and/or local publishing company
- Revised book
- Section of book with major and/or local publisher
- Editor of a book
- Editor of a national, international, or state professional journal
- Papers and speeches presented at national, international and state meetings
- Research honors, awards and grants
Teaching, Learning and Research Philosophy

Periodically reflecting on the scope and direction of your teaching and research activities can help you develop philosophy statements in these areas. Explain how your philosophy has been put into practice in course syllabi, examinations, readings and assignments to establish a context of understanding and evaluating your overall record of effectiveness as a university professor.

Other Documentation of Good Teaching and Learning

In addition to keeping records of teaching and research activities, begin to keep document outcomes that demonstrate ways your courses provide excellent learning environments. These records can also act as a means of self-assessment and personal growth and improvement toward efforts as an effective educator. Here are some examples of those endeavors:

- Accommodating students with disabilities
- Student essays, creative works and projects
- Field-work reports
- Laboratory workbooks or logs
- Student publications
- Student conference presentations based on course-related work
- Graded essays (with names removed) showing excellent, average and poor work with your comments as to why they were so graded
- Information on your students who are successful in advanced study in the field or those students who have earned academic awards
- Statements by former students on your quality of instruction
- Summary of student achievement on self-made or standardized proficiency tests, possibly before and after a course, as evidence of student learning
- Information about the effect of your courses on student career choices
- Assistance you give to students as they secure employment
- Engaging undergraduate students in service learning and research
- Innovative projects and assessments
- Innovative approach to teaching such as using and involving students in
  - Social media and podcasts
  - Themed Learning Communities (TLCs)
  - Multiculturalism/international perspectives
  - Critical thinking
  - Collaborative learning
  - Interdisciplinary collaboration (both you with colleagues from other disciplines and your students with students from other disciplines)

NIU Awards for Teaching, Research and Engagement

Because teaching and research are of utmost importance “for attaining the educational goals of the university, outstanding teachers [and researchers are] are recognized by the university community” through a number of awards. These awards are granted yearly to those individuals who have demonstrated excellence in teaching and research and provide “support for current and future efforts” (NIU 2007, Para. 1).

Excellent instructors and researchers exhibit an intense interest in their fields and show relevance of its value to society. These individuals apply rigorous standards in the classroom and inspire students to excel. They demonstrate a strong commitment to students and their welfare, not only in subject matter and
in class preparation, but by being available outside classroom to help students with course-related projects and activities as well as personal and professional development. The following highlight the NIU awards that recognize excellence in teaching, research and engagement.

**Excellence in Undergraduate Teaching Award**
This award honors tenure-track and tenured faculty who exhibit excellent undergraduate teaching in the university, encourage improvement of instruction promote discussion among members of the university community on the subject of teaching.

**Excellence in Undergraduate Instruction Award**
The purpose of the award is to honor excellent undergraduate teaching in the university, specifically among non-tenure track educators not recognized by the NIU Excellence in Undergraduate Teaching Award, to encourage improvement of instruction and to promote discussion among members of the university community on the subject of teaching.

**Presidential Teaching Professor Award (PTP)**
Presidential Teaching Professors are acknowledged to be among the most notable teachers at the university who have demonstrated continuous excellence in the teaching of undergraduate and/or graduate students.

**Presidential Research Professor Award (PRP)**
Each PRP is to be a person who has received national or international acclaim for his or her scholarship, to be among the researchers or artists of highest stature in his or her speciality, to have made significant positive impact on the discipline nationally or internationally, and judged to be likely to continue to make such impact.

**Board of Trustees Professor Award (BoTP)**
These faculty are recognized who have achieved a consistent record of excellence in teaching, scholarship or artistry, service and outreach, and academic leadership; have earned a national/international reputation for professional achievements; and are deemed likely to make continued and substantial contributions in higher education. Special emphasis is placed upon the recognition of faculty who are renowned scholars/artists who have engaged students in their research/or and other professional activities.

**Presidential Engagement Professor Award (PEP)**
This award honors those tenure-track and tenured faculty through their engagement with the community through research, economic development, service and instruction. Establishment of these professorships places NIU in the company of the growing number of institutions which now recognize and reward this increasingly critical function.

**Grants at NIU**

**Committee of the Improvement of Undergraduate Education (CIUE) Grants**
CIUE makes grants to faculty members who wish to carry out research on teaching, developing new course materials and instructional methods for teaching. Grants are offered for projects which will very likely improve undergraduate education at NIU, but for which no departmental funds are readily available. The maximum amount for these grants is $3500.

**Instructional Research and Improvement Grant (up to $1000)**
This award must be directed toward the improvement of instruction. Research into instructional method, curriculum development for instructional use, and media development for instructional use are all areas within the realm of improvement of instruction. The project application must contain proposed means for
determining whether an addition to knowledge about instruction or improved applications or deliver of instruction is actually achieved. A request for computer equipment, software or other equipment must include a non-technical introductory paragraph that explains the purpose and need for the item requested.

**Student Instructional Research and Improvement Grant (up to $1000)**
This award must be directed toward the improvement of undergraduate instruction. Research into instructional method, curriculum development for instructional use, and media development for instructional use are all areas within the realm of improvement of instruction. The project application must contain proposed means for determining whether an addition to knowledge about instruction or improved applications or delivery of instruction is actually achieved. A request for computer equipment, software or other equipment must include a non-technical introductory paragraph that explains the purpose and need for the item requested.

Eligibility to apply for this grant requires that students be enrolled in at least 12 semester hours (9 semester hours for graduate students) and that the applicant must not be on academic probation. Proposals will be supported to a maximum of $1000 unless special circumstances dictate increased support.

**Microcomputer Software Acquisition Grant (up to $1000)**
This grant focuses on software acquisition that must be directed toward the improvement of instruction, either directly or indirectly. The project application must contain proposed means for determining whether an addition to knowledge about instruction or improved applications or delivery of instruction is actually achieved.

Eligibility to apply for this grant requires that faculty and staff wishes to obtain or develop computer software relevant to research in and projects toward improvement of instruction. Proposals will be supported to a maximum of $1,000 unless special circumstances dictate increased support.

**Instructional Research and Improvement Grant ($3500)**
Proposals should offer imaginative and innovative approaches to the improvement of undergraduate education, including general education, and should be for projects which extend beyond the normal responsibilities of a department’s attention to its curriculum and courses. Proposals for projects relating to the development of new courses or to routine course revision are usually not supported. The application should include an explanation of the extent to which the project is beyond normal departmental responsibility. Proposals submitted by faculty members who will be continuing at NIU in the next academic year will be considered, such proposals must clearly state the faculty member will not be continuing at NIU and must address the specific details of how the results of the project will be utilized by other faculty.

To align with NIU engaged learning activities there are opportunities for faculty to enhance or develop a new course that incorporates a service learning component.

Grants will be awarded on a competitive basis to current faculty members who are full-time, regular, and tenure-track or tenured individuals for the completion of a project of one month’s duration. Each grant will pay a salary up to $3,500. Funds may be available for supplies, travel. Or other items that might be necessitated by a given project up to a maximum of $500 unless special circumstance justify increased support.
For further information on the CIUE instructional and research improvement grants please visit

http://www.niu.edu/provost/awards/ciue.shtml
Principles of Effective Instruction

As educators, we should strive to design and develop instruction that is effective, consistent, and meaningful. In their research on best practice and student learning in higher education, Chickering and Gamson (1987) identified seven principles for good practice which can be used toward efforts of best practice in teaching and learning.

Principles can become even more useful when accompanied with examples of how they can be implemented in the classroom. Following the description of each principle below you will find useful strategies that support ways each principle can easily be modified and used in any discipline.

1. Good Practice Encourages Contacts Between students and Faculty
   Frequent student-faculty contact in and out of class is a most important factor in student motivation and involvement. Faculty concern helps students get through rough times and keep on working. Knowing a few faculty members well enhances students’ intellectual commitment and encourages them to think about their own values and plans.

   Example: Set up and maintain regular office hours with a welcoming presence.

   Example: Establish an email response protocol so students know when to expect a response from you.

2. Good Practice Develops Reciprocity and Cooperation Among Students
   Learning is enhanced when it is structured more like a team than a solo race. Good learning, like good work, is collaborative and social, not competitive and isolated. Working with others often increases involvement in learning. Sharing one's ideas with others’ ideas improves thinking and deepens understanding.

   Example: Establish guidelines for group work so students understand group dynamics.

3. Good Practice Uses Active Learning Techniques
   Learning is not a spectator sport. Students do not learn much just sitting in classes listening to the instructor, memorizing prepackaged assignments, and spitting out answers. Students must talk about what they are learning, write reflectively about it, relate it to past experiences, and apply it to their daily lives. Students must make what they learn part of themselves.

   Example: Use an in-class discussion technique such as think-pair-share in which all students are posed a question or situation to think about, then pair up with a classmate to continue to discuss the topic, and then share their thoughts with the entire class.
4. Good Practice Gives Prompt Feedback
Students might need help in assessing their existing knowledge and competence—having students think about what they know and what they don’t know helps them focus on their own learning. In class then, provide students frequent opportunities to perform and to receive constructive feedback on their performance. At various points during the semester students need opportunities to reflect on what they have learned, what they still need to know, and how they might assess themselves.

*Example:* Establish a means for feedback. Give prompt feedback when students ask questions (in class) and let them know when you have received their work—this is especially helpful when students submit work electronically.

*Example:* Provide an opportunity for students to reflect on course content through a Web-based discussion forum in which you offer feedback.

*Example:* Use the end of the class period for a one-minute paper in which students write responses to one or two questions related to content covered during the class period. This feedback will inform you of students’ comprehension which can be used to plan subsequent class periods (Were course objectives met? Do you need to modify content?).

5. Good Practice Emphasizes Time on Task
Time plus energy equals learning. Learning to use one’s time well is critical for students and professionals alike. Allocating realistic amounts of time means effective learning for students and effective teaching for faculty.

*Example:* Establish realistic deadlines, keeping in mind that many of your students have responsibilities other than your course. Some instructors set up assignment and exam dates during the first class meeting where you are able to get to know your students’ needs.

6. Good Practice Communicates High Expectations
Expect more and you will get more. High expectations are important for everyone—for the poorly prepared, for those unwilling to exert themselves, and for the bright and well-motivated. Expecting students to perform well becomes a self-fulfilling prophecy.

*Example:* Communicate high expectations at the beginning of the semester rather than change your stance in the middle of the semester. It may be helpful to provide examples of certain assignments (written work, projects) to convey your expectations so students know what you are looking for. This can help alleviate issues later in the semester after students receive graded work and complain that they didn’t know what they were supposed to do.
7. **Good Practice Respects Diverse Talents and Ways of Learning**

Many roads lead to learning. Different students bring different talents and styles to the university classroom environment. Bright students in a seminar might be all thumbs in a lab or studio; students who possess lots of hands-on experience may not do so well in theory. Students need opportunities to show their talents and learn in ways that work for them. Then they can be motivated to learn in new ways that do not come so easily.

*Example:* Provide examples or models for students to follow such as papers, projects, and your expectations of class participation. Using non-examples can better help students understand what to do by seeing what not to do.

**Summary**

Designing and developing instruction that is effective, consistent, and meaningful can be achieved by following principles for good practice. The principles presented here can help you be a more effective teacher which in turn will help students be more successful learners.

**References**


Major Ideas that can Empower College Teaching

This is a list of major ideas on college teaching, shown by the year in which a new publication either introduced the idea or consolidated existing information on the idea. The point of this list is to illustrate that the scholars of teaching and learning are continuing to generate powerful new ideas year after year, thereby creating the possibility of enhancing the capabilities of college teachers everywhere - IF faculty members take time to learn about these ideas and incorporate them into their practice of teaching.

2004 - FORMATIVE FEEDBACK

- Identifies 7 principles for giving formative feedback in a way that will enable students and teachers to improve learning. Includes examples.

2004 - LEARNING PORTFOLIOS

- A special procedure in which students reflect on and assess their own learning.

2004 - TEAM-BASED LEARNING

- An unusually versatile teaching strategy that enables teachers to take small-group learning to a greater level of effectiveness.

2004 - THEORIES OF LEARNING AND MOTIVATION

- Familiarizing ourselves with different theories of learning and motivation can enable us to shape more effective teaching.
- Source: Svinicki, M.D. Learning and Motivation in the Postsecondary Classroom. Anker.

2003 - A TAXONOMY OF SIGNIFICANT LEARNING

- This taxonomy, a possible successor to the Bloom taxonomy, identifies six kinds of significant learning can be used to formulate learning goals.

2003 - INTEGRATED COURSE DESIGN

- Identifies the key decisions that must be made before a course begins, and that need to be aligned to maximize significant student learning.

2002 - HOW THE BRAIN WORKS

• An understanding of how learning occurs in the brain can inform and should inform our actions as teachers.
• Source: Zull, J. The Art of Changing the Brain. Stylus.

2002 - LEARNER-CENTERED TEACHING

• By sharing our power and decision-making with students, we can involve them more fully in taking responsibility for their own learning.

2001 - PROBLEM-BASED LEARNING

• This is a distinctive teaching strategy that teaches students how to solve complex problems, in groups, and how to learn on their own.
• Source: Duch, B., Groh, S. & Allen, D. The Power of Problem-Based Learning. Stylus.

1999 - LEARNING COMMUNITIES

• Learning communities, whether of students or of faculty, can lead to powerful forms of dialogue and growth.

1999 - PEER REVIEW OF TEACHING

• There are some principles that need to be observed when having our teaching reviewed by peers.
• Source: Chism, N.V.N. Peer Review of Teaching. Anker.

1998 - EFFECTIVE GRADING RUBRICS

• When assessing student work, teachers need to have clear criteria and standards, i.e., a clear and effective grading rubric.

1998 - IN-DEPTH UNDERSTANDING OF ONESELF AS A PERSON/TEACHER

• By doing some "inner work", teachers can understand what calls them to teach, what fears they have, and eventually how to engage students more fully.
1998 - SERVICE LEARNING

- Having students engage in community-based service projects which are then related to classroom learning drives multiple kinds of powerful learning.
- Source: Zlotkowski, E. Successful Service Learning Programs. Anker.

1998 - STRUCTURED ASSIGNMENTS FOR SMALL GROUPS

- Small group projects will work much better when they are carefully structured with specific kinds of learning in mind.
- Source: Millis, B. and Cottell, P. Cooperative Learning for Higher Education Faculty. Oryx.

1997 - DEEP LEARNING

- Students become effective learners only when they understand and engage in deep learning.

1997 - TEACHING PORTFOLIO

- Assembling a portfolio about oneself as a teacher can help us understand ourselves better and can communicate our teaching to others.
- Source: Seldin, P. The Teaching Portfolio, 2nd ed. Anker.

1996 - TEACHING STUDENTS HOW TO ENGAGE IDEAS

- Knowing how to integrate good writing assignments, critical thinking exercises, and active learning will enable students to engage ideas more fully.

1995 - CRITICALLY REFLECTING ON YOUR OWN TEACHING

- If we systematically collect information about teaching in general and about ourselves, over time we can become more competent as a teacher.

1995 - EMOTIONAL INTELLIGENCE

- There is a second kind of intelligence that teachers need to have and that they could help their students learn.

1995 - EVALUATING YOUR OWN TEACHING

- There are five basic sources of information all of which need to be used if we want to do a thorough job of evaluating our own teaching.
MAJOR NEW IDEAS THAT CAN EMPOWER COLLEGE TEACHING


1993 - CLASSROOM ASSESSMENT TECHNIQUES

- There are many easy-to-use techniques that can help teachers assess learning, teaching, and student characteristics.

1992 - LEARNING STYLES

- Different students learn in different ways. Knowing what those differences are can help us find ways to increase their success.
- Source: Multiple sources but an especially useful one is: Fleming, N.D. & Mills, C. "Helping Students Understand How They Learn" in The Teaching Professor, Vol. 7 No. 4.

1991 - ACTIVE LEARNING

- Students learn better if teachers have them do something with what they learn and reflect on the meaning of what they do.

1991 - COOPERATIVE LEARNING

- Having students work in small groups can create powerful energy for learning.

Prepared by:
Dr. L. Dee Fink, Ph.D.
(a) Former Director, Instructional Development Program, University of Oklahoma
(b) Past-President, POD Network
August, 2005

http://www.ou.edu/idp/tips/majornewideas.htm
University of Oklahoma, Instructional Development Program
Distribution and/or alteration by not-for-profit research or educational institutions for their local use is permitted as long as this notice is kept intact and attached to the document. Any other distribution of copies of the document or any altered version thereof is expressly prohibited without prior written consent of the University.
Instructional Research and Campus Resources

Northern Illinois University makes available a range of resources to help you develop in both your teaching and research expertise. These resources can be accessed as you prepare your course, during the semester and at the end of a course when you plan for the next semester. The following university teaching and research resources are presented in this paper:

- Faculty Development and Instructional Design Center
- Learning Center – College of Education
- Office of Testing Services
- University Libraries
- University Writing Center

<table>
<thead>
<tr>
<th>Faculty Development and Instructional Design Center (FDIDC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adams Hall 319</td>
</tr>
<tr>
<td>Fax: 815.753.2595</td>
</tr>
<tr>
<td>Phone: 815.753.0595</td>
</tr>
<tr>
<td>Email: <a href="mailto:facdev@niu.edu">facdev@niu.edu</a></td>
</tr>
<tr>
<td>Web: <a href="http://www.facdev.niu.edu">www.facdev.niu.edu</a></td>
</tr>
</tbody>
</table>

| One-On-One Consultations | Consultations can be provided on a one-time or continuing basis as needed. The consultation process is a partnership and a discovery process that evolves over time to accomplish the desired goals of faculty who seek assistance. Faculty who seek assistance can decide on the type and depth of consultation needed, and FDIDC staff will provide the available support and resources. |

| New Faculty Mentoring Program | This is a voluntary program through which experienced faculty at NIU who are knowledgeable about the campus and academic life are matched with new faculty to orient them to NIU, inform them about campus support services, and assist them in the early stages of their academic careers at NIU. This program is not meant to be a substitute for existing mentoring programs at the department or college levels but can be a supplement to those programs. |

| Library of Teaching-Related Resources | Books, DVDs and videotapes on teaching and professional development. These materials are available for short-term loan. |
| Online Resources | The Faculty Development and Instructional Design Center maintains a variety of resource directories in fulfilling Northern Illinois University's mission on teaching and scholarly activities including but not limited to accessibility, quick tips for instruction and tutorials on academic integrity, Blackboard, and effective writing practices. Click on this link for a complete list of FacDev online resources: [http://facdev.niu.edu/facdev/resources/](http://facdev.niu.edu/facdev/resources/) |
| Referral Services | The Faculty Development and Instructional Design Center serves as a referral service and as a resource unit in which we will help meet your particular needs. |
| Classroom Observations | Classroom observation involves observing faculty teaching in the classroom, analyzing related activities, and providing feedback for improvement. This is a lengthy and time consuming process which usually involves at least three to five observations of actual classroom teaching by individual faculty, meetings with the faculty before and after each classroom observation, and involves leading the faculty to make positive changes in teaching. |
| Coaching | Lead by a staff member . . . on various stages of teaching |
| Teaching Workshops and Institutes | A wide variety of workshops are offered on topics related to teaching, research, diversity & instructional use of technology. Weekly workshops are often 1.5 to 3 hours in length while some workshops and institutes last between half and full days. |
# Learning Center – College of Education

The College of Education’s Learning Center offers a wide variety of instructional support, programs, and services. The facility, located in the lower level of Gabel Hall, has multifunctional meeting rooms that can be used for courses, seminars, and workshops. Resources are available primarily for the use of College of Education faculty and students. However, non-College of Education faculty can borrow select equipment for a modest fee.

<table>
<thead>
<tr>
<th>Gabel Hall – lower level</th>
<th>Phone: 815.753.1241</th>
<th>Web: <a href="http://www.cedu.niu.edu/learningcenter/">http://www.cedu.niu.edu/learningcenter/</a></th>
</tr>
</thead>
<tbody>
<tr>
<td>Fax: 815.753.1258</td>
<td>Email: <a href="mailto:learningcenter@niu.edu">learningcenter@niu.edu</a></td>
<td></td>
</tr>
</tbody>
</table>

## Audio and graphics production labs

See next item

## Media production materials available for purchase at cost

- Multimedia (video and audio editing stations)
- Lamination (materials up to 26” wide and any length)
- Duplication of most media formats (e.g. VHS, mini-DV, CDs and DVDs)
- A VersaLaser system for cutting out images and letters
- Paper supplies and tools, including cutters, a binding machine, art paper, scissors, tape, glue
- Copy machines (accepts cash or Huskie bucks)
- Huskie Bucks dispenser

## Video library related to a range of topics in education

The Learning Center holds a variety of materials that cover every aspect of education. Programs can be previewed in the Center at available viewing stations and faculty can check them out for up to a week.

## Large collection of education and school texts

The Center’s collection of K-12 curriculum materials helps students become familiar with print-based teaching aids. Students can use these resources to prepare lesson plans and daily activities for their clinical experiences. Material may be checked out for up to two weeks.
### Instructional equipment rentals

The Learning Center loans a variety of equipment free for *instructional use* by College of Education faculty and students. Equipment is available to faculty and students outside of the college for a nominal fee.

CoE faculty and staff may reserve equipment with the Learning Center's online scheduling program.

CoE students and non-CoE faculty or staff may also request rooms by calling (815) 753-1241 or stopping by the south wing service desk.

### Satellite reception capability for teleconferences

The Learning Center coordinates satellite downlinks with Media Services and can make the program available in one of their classrooms.

Schedule well in advance for satellite downlinks in order to secure time on the university's satellite dish. If you'd like to contact Media Services directly, call Doug Ball at 753-6690 to set up a downlink. Then call the Learning Center at 753-1241 to schedule a room.

### Video conference classrooms and support

**Regularly Scheduled Conferences**

To schedule a regular semester, distance-education course, please contact the Office of External Programs in your college.

**Occasional Video Conferences**

The Learning Center can host your one-time or occasional video conference.

Examples of these types of conferences include:

- Face-to-face meetings for online courses
- Guest lectures
- Concerts and master classes
- Oral exams
- Collaboration on projects
- Modeling effective uses of technology in teaching & learning
- Teaching demonstrations for class critiques
- Face-to-face interviews for research
- Interviewing prospective new hires
- Faculty training sessions
- Dissertation defenses
- Moot Court hearings
- Consultation with remote experts
### University Libraries

The NIU Libraries are committed to supporting the teaching, research and outreach efforts of the university and to serving the northern region of Illinois through its collections, preservation efforts and access to information in all of its various formats.

<table>
<thead>
<tr>
<th>Founders Memorial Library</th>
<th>Phone: 815.753.1995</th>
<th>Email: <a href="mailto:Lib-Admin@niu.edu">Lib-Admin@niu.edu</a></th>
<th>Web: <a href="http://www.ulib.niu.edu/">http://www.ulib.niu.edu/</a></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Renewal of Library Items</strong></td>
<td><strong>Online or in person</strong></td>
<td></td>
<td><a href="https://vufind.carli.illinois.edu/vf-niu/MyResearch/Home">https://vufind.carli.illinois.edu/vf-niu/MyResearch/Home</a></td>
</tr>
<tr>
<td><strong>Request for Materials</strong></td>
<td></td>
<td></td>
<td><a href="https://niu.illiad.oclc.org/illiad/JNA/logon.html">https://niu.illiad.oclc.org/illiad/JNA/logon.html</a></td>
</tr>
<tr>
<td><strong>Courtesy Cards</strong></td>
<td>Illinois residents who are not affiliated with NIU or any of the other CARLI institutions and NIU alumni may apply for a courtesy card. Courtesy card holders may check out most library materials for four weeks (see Circulation Policies and Circulation Loan Periods for a full explanation of courtesy card privileges). Courtesy cards are valid for a period of one year; a new application is required each year.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Faculty Carrels</strong></td>
<td>Faculty carrels are available by request on a semester basis. There is no fee for this service. For information please contact the Security Office at 815-753-0164</td>
<td></td>
<td><a href="http://www.ulib.niu.edu/SERVICES/facultyCarrel.cfm">http://www.ulib.niu.edu/SERVICES/facultyCarrel.cfm</a></td>
</tr>
<tr>
<td><strong>Interlibrary Loan</strong></td>
<td>Interlibrary Loan (ILL) is a service provided by the Information Delivery Services Department that attempts to borrow materials from other libraries for you that are not available in the NIU University Libraries.</td>
<td></td>
<td><a href="http://www.ulib.niu.edu/SERVICES/ids-services.cfm">http://www.ulib.niu.edu/SERVICES/ids-services.cfm</a></td>
</tr>
<tr>
<td><strong>Mediated Searching</strong></td>
<td>The library provides a mediated search service using the DIALOG Select online search system. DIALOG Select provides online access to over 400 databases covering most fields of knowledge. The database access is fast, powerful and of no cost to the user of the service. For further information, or to arrange for a search, call (815) 753-9804.</td>
<td></td>
<td><a href="http://www.ulib.niu.edu/SERVICES/MediatedSearch.cfm">http://www.ulib.niu.edu/SERVICES/MediatedSearch.cfm</a></td>
</tr>
<tr>
<td><strong>Reserves (Print and electronic)</strong></td>
<td></td>
<td></td>
<td><a href="http://www.ulib.niu.edu/SERVICES/reservesrv.cfm">http://www.ulib.niu.edu/SERVICES/reservesrv.cfm</a></td>
</tr>
<tr>
<td>Service</td>
<td>Description</td>
<td>URL</td>
<td></td>
</tr>
<tr>
<td>-------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Smart Classroom</td>
<td></td>
<td><a href="http://www.ulib.niu.edu/SERVICES/smartclassroom.cfm">http://www.ulib.niu.edu/SERVICES/smartclassroom.cfm</a></td>
<td></td>
</tr>
<tr>
<td>Services for People with Disabilities</td>
<td>Our goal is to offer specialized library-use assistance to any person with any kind of disability who wishes to use our library materials and other resources. Assistance will be specifically tailored to the needs of the individual. Assistive equipment is available in a specialized study room.</td>
<td><a href="http://www.ulib.niu.edu/SERVICES/Disabilities.cfm">http://www.ulib.niu.edu/SERVICES/Disabilities.cfm</a></td>
<td></td>
</tr>
<tr>
<td>Computers for Public Use</td>
<td>There are a number of computer terminals in the library set aside for use by the public. These computers may be used for library research or general internet use. During busy times or when others are waiting, you may be asked to limit your session time to 30 minutes. All other computers in Founders Memorial Library require logging in with an NIU ID and password.</td>
<td><a href="http://www.ulib.niu.edu/SERVICES/computers.cfm">http://www.ulib.niu.edu/SERVICES/computers.cfm</a></td>
<td></td>
</tr>
<tr>
<td><strong>Office of Testing Services</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-----------------------------</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Testing Services provides comprehensive testing and evaluation support services for Northern Illinois University students, faculty, staff, administration, and individuals or agencies in the University's service region. Testing Services regular hours are Monday through Friday, 8:00 a.m. until 12:00 p.m. and 1:00 p.m. until 4:30 p.m.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Adams Hall 128</th>
<th>Phone: 815.753.1203</th>
<th>Web: <a href="http://www.niu.edu/testing/">http://www.niu.edu/testing/</a></th>
</tr>
</thead>
<tbody>
<tr>
<td>Fax: 815.753.3701</td>
<td>Email: <a href="mailto:testing@niu.edu">testing@niu.edu</a></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Testing Programs</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>- NIU Placement and Proficiency</td>
</tr>
<tr>
<td>- Credit by Exam (AP and CLEP)</td>
</tr>
<tr>
<td>- National (ACT, GRE, etc.)</td>
</tr>
<tr>
<td><a href="http://www.niu.edu/testing/programs/index.shtml">http://www.niu.edu/testing/programs/index.shtml</a></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Course and Teacher Evaluations</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>University Policy requires that a student assessment of teaching effectiveness be completed for every undergraduate class, every Fall and Spring semester. This assessment is an important aspect of evaluating faculty members for matters of salary, promotion, and tenure. One of the many services offered by NIU's Testing Services is the machine scoring and processing of these evaluations.</td>
</tr>
<tr>
<td><a href="http://www.niu.edu/testing/evaluations/index.shtml">http://www.niu.edu/testing/evaluations/index.shtml</a></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Exam Processing</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Testing Services process regular and final examinations Monday through Friday, 8:00 a.m. until 12:00 p.m. and 1:00 p.m. until 4:30 p.m. Contact Testing Services for times for shortened summer hours.</td>
</tr>
<tr>
<td>- Tests submitted by 11:30 a.m. should be ready by 4 p.m. the same day.</td>
</tr>
<tr>
<td>- Tests submitted by 3:30 p.m. should be ready by 8:30 a.m. the next working day.</td>
</tr>
<tr>
<td><a href="http://www.niu.edu/testing/processing/index.shtml">http://www.niu.edu/testing/processing/index.shtml</a></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Test Taking Tips</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Objective and subjective (essay) tests are the two main types of tests. The questions on objective tests are true-false, multiple choice, fill-in-the-blank, or matching. For essay tests, students must be able to recall main ideas and details and organize them intelligently. These tests usually require short answers consisting of a sentence or two, a list, or longer discussion answers.</td>
</tr>
<tr>
<td><a href="http://www.niu.edu/testing/tips/index.shtml">http://www.niu.edu/testing/tips/index.shtml</a></td>
</tr>
</tbody>
</table>
Placement and Proficiency Exam
Information and Score Interpretation

Testing Services provides useful information about placement and proficiency examinations and their results. Information sheets contain detailed information about the particular examination as well as scheduled testing sessions for that examination. Interpretation sheets provide details for interpreting the examination results.

http://www.niu.edu/testing/faculty/index.shtml

---

University Writing Center

The University Writing Center is located at Stevenson Towers South, Lower Level. The Writing Center is a place for undergraduates, graduates, staff, and faculty to talk about their writing with trained consultants, one-on-one.

| Stevenson South, Tower B, Lower Level | Phone: 815.753.6636 | Web: http://www.niu.edu/uwc/ |

When you work with Writing Center consultants, you can....

1. Discuss topics and ideas
2. Develop strategies in planning, organizing, and developing drafts
3. Discover effective uses of sources and correct documentation
4. Understand your professors’ writing assignments more clearly
5. Identify better ways to use language
6. Learn appropriate methods of persuading readers
7. Integrate critical reading and thinking skills in your written work
8. Become more aware of the different types of writing that various disciplines require
9. Prepare résumés and applications for internships, scholarships, or jobs
Advice for New Faculty

Excerpted from Learning, Teaching & Innovative Technologies Center
Middle Tennessee State University
http://www.mtsu.edu/ltanditc/docs/Article_for_new_fac.pdf

The Teaching Self
One of the most important goals of NIU is to offer effective instruction to the students who study here. The University strives to recruit the best faculty and teaching assistants possible and to support them in their teaching, research and service endeavors. As part of the support for teaching, this handbook provides an overview of some basic information on instructional strategies. To situate this information within the general context of effective teaching, this section provides an overview of what is meant by effective teaching, how faculty can continue to develop their instructional strengths through seeking and using feedback and how, given the pressures on instructors to perform well in several roles, they can “balance it all.”

Research suggests that certain characteristics are consistently associated with good college teaching as viewed by students, other teachers and administrators. In a study of winners of the Alumni Distinguished Teaching Award at Ohio State (Ebro, 1977), observation of their classes identified the following characteristics of effective teaching, which strongly parallel those found in other studies – these instructors:

- began class promptly and got right down to business
- were well organized
- taught at an appropriately fast pace, but stopped regularly to check student comprehension and engagement
- used a variety of instructional strategies rather than lecture alone
- focused on the topic and their instructional objectives and did not get sidetracked
- provided clear explanations
- used humor that was in keeping with their individual styles
- practiced good classroom management techniques, holding the attention and respect of the group
- interacted with students by providing immediate answers to questions or comments and corrective feedback when needed
- praised student answers and used probing questions to extend the answers
- provided a warm classroom climate by allowing students to speak freely and included personal humor or other attempts to relate to students as people
- used nonverbal behavior, such as gestures, walking around and eye contact to reinforce student comments

Lowman (1996) describes two main dimensions of effective college teaching that emerge in his studies: **Intellectual Excitement** (enthusiasm, knowledge, inspiration, humor, interesting viewpoint, clarity, organization) and **Interpersonal Concern/Effective Motivation** (concern, caring, availability, friendliness, accessibility, helpfulness, encouragement, challenge). Other studies (see, for example, Chickering

\[\text{[NIU] strives to recruit the best faculty and teaching assistants possible and to support them in their teaching, research and service endeavors.}\]

\[\ldots knowledge of subject matter, organizational skills, enthusiasm, clarity and interpersonal skills as marks of an effective instructor.\]
and Gamson, 1991) consistently identify knowledge of subject matter, organizational skills, enthusiasm, clarity and interpersonal skills as marks of an effective teacher. Agreement across studies suggests that the characteristics of good teaching are not mysterious or extremely relative. They can, and have been, identified by researchers, students and professionals alike.

Inspection of these characteristics fails to support another commonly held belief about teaching: good teachers are born, not made. While certain characteristics such as humor and interpersonal skills come easily to some people and not others, people are not born with knowledge of a given discipline or competency in the use of instructional strategies. Furthermore, those who exhibit these qualities most consistently state that they work hard at attaining them and are very conscious of their actions and their effects.

These highly conscious teachers are examples of what Schön (1983) has termed the “reflective practitioner,” the professional who acquires expertise by learning in the action environment. Based on a study of Ohio State faculty (Chism, 1988), a model of faculty growth in teaching emerged that suggested that effective teachers develop by maximizing what they learn through experience. They engage in cycles of learning during which they try a practice, observe its effects and decide how and when they will use a similar practice. Most instructors often carry on the process unsystematically without a great deal of conscious attention to the learning process. What distinguishes those who learn best, however, are the very level of conscious reflection and quality of information they bring to bear in determining the effects of a practice in a particular context. The best instructors know not only what they are doing, but why it is working and why it is likely to work in one kind of environment and not in another. Although they may have some natural personality characteristics that support their success, they also work very hard at their teaching and continually try to improve.

A number of writers have observed differences in style among instructors. They classify them according to a number of dimensions that represent how the teachers approach their students, the ways in which they think learning takes place, and personal strengths and preferences. Lowman (1996) observes that exemplary college instructors “appear to be those who are highly proficient in either one of two fundamental sets of skills: the ability to offer presentations in clearly organized and interesting ways [intellectual excitement] or to relate to students in ways that communicate positive regard and motivate them to work hard to meet academic challenges [interpersonal rapport]. All are probably at least completely competent in both sets of skills but outstanding in one or, occasionally, even both of them” (p. 38).

Five Teaching Styles
Grasha (1996) advocates an “Integrated Model” of teaching and learning styles, recognizing that individual teachers will naturally exhibit different styles, but stressing that teachers must cultivate certain styles so that they can use approaches that are appropriate to the instructional situations and kind of learners they encounter. For example, Grasha observes that a blend of the Expert-Formal Authority styles works best with learners who are dependent and less capable with the content. Grasha advocates that teachers reflect on their stylistic approaches and make conscious decisions about these. His book, Teaching with Style, provides many exercises for faculty to use in thinking about style. Grasha’s five teaching styles are below:
Expert. Concerned with transmitting information from an expert status; challenges students to enhance their competence

Formal Authority. Concerned with the acceptable ways to do things and providing students with the structure they need to learn

Personal Model. Believes in teaching by personal example; oversees and guides students to emulate

Facilitator. Emphasizes the personal nature of teacher-student interactions; guides students toward developing their capacity for independent action

Delegator. Concerned with developing students’ capacity to function autonomously; encourages independent projects

**Personal Adjustments**

As with any new work environment, instructors new to the university will find it necessary to make anticipated as well as unanticipated adjustments. *The New Faculty Member* by Boice (1992) offers suggestions that can be useful for new university instructors, particularly those in their first-year of teaching. Boice interviewed and studied 200 new instructors on two campuses (one comprehensive and one doctoral) over two years, the majority of whom had little preparation for teaching in their graduate experience. For most new instructors in the study, the first year was full of surprises and disappointments in the areas of collegial support, preparation time and student ratings. Three groups emerged from the study:

- **Inexperienced new faculty** (faculty with less than 2 years since receiving a terminal degree)
- **Returning new faculty** (faculty who came from careers outside academe)
- **Experienced new faculty** (faculty who were teaching full-time at another campus)

**Inexperienced new faculty.** A majority of inexperienced new faculty felt a lack of collegial support. They thought they should have received more concrete help from experienced colleagues, particularly with copies of previously used syllabi and other course material. Inexperienced new faculty characterized chairs and senior faculty as expressing the attitude that the ‘best faculty’ figure things out on their own. By their second year, many first time faculty turned to one another for support. They sought out senior faculty and used them as role models. Inexperienced new faculty were also open to trying various teaching methods and styles in the classroom. Inexperienced new faculty who were most satisfied and successful during their first two years (labeled as “quick starters”), expressed interest in learning the creative ways senior colleagues had devised to make learning easier and more interesting to their students.

**Returning new faculty** were most vocal about the lack of collegial support. Perhaps they expected to feel the level of acceptance similar to what they previously experienced as faculty. This would be a difficult expectation to meet and one on which returning faculty might want to reflect.

**Experienced new faculty** new to campus reported that they received useful advice and encouragement from senior faculty. Experienced new faculty also reported the least number of difficulties in adapting to all aspects of their new teaching position.
Boice (1992) revealed that the majority of instructors in all three newcomer categories defined teaching in ways that viewed students as passive recipients of information. New faculty tended to seek to improve their teaching, but they did not seek external advice on how to make those improvements. The majority of new faculty reported that their teaching ratings from students were lower than they had expected.

All three categories of new faculty described themselves as being well prepared and knowledgeable, interested in students, good at explaining/conceptualizing and good at motivating students. They equated good teaching with clear, knowledgeable and inspiring lectures. Most new faculty described their classroom styles in ways that indicated to the researcher that the vast majority defined teaching at a very simplistic level; a level that has been called “facts-and-principles lecturing.”

At the end of the first semester, between 50 and 80 percent of all categories of new faculty received student ratings below the mean rating for their campus. Throughout their second year, student rating of their teaching improved but continued to be lower than desirable. However, by this time the new faculty began attributing the disappointing ratings to their students’ inability to handle challenging material. New faculty rarely sought out advice for ways of translating ratings into alternative styles of teaching. New faculty taught defensively, concentrating on covering the material and getting the facts straight. This “more of the same” approach was not a successful approach.

Boice (1992) describes the quick starters as resilient, insightful, and positively identified with the campus. Quick starters demonstrated resilience by not taking their early feelings of isolation personally but rather sought support from senior faculty and identified those who could be helpful. They demonstrated their insight as they gathered information about their new role and new environment. Quick starters were able to separate gossip and small talk from valuable and reliable information. Perhaps because they quickly identified helpful senior faculty, quick starters began to feel themselves as part of the campus more readily than other new faculty.

After studying new faculty at different institutions over several years, Boice (1991, 1992) identified several characteristics of faculty he calls “quick starters,” those who adjust easily and make steady progress in their work. According to Boice, quick starters:

- Are concerned about students’ active involvement in the learning process.
- Avoid feelings of isolation by developing social and professional networks with colleagues and others
- Seek advice on teaching from colleagues and consultants
- Avoid being critical and negative about undergraduate students
- Learn to balance time across teaching, research and service
- Are highly energetic, curious and humorous

Quick starters quickly learned to carry out competently and efficiently their teaching responsibilities and integrate their teaching with their other scholarly activities. Critical to the success of new instructors was collegial support, a positive view of teaching, and control over preparation time vs. research vs. writing time.
Quick starters took a very different approach to their teaching. They were more relaxed and even though they taught in a facts-and-principles manner, they left time for student participation. Effective instructors had good rapport with students and encouraged classroom involvement through verbal and non-verbal cues. The quick starters enjoyed teaching and their students and expressed positive and optimistic attitudes about the undergraduates on their campuses.

The biggest mistake most new instructors made was spending too much time preparing material for lectures. Rather than providing students with the structure for thinking about the material and including only necessary content, many new instructors tried to cover too much. A good number of new instructors openly admitted to over-preparing lectures, to having too much material to present without hurrying their lectures and to being perfectionistic beyond the level that could be rewarded in most classes. Knowledge of these errors did not seem to make any difference in their behaviors.

For all new instructors in the study, there was a constant anticipation that the next semester would bring about greater balance between their teaching and their scholarly writing or research. As semesters came and went, this balance was not achieved by most.

There was an expectation that the summer would provide the time for them to bring about a better balance between teaching, research and writing. Rarely did this occur. Most instructors were not as productive over the summer as they had anticipated. However, the *quick starters* were able to reduce their teaching preparation time by the first half of their second year. For many new instructors, it is rather frightening to consider cutting back on preparation time and giving up writing copious notes in advance of the lecture. Boice found that it takes a “leap of faith” and that colleagues can be helpful in encouraging their new colleagues to focus on particular goals for each class and to keep the details to what is necessary for student level comprehension.

**Seven Attributes of Successful “Quick Starters”**

The quick starters were those new faculty who, during their first two years, were exemplary teachers according to student ratings, Boice’s (1991) own ratings, and faculty’s self-descriptions. In summary, the attributes and behaviors of the quick starters included:

- Positive attitudes about students
- Relaxed paced lectures with student involvement
- Low levels of complaining about students, workload, etc.
- Actively seeking advice about teaching
- Quicker transition to moderate levels of lecture preparation
- Superior investment in time spent on scholarly and grant writing
- Readiness to improve their teaching

The most obvious advice for new faculty is to follow the model set by quick starters. Finding balance in time expenditure is critical. Boice suggests that new faculty keep
... new faculty [should] keep daily records of how they spend their time and seek to streamline classroom preparation time to approximately one and a half-hours per classroom lecture hour.

With regard to teaching, Boice directs new faculty to seek advice on how to interpret student ratings and to improve teaching accordingly. Further, he suggests that new faculty attend to social networking, spend time on scholarly writing each day and integrate research and scholarly writing interests into lectures.

Eison (1990) stresses the importance of confidence for new teachers. Confidence is built upon good planning, setting clear goals and cultivating a sense of relaxation and self-esteem. Eison advises new teachers to avoid perfectionism, recognize their limitations and see it as scholarly, rather than a sign of failure, to admit that they do not have all the answers and to seek assistance from colleagues.

Sustaining Growth and Avoiding Burnout
Sustaining growth in teaching involves continuing to learn. Chism (1993), using a model of teaching development rooted in experiential learning, suggests that experienced instructors can avoid burnout and continue to improve through a range of activities such as:

- Stimulating their thinking by taking advantage of opportunities to learn of new approaches to teaching through reading
- Attending workshops and conferences, observing colleagues and joining book groups or seminars on teaching topics
- Relying on colleagues or teaching consultants to provide them support as they experiment with teaching or to challenge them to try new things
- Obtaining regular, systematic feedback on their teaching
- Reflecting on their teaching continually and making changes based on those reflections

Balancing the Work Load
The challenge of being the kind of instructor who continually strives to improve instructional technique is approached by instructors who are simultaneously conducting their own studies or research program as well as engaging in service activities and maintaining a personal life. Instructors can feel caught among all these roles and have the sense that they are not performing up to their personal standards. Severe stress can result. Psychology professor Grasha (1987) suggests ways to control stress and balance the work load:

1. **Be more selective about which requests to accept outside the teaching and research duties.** Avoid the feeling that you must please others at personal expense to yourself. It is acceptable to not provide a reason for refusing requests.

2. **Set priorities.**
   Look at your calendar before each week begins with the following questions in mind:
   - Does the task have to be completed as designed?
   - Is the task something that can be delegated to others?
Can completion of the task be delayed for a period of time?
Is it absolutely necessary to do this task at all?

After addressing the questions to eliminate some tasks, schedule social and recreational time as well as uninterrupted “work” time for writing or extended projects. Make effective use of these designated times as seriously as you take scheduled meetings.

3. **Use quick relaxation techniques.**

A number of techniques can be used to enhance your well-being.

- Tensing the body for a count of ten and then breathing deeply in and out to a count of four for a period of three to five minutes is especially effective after a tension-producing event.
- After an hour of repetitive activity (such as writing or grading) stop and stretch your hands, wrists, arms and shoulders.
- Writing, such as keeping a personal journal or writing letters that are not mailed, can help during extremely stressful periods.
- Feeling connected with your colleagues and students can increase your job satisfaction and productivity.
- Smiling improves your immune system and your perspective on life—laughter is even better!

4. **Positive thinking.**

Stress often occurs when people feel that they cannot perform to self-expectations. Reevaluate your expectations, seek small wins, focus on achievements rather than deficiencies and seek social support (Grasha, 1996 citing James).

**References**


**Selected Resources**


Copyright Basics for the Academic Classroom

Contributed by Rebecca P. Butler, Ph.D.
Department of Educational Technology,
Research and Assessment
Northern Illinois University

Questions to Ask When Borrowing, Copying, or Performing a Work

1. Does your use of the work constitute a fair use?
2. Is the work in the public domain?
3. Do you have permission from the owner of the work?
4. Do you have a license to borrow/copy/perform the work publicly?
5. Does this use fit under the classroom or another statutory exemption?
6. Does this use fit under copyright guidelines?

If the answer to any of these questions is “yes,” go ahead and copy or perform the work. If you answer “no” to all of these questions, either find another source or create your own.

Fair Use Factors and (What Uses Tip in Favor of Fair Use)

1. Purpose and Character of the Use (teaching in a public nonprofit institution)
2. Nature of the Work (nonfiction, published works)
3. Quantity to Be Borrowed (the smallest amount borrowed, that is not the HEART of the work)
4. Marketability of the Work (use of the work does not effect its marketability by the copyright owner)

Public Domain

1. Works free to use any way that you want.
2. Works published before 1923.
3. Works for which the owner/creator has given up all ownership.
5. Public domain comes into being 70 years after the death of the creator/owner of the work.

Permission Letter Contents (Get it in writing.)

1. Your name and address;
2. Date;
3. Name and address of copyright owner/creator or publisher;
4. Request for permission to copy work;
5. Work title, copyright date, publisher, place of publication, distributor, other information imperative to the specific work under consideration;
6. How the work under consideration will be used;
7. Number of times the work under consideration will be used;
8. Date by which permission is needed;

“Public Domain” [are] works free to use any way that you want.
9. If the wrong person has been contacted, request for name of the correct person;
10. Inclusion of a self-addressed, stamped envelope;
11. Thank you;
12. Signature of Requestor;
13. Place for owner/creator/publisher to sign and date that permission has been granted.

Licenses
1. A contract purchased by or given to the user by the owner of the work or a clearinghouse designated to represent the owner.
2. The license states specifically in what way the user may borrow, copy, or perform the work.

Classroom Exemption
1. Provides for use of lawfully-obtained copyrighted materials in F2F instructions and in transmissions.
3. Use of copyrighted work must be:
   a. In a nonprofit educational institution;
   b. In a classroom or similar place of instruction;
   c. A performance or display that is a regular part of systematic instruction;
   d. A performance or display directly related to the teaching content.

Guidelines
1. Congressionally created.
2. Not law but helpful when trying to abide by law.
3. Not binding.
4. By following, users are considered to have acted in good faith.
5. Represent minimums rather than maximums.
   a. motion media: 10% or 3 min.
   b. text: 10% or 1000 words
   c. music/lyrics: 10% or 30 seconds
   d. illustrations/photos: 5 or 10%
   e. database: 10% or 2500 cells

Selected Resources
Association for Information Media and Equipment www.aime.org


Copyright Clearance Center http://copyright.com
U.S. Copyright Office [www.loc.gov/copyright](http://www.loc.gov/copyright)

Creative Commons (2011). [http://creativecommons.org/](http://creativecommons.org/)

[Creative Commons develops, supports, and stewards legal and technical infrastructure that maximizes digital creativity, sharing, and innovation.]
Course Design: A Systematic Approach

Following the steps of a widely accepted Instructional Design (ID) model can assist instructors in preparing and delivering meaningful and effective instruction. “The term instructional design refers to the systematic and reflective process of translating the principles of learning and instruction into plans for instructional materials, activities, information resources, and evaluation” (Smith and Ragan, 1999). It is during this systematic process that you should consider the audience for whom the instruction is designed, what goals drive the instruction, and which objectives will students follow to ensure they do what you want them to do.

Instructional Design (ID) is a process that can help improve the design and development of courses and course content. Often associated with training in business and industry, ID has been widely used by educators in revising and modifying existing courses and to plan and implement new instruction. The process is systematic and systemic; steps are taken in the design (planning) phase of the course that are dependent upon each other to generate a successful product (course). One of the more tried and true ID models is ADDIE (Analyze, Design, Develop, Implement, Evaluate) although many others exist and are used in different learning situations. The ADDIE model is presented below.
Analyze
When using the ADDIE model, the first step is to analyze and understand all aspects of the instructional problem. In other words, why are we teaching what we teach, who are our learners (students), and will instruction get our students to where we want them to be at the end of the semester? Knowing your students will help guide your course design and even if the semester is about to begin or already has begun, it’s good to know something about your students.

Example: Have students take a self-assessment inventory at the beginning of the semester to get better acquainted with the skills and knowledge they bring to the course. The inventory could include questions related to the course content, i.e., “What events lead to the American Civil War?” or “How many groups are represented in the Periodic Group of Elements?” or “What skills do you bring to this class?” Another part of the self-assessment could ask students...

Design
In the design phase, consider all components of instruction (from beginning to the end). When designing instruction it often helps to work backwards and think about how you will evaluate, implement, and develop materials, methods, and media that facilitate instruction. This is the creative and inventive phase in which you can collaborate with colleagues and be open to new techniques and approaches. During the design phase, write learning objectives for events and tasks required of students, determine which methods (lecture demonstration, group work), materials (handouts, lab equipment, CD ROM’s) and media (computer multimedia, flip charts, video) will be incorporated in the course. Keep in mind that all materials, methods, and media should be carefully selected based on the learning objectives. Effective instruction should be well planned and nothing should be designed arbitrarily.

Example: Identify what students are supposed to learn in the course and write instructional objectives for each of them; decide what kinds of handouts and/or worksheets will be used for particular content areas; determine how many examinations and/or quizzes will be given during the semester.

Development
Development (or production) is the step where you actually create the “things” used in teaching: the lecture material, the Web site that supports the course, the handouts and assessment rubrics that instructors and students will use, a PowerPoint presentation, or a video tape on case studies digitized for viewing online. You will have to decide whether or not to create instructional products yourself or to employ an expert to create that special video or website. Ask yourself whether you can get by with an existing product, if it can be modified, or to begin from scratch. Time is of the essence at this point, and efficient instructional design relies on best practice, from planning to evaluation.

Validate what is developed during this phase—this is sometimes called rapid prototyping (or continuous evaluation)—which ensures everything which has been created goes well and is checked against goals and learning objectives.
Prototyping keep things running smoothly and minimizes potential problems later in the semester.

**Example:** Create activities conceptualized in the design phase—prepare the actual materials which will be used for an in-class activity such as a handout or worksheet.

**Implement**

*Implement* is where the actual instruction takes place. Students rely on the expertise of their instructors to present the content in a meaningful way. At the same time, students should be engaged in the learning process. All of the planning done in the design and development stages is onstage in the *implementation* phase. This is where instructor’s expertise shines, along with the selected approach to teaching, whether in the classroom, the lab, the field setting or online. Implementation then, involves facilitation of learning.

**Example:** After going through the design and develop phases in preparing course materials, now is the time to follow the plan and teach the course! It’s a good idea to keep an ongoing record of the good and the not so good aspects of the implementation phase. These notations (known as formative evaluation) will be helpful in delivering subsequent material, whether during the next class period or the next semester.

**Evaluate**

*Evaluation* happens at two levels: *formative* which tells us what is occurring and *summative* which tells us what has occurred. Formative evaluation takes place during the planning and instruction and evaluates what instructors and students are doing. Summative evaluation occurs after instruction—here we can evaluate the instruction and what the students have done. Evaluation tells us whether or not the students have participated in and retained the information stated in the instructional objectives. With data in hand, instructors need to ask, “How can I modify the instruction to improve its next presentation?”

**Examples (formative):**

1) Keep a notebook of what happened during the class period – how well an activity went, the feedback received from the students, your thoughts and feelings of the lecture. Use these notes to plan new activities, lectures, and assessments.

2) Elicit feedback from students at the end of the class period, every two-to-three weeks, or midway through the semester. This form of feedback can simply be a few questions on their impression of a particular lecture or activity, questions they might have on content, and how they feel about their own progress in the class. This information provides a snap shot of the course and if any adjustments need to be made.

**Example (summative):** Give students a quiz to evaluate knowledge level. If the results are less than what you had expected, determine the cause (could the delivery method be inappropriate for the content or are students not reading the
material) and proceed from there (have students been given adequate time to practice the material).

**Summary**
The systematic instructional design process can be used to create effective instruction which will be meaningful for instructors and students. Following the basic processes and procedures that constitute instructional design, instructors can become more efficient in developing their courses and approaches to different learning situations.

**References**

**Selected Resources**


Creating a Course Syllabus

Planning the Syllabus
The syllabus is a primary source of information to guide your students throughout the semester and should carefully explain course components. Think of the syllabus as a roadmap you and your students can follow as you navigate the course throughout the semester.

Most likely, your syllabus will be one of the first substantial means of communication between you and your students. The ultimate goal of a well-designed syllabus is to ensure students understand what is expected of them throughout the semester. Therefore, the syllabus should be easy to read, understand, and follow. Use welcoming and encouraging language and what you will do to help students throughout the semester.

Find out whether your department/school and/or college have policies that require specific information to be included on the syllabus. This might include policies on grading, attendance, make-up work, make-up exams and information related to standards and accreditation.

If you are preparing a syllabus for a course that has multiple sections, check with your department chair to see what content, books, and other course components should be consistently provided in all sections of the same course. If you are teaching a course for the first time, review the approved course proposal to adequately represent course goals, learning objectives and content.

Goals and Learning Objectives
Goals and learning objectives are the heart of your instruction and should be carefully written. Course goals and learning objectives represent what students should be able to do after successfully completing course modules and the course; they should be observable and measurable and be stated in terms of student outcomes. Plan activities, assignments, and outcomes which help students achieve the goals and learning objectives. When planning assignments and class activities, consider listing with them which course goals and learning objectives will be achieved when these tasks are completed. By showing relevance of course requirements with related goals and learning objectives students will better understand why assignments and activities have been assigned.

Methods and Activities
Select appropriate teaching methods, activities, assignments, and assessment strategies you plan to use throughout the semester and make sure they reflect the course goals and learning objectives. Also, consider how to present course content in different ways (visual, auditory, and hands-on) to meet the varied learning preferences of your students.

Consider including in the syllabus a teaching philosophy that conveys your enthusiasm for teaching and the subject and respect for your students.
importance and benefits of why students should take the course. Adding a positive and optimistic teaching philosophy statement to your syllabus can send an important message to your students of your love for the subject and that you are truly interested in students’ success in the course.

**Grading System**
Decide upon a grading system and check with your department chair, if necessary, to make sure it is consistent with departmental standards. Choose a grading system that is suitable for the course and communicates to your students your expectations about what is important and what you expect from them. Grading criteria can be made available in the form of rubrics and can increase objectivity when grading students’ work.

**Textbooks**
Adopt appropriate textbooks and resources and relate required readings to course goals, learning objectives, activities and outcomes. Ask your department chair if certain books are required for the course and contact your department secretary or the bookstore for book order deadlines.

**Course Schedule**
Many faculty provide a format that clearly lays out the course meeting dates, assignments, readings, exams, and due dates for each requirement which can be very useful to help students plan for the semester. Course schedules also help you stay on task, too! If you plan on developing a course calendar or schedule, refer to the NIU calendar to carefully sequence quizzes, exams, projects, and assignments to avoid overlapping due dates and other potential conflicts.

**Developing the Course Syllabus**
Now that you have planned the overall content of the syllabus, it’s time to put it all together and develop it. You can customize your syllabus to match your subject and teaching style and making it personal does not mean it shouldn’t be organized and thorough. The order in which the sections are presented here follows many syllabus models but can be arranged to fit your needs.

**Course Information.** Include the course designator and number (e.g., ENGL 103), the section number, course title, total credit hours, classroom location, course day or days and meeting times, any related lab or recitation session locations and course Web site URL if you have one (e.g., http://webcourses.niu.edu which is the URL for accessing Blackboard).

**Course Description.** Include the complete catalog course description and the course prerequisites. You can also provide a customized description that provides students with a more personal perspective on the course and how being enrolled will affect them in their studies and after they leave NIU.

**Instructor Information.** Include your name, title, office location, phone number, email address, office hours (face-to-face and virtual) and other ways in which students can contact or interact with you.
Teaching Assistant information if One Has Been Assigned to You: Provide his or her name, office location, phone number, email address, office hours and the role the TA plays in the course.

Course Requirements. List all assignments, readings, and exams and describe the requirements for successful completion of these activities. Mention that samples of projects and assignment can be made available in your office or electronically through Blackboard. Also, to help minimize the number of pages in the syllabus, details and guidelines about assignments and projects can be made available in Blackboard.

Course Assessment. Provide a list of standards and criteria for each graded course component such as assignments, exams, and class participation so students know your expectations. State how much each graded course activity will count toward the final course grade. Include the course grading scale so students can keep track of their progress. State how students will be rewarded for effort and progress and if you will allow extra credit—state how these will be used toward a student’s final grade. State specifically how final grades will be determined and provide information such as whether you weigh letter grades, use accumulated points, or if you will grade on a curve.

Course Resources (Required and Recommended). Provide full citation and edition number for textbooks and other course resources. Provide information where students can purchase these resources, their cost (if known), and if using e-books or alternative sources is acceptable. Include any course-related Websites and Blackboard links if applicable (e.g., http://webcourses.niu.edu which is the URL for accessing Blackboard). Provide information on support services such as the NIU Center for Access-Ability Resources, Writing Center, Learning Centers, and ways students can obtain peer tutoring (this is especially helpful for undergraduate students).

Course Policies and Accommodations. Provide clear and succinct information on attendance, late arrivals and early departures, late work, missed quizzes and exams, and make-up work. Also include information on use of copyrighted materials, individual and group work and classroom comportment such as mutual civility, respectfulness, use of cell phones or electronic devices, and eating and drinking in the classroom. Finally, list policies related to lab work such as safety, human subjects and university property.

Receiving Assistance. Include a statement requesting that students with disabilities contact you regarding accommodation needs. Visit the Center for Access-Ability Resources (CAAR) website at www.niu.edu/caar for further information on ways to provide this information to students who request such assistance. Also, you could include a statement that says something about how student success is important to you and that any student who has a disability or any other special circumstance that may have some impact on their work in the class, and for which they might require special accommodations, to contact you early in the semester so that accommodations can be made in a timely manner.
**Academic Integrity.** In a separate and prominent location of your syllabus, include statements on plagiarism, appropriate conduct and discipline regulations. Both of these statements can be found in the NIU Graduate and Undergraduate Catalogs in print form or online. Also, the Faculty Development and Instructional Design Center has created the “Academic Integrity Tutorials for Students and Faculty which are available at [http://www.ai.niu.edu/ai/](http://www.ai.niu.edu/ai/)

**Course Calendar and Schedule.** If you have planned to include course information in a calendar or schedule, provide a list of topics, chapter readings, assignments, exams and other requirements with their due dates. Providing this information in a table format will make it easy to read and reference. In a prominent location on the calendar or schedule, indicate that the schedule is subject to change to accommodate any necessary changes to the course schedule.

**Layout of the Course Syllabus**
The overall visual appeal of the course syllabus can help organize its content and make it easy to read. Use headings, short sentences, outlines, lists, charts and diagrams for organization and quick reference. Instead of completely filling the page with dense text consider leaving some open areas of blank space or even some content-related visuals.

After your syllabus has been created ask a colleague or your department chair to check it for accuracy and clarity. Then, file the syllabus with your department as a record of your course, for use for accreditation purposes and as a reference when students search for course information.

**Course Syllabus Checklist**
To accompany this guide, Faculty Development and Instructional Design Center has created a checklist to help you get started and plan an effective course syllabus. That checklist is available online at [http://www.niu.edu/facdev/programs/handouts/syllabuschecklist.pdf](http://www.niu.edu/facdev/programs/handouts/syllabuschecklist.pdf)
Taming the Cost of Textbooks

Do you know how much the textbook you have selected for your courses will cost students? Is the textbook bundled and sold with a CD or supplementary materials really necessary for the course? How often are new editions of a textbook released by the publisher? Are there significant differences between editions? Answers to these questions and their impact on the cost of textbooks are eye-opening!

In less than 20 years, textbook prices have nearly tripled, “rising at the average rate of six percent per year” (Powers, 2006). The California Public Interest Research Group found that 22 frequently assigned textbooks had an average cost of $131.44 (Capriccioso, 2006). For an undergraduate student taking a full load of courses the cost of textbooks alone can easily add up to several hundred dollars a semester and several thousand dollars over a four-year period. Considering these numbers, it is understandable why there is uproar over the escalating cost of textbooks. To address this issue, state policy makers and universities are exploring ways to ensure students have access to affordable textbooks.

In 2004, the Illinois Board of Higher Education (IBHE) requested university faculty, student groups and bookstore managers to examine college textbook prices and the feasibility of a textbook rental program. The ensuing report states that “although textbook rental programs would provide a lower-cost alternative to students, such programs are inappropriate for the large, research-oriented public universities in Illinois” (State of Illinois Board of Higher Education, 2005). There are, however, ways to make textbooks affordable. Consider the following cost-saving alternatives from the IBHE report, the Chicago Tribune (Bigda, 2007), and other common sense suggestions:

1. Investigate the cost of a textbook before adopting it for a course. If the cost is prohibitive, explore other alternatives such as an electronic version of the book which may be less expensive.

2. Make textbook adoptions early so that students can explore cheaper alternatives for purchasing the book.

3. Increase students’ awareness of textbook purchase or acquisition options, such as used textbooks, electronic texts, discount book sellers, cheaper versions of the same books sold abroad, and reserve copies in the library. Facilitate book exchanges and swaps among students. This could be a service activity for student organizations. See bookswap.com, a student-to-student bulletin board, where students can sell and buy textbooks 24x7.

4. Check textbooks on the same course topics available for other disciplines. Sometimes books on the same topic may be sold at different prices for different disciplines.

5. Avoid requiring more than one textbook for a course. Instead, provide class notes or other materials for content covered in additional textbooks.
6. Analyze the content and price of different textbooks available for the same course. Consider using a less expensive textbook that contains most of the necessary content and provide class materials for the missing information.

7. Use the same textbook for several semesters even if the publisher releases newer editions. Newer editions may only have minor changes or corrections and faculty can notify students about the revisions.

8. Use textbooks with substantial content that can be used for more than one course. In some cases, it may be possible to use one part of a book for an introductory course and the other part for an advanced course.

9. Discourage publishers from bundling textbooks with CDs or supplementary materials that are not essential for the course.

10. Negotiate with publishers for lower prices based on volume purchase or textbook adoptions for several courses. Support publishers who provide low-cost textbooks. Check with bookstores that might have suggestions about negotiating lower textbook prices.

11. Develop your own course materials and post them online or have them sold as a bookstore course pack.

Summary
There may not be one perfect solution for taming the cost of textbooks for all courses. But we can join the ranks of other universities and faculty who are implementing a number of alternatives mentioned above. The results can benefit us all.

References


The First Day of Class: Getting Off to a Good Start

Whether you have been teaching for years or are beginning to teach your very first semester, being prepared for the first day of class takes a fair amount of planning. No matter how hard you try to find your course notes from last semester, discover a new technique to remember your students’ names, or begin using a new technology in the classroom, careful planning for the first day of class is critical to making that first impression on your students (and making you feel good about the class, too).

The following First Day of Class: What Can/Should we do? was developed by the Program for Instructional Innovation at the University of Oklahoma (2006). It is reprinted here with permission. Material in brackets [ ] has been provided for further explanation.

In addition to the information below, as you prepare for the first day or any day of teaching or presenting, try some techniques which have been used by professionals in theatre, film, and television and can help improve your own teaching techniques. Vocal warm-ups such as yawning, humming and warming up the tongue and jaw through some simple exercises by speaking to yourself, out loud, and slowly, such words as

hello, away, until
buhdah guhdah, puhtah cuhtah

or tongue twisters such as

A big black bug bit a big black bear, made a big black bear bleed blood

can help develop better voice intonation and performance in the classroom (Justice, 2006).

What can we do on the first day of class? What should we do?

One common answer is simply to start lecturing: "This is day one, here is lecture one, away we go!" Another possibility is: "Here is the syllabus, go buy your books and we will see you at the next scheduled class period." Neither of these two options seems desirable. But what are some other possibilities?

Several years ago a group of professors at the University of Oklahoma visited each other on the first day of class and then discussed what they saw each other doing. But the discussion quickly went from what they observed, to "What might be done?" They eventually identified nine attractive possibilities, as described below. Do not feel obliged to do all of these, but doing even one or several of them on the first day (or during the first week) would seem to accomplish a number of important tasks for getting a class started in the right way.
1. **Involve students quickly.**
   This can be done in a variety of ways:
   - having students introduce themselves
   - allowing students to think and write silently [why they have enrolled in the course; what skills, abilities they might be able to contribute to the course; expectations they have for the course]
   - having a whole-class or a small-group discussion, etc.
   - [asking students some pointed questions the first day can help break the ice and allow students to feel comfortable contributing to the class early on:
     - What have you heard about me as an instructor?
     - What have you heard about this course?]
   But letting students know right from the outset that they will be active participants seems like a good approach.

2. **Identify the value and importance of the subject.**
   Not all students come to all classes with a clear idea of why this subject is important: You may need to help them understand the significance of the course. The sooner this is done, the sooner the students will be ready to invest time and energy in the task of learning the subject matter.

3. **Set expectations.**
   This can involve such things as what you consider appropriate amounts of study time and homework for the class, the importance of turning homework in on time, expectations about in-class behavior, how you want to relate to students, and how much interaction among students is desired. The first day also offers an opportunity to find out what expectations the students have of you and of the class.

4. **Establish rapport.**
   Almost any class will be more enjoyable for both the instructor and the students if they know each other a bit.
   Justice (2006) states that even the way you walk into the classroom the first day can make an impression (or not) on your students. Read the following “scenarios” and decide for yourself which instructor you would rather have for a course:

   **Scenario A.** The instructor rushes into the room a few minutes late while fidgeting with the messy stack of papers he is carrying, some of them falling to the floor. He keeps looking at his watch and begins the class by saying “I think we should begin with chapter one.”

   **Scenario B.** The instructor confidently walks into the room, making eye contact with and smiling at the students, and says “Good morning/afternoon/evening.” She places her book bag on the table and, walking toward the students, asks, “How is everyone is today?”
Scenario C. The instructor briskly walks into the room, carrying several large books which she neatly places on the corner of the desk, opens her PowerPoint presentation and, standing behind the podium, begins to read from the slides.

5. Reveal something about yourself.
Sometimes students can relate to you more productively if they can see you as something more than just an authority figure or subject matter expert. Sharing personal stories and being able to laugh at yourself can help this process.

6. Establish your own credibility.
Establishing credibility can happen automatically, but at other times students need to know about your prior work experience, travel experience, or research and publications in an area. Having this knowledge can help students gain confidence that “you” know what you are talking about.

7. Establish the "climate" for the class.
Different instructors prefer different classroom climates: intense, relaxed, formal, personal, humorous, serious, etc. Whatever classroom climate you want, you should try to establish this early and set the tone for the rest of the semester.

8. Provide administrative information.
This often takes the form of going through the syllabus, presuming you have a syllabus with this information in it: material the students will need
- what kind of homework will be involved
- what your office hours are
- where your office is located
- how the class grade will be determined
- what your policies are regarding attendance, late papers, make-up exams, etc.

9. Introduce the subject matter.
Generally this introduction will be facilitated by starting with some kind of overview of the subject.
- What is it?
- What are the parts of the subject?
- How is it connected to other kinds of knowledge?

Final Note:
Plan what you do on the first day of the semester to happen during the rest of the semester. If you want students to work in small groups during the semester, find something for them to do in small groups on the first day. Set the tone to better help students get a feel for the course.

References
Justice, G. (2006). *The art of teaching: Using performance techniques in the teaching/learning process*. Unpublished manuscript, Department of Theatre Arts, Virginia Tech University. [This document is available in the Faculty Development and Instructional Design Center, Northern Illinois University.]
Selected Resources
Carnegie Mellon University. Enhancing Education, Design & Teach a Course. Make the most of the first day of class (n.d.).
http://www.cmu.edu/teaching/design/teach/firstday.html

Honolulu Community College, Faculty Guidebook (n.d.). Teaching Tips Index: The First Day. First day of class: What can/should we do?
http://honolulu.hawaii.edu/intranet/committees/FacDevCom/guidebk/teachtip/firstday.htm

http://www1.umn.edu/ohr/teachlearn/resources/jit/jit-day1ta/day1tips/index.html

University of North Carolina, Center for Faculty Excellence (2009). The first day of class: Your chance to make a good first impression.
http://cfe.unc.edu/pdfs/FYC1.pdf

Vanderbilt University. Center for Teaching. (2011). First day of class.
http://cft.vanderbilt.edu/teaching-guides/preparing-to-teach/first-day-of-class
Writing Goals and Objectives

“If you’re not sure where you are going, you’re liable to end up some place else.” ~ Robert Mager, 1997

Instructional goals and objectives are the heart of instruction. When well written, goals and objectives will help identify course content, structure the lecture and guide the selection of meaningful and relevant activities and assessments. In addition, stating clear instructional goals and objectives help students understand what they should learn and exactly what to do to achieve them.

Course Goals

A course goal may be defined as a broad statement of intent or desired accomplishment. Goals do not specify exactly each step, component, or ways to accomplish the task but they help pave the way to writing good instructional objectives. Typical course goals include a number of subordinate skills which are further identified and clarified as instructional objectives.

For example, an English 101 goal might be to prepare students for English 103. The goal prepare students specifies the big picture or general direction or purpose of the course. Course goals often do not specify student outcomes or how they will be assessed. If you are having difficulty defining a course goal, brainstorm reasons your course exists and why students should enroll in it. Your ideas can then generate course-related goals. Course goals often originate in the course description and should be written before developing instructional objectives.

Course Goal Examples:

Marketing course: Students will learn about personal and professional development, interpersonal skills, verbal and written presentation skills, understanding sales and buying processes, and developing and maintaining customer satisfaction.

Physical Geography course: Students will understand the processes involved in the interactions, spatial variations, and interrelationships between hydrology, vegetation, landforms, and soils and humankind.

Theatre/Dance course: Students will investigate period style from pre-Egyptian through the Renaissance as it relates to theatrical production. Exploration of period clothing, manners, décor, and architecture with projects form dramatic literature.

General Goal Examples:

- Students will know how to communicate in oral and written formats
- Students will understand the effect of global warming.
- Students’ perspective on civil rights will improve
- Students will identify key elements and models used in education
- Students will learn basic math skills
- Students will understand the laws of gravity
WRITING GOALS AND OBJECTIVES

Comparison of Goals and Objectives

<table>
<thead>
<tr>
<th>Goals are:</th>
<th>Objectives are:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Broad, generalized statements about what is to be learned</td>
<td>Narrow, specific statements about what is to be learned</td>
</tr>
<tr>
<td>General intentions</td>
<td>Precise intentions</td>
</tr>
<tr>
<td>Intangible</td>
<td>Tangible</td>
</tr>
<tr>
<td>Abstract</td>
<td>Concrete</td>
</tr>
<tr>
<td>Cannot be validated</td>
<td>Can be validated or measured</td>
</tr>
<tr>
<td>Long term</td>
<td>Short term</td>
</tr>
<tr>
<td>Defined before analysis</td>
<td>Written after analysis</td>
</tr>
<tr>
<td>Written before objectives</td>
<td>Prepared before instruction is designed</td>
</tr>
</tbody>
</table>

**Goals should be written from the instructor's point of view**  
**Objectives should be written from the student's point of view**

Table 1. Comparison of goals and objectives.

Objectives are measurable and observable, goals are not.

**Instructional Objectives**

Once you have written your course goal you can then develop your instructional objectives. Instructional objectives are different from goals in that objectives are narrow, discrete, intentions of student performance whereas goals provide students with a global statement of intent. Objectives are measurable and observable, goals are not (see Table 1). Well-stated objectives clearly tell the student what they have to do, under what conditions the performance takes place, by following a specified degree or standard of acceptable performance. In other words, when properly written, your learners will know exactly what you expect them to do and you will be able to recognize when they have accomplished the task! Generally, each section/week/unit will have several objectives (Penn State University, 2007).

A common instructional objective model, developed by Heinich as cited by Smaldino, Lowther, and Russell (2008) is used by educators from a wide range of disciplines and follows the acronym **ABCD**: **A**=Audience, **B**=Behavior, **C**=Condition, **D**=Degree. Table 2 summarizes these characteristics. This guide will follow the ABCD model as a good starting point when learning how to derive well-stated instructional objectives.

**ABCD Model of Instructional Objectives**

<table>
<thead>
<tr>
<th><strong>Audience</strong></th>
<th>Who will be doing the behavior?</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Behavior</strong></td>
<td>What should the learner be able to do? What is the performance?</td>
</tr>
<tr>
<td><strong>Condition</strong></td>
<td>Under what conditions do you want the learner to be able to do it?</td>
</tr>
<tr>
<td><strong>Degree</strong></td>
<td>How well must the behavior be done? What is the degree of mastery?</td>
</tr>
</tbody>
</table>

Table 2. Characteristics of the ABCD model of instructional objectives. Source: Smaldino, Lowther and Russell (2008), citing Heinich.
It is good practice to write an instructional objective for each behavior you wish to measure. By using the model as illustrated in Table 1, you will easily be able to fill in the characteristics to the right of each letter. This practice will allow you to break down more complex objectives (ones with more than one behavior), into smaller, more discrete objectives.

Behavioral Verbs
Key to writing instructional objectives is to use an action verb when describing the behavior you intend the students to perform. Action verbs such as calculate, read, identify, match, explain, translate, and prepare all can be used to further describe the behavior. On the other hand, words such as understand, appreciate, internalize, and value are not appropriate when writing instructional objectives because they are not measurable or observable. Use these words in your course goals but not when writing instructional objectives. See Verbs to Use in Creating Educational Objectives (Based on Bloom’s Taxonomy), at the end of this section.

Overt behavior: If the behavior is covert or not typically visible when observed, such as the word discriminate, include an indicator behavior to clarify to the student what she or he has to be able to do to meet your expectations (as a written instructional objective). For example, if you want your learners to be able to discriminate between good and bad apples, add the indicator behavior “sort” to the objective: Be able to discriminate (sort) the good apples from the bad apples.

What some instructors tend to forget is to write instructional objectives from the students’ perspective. Mager (1997) contends that when you write instructional objectives you should indicate what the learner is supposed to be able to do and not what you, the instructor, want to accomplish. Also, avoid using fuzzy phrases such as “to understand,” “to appreciate,” “to internalize,” and “to know” which are not measurable or observable. These types of words can lead to student misinterpretations and their lack of understanding of what it is you want them to do.

The Link Between Instructional Objectives and Course Activities and Assessment
After you have written your course goals and instructional objectives, it is time to design course activities and assessments which will tell you if learning has occurred. Matching objectives and activities and assessments will also check to see if you are teaching what you have intended. These strategies and activities should motivate students to gain knowledge and skills useful for success in your course, future courses and real world applications. Table 3 illustrates objective behaviors with related student activities and assessments.
<table>
<thead>
<tr>
<th>Level of Learning For Knowledge</th>
<th>Student Activities and Assessments</th>
</tr>
</thead>
</table>
| **Define** (facts, tables, vocabulary lists) | **Activity:** Self-check quizzes, trivia games, word games  
**Assessment:** Vocabulary test, matching item quiz |
| **Solve or calculate** (concepts) | **Activity:** Have students show examples/non-examples, student-generated flowcharts  
**Assessment:** Equations, word problems with given set of data |
| **Set-up, manipulate, operate, build, demonstrate** (rules and principles) | **Activity:** Suggests psychomotor (hands-on) assessments, design projects and prototypes, simulations  
**Assessment:** Checklists, videotape the session |
| **Describe or explain** (problem-solving) | **Activity:** Case study, small group critical thinking, teamwork, pair share  
**Assessment:** Essays, research papers, discussion questions |
| **Present** (synthesis, create) | **Activity:** Develop a portfolio, design a project  
**Assessment:** Speech, projected presentation |

Table 3. Matching cognitive domain levels of learning (Bloom’s Levels) with related student activities and assessments. Source: Adapted from Penn State University (2007).

**Summary Examples of Instructional Goals, Objectives and Related Assessments**

1. **Instructional Goal:** Know the conditions of free Blacks during antebellum south.  
   **Instructional Objective:** In at least 2 paragraphs, students will describe the conditions of free Blacks in pre-Civil War America, including 3 of 5 major points that were discussed in class.  
   **Assessment:** A traditional essay could be used.

2. **Instructional Goal:** Students will know how to analyze blood counts.  
   **Instructional Objective:** Given a sample of blood and two glass slides, students will demonstrate the prescribed method of obtaining a blood smear for microscopic analysis.  
   **Assessment:** Assessment could be done by instructor observation of student demonstration in a lab. A criterion checklist of critical steps can be used to provide objective scoring.

3. **Instructional Goal:** Students will interpret classic literature.  
   **Instructional Objective:** During the final exam period, students will be able to compare/contrast Shakespeare’s “Merchant of Venice” and Marlowe’s “Jaw of Malta” in terms of plot, character, and social-political themes.  
   **Assessment:** A traditional essay could be used with a criterion-checklist of key similarities and differences in these two plays.
Summary
Instructional goals and objectives are the heart of your instruction. When written well, goals and objectives will assist in identifying course content, help you structure your lecture, and allow you to select activities and assessments that are relevant and meaningful.

Several sources are available which can be used to check the accuracy of your instructional objectives. The sources below provide checklists and other instruments to help you design effective and meaningful objectives.

References
Mager, R. F. (1997). Measuring instructional results: How to find out if your instructional objectives have been achieved. (3rd ed.). Atlanta, GA: CEP Press. [This source focuses on how to determine if your instruction is doing what it is supposed to do. Provides the basic tools through which to measure instructional success]

Mager, R. F. (1997). Preparing instructional objectives: A critical tool in the development of effective instruction. (3rd ed.). Atlanta, GA: CEP Press. [This source presents a comprehensive and detailed description of how to write instructional objectives in an easy-to-read and witty format. This is a “must buy” for anyone interested in writing effective instructional objectives]


Selected Resource
## Verbs Used in Creating Educational Objectives

<table>
<thead>
<tr>
<th>Definitions</th>
<th>Remembering</th>
<th>Understanding</th>
<th>Applying</th>
<th>Analyzing</th>
<th>Evaluating</th>
<th>Creating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remembering previously learned information</td>
<td>Demonstrating an understanding of the facts</td>
<td>Applying knowledge to actual situations</td>
<td>Breaking down objects or ideas into simpler parts and finding evidence to support generalizations</td>
<td>Making and defending judgments based on internal evidence or external criteria</td>
<td>Compiling component ideas into a new whole or propose alternative solutions</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Verbs</th>
<th>Remembering</th>
<th>Understanding</th>
<th>Applying</th>
<th>Analyzing</th>
<th>Evaluating</th>
<th>Creating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arrange</td>
<td>Classify</td>
<td>Apply</td>
<td>Analyze</td>
<td>Appraise</td>
<td>Argue</td>
<td>Arrange</td>
</tr>
<tr>
<td>Define</td>
<td>Convert</td>
<td>Change</td>
<td>Appraise</td>
<td>Agree</td>
<td>Argue</td>
<td>Assemble</td>
</tr>
<tr>
<td>Describe</td>
<td>Defend</td>
<td>Choose</td>
<td>Breakdown</td>
<td>Assess</td>
<td>Attach</td>
<td>Categorize</td>
</tr>
<tr>
<td>Duplicate</td>
<td>Describe</td>
<td>Compute</td>
<td>Calculate</td>
<td>Choose</td>
<td>Attach</td>
<td>Collect</td>
</tr>
<tr>
<td>Identify</td>
<td>Distinguish</td>
<td>Demonstrate</td>
<td>Categorize</td>
<td>Compare</td>
<td>Compare</td>
<td>Comply</td>
</tr>
<tr>
<td>Label</td>
<td>Estimate</td>
<td>Discover</td>
<td>Contrast</td>
<td>Conclude</td>
<td>Conclude</td>
<td>Compose</td>
</tr>
<tr>
<td>List</td>
<td>Explain</td>
<td>Dramatize</td>
<td>Criticize</td>
<td>Define</td>
<td>Describe</td>
<td>Construct</td>
</tr>
<tr>
<td>Match</td>
<td>Express</td>
<td>Employ</td>
<td>Diagram</td>
<td>Defend</td>
<td>Describe</td>
<td>Create</td>
</tr>
<tr>
<td>Memorize</td>
<td>Extend</td>
<td>Illustrate</td>
<td>Differentiate</td>
<td>Diagram</td>
<td>Describe</td>
<td>Design</td>
</tr>
<tr>
<td>Name</td>
<td>Generalize</td>
<td>Interpret</td>
<td>Discriminate</td>
<td>Discriminate</td>
<td>Describe</td>
<td>Develop</td>
</tr>
<tr>
<td>Order</td>
<td>Give examples</td>
<td>Manipulate</td>
<td>Distinguish</td>
<td>Evaluate</td>
<td>Evaluate</td>
<td>Devise</td>
</tr>
<tr>
<td>Outline</td>
<td>Identify</td>
<td>Modify</td>
<td>Examine</td>
<td>Explain</td>
<td>Explain</td>
<td>Explain</td>
</tr>
<tr>
<td>Recognize</td>
<td>Indicate</td>
<td>Operate</td>
<td>Experiment</td>
<td>Judge</td>
<td>Explain</td>
<td>Formulate</td>
</tr>
<tr>
<td>Relate</td>
<td>Infer</td>
<td>Practice</td>
<td>Identify</td>
<td>Justify</td>
<td>Judge</td>
<td>Generate</td>
</tr>
<tr>
<td>Recall</td>
<td>Locate</td>
<td>Predict</td>
<td>Illustrate</td>
<td>Interpret</td>
<td>Interpret</td>
<td>Plan</td>
</tr>
<tr>
<td>Repeat</td>
<td>Paraphrase</td>
<td>Prepare</td>
<td>Infer</td>
<td>Relate</td>
<td>Relate</td>
<td>Prepare</td>
</tr>
<tr>
<td>Reproduce</td>
<td>Predict</td>
<td>Produce</td>
<td>Model</td>
<td>Predict</td>
<td>Rate</td>
<td>Rearrange</td>
</tr>
<tr>
<td>Select</td>
<td>Recognize</td>
<td>Relate</td>
<td>Outline</td>
<td>Select</td>
<td>Select</td>
<td>Reconstruct</td>
</tr>
<tr>
<td>State</td>
<td>Rewrite</td>
<td>Schedule</td>
<td>Point out</td>
<td>Summarize</td>
<td>Summarize</td>
<td>Relate</td>
</tr>
<tr>
<td></td>
<td>Review</td>
<td>Show</td>
<td>Question</td>
<td>Support</td>
<td>Support</td>
<td>Reorganize</td>
</tr>
<tr>
<td></td>
<td>Select</td>
<td>Sketch</td>
<td>Relate</td>
<td>Value</td>
<td>Value</td>
<td>Revise</td>
</tr>
<tr>
<td></td>
<td>Summarize</td>
<td>Solve</td>
<td>Select</td>
<td></td>
<td></td>
<td>Rewrite</td>
</tr>
<tr>
<td></td>
<td>Translate</td>
<td>Use</td>
<td>Separate</td>
<td></td>
<td></td>
<td>Set up</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Divide</td>
<td></td>
<td></td>
<td>Summarize</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>test</td>
<td></td>
<td></td>
<td>Synthesize</td>
</tr>
</tbody>
</table>

Source:
Bloom’s Taxonomy

Benjamin Bloom (1913-1999) was an educational psychologist who was interested in improving student learning. In the late 1940s, Bloom and other educators worked on a way to classify educational goals and objectives, which resulted in three learning categories or “domains” and the taxonomy of categories of thinking. Each of the three categories requires learners to use different sets of mental processing to achieve stated outcomes within a learning situation. Thus, instructional goals and objectives should be designed to support the different ways learners process information in these domains.

- **Cognitive domain** (knowledge) verbal or visual intellectual capabilities
- **Affective domain** (attitudes) feelings, values, beliefs
- **Psychomotor domain** (skills) physical skill capabilities

The “original” Bloom’s taxonomy, Figure 1, is still widely used as an educational planning tool by all levels of educators today. In 2001 a former student of Bloom and others published a new version the taxonomy to better fit educational practices of the 21st century. At that time, the six categories were changed from nouns to verbs because verbs describe actions and thinking is an active process. Figure 2 represents the revised Bloom’s taxonomy. Both models are portrayed as hierarchical frameworks where each level is subsumed by the higher, more complex level – students who function at one level have also mastered the level or levels below it. Using the revised taxonomy, Figure 2, for example, a student who has reached the highest level “Creating” has also learned the material at each of the five lower levels. Thus, a student has achieved a high level of thinking skills.

---

**Why Use Bloom’s Taxonomy?**

Bloom’s Taxonomy can be useful for course design because the different levels can help you move students through the process of learning—from the most fundamental remembering and understanding to the more complex evaluating and creating (Forehand, 2010).
The taxonomy can be helpful as you develop assessments by matching course learning objectives at any given level of mastery. When teaching lower division, introductory courses, you might measure mastery of objectives at the lower levels and when teaching more advanced, upper division courses you would most likely be assessing students’ abilities at the higher levels of the taxonomy.

Instructional objectives are more effective if they include specific verbs which can tell students what they are expected to do. The verbs listed in Table 1 are linked with each level of thinking, which in turn are tied to activities, products and/or outcomes specific to the objective.

Table 1

<table>
<thead>
<tr>
<th>Verbs</th>
<th>Level of Thinking</th>
<th>Potential activities, products or outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>change</td>
<td>Creating</td>
<td>– algorithm</td>
</tr>
<tr>
<td>compare</td>
<td></td>
<td>– framework</td>
</tr>
<tr>
<td>construct</td>
<td></td>
<td>– haiku</td>
</tr>
<tr>
<td>design</td>
<td></td>
<td>– multimedia presentation</td>
</tr>
<tr>
<td>formulate</td>
<td></td>
<td>– game</td>
</tr>
<tr>
<td>hypothesize</td>
<td></td>
<td>– poem</td>
</tr>
<tr>
<td>improve</td>
<td>Evaluating</td>
<td>– story</td>
</tr>
<tr>
<td>plan</td>
<td></td>
<td>– theorem</td>
</tr>
<tr>
<td>propose</td>
<td></td>
<td>– treatment</td>
</tr>
<tr>
<td>argue</td>
<td></td>
<td>– critique</td>
</tr>
<tr>
<td>assess</td>
<td>Evaluating</td>
<td>– judgment</td>
</tr>
<tr>
<td>debate</td>
<td></td>
<td>– opinion</td>
</tr>
<tr>
<td>defend</td>
<td></td>
<td>– recommendation</td>
</tr>
<tr>
<td>dispute</td>
<td></td>
<td>– report</td>
</tr>
<tr>
<td>judge</td>
<td></td>
<td>– self-evaluation</td>
</tr>
<tr>
<td>prioritize</td>
<td></td>
<td>– select</td>
</tr>
<tr>
<td>recommend</td>
<td></td>
<td></td>
</tr>
<tr>
<td>support</td>
<td></td>
<td></td>
</tr>
<tr>
<td>verify</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Adapted from “Bloom’s Bakery, An Illustration of Bloom’s Taxonomy” by Argiro, Forehand, Osteen, & Taylor (2007)
To further develop effective and meaningful instruction, use meaningful and probing questions to elicit student response. Refer to Table 2 to create sample questions or statements at each level of learning to challenge students to move from the most basic skills (remembering) to more complex learning which leads to higher order thinking (creating). Questions to encourage possible thinking at each of the six levels can be used in combination with appropriate verbs and related activities, products and/or outcomes.

<table>
<thead>
<tr>
<th>Remembering</th>
<th>Analyzing</th>
<th>Applying</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recalling information</td>
<td>Distinguishing different parts of a whole</td>
<td>Using information in new way</td>
</tr>
<tr>
<td>- advertise</td>
<td>- analyze</td>
<td>- chart</td>
</tr>
<tr>
<td>- appraise</td>
<td>- attribute</td>
<td>- plan</td>
</tr>
<tr>
<td>- categorize</td>
<td>- compare</td>
<td>- questionnaire</td>
</tr>
<tr>
<td>- contrast</td>
<td>- differentiate</td>
<td>- spreadsheet</td>
</tr>
<tr>
<td>- distinguish</td>
<td>- examine</td>
<td>- summary</td>
</tr>
<tr>
<td>- identify</td>
<td>- infer</td>
<td>- survey</td>
</tr>
<tr>
<td>- investigate</td>
<td>- organize</td>
<td></td>
</tr>
<tr>
<td>- outline</td>
<td>- separate</td>
<td></td>
</tr>
<tr>
<td>- sequence</td>
<td>- test</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Understanding</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Explaining information and concepts</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- classify</td>
<td>- construct</td>
<td>- collection</td>
</tr>
<tr>
<td>- complete</td>
<td>- demonstrate</td>
<td>- interview</td>
</tr>
<tr>
<td>- dramatize</td>
<td>- examine</td>
<td>- model</td>
</tr>
<tr>
<td>- execute</td>
<td>- illustrate</td>
<td>- building</td>
</tr>
<tr>
<td>- implement</td>
<td>- practice</td>
<td>- presentation</td>
</tr>
<tr>
<td>- show</td>
<td>- solve</td>
<td>- role playing</td>
</tr>
<tr>
<td>- use</td>
<td></td>
<td>- scrapbook</td>
</tr>
</tbody>
</table>

| | | |
| | Analyzing | Applying |
| | Distinguishing different parts of a whole | Using information in new way |
| | - chart | - chart |
| | - plan | - plan |
| | - questionnaire | - questionnaire |
| | - spreadsheet | - spreadsheet |
| | - summary | - summary |
| | - survey | - survey |

<table>
<thead>
<tr>
<th>Applying</th>
<th>Understanding</th>
<th>Remembering</th>
</tr>
</thead>
<tbody>
<tr>
<td>Using information in new way</td>
<td>Explaining information and concepts</td>
<td>Recalling information</td>
</tr>
<tr>
<td>- applying</td>
<td>- understanding</td>
<td>- remembering</td>
</tr>
<tr>
<td>- use information in new way</td>
<td>- explain information and concepts</td>
<td>- recall information</td>
</tr>
<tr>
<td>- collection</td>
<td>- paraphrasing</td>
<td>- definition</td>
</tr>
<tr>
<td>- interview</td>
<td>- peer teaching</td>
<td>- fact charts</td>
</tr>
<tr>
<td>- model</td>
<td>- show &amp; tell</td>
<td>- lists</td>
</tr>
<tr>
<td>- building</td>
<td>- story problems</td>
<td>- recitations</td>
</tr>
<tr>
<td>- presentation</td>
<td></td>
<td>- work-sheets</td>
</tr>
</tbody>
</table>

| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
Table 2

Verbs and Products/Outcomes Based on the Six Levels Bloom’s Revised Taxonomy

Adapted from Good Questions are the Key to Good Research by Dalton (1986)

<table>
<thead>
<tr>
<th>Verbs</th>
<th>Sample question / statement stems</th>
<th>Potential activities, products or outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Creating</td>
<td></td>
<td></td>
</tr>
<tr>
<td>create</td>
<td>– Design a… to…?</td>
<td>– Invent a machine to do a specific task</td>
</tr>
<tr>
<td>compose</td>
<td>– How would you improve…?</td>
<td>– Design a computer lab for your program</td>
</tr>
<tr>
<td>construct</td>
<td>– Formulate a theory for…?</td>
<td>– Create a new product and plan a marketing campaign</td>
</tr>
<tr>
<td>design</td>
<td>– Predict the outcome of…?</td>
<td>– Design a cover for a DVD</td>
</tr>
<tr>
<td>devise</td>
<td>– How would you test…?</td>
<td>– Sell a product</td>
</tr>
<tr>
<td>formulate</td>
<td>– How would you estimate the results for…?</td>
<td>– Write a musical score for …</td>
</tr>
<tr>
<td>generate</td>
<td>– If you had access to all resources how would you deal with…?</td>
<td>– Write about your feelings in relation to…</td>
</tr>
<tr>
<td>hypothesize</td>
<td>– What would happen if…?</td>
<td></td>
</tr>
<tr>
<td>imagine</td>
<td>– How many ways can you…?</td>
<td></td>
</tr>
<tr>
<td>improve</td>
<td>– Develop a new proposal which would…</td>
<td></td>
</tr>
<tr>
<td>invent</td>
<td>– Create new and unusual uses for…</td>
<td></td>
</tr>
<tr>
<td>plan</td>
<td>– Construct a new model that would change…</td>
<td></td>
</tr>
<tr>
<td>predict</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>propose</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td><strong>Evaluating</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>argue</td>
<td>– What is your opinion of…?</td>
<td>– Prepare a brief</td>
</tr>
<tr>
<td>appraise</td>
<td>– How would you prove or disprove…?</td>
<td>– Form a panel to discuss views</td>
</tr>
<tr>
<td>assess</td>
<td>– Would it be better if…?</td>
<td>– Write a letter to… expressing your views on …</td>
</tr>
<tr>
<td>check</td>
<td>– What would you recommend…?</td>
<td>– Write an end of the year report</td>
</tr>
<tr>
<td>debate</td>
<td>– How would you rate the…?</td>
<td>– Write a job aid for…</td>
</tr>
<tr>
<td>decide</td>
<td>– What would you cite to defend the actions…?</td>
<td>– Explain and justify a proposal</td>
</tr>
<tr>
<td>defend</td>
<td>– How could you determine…?</td>
<td>– Select the most useful products for…</td>
</tr>
<tr>
<td>determine</td>
<td>– How would you prioritize…?</td>
<td></td>
</tr>
<tr>
<td>dispute</td>
<td>– Based on what you know, how would you explain…?</td>
<td></td>
</tr>
<tr>
<td>editorialize</td>
<td>– What data were used to make the conclusion?</td>
<td></td>
</tr>
<tr>
<td>judge</td>
<td>– How would you compare the ideas …?</td>
<td></td>
</tr>
<tr>
<td>justify</td>
<td>– How would you compare the people?</td>
<td></td>
</tr>
<tr>
<td>rate</td>
<td>– How would you justify…?</td>
<td></td>
</tr>
<tr>
<td>recommend</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>select</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>support</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>verify</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>Analyzing</td>
<td>Applying</td>
<td></td>
</tr>
<tr>
<td>-------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>advertise analyze appraise attribute categorize compare contrast</td>
<td>– How would you use…?</td>
<td></td>
</tr>
<tr>
<td>attribute classify construct complete demonstrate dramatize examine</td>
<td>– What examples can you find to…?</td>
<td></td>
</tr>
<tr>
<td>execute illustrate implement practice show solve use</td>
<td>– How would you solve ___ using what you’ve learned?</td>
<td></td>
</tr>
<tr>
<td>examine identify infer investigate organize outline separate sequence</td>
<td>– What approach would you use to…?</td>
<td></td>
</tr>
<tr>
<td>test</td>
<td>– What would result if…?</td>
<td></td>
</tr>
<tr>
<td>– What are the parts of features of …?</td>
<td>– What elements would you choose to change …?</td>
<td></td>
</tr>
<tr>
<td>– How is ___ related to …?</td>
<td>What questions would you ask in an interview with …?</td>
<td></td>
</tr>
<tr>
<td>– What is the theme …?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>– List the parts …?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>– What inferences can you make …?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>– How would you classify …?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>– How would you categorize …?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>– What evidence can you find …?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>– What is the relationship between …?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>– What is the function of …?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>– What motive is there …?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>– Identify the different parts …?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>– Gather data and analyze them according to …</td>
<td>– Make a model of an activity</td>
<td></td>
</tr>
<tr>
<td>– Troubleshoot problems with lab equipment</td>
<td>– Paint a wall poster to advertise a special event</td>
<td></td>
</tr>
<tr>
<td>– Design a survey</td>
<td>– Design a marketing strategy for your organization</td>
<td></td>
</tr>
<tr>
<td>– Write a story about an interviewee</td>
<td>– Design a store window for homecoming</td>
<td></td>
</tr>
<tr>
<td>– Arrange a conference and all necessary steps</td>
<td>– Develop a storyboard of digital images to demonstrate a process</td>
<td></td>
</tr>
<tr>
<td>– Make an organizational chart of your unit or department</td>
<td>Use a set of standards to evaluate performance</td>
<td></td>
</tr>
<tr>
<td>– Write a ad campaign for your organization</td>
<td></td>
<td></td>
</tr>
<tr>
<td>– Construct a flow chart which illustrates a system</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Understanding

<table>
<thead>
<tr>
<th>Calculate</th>
<th>How would you classify the type of...?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compare</td>
<td>How would you compare or contrast...?</td>
</tr>
<tr>
<td>Describe</td>
<td>How would you rephrase the meaning...?</td>
</tr>
<tr>
<td>Discuss</td>
<td>What facts or ideas show...?</td>
</tr>
<tr>
<td>Distinguish</td>
<td>Which statements support...?</td>
</tr>
<tr>
<td>Explain</td>
<td>What can you say about...?</td>
</tr>
<tr>
<td>Describe</td>
<td>Which is the best answer...?</td>
</tr>
<tr>
<td>Report</td>
<td>How would you summarize...?</td>
</tr>
<tr>
<td>Restate</td>
<td>Illustrate what you think the main idea was</td>
</tr>
<tr>
<td>Translate</td>
<td>Write and perform a play based on the story</td>
</tr>
<tr>
<td>Retell</td>
<td>Retell the story in your own words</td>
</tr>
<tr>
<td>Paint</td>
<td>Paint a picture of some aspect you like</td>
</tr>
<tr>
<td>Critique</td>
<td>Write a critique of a presentation</td>
</tr>
<tr>
<td>Flow Chart</td>
<td>Prepare a flow chart to illustrate the sequence of events</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Define</th>
<th>What is...?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Describe</td>
<td>Where is?</td>
</tr>
<tr>
<td>Duplicate</td>
<td>How did ___ happen?</td>
</tr>
<tr>
<td>Find</td>
<td>How would you describe...?</td>
</tr>
<tr>
<td>List</td>
<td>Who was...?</td>
</tr>
<tr>
<td>Locate</td>
<td>Who were the main...?</td>
</tr>
<tr>
<td>Name</td>
<td>When did...?</td>
</tr>
<tr>
<td>Recall</td>
<td>Recall...?</td>
</tr>
<tr>
<td>Reproduce</td>
<td>Make a list of the main events</td>
</tr>
<tr>
<td>State</td>
<td>Make a timeline of events...</td>
</tr>
<tr>
<td>Tell</td>
<td>Make a facts chart</td>
</tr>
<tr>
<td>Underline</td>
<td>Recite a poem</td>
</tr>
<tr>
<td>Write</td>
<td>List all the ___ in the story.</td>
</tr>
<tr>
<td></td>
<td>Write a list of any pieces of information you can remember</td>
</tr>
</tbody>
</table>

### Summary

Bloom’s Revised Taxonomy is one of many tools which can be used to create effective and meaningful instruction. Use it to plan new or revise existing curricula, test relevance of course goals and objectives, design instruction and assignments and activities, and develop authentic assessments.

### References

[http://www.coe.uga.edu/epltt/images/bloom.swf](http://www.coe.uga.edu/epltt/images/bloom.swf)


Forehand, M. (2010). *Bloom’s taxonomy.* Retrieved from  

Gagné’s Nine Events of Instruction

Robert Gagné proposed a series of events which follow a systematic instructional design process that share the behaviorist approach to learning, with a focus on the outcomes or behaviors of instruction or training. Each of the nine events of instruction is highlighted below, followed by sample methods to help implement the events in your own instruction. Use Gagné’s nine events in conjunction with Bloom’s Revised Taxonomy to design engaging and meaningful instruction.

The following nine steps have been adapted from Gagné, Briggs, and Wager (1992).

1. **Gain attention of the students**
   Ensure the learners are ready to learn and participate in activities by presenting a stimulus to gain their attention.

   *Methods for gaining learners’ attention include:*
   - Stimulate students with novelty, uncertainty and surprise
   - Pose thought-provoking questions to the students
   - Have students pose questions to be answered by other students

2. **Inform students of the objectives**
   Inform students of the objectives or outcomes to help them understand what they are to learn during the course. Provide objectives before instruction begins.

   *Methods for stating the outcomes include:*
   - Describe required performance
   - Describe criteria for standard performance
   - Learner establishes criteria for standard performance

3. **Stimulate recall of prior learning**
   Help students make sense of new information by relating it to something they already know or something they have already experienced.

   *Methods for stimulating recall include:*
   - Ask questions about previous experiences
   - Ask students about their understanding of previous concepts

4. **Present the content**
   Use strategies to present and cue lesson content to provide more effective, efficient instruction. Organize and chunk content in a meaningful way. Provide explanations after demonstrations.

   *Ways to present and cue lesson content include:*
   - Present vocabulary
   - Provide examples
   - Present multiple versions of the same content, e.g., video, demonstration, lecture, podcast, group work
   - Use a variety of media to address different learning preferences

*Help students make sense of new information by relating it to something they already know or to something they have already experienced.*
5. **Provide learning guidance**

Advise students of strategies to aid them in learning content and of resources available.

*Methods to provide learning guidance include:*

- **Provide instructional support as needed** – as scaffolds (cues, hints, prompts) which can be removed after the student learns the task or content
- **Model varied learning strategies** – mnemonics, concept mapping, role playing, visualizing
- **Use examples and non-examples** – in addition to providing examples, use non-examples to help students see what not to do or the opposite of examples
- **Provide case studies, analogies, visual images and metaphors** – case studies for real world application, analogies for knowledge construction, visual images to make visual associations, metaphors to support learning

6. **Elicit performance (practice)**

Activate student processing to help them internalize new skills and knowledge and to confirm correct understanding of these concepts.

*Ways to activate learner processing include:*

- **Elicit student activities** – ask deep-learning questions, make reference to what students already know or have students collaborate with their peers
- **Elicit recall strategies** – ask students to recite, revisit, or reiterate information they have learned
- **Facilitate student elaborations** – ask students to elaborate or explain details and provide more complexity to their responses
- **Help students integrate new knowledge** – provide content in a context-rich way (use real-world examples)

7. **Provide feedback**

Provide immediate feedback of students’ performance to assess and facilitate learning.

*Types of feedback include:*

- **Confirmatory feedback** – informs the student they did what he or she were supposed to do
- **Corrective and remedial feedback** – informs the student the accuracy of their performance or response
- **Remedial feedback** – Directs students in the right direction to find the correct answer but does not provide the correct answer
- **Informative feedback** – Provides information (new, different, additions, suggestions) to a student and confirms that you have been actively listening – this information allows sharing between two people
- **Analytical feedback** – Provides the student with suggestions, recommendations, and information for them to correct their performance
8. Assess performance

In order to evaluate the effectiveness of the instructional events, you must test to see if the expected learning outcomes have been achieved. Performance should be based on previously stated objectives.

Methods for testing learning include:

- Pretest for mastery of prerequisites
- Use a pretest for endpoint knowledge or skills
- Conduct a post-test to check for mastery of content or skills
- Embed questions throughout instruction through oral questioning and/or quizzes
- Include objective or criterion-referenced performances which measure how well a student has learned a topic
- Identify normative-referenced performances which compares one student to another student

9. Enhance retention and transfer to the job

To help learners develop expertise, they must internalize new knowledge.

Methods for helping learners internalize new knowledge include:

- Paraphrase content
- Use metaphors
- Generating examples
- Create concept maps or outlines
- Create job-aids, references, templates, or wizards

Summary

Gagné’s Nine Events of Instruction can help build the framework with which to prepare and deliver instructional content. Ideally, you should prepare course goals and learning objectives before implementing the nine events (the goals and objectives will actually help situate the events in their proper context). The nine events of instruction can then be modified to fit both the content to be presented and the students’ level of knowledge.

Reference


Suggested Resource

Howard Gardner’s Theory of Multiple Intelligences

Many of us are familiar with three general categories in which people learn: visual learners, auditory learners, and kinesthetic learners. Beyond these three general categories, many theories of and approaches toward human potential have been developed. Among them is the theory of multiple intelligences, developed by Howard Gardner, Ph.D., Professor of Education at Harvard University.

Gardner’s early work in psychology and later in human cognition and human potential led to the development of the initial six intelligences. Today there are nine intelligences and the possibility of others may eventually expand the list. These intelligences (or competencies) relate to a person’s unique aptitude set of capabilities and ways they might prefer to demonstrate intellectual abilities.

Gardner’s Multiple Intelligences

1. Verbal-linguistic intelligence (well-developed verbal skills and sensitivity to the sounds, meanings and rhythms of words)
2. Logical-mathematical intelligence (ability to think conceptually and abstractly, and capacity to discern logical and numerical patterns)
3. Spatial-visual intelligence (capacity to think in images and pictures, to visualize accurately and abstractly)
4. Bodily-kinesthetic intelligence (ability to control one’s body movements and to handle objects skillfully)
5. Musical intelligences (ability to produce and appreciate rhythm, pitch and timber)
6. Interpersonal intelligence (capacity to detect and respond appropriately to the moods, motivations and desires of others)
7. Intrapersonal (capacity to be self-aware and in tune with inner feelings, values, beliefs and thinking processes)
8. Naturalist intelligence (ability to recognize and categorize plants, animals and other objects in nature)
9. Existential intelligence (sensitivity and capacity to tackle deep questions about human existence such as, What is the meaning of life? Why do we die? How did we get here?)
(Source: Thirteen ed online, 2004)

Human Potential

Human potential can be tied to one’s preferences to learning; thus, Gardner’s focus on human potential lies in the fact that people have a unique blend of capabilities and skills (intelligences). This model can be used to understand “overall personality, preferences and strengths” (businessballs.com, n.d.). Gardner asserts that people who have an affinity toward one of the intelligences do so in concert with the other intelligences as “they develop skills and solve problems” (businessballs.com, 2009).
People have different strengths and intelligences. For example, students who are “interviewed” as a means to gain access to a course may be mis-labeled as being less than desirable because of inappropriate assessment (poorly written interview questions, bias toward a perceived “perfect student,” and other narrow criteria). “In life, we need people who collectively are good at different things. A well-balanced world, and well-balanced organizations and teams, are necessarily comprised of people who possess different mixtures of intelligences. This gives that group a fuller collective capacity than a group of identical able specialists” (businessballs.com, 2009).

Gardner’s multiple intelligences theory can be used for curriculum development, planning instruction, selection of course activities, and related assessment strategies. Instruction which is designed to help students develop their strengths can also trigger their confidence to develop areas in which they are not as strong. Students’ multiple learning preferences can be addressed when instruction includes a range of meaningful and appropriate methods, activities, and assessments.

Summary
In summary, integrate educational theories, teaching strategies, and other pedagogic tools in meaningful and useful ways to better address the needs of students. Gardner himself asserts that educators should not follow one specific theory or educational innovation when designing instruction but instead employ customized goals and values appropriate to their teaching and student needs. Addressing the multiple intelligences and potential of students can help instructors personalize their instruction and methods of assessment.

Gardner’s Multiple Intelligences
Table 1 below highlights the primary seven intelligences with further details on their attributes. Refer to this chart as you prepare instruction, related activities, and assessments.

Adapted from businessballs.com (2009)
### Table 1

<table>
<thead>
<tr>
<th>Learning style and preferences</th>
<th>Description</th>
<th>Roles</th>
<th>Tasks, activities and assessments</th>
</tr>
</thead>
</table>
| **Words and language**        | – written and spoken words  
– interpretation and explanation of ideas and information via language  
– understands relationship between communication and meaning | – copywriters  
– editors  
– historians  
– journalists  
– lawyers  
– linguists  
– poets  
– PR and media consultants  
– speakers  
– teachers  
– professors  
– trainers  
– translators  
– TV and radio presenters  
– voice-over artists  
– writer | – edit a peer’s paper  
– give an oral presentation  
– list the strengths and weaknesses of a product  
– write a eulogy  
– write directions to accompany a map |
## LOGICAL-MATHEMATICAL Intelligence

<table>
<thead>
<tr>
<th>Learning style and preferences</th>
<th>Description</th>
<th>Roles</th>
<th>Tasks, activities and assessments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Logic and numbers</td>
<td>– analyze problems</td>
<td>– analysts</td>
<td>– analyze how a computer works</td>
</tr>
<tr>
<td></td>
<td>– detecting patterns</td>
<td>– arbitrators</td>
<td>– assess the value of a business or a proposition</td>
</tr>
<tr>
<td></td>
<td>– perform mathematical calculations</td>
<td>– bankers</td>
<td>– create a process</td>
</tr>
<tr>
<td></td>
<td>– scientific reasoning and deduction</td>
<td>– certified public accountants</td>
<td>– devise a strategy to achieve an aim</td>
</tr>
<tr>
<td></td>
<td>– understands relationship between cause and effect toward a tangible outcome or result</td>
<td>– computer programmers accountants</td>
<td>– perform a mental mathematical calculation, create a process to measure something</td>
</tr>
<tr>
<td></td>
<td></td>
<td>– engineers</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>– insurance brokers negotiators</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>– researchers</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>– scientists</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>– statisticians</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>– traders</td>
<td></td>
</tr>
</tbody>
</table>
### MUSICAL Intelligence

<table>
<thead>
<tr>
<th>Learning style and preferences</th>
<th>Description</th>
<th>Roles</th>
<th>Tasks, activities and assessments</th>
</tr>
</thead>
</table>
| **Music, sound, rhythm**      | – awareness, appreciation and use of sound  
|                               | – recognition of tonal and rhythmic patterns  
|                               | – understands relationship between sound and feeling | – acoustic engineers  
|                               |                                                      | – composers  
|                               |                                                      | – DJs  
|                               |                                                      | – entertainers  
|                               |                                                      | – environment and noise analysts  
|                               |                                                      | – music producers  
|                               |                                                      | – musical instrument repair specialists  
|                               |                                                      | – musical performers  
|                               |                                                      | – singers  
|                               |                                                      | – voice coaches | – coach someone to play a musical instrument  
|                               |                                                      | – compose media jingles  
|                               |                                                      | – identify music for malls and retail stores  
|                               |                                                      | – lead a choir  
|                               |                                                      | – perform a musical piece  
|                               |                                                      | – review a musical play  
<p>|                               |                                                      | – whistle a tune |</p>
<table>
<thead>
<tr>
<th>Learning style and preferences</th>
<th>Description</th>
<th>Roles</th>
<th>Tasks, activities and assessments</th>
</tr>
</thead>
</table>
| **Body movement control**     | – eye and body coordination  
|                               | – manual dexterity  
|                               | – physical agility and balance | – anthropologists  
|                               |                               | – athletes  
|                               |                               | – biologists  
|                               |                               | – dancers  
|                               |                               | – geologists  
|                               |                               | – instrumentalists  
|                               |                               | – nurses  
|                               |                               | – physical education teachers  
|                               |                               | – physical therapists  
|                               |                               | – physicians actors  
|                               |                               | – sign-language interpreters | – arrange workplace furniture  
|                               |                               |                               | – demonstrate a sports technique  
|                               |                               |                               | – design a window display  
|                               |                               |                               | – interpret a speech using American sign language  
|                               |                               |                               | – prepare samples for magnification and testing  
|                               |                               |                               | – put together a piece of modular furniture  
|                               |                               |                               | – ride a horse  
|                               |                               |                               | – stack books on a shelf |
## Spatial-Visual Intelligence

<table>
<thead>
<tr>
<th>Learning style and preferences</th>
<th>Description</th>
<th>Roles</th>
<th>Tasks, activities and assessments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Spatial-visual Images and space</strong></td>
<td>interpretation and creation of visual images, pictorial imagination and expression</td>
<td>architects</td>
<td>compose a photograph</td>
</tr>
<tr>
<td></td>
<td>understands relationships between images and meanings and between space and effect</td>
<td>artists</td>
<td>create an organizational logo</td>
</tr>
<tr>
<td></td>
<td></td>
<td>cartographers</td>
<td>design a building</td>
</tr>
<tr>
<td></td>
<td></td>
<td>city-planners</td>
<td>design a historic costume</td>
</tr>
<tr>
<td></td>
<td></td>
<td>engineers</td>
<td>design a landscape</td>
</tr>
<tr>
<td></td>
<td></td>
<td>graphic designers</td>
<td>interpret a painting</td>
</tr>
<tr>
<td></td>
<td></td>
<td>inventors</td>
<td>organize a storage room</td>
</tr>
<tr>
<td></td>
<td></td>
<td>landscape architects</td>
<td>pack an automobile trunk</td>
</tr>
<tr>
<td></td>
<td></td>
<td>photographers</td>
<td>paint a landscape</td>
</tr>
<tr>
<td></td>
<td></td>
<td>sculptors</td>
<td></td>
</tr>
<tr>
<td>Learning style and preferences</td>
<td>Description</td>
<td>Roles</td>
<td>Tasks, activities and assessments</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>-------------</td>
<td>-------</td>
<td>----------------------------------</td>
</tr>
<tr>
<td><strong>Other people’s feelings</strong></td>
<td>ability to relate to others</td>
<td>advertising professionals</td>
<td>affect the feelings of others in a planned way</td>
</tr>
<tr>
<td></td>
<td>interpretation of behavior and communications</td>
<td>care givers</td>
<td>coach or counsel another person</td>
</tr>
<tr>
<td></td>
<td>understands the relationship between people and their situations, including other people</td>
<td>coaches and mentors</td>
<td>demonstrate feelings through body language</td>
</tr>
<tr>
<td></td>
<td></td>
<td>counselors</td>
<td>interpret moods from facial expressions</td>
</tr>
<tr>
<td></td>
<td></td>
<td>educators</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>health providers</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>HR professional</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>mediators</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>politicians</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>psychologists</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>sales-people</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>teachers</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>therapists</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>trainers</td>
<td></td>
</tr>
</tbody>
</table>

Northern Illinois University, Faculty Development and Instructional Design Center
facdev@niu.edu, www.niu.edu/facdev, 815.753.0595
### INTRAPERSONAL Intelligence

<table>
<thead>
<tr>
<th>Learning style and preferences</th>
<th>Description</th>
<th>Roles</th>
<th>Tasks, activities and assessments</th>
</tr>
</thead>
</table>
| Self-awareness                 | – one’s own needs for and reaction to change, ability to deal with change in the workplace  
– one’s relationship to others and the world  
– personal cognizance  
– personal objectivity  
– the capability to understand oneself | – one who is self-aware and involved in the process of changing personal thoughts, beliefs, and behavior in relation to their situation  
– other people, their purpose and aims | – consider and decide one’s own aims and personal changes required to achieve them (not necessarily reveal this to others)  
– consider and decide one’s own position in relation to the Emotional Intelligence Model |

**References**


[http://www.thirteen.org/edonline/concept2class/mi/index.html](http://www.thirteen.org/edonline/concept2class/mi/index.html).

**Selected Resources**


Brainstorming

Brainstorming is a cooperative approach in which a number of people collectively agree upon a solution after all of their ideas are brought forth and discussed.

Brainstorming is a strategy used to generate a number of ideas to help solve a particular problem. The technique has been around for over 70 years and is still used today to engage students in solving a range of problems.

Techniques vary but there is a general structure to follow when developing brainstorming sessions. After the problem or issue is presented, students are organized into groups to brainstorm all possible ideas which could solve the problem. Discussion of these ideas takes place after the brainstorming session ends, usually after a defined period of time. Each idea will be discussed and considered, some ideas will be eliminated, and a final list will be ranked for possible use as a solution toward solving the problem.

It is important to plan the brainstorming session before implementing it in the classroom. As outlined below, you will need to consider the strengths, challenges and barriers when designing the session.

Planning a Brainstorming Session

1. State the problem or issue.
   a. Avoid preparing students by giving them the problem or issue—you don’t want them to think about the topic beforehand. Brainstorming sessions are meant to be spontaneous and creative. Provide students with the problem/topic that is new to them and one that challenges their current level of knowledge on the issue.
   b. State the problem/topic as a question which is concise and to the point. State the problem/topic succinctly yet loose enough to encourage more idea generation. A stated problem which is too succinct may be difficult to understand and one which is too limiting may restrict creative ideas.
   c. Use sample question “stems"(adapted from Elkenberry, 2007):
      i. In what ways might we improve product X?
      ii. What are the characteristics of X?
      iii. What is it about X that sets it apart from other Xs?
      iv. How can we do A and B?

2. Identify the roles of all students in the group.
   a. Often one student acts as the group facilitator who records all generated ideas, encourages participation, prevents negative remarks, and watches the time.
   b. All other group members are to be collaborative, respectful, and cooperative.

3. Explain the guidelines of the brainstorming session (the DOs and DON’Ts).
   a. Stress that all ideas are welcome and even ideas which are perceived as “out there,” “funny or silly,” or “weird” can lead to creative solutions.
b. During the session there is to be no criticism or evaluation of ideas which could inhibit contributions.

c. Encourage the group to relax and be enthusiastic about the process.

d. Encourage use of items such as squish balls, pipe cleaners, and other gadgets to create a relaxed environment.

e. Everyone must participate, even those students who tend not to contribute in class discussions. All voices are to be heard and everyone must contribute ideas.

f. No one student can dominate the brainstorming session by shouting over the others or contributing meaningless solutions.

g. Encourage students to not delve on one idea for too long.

4. Keep the group number group manageable (8-12 people works well).

   a. Generally, more people in a group can lead to more ideas being generated. However, it may be difficult manage large groups in a classroom setting. Experiment to see what works well in your own courses.

   b. Too many people could intimidate those who tend not to participate from offering their ideas.

5. Create a relaxed environment which is supplied with adequate workspace and materials and free from distractions.

   a. Provide necessary tables, chairs, paper and writing instruments, white board and markers, flip chart, or concept mapping software such as Inspiration® or SMART Ideas™.

   b. Provide background music (unless students find it distracting).

   c. Ask students to refrain from annoying mannerisms such as leg swinging, gum chewing, and pen twisting which can interfere with other students’ concentration.

   d. Announce that all cell phones and electronic devices be turned off.

6. Create heterogenic groups. Groups should consist of students who vary in experiences, backgrounds, knowledge and academic disciplines.

   a. A varied group of students will suggest more varied and unique ideas and suggestions.

7. Rank the generated ideas and suggestions. After the designated time frame is over, students should begin to evaluate and rank all of the ideas generated during the brainstorming session. Suggest that students create a list of criteria used to evaluate the ideas. They should work toward a final list of three to five highly possible solutions to the problem. Criteria should be given scores, with 5 being a perfect score to 0 which would indicate that the idea does not meet any of the criteria.

   a. Sticky notes are helpful and can be moved when chunking and categorizing ideas.

   b. Criteria also can be established before the actual brainstorming begins.

8. Review the brainstorming session. It is important to provide some form of follow-up to the brainstorming session as a sort of follow-through to support
It is important to provide some form of follow-up to the brainstorming session as a sort of follow-through to support student effort.

Student effort. Even if their suggested solutions are not used, it’s good practice to provide feedback. Thanking the students for their efforts will prove to them that their work is valued, and encourage them to participate in a future brainstorming activity. The final report should include the following elements (adapted from Baumgartner, 2005):

- Statement of the original problem or issue
- Criteria and scale used to evaluate the brainstorming ideas
- All ideas generated during the brainstorming session
- Criteria and rating scales used to evaluate the generated ideas
- Final rated items and their scores
- Relevant comments and further ideas provided by students during the rating process
- How final rated items are used (provide feedback with explanation if the final rated items are not used)

**Strengths of Brainstorming**

- Provides a quick and easy class activity. Brainstorming sessions can be effectively used in the classroom. However, they do require meaningful planning time for ultimate success.
- Contributes to classroom collective power. Brainstorming sessions allow individual students’ voices to become one with the group’s voice. The final ideas are generally identified through consensus.
- Creates a student-centered activity. Students direct the group in which they generate their own ideas, develop rating criteria, and are responsible for group dynamics.
- Supports learning in a relaxed environment. Students are able to collaborate in a relaxed, informal learning environment.
- Strengthens problem-based learning. Brainstorming is a problem-solving activity where students build on or develop higher order thinking skills.
- Encourages creative thought. Brainstorming encourages students to think creatively (out of the box), encouraging all students to share their ideas, no matter how far “out there” they may seem.

**Challenges of Brainstorming**

- Keeping the session from being just a chat session. The moderator should direct the session to keep students on task.
- Ensuring students collaborate rather than compete with one another when generating ideas. Walk around the room and listen for inappropriate group behavior.
- Encouraging students to build on each other’s ideas to help them build their critical thinking skills.
- Getting “buy-in” or acceptance from those who have participated in brainstorming who have never seen their ideas brought forth and acted upon. Work forward from this point with any student who may be in this category and remark on their contribution both to them personally, their group and to the whole class.
- Getting quiet or independent students to actively participate. Explain that as part of this course all students are expected to bend a little which may have them participating in activities which might make them uncomfortable.

Never force someone who is adamant about a particular situation. Instead,
coax those who are hesitant at first by creating a trusting and caring classroom environment *from the beginning of the semester*. This approach can help students be more accepting of change and those who tend to feel uncomfortable working with others.

- *Helping groups to move forward if they are “stuck” and not able to generate ideas.* Reconvene the group to review the problem or issue or provide an example of a possible solution.
- *Reaching consensus.* Getting students to reach consensus becomes less of a problem if all students are given equal time to provide input, feel comfortable as a valued member of the group and are respected for their points-of-view.

**Summary**

Brainstorming sessions can be a useful strategy to encourage genuine collaboration and interaction in the classroom. Putting together a well-stated problem and careful planning strategies can lead to meaningful idea generation and idea building which can be used in solving problems or addressing specific course-related issues.

**Resources**


**Suggested Resources**


Maricopa Community Colleges (2001). *Brainstorming.*

Case Studies

Case studies can be used to help students understand simple and complex issues. They typically are presented to the students as a situation or scenario which is guided by questions such as “What would you do in this situation?” or “How would you solve this problem?” Successful case studies focus on problem situations relevant to course content and which are relevant “both to the interests and experience level of learners” (Illinois Online Network, 2007).

Case studies can be simple problems where students “work out” a solution to more complex scenarios which require role playing and elaborate planning. Case studies typically involve teams although cases can be undertaken individually. Because case studies often are proposed to not have “one right answer” (Kowalski, Weaver, Henson, 1998, p. 4), some students may be challenged to think alternatively than their peers. However, when properly planned, case studies can effectively engage students in problem solving and deriving creative solutions.

The Penn State University’s Teaching and Learning with Technology unit suggests the following elements when planning case studies for use in the classroom.

1. **Real-World Scenario.** Cases are generally based on real world situations, although some facts may be changed to simplify the scenario or “protect the innocent.”

2. **Supporting Data and Documents.** Effective case assignments typically provide real world situations for student to analyze. These can be simple data tables, links to URLs, quoted statements or testimony, supporting documents, images, video, audio, or any appropriate material.

3. **Open-Ended Problem.** Most case assignments require students to answer an open-ended question or develop a solution to an open-ended problem with multiple potential solutions. Requirements can range from a one-paragraph answer to a fully developed team action plan, proposal or decision. (Penn State University, 2006, para. 2).

**Instructor Tasks**

To help you get started using case studies in the classroom, a number of tasks should be considered. Following this list are tasks to help you prepare students as they participate in the case study.

- Identify a topic that is based on real-world situations
- Develop the case that will challenge students’ current knowledge of the topic
- Link the case to one (or more) of the course goals or objectives
- Provide students with case study basic information before asking them to work on the case
• Prepare necessary data, information, that will help students come up with a solution
• Discuss how this case would relate to real life and career situations
• Place students in teams in which participants have differing views and opinions to better challenge them in discussing possible solutions to the case
• Review team dynamics with the students (prepare an outline of team rules and roles)
• Inform students that they are to find a solution to the case based on their personal experiences, the knowledge gained in class, and challenge one another to solve the problem

Student Tasks
• Determine team member roles and identify a strategic plan to solve the case
• Brainstorm and prepare questions to further explore the case
• Read and critically analyze any data provided by the instructor, discuss the facts related to the case, identify and discuss the relationship of further problems within the case
• Listen to and be open to viewpoints expressed by each member of the team
• Assess, refine, and condense solutions that are presented
• Prepare findings as required by the instructor

Sample Case Study Titles by Subject Area
The subjects in Table 1 below are provided to illustrate the diverse range of topics which could be presented as a case study. Note that the topics fit the “real world” scenario and “open-ended” problem elements of case studies and how easily two sides of the issue could be identified.

Table 1

<table>
<thead>
<tr>
<th>Sample Case Study Titles by Subject Area</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Art</strong> – Performance Art and Ethics</td>
</tr>
<tr>
<td><strong>Biology</strong> – Simulating the Spread of Anthrax</td>
</tr>
<tr>
<td><strong>Business</strong> – Women and the Glass Ceiling</td>
</tr>
<tr>
<td><strong>Chemistry</strong> – The Case for Artificial Sweeteners</td>
</tr>
<tr>
<td><strong>Teacher Education</strong> – No Child Left Behind</td>
</tr>
</tbody>
</table>

Summary
Case studies provide students with scenarios in which they can begin to think about their understanding and solutions to problems found in real-world situations. When carefully planned, case studies will challenge students’ critical
thinking and problem solving skills in a safe and open learning environment. Case studies can help students analyze and find solutions to complex problems with foresight and confidence.

**References**

http://www.ion.uillinois.edu/resources/casestudies/


http://tlt.its.psu.edu/suggestions/cases/casewhat.html

**Suggested Resource**

Study Guides and Strategies (2007). *Case studies.*
http://www.studygs.net/casestudy.htm
Classroom Debates

Using debates in the classroom provide students the opportunity to work in a collaborative and cooperative group setting. By having students discuss and organize their points of view for one side of an argument they are able to discover new information and put knowledge into action. Classroom debates help students learn through friendly competition, examine controversial topics and “strengthen skills in the areas of leadership, interpersonal influence, teambuilding, group problem solving, and oral presentation” (Leuser, n.d., para. 1).

Debates can be used in all disciplines on a wide range of topics. Table 1 illustrates examples of subject matter topics for debate which can easily be adapted for a variety of subject areas.

| Table 1 |
|---------------------------------|---------------------------------|---------------------------------|---------------------------------|
| **Arts**                        | **English**                     | **Geology**                     | **Health**                     |
| There should no restrictions    | Language is not a skill         | Mountain top mining is good    | There is nothing morally       |
| upon artistic expression        |                                 | for the economy                | wrong with doing drugs         |
| **Business**                    | **Math**                        | **Science**                    |                                 |
| Corporations should be abolished| Elementary school mathematics   | The theory of evolution is     |                                 |
|                                 | should be confined largely      | based on both science          |                                 |
|                                 | to arithmetic                   | and faith                      |                                 |
| **Education**                   | **Sociology**                   |                                 |                                 |
| Intelligence testing is without | It is morally okay to break     |                                 |                                 |
| value                           | laws you don't agree with       |                                 |                                 |
| **Engineering**                 | **Science**                     |                                 |                                 |
| Only bridges over waterways    |                                 |                                 |                                 |
| need to be routinely inspected  |                                 |                                 |                                 |

**Debate Format**

Teams work well for classroom debates but two students can be paired as well. Adapt the following format to fit your specific goals and objectives. Adding a third, shorter round will allow teams to further defend their arguments.

Alternatively, have all students prepare both a pro and con position for a designated class session. During this class period two teams are randomly selected who will then state their arguments. The other students will contribute differing remarks and suggestions for a more active and well-prepared class discussion.
Table 2

<table>
<thead>
<tr>
<th>Round One</th>
<th>Team One</th>
<th>Presentation of “Pro/positive” or “Arguments for”</th>
<th>10 minutes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Team Two</td>
<td></td>
<td>Presentation of “Con/negative” or “Arguments against”</td>
<td>10 minutes</td>
</tr>
<tr>
<td>Team Discussion Period</td>
<td></td>
<td>This period is used for teams to prepare their responses</td>
<td>5 minutes</td>
</tr>
<tr>
<td>Round Two</td>
<td>Team One</td>
<td>Response or rebuttal of “Pro/positive” or “Arguments for”</td>
<td>5 minutes</td>
</tr>
<tr>
<td>Team Two</td>
<td></td>
<td>Response or rebuttal of “Con/negative” or “Arguments against”</td>
<td>5 minutes</td>
</tr>
</tbody>
</table>

Whole Class Discussion
To determine which team provided the most convincing arguments. A vote can be taken or a more detailed evaluation form can be used to assess each team. (10-15 minutes)

Note: Explain to the students that the success behind using debates in the classroom is not in winning and losing but rather how well teams prepared for and delivered their arguments and get potential buy-in from those who help the opposite point-of view.

1. Prepare guidelines and a set of rules to assist students as they prepare for the debate.
   a. Include a time frame in which they have to prepare for the debate and how they are to present their material.
   b. Allow non-debate students to be adjudicators to help them learn how to be objective in rating their peers’ performance.
   c. Determine if non-debating students will be allowed to vote.
2. Provide resources which will help students learn about debates and their structure. Consider holding a practice debate to help students understand the process.
3. Consider having students prepare brief “position papers” which also includes their reaction to the debate process and how they were able to reach consensus in their team’s arguments.
4. Select the format you plan to use: teams, individual students, all students (see format above).
5. Research controversial, news-breaking and stimulating topics to encourage dynamic and energized classroom discussion. Students are more likely to be authentic when they debate a subject to which they can relate.
6. Review the debate process previously established and ask for questions and clarifications on the day of the debate.
7. Prepare rating rubrics and distribute to adjudicators before the debate begins.
8. Begin the debate, giving students as much autonomy as possible.
9. Facilitate classroom discussion and debrief the process at the end of the debate.
10. Distribute both student and instructor evaluations to the teams.
11. Have a plan in place if the debate gets “hot” and students argue instead of debate. Review guidelines before the debate begins to minimize inappropriate discussion and behavior. Also, getting to know your students through observation and actively listening to their classroom conversations can provide helpful information when selecting topics for debate.

Summary
Using debates in the classroom provides students the opportunity to explore real-world topics and issues. Debates also engage students through self reflection and encourage them to learn from their peers. Finally, debates prepare students to be more comfortable engaging in dialogue related to their beliefs as well as their areas of study.

Reference
http://oz.plymouth.edu/~davidl/bu342/Debates.DOC

Selected Resources
Classroom debates: A one page tutorial. (n.d).

http://teaching.berkeley.edu/compendium/suggestions/file181.html
## Classroom Debate Rubric

<table>
<thead>
<tr>
<th>Criteria</th>
<th>5 points</th>
<th>4 points</th>
<th>3 points</th>
<th>2 points</th>
<th>1 point</th>
<th>Total Points</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Respect for Other Team</strong></td>
<td>All statements, body language, and responses were respectful and used inappropriate language</td>
<td>Statements and responses were respectful and used appropriate language, but once or twice body language was not</td>
<td>Most statements and responses were respectful and in appropriate language, but there was one sarcastic remark</td>
<td>Statements, responses and/or body language were borderline appropriate. Some sarcastic remarks</td>
<td>Statements, responses and/or body language were consistently not respectful</td>
<td>Total Points</td>
</tr>
<tr>
<td><strong>Information</strong></td>
<td>All information presented in this debate was clear, accurate and thorough</td>
<td>Most information presented in this debate was clear, accurate and thorough</td>
<td>Most information presented in the debate was clear and accurate, but was not usually thorough</td>
<td>Some information was accurate, but there were some minor inaccuracies</td>
<td>Information had some major inaccuracies OR was usually not clear</td>
<td>Total Points</td>
</tr>
<tr>
<td><strong>Rebuttal</strong></td>
<td>All counter-arguments were accurate, relevant and strong</td>
<td>Most counter-arguments were accurate, relevant, and strong</td>
<td>Most counter-arguments were accurate and relevant, but several were weak</td>
<td>Some counter arguments were weak and irrelevant</td>
<td>Counter-arguments were not accurate and/or relevant</td>
<td>Total Points</td>
</tr>
<tr>
<td><strong>Use of Facts/Statistics</strong></td>
<td>Every major point was well supported with several relevant facts, statistics and/or examples</td>
<td>Every major point was adequately supported with relevant facts, statistics and/or examples</td>
<td>Every major point was supported with facts, statistics and/or examples, but the relevance of some was questionable</td>
<td>Some points were supported well, others were not</td>
<td>All points were not supported</td>
<td>Total Points</td>
</tr>
<tr>
<td><strong>Organization</strong></td>
<td>All arguments were clearly tied to an idea (premise) and organized in a tight, logical fashion</td>
<td>Most arguments were clearly tied to an idea (premise) and organized in a tight, logical fashion</td>
<td>Most arguments were clearly tied to an idea (premise) and organized in a tight, logical fashion</td>
<td>Most arguments were clearly tied to an idea (premise) and organized in a tight, logical fashion</td>
<td>Most arguments were clearly tied to an idea (premise) and organized in a tight, logical fashion</td>
<td>Total Points</td>
</tr>
<tr>
<td><strong>Understanding of Topic</strong></td>
<td>The team clearly understood the topic in depth and presented their information forcefully and convincingly</td>
<td>The team clearly understood the topic in depth and presented their information with ease</td>
<td>The team seemed to understand the main points of the topic and presented those with ease</td>
<td>The team seemed to understand the main points of the topic, but didn’t present with ease</td>
<td>The team did not show an adequate understanding of the topic</td>
<td>Total Points</td>
</tr>
</tbody>
</table>

**Comments:**

Source: [http://course1.winona.edu/shatfield/air/classdebate.pdf](http://course1.winona.edu/shatfield/air/classdebate.pdf)
Classroom Discussions

Classroom discussions should help students learn but getting students to actively participate can sometimes be a difficult task. Silberman (1996) asserts that to stimulate class discussion, “You first have to build interest!” How, then, can we make that happen? A number of strategies are presented here which can change the once “quiet” classroom into one that has lively and meaningful discussion.

Barton, Heilker, and Rutkowski (n.d.) stress that our students should be “attentive and involved and engaged” to help them construct their own learning and engage in discussion. Burton et al. also point out that effective classroom discussion occurs when students talk with other students and not just the instructor (para. 7). Dialog among classroom peers can be monopolized by a few talkative students while other students sit back and passively observe. Helping to break the habit of rote, two-way responses between the instructor and the student while the rest of the class remains uninvolved can be achieved by implementing some of the strategies presented here.

Plan classroom discussions by talking about its purpose and stress the importance of hearing everyone’s “voice” in the dialogue. It is good practice, though, to never force students to talk if they are not comfortable. Talk with these students outside of class to ensure there aren’t underlying reasons for them not participating. Quieter students may assume a more active role in small group discussions so be sure to include break out sessions periodically during the semester.

Also, talk with the students about ways they can prepare for classroom discussions through required homework and textbook readings. It is important to also connect classroom discussions to course goals, objectives and students’ background knowledge.

It is good practice to go over the ground rules for classroom discussion by describing roles and etiquette. For example, inform students that a major portion of the class grade will be based on active and meaningful participation and that everyone must be respectful of their peers and the instructor. Know how to curb students who dominate the discussion, those who bring about negativity, or students who joke around. Finally, teach students how to listen so they can effectively continue the discussion with a coherent dialogue.

Strategies for Fostering Classroom Discussions
Excerpted from Fostering Effective Classroom Discussions
by J. Barton, P. Heilker, and D. Rutkowski. Used with permission.

1. Set clear expectations for student participation in discussion sessions.
   - Do this at the beginning of the semester to set the tone of the class
   - Establish discussion “rules” such as “You are not allowed to say ‘I don’t know’ when asked a question. If you don’t know, think of a plausible answer, guess, speculate, wonder aloud.”
• Require students to submit an Entrance Ticket when they come to class. Students submit the entrance ticket to the instructor if they have completed homework or reading – this ticket can help motivate students to be prepared for class discussions. (See a sample Entrance Ticket as the end of this section)

2. Break the ice with informal talk outside of class.
   • Informally talk with student before and after class about non-class material such as their other classes, sports, and activities. Showing students that you care about them as individuals may help them to be more open to formal discussion in class.

3. Control and use classroom space strategically.
   • Arrange the classroom in a circle or horseshoe to help stimulate discussion.
   • Move toward the person to whom you are talking but then move away as soon as they begin to speak so they become the center of the conversation.
   • Walk among the students during your presentation to encourage students to talk with you.
   • Sitting with your students helps the class become a community which can encourage discussion.

4. Use eye contact purposefully and strategically.
   • Look directly at the person to whom you are discussing but then scan the class to encourage more dialogue.
   • Watch for non-verbal feedback to keep the discussion lively and meaningful—move on and change the subject when you see people drifting off.

5. Avoid open questions; Call on individual students.
   • Directing questions to specific students rather than asking the entire class to answer will prevent students who tend to answer all the time from monopolizing the discussion.

6. Ask good questions.
   • Prepare a list of questions to help drive the discussion. Mark those which are good and delete for future classes those which do not spur discussion.
   • Avoid yes/no questions. Instead, form questions which require students to analyze and interpret, beginning the question with, “Why do you think?” or “How would you?”
   • Include questions that lead to students taking a stand on a subject and lead these questions with, “What arguments, pro and con, can we generate?”
   • Prompt students recall of information by asking questions that refer to readings, prior discussions, and exam material.
7. Resist responding to your own questions.
   - Take the time to allow students to formulate an answer and avoid answering the question yourself or asking another student for the answer.
   - Ask the student to clarify the answer or add more information if it is not exactly what you are looking for instead of bypassing that student for another. A sure way to deter students from discussion is to quickly disregard their answer or comment.

8. Time and discussion management.
   - Plan on how much time you will provide for classroom discussions—and provide more time than what you think you will need.
   - How will you end a discussion if time runs out—will you resume the discussion during the next class period? Will you have students continue with the discussion in an online discussion forum you create for that purpose using Blackboard? Will you have students complete homework based on the discussion?
   - Prepare for disagreement among students, especially if the topic is controversial or gets out of hand. Providing and reviewing discussion policies and guidelines can help reduce flare-ups or heated discussions. Refer to step 1 above.

Silberman (1996) suggests a number of strategies to engage students in classroom discussions which are organized in an easy-to-follow overview, procedure, and variations. A few of these strategies are presented below.

- **Active Debate**—where every student is involved in the discussion and not only the debaters.
- **Town Meeting**—lightly defined, a town meeting is a meeting of the members of a town or community who discuss and act upon town business. In education, a town meeting can imply a meeting where the students are formed in a group (or the entire class) are welcome to voice their views on a subject in an egalitarian, participatory, and democratic way. The instructor can direct the conversation on a particular subject where students are involved in the creation of course policy, development of course assignments, or course calendar.
- **Three-Stage Fishbowl Decision**—this strategy can be used for practicing listening skills, where a group of students discuss and answer one question, which is then discussed by a second group of students before discussing and answering their own question, followed by a third group who discusses the second question before their own question.
- **Reading Aloud**—helps students focus, raise questions, and stimulate discussion of a selected book.
- **Trial by Jury**—sparks “controversy learning” which is stimulated by challenging viewpoints. (1996, pp. 83-92)
Summary
Classroom discussions can effectively be implemented with careful planning and selecting topics which are interesting and relevant to students. Implementing one or more of the “tested” strategies listed here are suitable to engage students in discussions which are lively and meaningful. As Barton, et al. (n.d.) caution, attempting to implement all of the strategies at once would be “counterproductive.” Instead, select a strategy which would be easy to implement and appropriate for a course. Once the benefits are observed, try introducing another.

References


Suggested Resource
University of Wisconsin Whitewater Learn Center (2009). Plan classroom discussions at least as carefully as lectures. http://www.uww.edu/learn/diversity/classroomdiscussions.php

Entrance Ticket to Class

Entrance Tickets can be used to encourage students to be more engaged in classroom participation. The ticket can be a simple Word document made available to students electronically in Blackboard. Provide information how students can use the ticket, if you will allow more than one ticket, how the ticket will count toward the final grade (will it count toward participation points, attendance or will the point count toward the final grade for an assignment or project?).

The Entrance Ticket below is an adaptation from a course syllabus, from Appalachian State University CI 3850 Literacy, Technology and Instruction http://classdat.rcoe.appstate.edu/CI/3850_lp_f03/entrance_ticket.htm

Entrance Ticket

This ticket must accompany the work listed below to gain access to the classroom on

Date__________________

for ________________________

(Name of assignment, homework)

Instructions:
Concept Mapping

Our brains are wired to take in complex information and make meaning of that information, especially when that information is presented visually. Concept maps can visually represent large amounts of information, provide a holistic representation of a concept, show connections and relationship among data, and enable you to plan and make choices by creating a road map of where you are going and where you have been. By integrating visuals with text, concept maps create a bird’s eye view of the subject being presented, constructing a visual approach to communication.

Concept mapping is a technique that represents information visually and is useful in translating complex ideas into easy-to-understand visual diagrams. Boxes, circles, and other shapes (sometimes called nodes) are connected by arrows and lines (connectors) that show connections and relationships of concepts and knowledge. Concept maps can be used to create advanced organizers of information in a visual way to help plan teaching and to help students learn. See the figure below for an example of a simple concept map on the topic of photosynthesis.

Figure 1.
Photosynthesis Concept Map
(Created using Inspiration ® Software)
The design of concept maps ranges in complexity depending on the topic (how it relates to the whole and what aspect of it is to be learned), a person’s learning preference, and how much information a person needs to understand the concept. Some people need more information on a map than others to understand the concept, and it is important to understand how one assimilates information and how the creation of concept maps can benefit learning. Therefore, it is useful knowing some basic applications of concept maps in the classroom.

Applications of Using Concept Maps in Teaching and Learning

- **Efficient way for students to take notes.** Consider requiring students to “map” a designated number of textbook chapters for two points each that would count toward the final points. These points could count toward classroom participation. Anecdotal evidence has found that students are more apt to read assigned material which is to be mapped. Two points per map might be an appropriate number.

- **Prepare lecture or presentation notes.** Consider creating concept maps in lieu of written notes for quick and easy visualization.

- **Quickly record and visualize brainstorming and discussion sessions.** Show students how this could provide necessary practice time for those students learning how to create a concept map.

- **Visualize timelines (for projects and other activities).** Suggest the incorporation of images and symbols in addition to text for a more personalized map.

- **Adding relevant graphics to presentations and written papers.** Encourage use of graphics which can be effective when communicating messages but only if they are relevant to the content. Consider “mapping” content in PowerPoint presentations as an alternative to bullet points.

- **An alternative or addition to using outlines.** Stress to students that concept maps are excellent visual representations of content and can provide effective visual interest to outlined information.

Creating Concept Maps

Materials:

1. Pencil
2. Eraser or white out
3. Large piece of blank paper (flip chart paper works well)
4. Sticky notes (1.5x2” and 3x3” work well)
5. Colored pencils or markers
6. Source materials (books, journals, Web site URLs, lecture notes, etc.)

Create the Map

1. Consider the hierarchical structure of the map and where to place the question or word on the blank paper.
2. Begin with a question or key word or term. For example, “How does photosynthesis work?”

3. Write the question or word toward the top of the concept map.

4. Write down important related concepts below the central question or topic (these become sub-concepts). Work quickly to get ideas on paper. Draw a circle or rectangle around each sub-concept.

5. Stop and look at the map and begin to categorize the subtopics. Revise and / or remove unnecessary words. Use colored pencils or markers to thematically organize the sub-concepts by coloring in the shapes.

6. Draw arrows and / or lines to and from concepts to show their relationships.

7. Add a label on each arrow or line that describes the relationships between concepts. For example, in the Photosynthesis Concept Map on the previous page, the line between the “sun” icon and the sub-concept “leaf” is labeled “is absorbed through” to show the relationship between those two concepts. Labels need not be long and often short words such as those used in the Photosynthesis Concept Map work to connect concepts.

8. Review the completed concept map by asking the question, “Does this make sense to me?” remembering that concept maps can be as unique as the individual who created it.

Summary
Mapping concepts, ideas, class notes and plans is an effective technique to quickly present information in a visual way. Reviewing content on the concept map helps identify missing elements and redundant or unnecessary information to ensure the information presented is a meaningful whole. In addition to using paper and pen, a range of concept mapping software is available to quickly and efficiently visualize concepts. Many of these products are easy to use and available at a reasonable cost. See resources for a list of concept mapping software.

Suggested Resources
Concept mapping resource guide (n.d.).
http://www.socialresearchmethods.net/mapping/mapping.htm


Cooperative Learning

Cooperative learning (CL) is a student-centered, instructor-facilitated instructional strategy in which a small team of students is responsible for its own learning and the learning of all team members. CL is much more than placing students in teams and expecting them to discuss the chapter and then report back to the class. CL holds each of the team members accountable for his or her own and the team’s outcomes. Several essential characteristics must be present for a team to be called “cooperative.” Even though the instructor structures the majority of the activities, it is the team and each of its members who are responsible for learning. A team must exhibit interdependence; support one another’s learning; will hold each other accountable for the team’s process and outcomes; exhibit acceptable interpersonal skills and process team dynamics (Johnson and Others, 2003).

The literature shows that students who are given opportunities to work in CL teams are able to learn more quickly and efficiently, are better able to grasp and retain content, and take a more positive stance toward their own learning (Felder & Brent, 2001; Hamilton, 1997; Johnson & Johnson, 1994; D. W; Stahl. 1994). In addition, CL experiences give students the opportunity to collaborate and assume various team-related roles. Cooperative learning, then, when effectively implemented, can provide students with transferable skills sought after in today’s competitive workplace.

Getting Started with Cooperative Learning

Although there are different approaches to creating cooperative learning (CL) teams, it is best to consider some characteristics which are essential to their success in the classroom. Ledlow (1999) has identified six areas to help design and develop successful cooperative learning teams: climate-setting, team formation, teambuilding, cooperative skills development, lesson design, and classroom management. The following has been excerpted from both Stahl (1994) and Ledlow (1999). See their works for more complete and detailed information.

Climate Setting

It is important to set an overall tone when using cooperative learning teams and activities in the classroom. Many students enjoy working together on a project or activity while others are not comfortable with or have not worked in teams. Still, other students may “hitchhike” and let other students do all the work. Here are some ways to encourage student buy-in and cooperation in CL teams.

- Illustrate how CL helps build communication, leadership and trust-building skills. Introduce cooperative learning at the beginning of the semester with a structured team activity which involves all students. This will help set the tone for the rest of the semester.
- Provide an opportunity for students to participate in a “practice” CL team at the beginning of the semester so they know what to expect. For example, place students in teams and have them discuss the
reasons why they have enrolled in the class; what they might have heard about the way you teach; the course syllabus and expected outcomes, all of which could be discussed as an entire class after the team time is over.

– Communicate clearly how students will be graded and that although much of the work will be accomplished face-to-face and rely on interdependency, some work can be completed individually. Explain that the final project grade will be based on the overall performance of everyone in the team.

Team Formation
Carefully planned cooperative learning teams can maximize the performance of each team member. The following are some ideas to help you organize students into well-structured teams.

– Organize the teams rather than allow students to self-select their team members. Plan the heterogeneous team to be made up of students who have different skills sets and capabilities. For example, if the team will be required to use specific software, have at least one person in the team who is comfortable using that software. Also arrange the team to include students from different academic majors to provide their unique point of view. Teams can also be organized on the basis of ethnicity, gender or life experiences.

– Arrange teams to be no larger than four to five students. Equal numbers can be useful to pair students within a team to increase participation.

– Keep teams together for most of the semester to help students get comfortable with one another and build a sense of community.

– Use tent cards to help you and the students learn everyone’s names.

Teambuilding
Team dynamics should be welcoming, organized and cohesive. Because CL teams can span several weeks or an entire semester, a number of points should be followed to help create and sustain all members of the team.

– Allow students time to get acquainted and build camaraderie. For example, have them decide upon a name for the team, discuss their abilities for specific team roles, or develop a timeline for activities that will take place during their time together.

– Provide realistic and attainable ways for each team member to feel they have the ability to succeed. For example, help place students in team roles in which they are comfortable (assign a strong writer to build the outline or let the less experienced student assume the role of timekeeper). Roles can then be changed as the project progresses to give everyone equal time and experience.
– Suggest that the teams develop their own *rules of the road or guidelines* to help them proceed smoothly through the project. Each team member should be given a copy of this protocol or make it available electronically for quick access – a team wiki would be good tool for this.

**Cooperative Skills Development**

– Give the team a set of well-defined and explicit instructions or guidelines before they begin each team activity so all team members know what it expected of them, their roles, and how they should work within the team.

– Provide ways students will build social skills and behaviors before the team is formed. Social skills include communication (how will the students communicate with one another—face-to-face, online, in a blended format?), leadership (who will be the initial leader and will each member assume the leadership role?), and trust building (in what ways will members build trust within the team and assume an active, caring, and meaningful camaraderie?).

**Lesson Design**

Ledlow (1999) recommends four essential principles (PIES) when designing cooperative learning lessons: *Positive interdependence, Individual accountability, Equal participation, and Simultaneous interaction.* With these principles in mind, design cooperative learning lessons and activities to also include a specific outcome or task related to course goals and learning objectives.

– Plan well-structured learning objectives for the CL activity and ensure students will be able to complete them in the allotted time.

– Structure learning tasks where students must rely on each another’s skills and abilities to succeed. Stress that students are accountable for themselves and the team.

**Classroom Management**

As with all team work, cooperative learning teams requires careful monitoring to ensure students are on track, each team member is contributing, and the team members are getting along.

– Provide enough time for the students to function as a team where they learn to rely on, cooperate with, and learn from one another. Without adequate time students may become frustrated and not function well as a team.

– Provide clear, written instructions for the overall goal and criteria for each learning objective and activity. Visually-enhanced instructions can help students understand instructions (charts, graphs, diagrams).

– Monitor team work though frequent feedback such as self- and peer-evaluations and team progress reports. Other teams like to
hear what their peers are doing so an all-class discussion can provide valuable feedback as well.

– Reward high-achieving teams. Doing this in public encourages further success of that team and other teams to do as well (Stahl, 1994).

Summary
Cooperative learning works well in small and large classes, can be adapted across learning disciplines and can meet the needs of students with diverse learning preferences. Cooperative learning imparts learning through positive interdependence, individual accountability, face-to-face interaction, interpersonal skills, and reflection (Johnson and Johnson (1994).

References


Selected Resource
Experiential Learning

“Experiential [learning] is a philosophy and methodology in which educators purposefully engage with students in direct experience and focused reflection in order to increase knowledge, develop skills, and clarify values” (Association for Experiential Education, para. 2).

Experiential learning is also referred to as learning through action, learning by doing, learning through experience, and learning through discovery and exploration, all which are clearly defined by these well-known maxims:

I hear and I forget, I see and I remember, I do and I understand.
~ Confucius, 450 BC

Tell me and I forget, Teach me and I remember, Involve me and I will learn.
~ Benjamin Franklin, 1750

There is an intimate and necessary relation between the process of actual experience and education.
~ John Dewey, 1938

In their book, Teaching for Experiential Learning, Wurdinger and Carlson (2010) found that most college faculty teach by lecturing because few of them learned how to teach otherwise. Although good lecturing should be part of an educator’s teaching repertoire, faculty should also actively involve their students “in the learning process through discussion, group work, hands-on participation, and applying information outside the classroom” (p. 2). This process defines experiential learning where students are involved in learning content in which they have a personal interest, need, or want.

Learning through experience is not a new concept for the college classroom. Notable educational psychologists such as John Dewey (1859-1952), Carl Rogers (1902-1987), and David Kolb (b. 1939) have provided the groundwork of learning theories that focus on “learning through experience or “learning by doing.” Dewey popularized the concept of Experiential Education which focuses on problem solving and critical thinking rather than memorization and rote learning. Rogers considered experiential learning “significant” as compared to what he called “meaningless” cognitive learning. Kolb also noted that concrete learning experiences are critical to meaningful learning and is well known for his Learning Style Inventory (LSI) which is widely used in many disciplines today to help identify preferred ways of learning. A key element of experiential learning, therefore, is the student, and that learning takes place (the knowledge gained) as a result of being personally involved in this pedagogical approach.

Principles of Experiential Learning (EL)
Unlike traditional classroom situations where students may compete with one
another or remain uninvolved or unmotivated and where the instruction is highly structured, students in experiential learning situations cooperate and learn from one another in a more semi-structured approach. Instruction is designed to engage students in direct experiences which are tied to real world problems and situations in which the instructor facilitates rather than directs student progress. “The focus of EL is placed on the process of learning and not the product of learning” (UC Davis, 2011, para 6). Proponents of experiential learning assert that students will be more motivated to learn when they have a personal stake in the subject rather than being assigned to review a topic or read a textbook chapter. What is essential in EL, however, “that the phases of experiencing (doing), reflection and applying are present. In addition, “the stages of reflection and application are what make experiential learning different and more powerful than the models commonly referred to as ‘learn-by-doing’ or ‘hands-on-learning”’ (UC Davis, 2011, para 12 citing Proudman).

The following is a list of experiential learning principles as noted from the (Association for Experiential Education, 2011, para 4):

- Experiential learning occurs when carefully chosen experiences are supported by reflection, critical analysis and synthesis.
- Experiences are structured to require the student to take initiative, make decisions and be accountable for results.
- Throughout the experiential learning process, the student is actively engaged in posing questions, investigating, experimenting, being curious, solving problems, assuming responsibility, being creative and constructing meaning.
- Students are engaged intellectually, emotionally, socially, soulfully and/or physically. This involvement produces a perception that the learning task is authentic.
- The results of the learning are personal and form the basis for future experience and learning.
- Relationships are developed and nurtured: student to self, student to others and student to the world at large.
- The instructor and student may experience success, failure, adventure, risk-taking and uncertainty, because the outcomes of the experience cannot totally be predicted.
- Opportunities are nurtured for students and instructors to explore and examine their own values.
- The instructor’s primary roles include setting suitable experiences, posing problems, setting boundaries, supporting students, insuring physical and emotional safety, and facilitating the learning process.
- The instructor recognizes and encourages spontaneous opportunities for learning.
- Instructors strive to be aware of their biases, judgments and pre-conceptions, and how these influence the student.
- The design of the learning experience includes the possibility to learn from natural consequences, mistakes and successes.
The Experiential Learning Process
Experiential learning involves a number of steps that offer students a hands-on, collaborative and reflective learning experience which helps them to “fully learn new skills and knowledge” (Haynes, 2007). Although learning content is important, learning from the process is at the heart of experiential learning. During each step of the experience, students will engage with the content, the instructor, each other as well as self-reflect and apply what they have learned in another situation.

The following describes the steps that comprise experiential learning as noted by (Haynes, 2007, para. 6 and UC Davis, 2011)

**Experiencing/Exploring “Doing”**
Students will perform or do a hands-on minds-on experience with little or no help from the instructor. Examples might include: Making products or models, role-playing, giving a presentation, problem-solving, playing a game. A key facet of experiential learning is what the student learns from the experience rather than the quantity or quality of the experience.

**Sharing/Reflecting “What Happened?”**
Students will share the results, reactions and observations with their peers. Students will also get other peers to talk about their own experience, share their reactions and observations and discuss feelings generated by the experience. The sharing equates to reflecting on what they discovered and relating it to past experiences which can be used for future use.

**Processing/Analyzing “What’s Important?”**
Students will discuss, analyze and reflect upon the experience. Describing and analyzing their experiences allow students to relate them to future learning experiences. Students will also discuss how the experience was carried out, how themes, problems and issues emerged as a result of the experience. Students will discuss how specific problems or issues were addressed and to identify recurring themes.

**Generalizing “So What?”**
Students will connect the experience with real world examples, find trends or common truths in the experience, and identify “real life” principles that emerged.

**Application “Now What?”**
Students will apply what they learned in the experience (and what they learned from past experiences and practice) to a similar or different situation. Also, students will discuss how the newly learned process can be applied to other situations. Students will discuss how issues raised can be useful in future situations and how more effective behaviors can develop from what they learned. The instructor should help each student feel a sense of ownership for what was learned.

In experiential learning, the instructor guides rather than directs the learning process where students are naturally interested in learning.

Although learning content is important, learning from the process is at the heart of experiential learning.
Instructor Roles in Experiential Learning
In experiential learning, the instructor guides rather than directs the learning process where students are naturally interested in learning. The instructor assumes the role of facilitator and is guided by a number of steps crucial to experiential learning as noted by (Wurdinger & Carlson, 2010, p. 13).

1. Be willing to accept a less teacher-centric role in the classroom.
2. Approach the learning experience in a positive, non-dominating way.
3. Identify an experience in which students will find interest and be personally committed.
4. Explain the purpose of the experiential learning situation to the students.
5. Share your feelings and thoughts with your students and let them know that you are learning from the experience too.
6. Tie the course learning objectives to course activities and direct experiences so students know what they are supposed to do.
7. Provide relevant and meaningful resources to help students succeed.
8. Allow students to experiment and discover solutions on their own.
9. Find a sense of balance between the academic and nurturing aspects of teaching.
10. Clarify students’ and instructor roles.

Student Roles in Experiential Learning
Qualities of experiential learning are those in which students decide themselves to be personally involved in the learning experience (students are actively participating in their own learning and have a personal role in the direction of learning). Students are not completely left to teach themselves; however, the instructor assumes the role of guide and facilitates the learning process. The following list of student roles has been adapted from (UC-Davis, 2011 and Wurdinger & Carlson, 2010).

1. Students will be involved in problems which are practical, social and personal.
2. Students will be allowed freedom in the classroom as long as they make headway in the learning process.
3. Students often will need to be involved with difficult and challenging situations while discovering.
4. Students will self-evaluate their own progression or success in the learning process which becomes the primary means of assessment.
5. Students will learn from the learning process and become open to change. This change includes less reliance on the instructor and more on fellow peers, the development of skills to investigate (research) and learn from an authentic experience, and the ability to objectively self-evaluate one’s performance.

Integrating Experiential Learning (EL) in Teaching
As previously noted, a primary role for instructors is to identify a situation which challenges students through problem-solving, cooperation, collaboration, self-discovery and self-reflection. At the same time, decide what the students should learn or gain from the learning experience. Below are some primary points to consider when integrating experiential learning in your own teaching.
Plan. Once the EL experience has been decided upon, plan the experience by tying it to the course learning objectives and determine what students will need to successfully complete the exercise (resources such as readings and worksheets, research, rubrics, supplies and directions to off-campus locations, etc.). Also, determine the logistics: how much time will be allotted for the students to complete the experience (a complete class session, one week or more)? Will students need to work outside of class? How will the experience end? What forms of assessment will you employ? Will you use ongoing assessments such as observations and journals (called formative assessment), end of experience assessments such as written reports and projects, self and/or peer assessments, or a combination of all three?

Prepare. After the planning has been completed, prepare materials, rubrics, and assessment tools and ensure that everything is ready before the experience begins.

Facilitate. As with most instructional strategies, the instructor should commence the experience. Once begun, you should refrain from providing students with all of the content and information and complete answers to their questions. Instead, guide students through the process of finding and determining solutions for themselves.

Evaluate. Success of an experiential learning activity can be determined during discussions, reflections and a debriefing session. Debriefing, as a culminating experience, can help to reinforce and extend the learning process. In addition, make use of the assessment strategies previously planned.

Experiential Learning Opportunities in Higher Education
There are numerous experiential learning opportunities in higher education that can be found in most disciplines. The following is a list of these experiences as noted by (George Mason University, 2011; Loretto, 2011; Northern Illinois University OTC, 2011).

Apprenticeship Experiences provide students an opportunity to try out a job usually with an experienced professional in the field to act as a mentor. Apprenticeships are a type of on the job training which may lead to certification. Many skilled laborers learn their trade by doing an apprenticeship.

Clinical Experiences are hands-on experiences of a pre-determined duration directly tied to an area of study such as nursing students participating in a hospital-based experience or child development and teacher education students participating in day care and classroom settings.

Cooperative Education Experiences are more extensive than internships and will usually span two or more semesters of work. Co-ops are paid professional work experiences and are tied very closely to the student’s academic work. During the co-op experience students will...
receive ongoing advising and the co-op will be structured to meet the student's academic and/or career goals. Co-op experience usually is included on a student's transcript in addition to being awarded designated credit hours for its completion.

**Fellowship Experiences** provide tuition or aid to support the training of students for a period of time, usually between 6 months to one year. They are usually made by educational institutions, corporations, or foundations to assist individuals pursuing a course of study or research. Post-graduate fellowships assist students at the graduate level while post-doctorate fellowships provide monies for those who have already achieved their doctorate degree.

**Field Work Experiences** allow students to explore and apply content learned in the classroom in a specified field experience away from the classroom. Field work experiences bridge educational experiences with an outside community which can range from neighborhoods and schools to anthropological dig sites and laboratory settings.

**Internship Experiences** are job-related and provide students and job changers with an opportunity to test the waters in a career field and also gain some valuable work experience. Internships can be for credit, not for credit, paid or unpaid.

**Practicum Experiences** are often a required component of a course of study and place students in a supervised and often paid situation. Students develop competencies and apply previously studied theory and content such as school library media students working in a high school library or marketing majors working in a marketing research firm. Practicum experiences also allow students to design and develop a project in which they apply knowledge and develop skills such as a doctoral student preparing the components of an online course.

**Service Learning Experiences** are distinguished by being mutually beneficial for both student and community. Service learning involves solving some of society's issues; such as, homelessness, poverty, lack of quality education, pollution, etc. One of the goals of service learning is to help students become aware of these issues and develop good citizenship in learning how to help solve some of these problems.

**Student Teaching Experiences** provides student candidates with an opportunity to put into practice the knowledge and skills he or she has been developing in the preparation program. Student teaching typically involves an on-site experience in a partner school and opportunities for formal and informal candidate reflection on their teaching experience.

The on-site teaching portion of this experience can range from ten to sixteen weeks, depending on the program.
**Study Abroad Experiences** offer students a unique opportunity to learn in another culture, within the security of a host family and a host institution carefully chosen to allow the transfer of credit to a student’s degree program. Students studying a foreign language will perfect the accent and greatly expand their vocabulary—a skill retained for life. Making new friends, and travel and decision making, are also key parts of the study abroad experience.

**Volunteer Experiences** allow students to serve in a community primarily because they choose to do so. Many serve through a non-profit organization—sometimes referred to as formal volunteering, but a significant number also serve less formally, either individually or as part of a group. Because these informal volunteers are much harder to identify, they may not be included in research and statistics on volunteering.

**Experiential Learning Opportunities at Northern Illinois University**
The Office of Student Engagement and Experiential Learning (OSEEL) provides “opportunities for undergraduates to engage in hands-on learning. Through OSEEL’s undergraduate research, service learning, themed learning communities, and other high impact practices, NIU students will develop critical thinking, use creativity, and employ multiple communication strategies while applying their skills to real-world problems. As an outgrowth of the Curricular Innovations strategic plan, OSEEL works collaboratively across university divisions and colleges to create sustainable, relevant, student-centered, research-based programming which utilizes experiential learning, both in and out of the classroom to promote and sustain student academic success. Each of OSEEL’s programs align directly with the eight student learning outcomes of the Baccalaureate Review as NIU seeks to enhance the cognitive, social, and academic skills of its students to prepare them to be life-long students and responsible citizens in our ever-changing, global society” (OSEEL, 2011, para. 1). For more information on the Office of Student Engagement and Experiential Learning, call 815.753.8154 or at [http://www.niu.edu/engagedlearning/](http://www.niu.edu/engagedlearning/).

Since 2000, The Experiential Learning Center (ELC) in the College of Business has been connecting “teams of NIU students with organizations to tackle real-world business issues. From software evaluation to emerging market analysis projects, students serve as consultants addressing non-mission critical, cross functional business issues. Throughout the 16-week semester, Business ELC teams are guided by a faculty coach and assisted by an organizational sponsor. To each unique project, teams apply the Business ELC project methodology, as well as the knowledge, skills and theories learned in the classroom” (ELC 2001). For more information about the College of Business Experiential Learning Center, call 815.753.5445 or at [http://www.cob.niu.edu/elc/](http://www.cob.niu.edu/elc/).
Summary
Experiential learning experiences help to complete students’ preparation for their chosen careers which reinforce course content and theory. Students learn through student- rather than instructor-centered experiences by doing, discovering, reflecting and applying. Through these experiences students develop communication skills and self-confidence and gain and strengthen decision-making skills by responding to and solving real world problems and processes.

References
Association for Experiential Education
http://www.acee.org/

http://cte.gmu.edu/Teaching/experiential_learning.html


http://internships.about.com/od/internships101/p/TypesExperEd.htm


http://www.niu.edu/teachercertification/teachercert/tcp_st.shtml

Northern Illinois University, Office of Teacher Certification OTC (2011). Student teaching.
http://www.niu.edu/teachercertification/teachercert/tcp_st.shtml

Northern Illinois University, Study Abroad Program SAP (2011). A parent’s guide to study abroad programs.
http://www.niu.edu/studyabroad/audiences/parents.shtml


Experiential Learning Resources
Association for Experiential Education
http://www.aee.org/

International Consortium for Experiential Learning
http://www.icel.org.uk/

Journal of Experiential Education
http://www.aee.org/publications/jee

National Society for Experiential Education
http://www.nsee.org/

http://www.wilderdom.com/experiential/

The Council for Adult and Experiential Learning
http://www.cael.org/
Instructional Scaffolding to Improve Learning

Similar to the scaffolding used in construction to support workers as they work on a specific task, instructional scaffolds are temporary support structures faculty put in place to assist students in accomplishing new tasks and concepts they could not typically achieve on their own. Once students are able to complete or master the task, the scaffolding is gradually removed or fades away—the responsibility of learning shifts from the instructor to the student.

Why use Instructional Scaffolding?
One of the main benefits of scaffolded instruction is that it provides for a supportive learning environment. In a scaffolded learning environment, students are free to ask questions, provide feedback and support their peers in learning new material. When you incorporate scaffolding in the classroom, you become more of a mentor and facilitator of knowledge rather than the dominant content expert. This teaching style provides the incentive for students to take a more active role in their own learning. Students share the responsibility of teaching and learning through scaffolds that require them to move beyond their current skill and knowledge levels. Through this interaction, students are able to take ownership of the learning event.

The need to implement a scaffold will occur when you realize a student is not progressing on some aspect of a task or unable to understand a particular concept. Although scaffolding is often carried out between the instructor and one student, scaffolds can successfully be used for an entire class. The points below are excerpted from Ellis and Larkin (1998), as cited in Larkin and provide a simple structure of scaffolded instruction.

First, the instructor does it.
In other words, the instructor models how to perform a new or difficult task, such as how to use a graphic organizer. For example, the instructor may project or hand out a partially completed graphic organizer and asks students to "think aloud" as he or she describes how the graphic organizer illustrates the relationships among the information contained on it.

Second, the class does it.
The instructor and students then work together to perform the task. For example, the students may suggest information to be added to the graphic organizer. As the instructor writes the suggestions on the white board, students fill in their own copies of the organizer.

Third, the group does it.
At this point, students work with a partner or a small cooperative group to complete the graphic organizer (i.e., either a partially completed or a blank one). More complex content might require a number of scaffolds given at different times to help students master the content.
Fourth, the individual does it.
This is the independent practice stage where individual students can demonstrate their task mastery (e.g., successfully completing a graphic organizer to demonstrate appropriate relationships among information) and receive the necessary practice to help them to perform the task automatically and quickly.

Types of Scaffolds

Alibali (2006) suggests that as students progress through a task, faculty can use a variety of scaffolds to accommodate students’ different levels of knowledge. More complex content might require a number of scaffolds given at different times to help students master the content. Table 1 presents scaffolds and ways they could be used in an instructional setting.

<table>
<thead>
<tr>
<th>Scaffold</th>
<th>Ways to use Scaffolds in an Instructional Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advance organizers</td>
<td><strong>Tools used to introduce new content and tasks to help students learn about the topic:</strong> Venn diagrams to compare and contrast information; flow charts to illustrate processes; organizational charts to illustrate hierarchies; outlines that represent content; mnemonics to assist recall; statements to situate the task or content; rubrics that provide task expectations.</td>
</tr>
<tr>
<td>Cue Cards</td>
<td><strong>Prepared cards given to individual or groups of students to assist in their discussion about a particular topic or content area:</strong> Vocabulary words to prepare for exams; content-specific stem sentences to complete; formulae to associate with a problem; concepts to define.</td>
</tr>
<tr>
<td>Concept and mind maps</td>
<td><strong>Maps that show relationships:</strong> Partially or completed maps for students to complete; students create their own maps based on their current knowledge of the task or concept.</td>
</tr>
<tr>
<td>Examples</td>
<td><strong>Samples, specimens, illustrations, problems:</strong> Real objects; illustrative problems used to represent something.</td>
</tr>
<tr>
<td>Explanations</td>
<td><strong>More detailed information to move students along on a task or in their thinking of a concept:</strong> Written instructions for a task; verbal explanation of how a process works.</td>
</tr>
<tr>
<td>Handouts</td>
<td><strong>Prepared handouts</strong> that contain task- and content-related information, but with less detail and room for student note taking.</td>
</tr>
<tr>
<td>Hints</td>
<td><strong>Suggestions and clues to move students along:</strong> “place your foot in front of the other,” “use the escape key,” “find the subject of the verb,” “add the water first and then the acid.”</td>
</tr>
</tbody>
</table>
| Prompts                  | **A physical or verbal cue to remind—to aid in recall of prior or assumed knowledge.**  
                          | **Physical:** Body movements such as pointing, nodding the head, eye blinking, foot tapping. **Verbal:** Words, statements and questions such as “Go,” “Stop,” “It’s right there,” “Tell me now,” “What toolbar menu item would you press to insert an image?”, “Tell me why the character acted that way.” |
| Question Cards           | **Prepared cards with content- and task-specific questions** given to individuals or groups of students to ask each other pertinent questions about a particular topic or content area. |
### Question Stems

<table>
<thead>
<tr>
<th>Question Stems</th>
<th>Incomplete sentences which students complete: Encourages deep thinking by using higher order “What if?” questions.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stories</td>
<td>Stories relate complex and abstract material to situations more familiar with students: Recite stories to inspire and motivate learners.</td>
</tr>
<tr>
<td>Visual Scaffolds</td>
<td>Pointing (call attention to an object); representational gestures (holding curved hands apart to illustrate roundness; moving rigid hands diagonally upward to illustrate steps or process), diagrams such as charts and graphs; methods of highlighting visual information.</td>
</tr>
</tbody>
</table>

Source: (Alibali, 2006)

### Preparing to Use Scaffolding

As with any teaching technique, scaffolds should complement instructional objectives. While we expect all of our students to grasp course content, each of them will not have the necessary knowledge or capability to initially perform as we have intended. Scaffolds can be used to support students when they begin to work on objectives that are more complex or difficult to complete. For example, the instructional objective may be for students to complete a major paper. Instead of assuming all students know how to begin the process, break the task into smaller, more manageable parts.

1. First, the instructor provides an outline of the components of the paper
2. Then students would prepare their outline
3. The instructor then provides a rubric of how each paper criteria will be assessed
4. Students would then work on those criteria and at the same time and self-evaluate their progress
5. The pattern would continue until the task is completed (although scaffolds might not be necessary in all parts of the task)

Knowing your subject well will also help you identify the need for scaffolding. Plan to use scaffolds on topics that former students had difficulty with or with material that is especially difficult or abstract. Hogan and Pressley, (1997) suggest that you practice scaffold topics and strategies they know well. In other words, begin by providing scaffolded instruction in small steps with content you are most comfortable teaching. See Table 2.
Table 2. Illustrative Model of Scaffolding

<table>
<thead>
<tr>
<th>Provided from the instructor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scaffold</td>
</tr>
<tr>
<td>That students cannot do on their own</td>
</tr>
<tr>
<td>New Task</td>
</tr>
<tr>
<td>What the students can already do</td>
</tr>
<tr>
<td>Foundational Knowledge</td>
</tr>
<tr>
<td>New Knowledge</td>
</tr>
</tbody>
</table>

What students can now do on their own as a result of the scaffold
Scaffold fades or is removed

Guidelines for Implementing Scaffolding
The following points can be used as guidelines when implementing instructional scaffolding (adapted from Hogan and Pressley, 1997).

- Select suitable tasks that match curriculum goals, course learning objectives and students’ needs.
- Allow students to help create instructional goals (this can increase students’ motivation and their commitment to learning).
- Consider students’ backgrounds and prior knowledge to assess their progress – material that is too easy will quickly bore students and reduce motivation. On the other hand, material that is too difficult can turn off students’ interest levels).
- Use a variety of supports as students progress through a task (e.g., prompts, questions, hints, stories, models, visual scaffolding “including pointing, representational gestures, diagrams, and other methods of highlighting visual information” (Alibali, M, 2006).
- Provide encouragement and praise as well as ask questions and have students explain their progress to help them stay focused on the goal.
- Monitor student progress through feedback (in addition to instructor feedback, have students summarize what they have accomplished so they are aware of their progress and what they have yet to complete).
- Create a welcoming, safe, and supportive learning environment that encourages students to take risks and try alternatives (everyone should feel comfortable expressing their thoughts without fear of negative responses).
- Help students become less dependent on instructional supports as they work on tasks and encourage them to practice the task in different contexts.
Benefits of Instructional Scaffolding

- Challenges students through deep learning and discovery
- Engages students in meaningful and dynamic discussions in small and large classes
- Motivates learners to become better students (learning how to learn)
- Increases the likelihood for students to meet instructional objectives
- Provides individualized instruction (especially in smaller classrooms)
- Affords the opportunity for peer-teaching and learning
- Scaffolds can be “recycled” for other learning situations
- Provides a welcoming and caring learning environment

Challenges of Instructional Scaffolding

- Planning for and implementing scaffolds is time consuming and demanding.
- Selecting appropriate scaffolds that match the diverse learning and communication styles of students.
- Knowing when to remove the scaffold so the student does not rely on the support.
- Not knowing the students well enough (their cognitive and affective abilities) to provide appropriate scaffolds.

Summary

Instructional scaffolds promote learning through dialogue, feedback and shared responsibility. Through the supportive and challenging learning experiences gained from carefully planned scaffolded learning, instructors can help students become lifelong, independent learners.

References


Selected Resources


Scaffolds can be “recycled” for other learning situations.

Learning Communities

What used to be an innovative trend is now a “credible and proven curricular model” (Laufgraben, J. L., & Shapiro, N. S., 2004, p. xiii). The term “learning communities” (LC) is an instructional strategy where people work together toward a common goal—students working with students, faculty working with faculty within the same discipline or from different disciplines, or students working with faculty. Although each learning community may take on a slightly different focus, here is one way they can be defined:

Learning communities can be defined as a group of individuals who collaboratively engage in a learning endeavor toward a common goal during a prescribed period of time. The typical time period for a successful learning community in an academic setting is one semester.

A number of characteristics, components, and features have been identified which make up a learning community (Burden, 2003; Cox, M. D., 2007; Iowa State University, 2006; Wilson & Ryder, n.d.; Wojcicki, E. 2002). A compilation of these sources is presented in the following list.

1. **Voluntary Membership**
   a. Members join a learning community voluntarily. However, in a classroom situation, students could be assigned to take part in a learning community.

2. **Shared Goals, Objectives, Values, Vision**
   a. Members are encouraged to help develop goals, objectives, and activities together with the instructor.
   b. Once the learning community is developed, members work toward a common goal, objective or vision.
   c. Community members learn from one another including the instructor.

3. **Connectedness and Trust**
   a. Learning communities impart trust and mutual respect.
   b. Members of the community understand that in addition to working on problems, they also are part of the solution—they must provide equal time in solving problems.
   c. Learning communities should provide a safe and secure learning environment where members feel free to discuss issues without the worry of reprisal.

4. **Supportive Environment**
   a. Everyone has a voice and that voice should be heard, respected, encouraged and supported.
   b. The community of learners is meant to cooperate and work through challenges and problems.
c. Members are accountable for their actions and are expected to complete their share of the work load. Members feel free to rely on other members for support.

5. Open Communication
   a. Learning communities should provide a variety of ways for students to communicate with peers and the instructor; members are encouraged and expected to foster open and autonomous communication. Anonymity is not a function of a learning community.
   b. Members are encouraged to be open with their thoughts, be an attentive listener, be able to communicate feelings (even if they are difficult to say), challenge other’s ideas, think out-of-the-box, know when to say nothing, use humor appropriately, be organized, be curious, leave biases out of the community, be enthused, be flexible, be tolerant, encourage others, keep each other on track, do sound research, be respectful, be resolute and believe in oneself and others.
   c. Learning communities help to create a social network of peers.

6. Instructor Role
   a. Act primarily as a facilitator and then as an instructor (with the notion that you will learn from students and learn from yourself).
   b. With the input of the students, establish ground rules, etiquette, expectations, and overall goal of the community.
   c. Believe in students’ abilities to achieve.
   d. Model best practice and encourage students to assume leadership roles.
   e. Encourage mutual respect and caring, tolerate and encourage challenges of opinions, discussions, disagreement, learn from successes and failures, praise and recognize one another’s triumphs, support each others’ troubles.
   f. Be fair, knowledgeable, unbiased, willing to help, and easy to approach.

Getting Started with Learning Communities
Leigh Smith, MacGregor, Matthews and Gabelnick (2004) suggest the following steps to initiate and sustain learning communities.

1. Seeing the Opportunity in the Idea—through existing models taking place in academic departments, at other institutions or learning about them from attending conferences.

2. Establishing a Collaborative Leadership Team—“is probably the single most important step in initiating and sustaining” learning communities (Leigh Smith, et al., 2004, p. 303). Successful learning communities emerge from strong bonds between academic and administrative units as well as collaboration between “academic and
student life” (Leigh Smith, et al., 2004, p. 304). Having a willing and able person or persons to lead and be responsible for the learning community is vital to its success. A faculty member, an administrator, or another individual can serve in this role who can work with the broader leadership team made up of stakeholders in the learning community. Leigh Smith, et al. (2004) note that some institutions form steering committees to “provide coherence and good communication” (p. 305).

3. **Defining Learning Community Goals**—as with any learning environment, learning communities need to focus on well-established and meaningful goals. Well-defined goals assist learning communities in the formation of appropriate activities for successful outcomes, help students learn and promote creativity, vitality and collaborative cultures. Learning community constituents have different goals and should have students’ learning in mind. However, everyone and every element involved in the learning community should benefit from the experience and these include students, faculty, curriculum, institution and community (Leigh Smith, et al., 2004). Goals will evolve over time and the learning community and everyone connected to it should be open to and learn from changes that can take place.

4. **Choosing a Curricular Structure**—Leigh Smith et al. (2004) have identified three structural frameworks to follow when creating learning communities (see their work for a full explanation of these structures).

   a. **Learning Communities within Courses that are Unmodified**
   Students in a learning community cohort enroll in courses together which are not modified on behalf of the community. Students will, however, enroll in another course or courses which integrate and perpetuate the learning community.
   **Example:** Themed Learning Communities such as *Business Ethics*; *How GREEN is your paw print? Reducing Your Carbon Footprint*; *Black and Latino Leaders in U.S. Social Movements*; and *Military Arts and Artists Militant* – offered at Northern Illinois University.

   b. **Learning Communities of Linked or Clustered Classes**
   This LC structure has instructors who teach different courses collaborate to link content to each other’s courses. This structure could link an introductory skill building course to a more content-intense course; link “foundation courses for a major,” link related courses toward a minor, or link general education courses “around an interdisciplinary theme” (Leigh Smith, et al., 2004, p. 77).
   **Example:** An introductory Public Speaking course linked with an American Public Opinion course in which the student cohort learns basic public-speaking skills which can be practiced and refined in the public opinion course discussions.

5. **Team-Taught Learning Communities**
As the title implies, this LC structure is taught by a number of faculty
members who can be from the same general discipline (English Composition and American Literature) or from unique disciplines (Humanities, Composition, Art). This structure can be created around a central theme related to a particular content, an academic college, or a problem/issue. Students receive one syllabus which integrates each of the courses around the central theme.

**Example:** UBUS 310, Business Core: Lecture, a 9-credit hour course for undergraduate business students, offered at NIU. This course is team-taught between three business disciplines (finance, marketing, and operations management) and introduces “students to the three primary functional areas in business” (Northern Illinois University, 2007c, para. 1).

6. **Recruiting Students**—students want classes that are relevant to their interests, fit in their busy academic and personal schedules (fit into a semester rather than longer commitment), “count” toward their academic majors and can be transferred to other schools. Leigh Smith et al. (2004) suggest that learning community developers consider these points rather than creating a LC that is interesting to them rather than the students.

7. **Marketing and Promoting Learning Communities**—knowing your students and their academic needs is at the heart of all instruction. Therefore, doing some research about your students will help you through the LC planning stages (which can be gleaned from academic advisors and colleagues). Marketing plans should include information about the value of the learning community for the students—how it fits their needs and when and where the learning community will take place. Promoting the learning community can be done through academic advisors, university recruitment media, bulletin boards, course announcements, former students, student organizations, and online using the department, college, school, or university’s Web site.

8. **Advising**—Advisors can help students transition to and function within a learning community and can act as spokespersons in recruitment efforts. Leigh Smith et al. (2004) suggest that advisors be included when planning learning communities for their perspective on students’ personal, academic and scheduling needs.

9. **Registration and Scheduling**—getting student buy-in to actually commit to a learning community begins with its purpose—what is the overall goal and how will students benefit from it? Leigh Smith et al. (2004) state that learning communities can help students adjust to college life, can assist students in registering for bundled courses, and provide a means to make new friends and study partners. As mentioned in the previous step, advisors can play a crucial role in helping students through all phases of a learning community.

10. **Assessment**—assessment strategies should be well thought out and start at the beginning of the LC experience and include both formative (throughout the learning) and summative (at the end of learning) formats.
(throughout the learning) and summative (at the end of learning) formats. As with any teaching strategy, assessment methods should evaluate the goals and instructional objectives (the purpose of the learning community) and meet the needs of all the stakeholders — the students, the instructors, the administrators, the institution, the curriculum, and any other people who are involved in the learning community.

In *Sustaining & Improving Learning Communities*, Laufgraben and Shapiro (2004) list four learning community forms or models all of which are offered at NIU:

1. **Paired or Clustered Courses.** NIU’s Department of Special and Early Education requires students to enroll in courses which are sequenced in blocks for students enrolled in the teacher education programs.

2. **Cohorts in Large Courses or TLCs (Themed Learning Communities).** NIU offers Themed Learning Communities which enroll “a common cohort of students in a small, personal ‘learning community’ by linking general education or other undergraduate courses around a common theme or area of interest” (Northern Illinois University, 2011, para. 1).

3. **Team-taught Programs.** The College of Business at NIU offers UBUS 310, Business Core: Lecture, a 9-credit hour course for undergraduate business students. This course is team-taught between three business disciplines (finance, marketing, and operations) and introduces “students to the three primary functional areas in business” (Northern Illinois University, 2007c, para. 1). Visit the College of Business Web site to see their other team-taught courses at (http://www.cob.niu.edu/).

4. **Residence-based learning communities, models that intentionally link the classroom-based learning community with a residential life component.** NIU has several Academic Residential Program communities, including Business Careers House; Fine Arts House; Health House; Hearing Impaired Interest House; Honors House; International House; Science Engineering & Technology House; and Teacher Education and Certification House. The “Academic Residential Programs . . . [strengthen] connections between students and faculty within a chosen course of study.” (Northern Illinois University, 2007a, para. 1).

**Summary**

Learning communities create interdisciplinary learning environments which assist students in becoming partners in their own learning. Learning communities encourage students to take an active role in their learning through open communication, creative thinking, negotiation, and mutual respect of each member of the community.

**References**


**Selected Resource**

Washington Center for Improving the Quality of Undergraduate Education (n.d.). *Learning Communities*. [http://www.evergreen.edu/washcenter/lcFaq.htm](http://www.evergreen.edu/washcenter/lcFaq.htm)
Problem-Based Learning (PBL)

Problem based learning (PBL) is an instructional approach where students learn by solving challenging, open-ended problems. The problems are authentic tasks and are solved in socially and contextually based teams of students. The students rely on their current knowledge of the problem, identify “information they need to know to solve the problem, and the strategies they use to solve the problem” (Stanford University Newsletter on Teaching, 2001).

**Traditional versus Problem-Based Learning**

Traditional approaches to learning often follow a linear process where the instructor dictates what is to be done: Information and details are presented first which the students then use to solve a problem. In problem-based learning, the problem is presented first after which students work in small teams to solve the problem. Figure 1 represents the problem-based learning process showing how each of the steps inter-connect and relate to one another and are iterative (steps can, and often should be, revisited).

![Figure 1](image-url)
Instructor’s Role in Problem-Based Learning

The instructor identifies a problem that is purposely complex and vague yet intriguing enough to excite students to inquire about it, do research on it and draw reasonable multiple solutions or conclusions on the problem. The problem should be linked to course content; however, although the problem should not be familiar to students it should be relevant to potential future use in work environments.

- Identify a problem that is appropriate for the course and student population. The problem should help teach students new skills they will use for a problem that would be too difficult for them to complete on their own. State the problem in a narrative format that includes details about its background but do not provide too much information that the students could find on their own as they search for a solution.

- Organize students in groups that represent different skill levels and diversity in an effort to achieve more successful team dynamics and outcomes. Find ways to engage students collaboratively in teams. This can be achieved by having students identify their strengths and weaknesses which will assist them as they assume different roles during the problem-solving process.

- Provide instructional support to assist the students in building their understanding of new content and the problem-solving process. Support should be provided from the time you present the problem to when the teams present their solutions. Key here is support – your role will be facilitator, coach and mentor to guide and move students from what they already know to a deep understanding of new material.

Students’ Role in Problem-Based Learning

During problem-based learning, students collaborate in small teams to explore the presented problem situation. “Through this exploration students are expected to examine gaps in their own knowledge and skills in order to decide what information they need to acquire in order to resolve or manage” the problem situation (Savin-Baden, 2004, p. 3). What follows is a method that summarizes the steps students take to solve the problem situation which is excerpted from and used with permission, Problem-based Learning by Landsberger (2011).

1. **Explore the issues related to the problem.** Read, discuss and analyze the problem and identify its significant parts.

2. **List what your team knows about the problem.** Discuss your team members’ current knowledge and experiences that relate to the problem. Identify the strengths and capabilities each team member can offer as you explore solutions to the problem. Brainstorm possible solutions and accept everyone’s contributions.

3. **Develop and write out the problem statement in your own words.**
   This description should be based on what you know about the
problem and what you will need to know to solve the problem. Do the following:
   a. Get consensus from the team on the new written statement
   b. Write the problem statement
   c. Get feedback from your instructor (for confirmation that you are on the right track)
   d. Be willing to change/modify the problem statement as you gather information and learn more about the problem

4. **List all possible solutions to the problem.** List ideas, speculations, and hypotheses about the problem – what are its causes and in what ways might the problem be solved? Order the possible solutions from the most likely to the least likely and choose the one your team feels is most likely to succeed.

5. **List actions to be taken with a timeline.**
   a. What do we have to know and do to solve the problem?
   b. How do we rank these actions?
   c. How do these actions relate to our list of possible solutions?
   d. Do we agree on these actions and if not, how do we reach consensus?

6. **List what your team needs to know to solve the problem.** List what your team does not know about the problem and ask questions such as, “What do we need to know to solve this problem?” or “Can the instructor provide us with more information?”
   a. Discuss possible resources needed to solve the problem such as the Internet, textbooks, primary and secondary sources, interviews, the instructor.
   b. Assign and schedule research tasks to each team member.
   c. Set deadlines for all tasks.

7. **Write your team’s report with the solution to the problem that includes supporting documents.** This step can act as a preliminary step that involves a draft report or can be the final report. Check with your instructor on his or her requirements.
   a. Prepare how you will present your findings by following the requirements for this part of the activity. Typically, each team presents their solutions as a group presentation to the entire class or stakeholders related to the problem.
   b. The findings should include the problem statement, questions, gathered data, analysis of the data, and support for solutions or recommendations based on the data analysis. This step will show the process and the outcome of the problem-based learning activity.

8. **Presenting and defending your conclusions.** An important goal in problem-based learning is to present not only your team’s conclusions but also the foundation upon which they are drawn. Prepare all of the following points:

---

*Northern Illinois University, Faculty Development and Instructional Design Center*  
*facdev@niu.edu, www.niu.edu/facdev, 815.753.0595*
a. State both the original problem and your conclusions
b. Summarize the process in which the problem was solved: what options were originally considered, what difficulties were encountered, what resources were used.
c. Convince your audience of your solution by using supporting documents, interviews and guests and the reasons these pieces of evidence were used
d. Prepare for challenging comments and questions – clearly address and or answer what you can and if you do not have an answer, acknowledge it and refer to it for more consideration.

9. **Review and reflect on your individual and team’s performance.**
   This reflection is an important step that will help validate what you learned and how you could improve on the process. A key component of problem-based learning is the act of reflection in which students are asked to apply what they have learned in other situations (transfer of knowledge), how they will apply what they have learned in their personal lives (as students and citizens of a community) and how they will apply what they have learned in another course-related projects (Barell, 2007). Reflective thinking also helps students become more observant of their own learning environment and to pose thoughtful questions as they solve problems.

**Summary**
Through problem-based learning students learn to become partners in the teaching/learning process where they accept responsibility for much of their learning, work successfully as a team member, deal with new and changing situations and develop lifelong learning skills. Problem-based learning then, can help students think critically, analyze and solve real world problems that will better prepare them for careers outside the classroom.

**References**


Questioning Strategies to Engage Students

Asking students challenging and thought-provoking questions encourages students to tap their existing mental models and build upon previous knowledge. Faculty can ask key questions to get students to see the relevance of a topic. In turn, it is hoped that students will then ask follow-up questions, engaging in dialogue while critically analyzing viewpoints shared. Therefore, by encouraging students to ask questions faculty provide opportunities for students to become actively engaged in the learning process while also developing valuable metacognitive skills that will benefit them the rest of their lives.

This article shares tips for designing and asking effective questions, during the beginning, middle and end of class, as well as asking questions outside of class.

Tips for Designing and Asking Effective Questions

In his book, *The Craft of Teaching*, Kenneth E. Eble (1988) shows the essential connection between “the art of asking questions” with meaningful class discussions (p. 88-89). Eble suggests “three cardinal principles” when forming questions:

1. “Ask real questions even though they may seem off-hand, simple, or imprecise.” Avoid using stock questions that fail to match course content and worst of all, your teaching style. Instead, form questions that are related to course content, current and ongoing discussions, and ones that are interesting to your students. Finding students’ interests can be achieved through an early course survey and more intimate classroom discussions.

2. “Be ingeniously responsive to the students’ answers and questions.” Class conversations, as Eble suggests, should be accepting of all points of view, whether or not the answer is correct, “vague, wandering, irritating, or whatever” (1988, p. 89). In other words, everyone should feel comfortable answering questions without fear of ridicule, non-acceptance, or laughter. This is especially important when asking questions in a classroom of diverse learners. Some students not educated in western cultures may not be comfortable answering questions—they learned by listening to more autocratic instructors and did not ask questions because doing so questioned the authority of the instructor. Other students could have learning disabilities or are fearful of speaking in class. It is important, then, to create a learning environment in which you welcome and encourage questions. Model your expectations at the beginning of the semester and provide examples of ways you expect questions to be asked and answered. “Never deliberately ignore a question or demean the questioner” (Eble, 1988, p. 89). If class time is coming to an end and you feel students have questions yet to ask, have them write the questions on a note card that they submit before leaving class. You can address these questions at the beginning of the next class period or comment directly on the card which you can return to the student.
3. “Try to achieve a rhythm in a series of questions so that the group arrives at moments of larger understanding.” Prepare a series of questions that begin with less complicated content that eventually leads to more complex content. Present questions with just enough information to encourage students to think deeply and form a meaningful answer. Instead of expecting one person to answer the question, ask students to pair up and discuss the question and prepare a shared answer—this allows them to talk about and share their collective knowledge with the class.

Avoid using language that is ambiguous or not yet relevant to course content. Do not assume students know the “terminology du jour.” Asking vague questions by virtue of ambiguous or out-of-context language may elicit vague answers. Therefore, “questions should be definite and unmistakable” (Eble, 1988, p. 90, citing Fitch).

The following tips and techniques have been compiled from a number of sources (see references) that provide ways to prepare and deliver effective questions in the classroom. Although this list is not exhaustive, the points provide a range of ways to integrate questions in the classroom. The list begins with preparing questions and ends with ways questions can be used outside the classroom.

**Preventing Questions**
First and foremost, design course goals and learning objectives to help students achieve what you want them to learn. Once course goals and objectives have been developed you can begin to prepare complementary and effective questions.

Get acquainted with your students so you can customize questions that challenge them to think more critically about course content to help them learn. This does not mean that you must scrap the foundations, key concepts and content that drives your course. It means, however, that you can meet your students along the way—to challenge the knowledge they bring to the classroom and to present content through questions that is useful and relevant to them.

**Questions to Ask Students at the Beginning of Class**
- Arrive in the classroom early to help students who have questions about previous lectures, readings and exam preparation.
- Begin the semester—the very first class, by asking students the type of questions you plan to ask throughout the semester. This will set the stage for the class, and help students form more complete impressions and establish expectations.
- Begin the class with a key question. Assume that students who come to your class are interested in being there. “Hook” students with a question based on what they know (through readings and course content, by virtue
of their academic level—freshmen versus seniors, or by their major). This key question can be the foundation upon which they can “hang” further concepts (facts and content). The key question can be projected on the screen as students enter the room or asked as soon as the class begins. Here are a few key question examples:

- “How will the proposed economic stimulus package affect you as a college student?”
- “Why should we be concerned about melting arctic ice?”
- “How will your successful completion of this class prepare you to enter the work force?”

- Ask provocative questions to energize students into saying something. Keep the topic relevant to the course and be prepared for discussions that could begin to get divergent. Know when to draw the line on discussions that veer from the question or when students dominate the discussion at the expense of others. Bain (2004) provides examples of provocative questions:

  - “Why did some societies get in boats and go bother other people while others stayed at home and tended to their own affairs?”
  - “Why are human beings occasionally willing to leave home and hearth and march off into the wilderness, desert, or jungle and kill each other in large numbers?”
  - “Why are some people poor and other people rich?”
  - “How does your brain work?”
  - “What is the chemistry of life?”
  - “Can people improve their basic intelligence?”

- Tell stories about your life, your friends, and other people that provide meaning to the topic of the day. Stories can provide the springboard some students might need to ask questions. For example, as an instructor in a University Experience class, you could tell the story of your first experiences away at college and some of your struggles with study and time management skills. Personal stories might compel students to ask questions about study skills, time management and taking exams.

Questions to Ask Students During Class

- Teach with the notion that students are naturally curious and have them “develop an intrinsic interest that guides their quest for knowledge, and an intrinsic interest...that can diminish in the face of extrinsic rewards and punishments that appear to manipulate their focus” (Bain, 2004, pp. 46-47). In other words, provide content in such a way that students can see how it can be used in their professions and the relevance of course content to job-related skills. Provide meaningful comments on graded papers and exams—show them the “why” so they can learn “how” to improve.
• Be aware of how you present questions—do you ask questions in a friendly or authoritative manner? What is the purpose of asking questions? Do you want your students to learn from the question or are you asking the question “just because”?

• Avoid “schooling” where “bulimic learners” (Bain, 2004, p. 40, citing Nelson) memorize facts and short-ranged information to later purge, “making room for the next feeding” (Bain, 2004, p. 41). This “force fed” competitive-type of schooling reduces students to be mere receptors of information to compete for grades and have little interest in learning something new.

• Incorporate relevant vocabulary when responding to a student’s question. For example, when a student asks why her computer is not operating as fast as it had been, you can tell her that she might need more RAM. The student can then ask, “What is RAM?” a question she would not have asked except in this context (the idea for this example was improvised from Bain, 2004, p. 104).

• Ask students to bring one or two questions to class based on textbook readings or content covered in the previous class. Provide some sample questions to help students write meaningful questions. These questions can then be submitted (a good way to take attendance) and randomly addressed at the beginning of the class period or used to develop exam questions.

• Avoid answering your own question by giving students a few seconds to form a good answer. If the first answer is not what you had expected, do not discount the effort the student has made. Instead, ask the student if they could re-phrase their answer or to elaborate a bit more. If they are still having some difficulty, ask another student to help form the correct answer. Ask questions that students can think for themselves (McComas & Abraham, 2004).

• Engage other students by having them answer the question of one of their peers. It has been shown that students can learn from other students if given the opportunity to do so.

Questions to Ask Students at the End of Class
• End the class by asking the students:
  o “What questions do you still have about today’s topic?”
  o “If you were to ask one last question, what would it be?”
  o “What was the muddiest point today?”
  o “What was the most meaningful point we covered today?”

Ask end-of –class questions to help students synthesize the information and draw conclusions. Their responses to one last question and muddiest point can be submitted for your review—you
can address student issues at the beginning of the next class period or review to clarify content.

- Make notes about how students responded to questions asked during the class as well as the type of questions students asked of you. These notes can help you prepare for and modify subsequent classes (Gross Davis, 1993 citing Kasulis).

Questions to Ask Students Outside the Classroom

- Questions do not have to be limited to the classroom setting. You can ask specific questions related to textbook readings, homework and study. Meyers and Jones (1993) suggest that questions should “fit into prospective classroom activities, model theories and approaches used in academic disciplines and professional careers, extend meaning to materials read or discussed previously, promote a critical analysis of the materials, and make the students think about how the text applies to their personal experiences” (p. 128). Here is an example of such questioning:

  “Please take particular note of pages 13-14 of Kaisha’s article in which he comments on decision-making in Japanese business. Recall our discussion of decision-making in the American auto industry last week. What comparisons and contrasts can you draw between the two approaches to decision making? We will be using these two approaches in a simulated decision-making exercise Thursday” (Meyers and Jones, 1993, p. 129).

Other questions related to reading assignments can follow these examples:
  - What [material from] the chapter do you think we should review?
  - What item in the chapter surprised you?
  - What topic in the chapter can you apply to your own experience?  
    (Meyers and Jones, 1993, p. 130 citing Gaede).

Finally, use online discussion boards to pose questions that can help extend course content asynchronously. Online discussion boards give students extra time to form their answers and can benefit those students who are less inclined to join in on face-to-face class discussions.

Summary

Using questions in the classroom can help students engage with course content, the instructor, and other students. Good instructor-generated questions can also guide students in developing better answers and help them to form questions of their own.

References


Selected Resource
University of Illinois at Urbana-Champaign (2006). Levels and types of questions. Center for Teaching Excellence Web site: http://leusd.les.schoolfusion.us/modules/groups/hompagefiles/cms/568549/File/Files%202009/Levels_and_Types_of_Questions.pdf?sessionid=705e0ac7e99bc4b2f09f4852baecc112
Role Playing

Role play exercises give students the opportunity to assume the role of a person or act out a given situation. These roles can be performed by individual students, in pairs, or in groups which can play out a more complex scenario. Role plays engage students in real-life situations or scenarios that can be “stressful, unfamiliar, complex, or controversial” which requires them to examine personal feelings toward others and their circumstances (Bonwell & Eison, 1991, p.47).

Unlike simulations and games which often are planned, structured activities and can last over a long period of time, role play exercises “are usually short, spontaneous presentations” but also can be prearranged research assignments (Bonwell & Eison, 1991, p.47).

Benefits of Role Playing
Role playing can be effectively used in the classroom to:

- Motivate and engage students
- Enhance current teaching strategies
- Provide real-world scenarios to help students learn
- Learn skills used in real-world situations (negotiation, debate, teamwork, cooperation, persuasion)
- Provide opportunities for critical observation of peers

Guidelines in Developing Role Playing Exercises
Using a set of guidelines can be helpful in planning role playing exercise. Harbour and Connick (2005) offer the following:

- If you plan to use role playing as a graded exercise, introduce small, non-graded role plays early in and during the semester to help students prepare for a larger role play which will be assessed.
- Determine how the role play will be assessed: will observers be given an assessment rubric? Will observers’ remarks and scores be shared with the role players? Will the observers’ scores be included with the instructor’s scores? Will the role players be given the opportunity to revise and present the role play again? Will observers be taught how to properly assess the performance (include meaningful feedback that is not purely judgmental but rather justify all remarks that are practical and unbiased)?
- Instruct students that the purpose of the role play is to communicate a message about the topic and not focus as much on the actual person acting the role.
- Tie role plays to learning objectives so students see their relevance to course content.
- Allow time for students to practice the role play, even if it is spontaneous, so they will be able to think deeply about the role and present it in a meaningful way.
- Reduce large chunks of content into smaller sections which can be more effectively presented as a role play.
• When assigning a role play, explain its purpose and answer questions so students are able to properly prepare the exercise. Provide guidelines about content to include: general presentation behavior (eye contact, gestures, voice projection); use of props; and specific language to be used (content-related vocabulary) and language not to be used (profanity, slang).
• Challenge all students equally when assigning role plays so everyone will be assessed on equal ground.

Examples of Role Play Exercises
Students can gain additional (and alternative) meaning from the context of role playing than from non-context specific book learning and lectures. By means of guidance from clearly developed objectives and instructions, role plays can help students gain knowledge and skills from a variety of learning situations:

1. **Interview practice**—In preparation for career interviews, students can assume the role of the interviewer and/or the interviewee.
2. **Marketing**—In preparation for a class presentation, students can assume the position of a sales representative and sell a product.
3. **Retailing**—To help prepare students for a guest speaker in merchandising course, students can play the role of sales manager and sales representative to gain better insight on the responsibilities of these positions.
4. **Counseling**—In preparing for clinical practice, students can role play a family therapist whose client has revealed she has committed a criminal act.
5. **Teaching**—In preparation for a job fair, students can role play the teacher and the student, or the administrator and the student, or the teacher and a parent.
6. **Debates**—As a spontaneous exercise, the instructor has students briefly prepare arguments for and arguments against positions on a topic such as *Logging in the Northwest and the Spotted Owl, Arab-Israeli Conflict or Airline Flight Departure Delays*.

Summary
Role plays provide students with the opportunity to take part in activities which mirror career-related scenarios. To help students understand the use of role playing sessions, role plays should be content-focused, match learning objectives, and be relevant to real-world situations. Role playing exercises encourage students to think more critically about complex and controversial subjects and to see situations from a different perspective. When properly employed, role plays can motivate students in a fun and engaging way.

References

Selected Resources


Situated Learning

Situated learning is an instructional approach developed by Jean Lave and Etienne Wenger in the early 1990s, and follows the work of Dewey, Vygotsky, and others (Clancey, 1995) who claim that students are more inclined to learn by actively participating in the learning experience. Situated learning essentially is a matter of creating meaning from the real activities of daily living (Stein, 1998, para. 2) where learning occurs relative to the teaching environment. The following are examples of situated learning activities:

- Field trips where students actively participate in an unfamiliar environment
- Cooperative education and internship experiences in which students are immersed and physically active in an actual work environment
- Music and sports (physical education) practice which replicate actual setting of these events, e.g., orchestras, studios, training facilities
- Laboratories and child-care centers used as classrooms in which students are involved in activities which replicate actual work settings

These examples illustrate that students are actively involved in addressing real world problems. As the practice implies, the student is “situated” in the learning experience and knowledge acquisition becomes a part of the learning activity, its context, and the “culture in which it is developed and used” (Oregon Technology in Education Council, 2007). Students form or “construct” their own knowledge from experiences they bring to the learning situation; the success of situated learning experiences relies on social interaction and kinesthetic activity.

Traditional learning occurs from abstract, out of context experiences such as lectures and books. Situated learning, on the other hand, suggests that learning takes place through the relationships between people and connecting prior knowledge with authentic, informal, and often unintended contextual learning. In this situation, a student’s role changes from being a beginner to an expert as they become more active and immersed in the social community where learning often is “unintentional rather than deliberate” (Oregon Technology in Education Council, 2007). Therefore, the social community matures and learns through collaboration and “sharing of purposeful, patterned activity” (Oregon Technology in Education Council, 2007, para. 14, citing Lave & Wenger).

Situated learning involves students in cooperative activities where they are challenged to use their critical thinking and kinesthetic abilities. These activities should be applicable and transferable to students’ homes, communities, and workplaces (Stein, 1998). While immersed in the experience, students reflect on previously held knowledge and by challenging the assumptions of other students.

Developing Classroom Activities

Stein (1998) recommends the following guidelines to develop situated learning classroom activities:
“Learning is grounded in the actions of everyday situations.
Knowledge is acquired situationally and transfers only to similar situations.
Learning is the result of a social process encompassing ways of thinking, perceiving, problem solving, and interacting in addition to declarative and procedural knowledge.
Learning is not separated from the world of action but exists in robust, complex, social environments made up of actors, actions, and situations” (para. 3).

Stein (1998), citing Young further clarifies ways instructors can design “situated learning in the classroom:

- Select situations that will engage the learners in complex, realistic, problem-centered activities that will support the desired knowledge to be acquired.
- Provide a scaffold for new learners, knowing the type and intensity of guidance necessary to help learners master the situations. As learners acquire additional skills, less support will be needed.
- Recast your role from content transmitter to facilitator of learning by tracking progress, assessing products produced by learners, building collaborative learning environments, encouraging reflection, and helping learners become more aware of contextual cues to aid understanding and transference.
- Assess the intellectual growth of the individual and the community of learners …through discussion, reflection, evaluation, and validation of the community’s perspective” (para 12).

Summary
Situated learning environments place students in authentic learning situations where they are actively immersed in an activity while using problem-solving (critical thinking) skills. These opportunities should involve a social community which replicates real world situations. In the end, the situated learning experience should encourage students to tap their prior knowledge and to challenge others in their community (Stein, 1998, para. 3).

References


Higher Education’s Obligations and the American with Disabilities Act, Section 504

In 1973, Congress passed Section 504 of the Rehabilitation Act of 1973 (Section 504), a law that prohibits discrimination on the basis of physical or mental disability (29 U.S.C. Section 794). The following is an abbreviated version of the act:

No otherwise qualified individual with a disability in the United States . . .. shall, solely by reason of his disability, be excluded from the participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance . . .

The Office for Civil Rights in the U.S. Department of Education enforces regulations implementing Section 504 with respect to programs and activities that receive funding from the Department (34 C.F.R. Part 104 [1988]). The Section 504 regulation applies to all recipients of this funding, including colleges, universities, and postsecondary vocational education and adult education programs. Failure by these recipients to provide auxiliary aids to students with disabilities that results in a denial of a program benefit is discriminatory and is prohibited by Section 504.

SEC. 202. DISCRIMINATION. 42 USC 12132. Subject to the provisions of this title, no qualified individual with a disability shall, by reason of such disability, be excluded from participation in or be denied the benefits of the services, programs, or activities of a public entity, or be subjected to discrimination by any such entity.

Postsecondary School Provision of Auxiliary Aids
Subpart E of the Section 504 regulation contains the following requirement relating to a postsecondary recipient's obligation to provide auxiliary aids to qualified students who have disabilities:

A recipient . . . shall take such steps as are necessary to ensure that no disabled student is denied the benefits of, excluded from participation in, or otherwise subjected to discrimination under the education program or activity operated by the recipient because of the absence of educational auxiliary aids for students with impaired sensory, manual, or speaking skills.

34 C.F.R. 104.44 (d)(1). Section 35.160 (b)(1) of the Title II regulation states:
A public entity shall furnish appropriate auxiliary aids and services where necessary to afford an individual with a disability an equal opportunity to participate in, and enjoy the benefits of, a service, program, or activity conducted by a public entity.
It is, therefore, the institution's responsibility to provide these auxiliary aids and services in a timely manner to ensure effective participation by students with disabilities. If students are being evaluated to determine their eligibility under Section 504 or the ADA, the recipient must provide auxiliary aids in the interim.

Postsecondary Student Responsibilities
A postsecondary student with a disability who is in need of auxiliary aids is obligated to provide notification of the nature of the disabling condition to the institution and to assist the institution in identifying appropriate and effective auxiliary aids. The students themselves must identify the need for an auxiliary aid and give adequate notice of the need. The student's notification should be provided to the appropriate representative of the institution who, depending upon the nature and scope of the request, could be one or more of the following: the institution's Section 504 or ADA coordinator, the appropriate dean, a faculty advisor, or professor. Postsecondary recipients, in response to a request for auxiliary aids, may make reasonable requests that the student provide supporting diagnostic test results and professional prescriptions for auxiliary aids. An institution also, on its own, may obtain a professional determination of whether requested auxiliary aids are necessary and, if so, what kind. The U.S. Office of Education provides the following list of auxiliary aids:

- taped texts
- notetakers
- interpreters
- readers
- videotext displays
- television enlargers
- talking calculators
- electronic readers
- Braille calculators, printers, or typewriters
- telephone handset amplifiers

- closed caption decoders
- open and closed captioning
- voice synthesizers
- specialized gym equipment
- calculators or keyboards with large buttons
- reaching device for library use
- raised-line drawing kits
- assistive listening devices
- assistive listening systems
- telecommunications devices for deaf persons

Institutions are not required to provide the most sophisticated auxiliary aids available...

Technological advances in electronics have vastly improved participation by students with disabilities in educational activities. Institutions are not required to provide the most sophisticated auxiliary aids available; however, the aids provided must effectively meet the needs of a student with a disability. An institution has flexibility in choosing the specific aid or service it provides to the student, as long as the aid or service selected is effective. These aids should be selected after consultation with the student who will use them.
Effectiveness of Auxiliary Aids

No aid or service will be useful unless it is successful in equalizing the opportunity for a particular student with a disability to participate in the educational program or activity. Not all students with a similar disability benefit equally from an identical auxiliary aid or service. The regulation refers to this complex issue of effectiveness in several sections. The specific reference to the effectiveness of auxiliary aids in the Section 504 regulation states:

Auxiliary aids may include taped texts, interpreters or other effective methods of making orally-delivered materials available to students with hearing impairments, readers in libraries for students with visual impairments, classroom equipment adapted for use by students with manual impairments, and other similar services and actions.

34 C.F.R. 104.44 (d)(2). There are other references to effectiveness in the general provisions of the Section 504 regulation which state, in part, that a recipient may not:

- Provide a qualified person with a disability with an aid, benefit, or service that is not as effective as that provided to others; or
- Provide different or separate aids, benefits, or services to disabled persons or to any class of disabled persons unless such action is necessary to provide qualified persons who are disabled with aids, benefits, or services that are as effective as those provided to others.

The Section 504 regulation also states:

[A]ids, benefits, and services, to be equally effective, are not required to produce the identical result or level of achievement for disabled and nondisabled persons, but must afford disabled persons equal opportunity to obtain the same result, to gain the same benefit or to reach the same level of achievement, in the most integrated setting appropriate to the person's needs.

34 C.F.R. 104.4 (b)(2). The institution must analyze the appropriateness of an aid or service in its specific context. For example, the type of assistance needed in a classroom by a student who is hearing-impaired may vary, depending upon whether the format is a large lecture hall or a seminar. With the one-way communication of a lecture, providing the service of a note taker may be adequate; but in the two-way communication of a seminar, an interpreter may be needed. Public institution also should be aware that under Title II of the ADA, in determining what type of auxiliary aid and service is necessary, the institution must give primary consideration to the requests of individuals with disabilities.

Cost of Auxiliary Aids

Covered institutions are responsible for the provision of effective auxiliary aids to students who are disabled. If an aid is necessary for classroom or other appropriate (non-personal) use, the institution must make it available, unless provision of the aid causes undue burden. A student with a disability may not be required to pay part or all of the costs of that aid or service. An institution may
not place a limit on its expenditure for auxiliary aids or services or refuse to provide auxiliary aids because it believes that other providers of these services exist, or condition its obligation to provide auxiliary aids on the availability of funds. In many cases, an institution may meet its obligation to provide auxiliary aids by assisting the student in obtaining the aid or obtaining reimbursement for the cost of an aid from an outside agency or organization, such as a state rehabilitation agency or a private charitable organization. However, the institution remains responsible for providing the aid.

**Personal Aids and Services**

An issue which is often misunderstood by institutions and students is the provision of personal aids and services to postsecondary students. Personal aids and services, including help in bathing, dressing, or other personal care, are not required to be provided by postsecondary institutions. The Section 504 regulation states:

> Recipients need not provide attendants, individually prescribed devices, readers for personal use or study, or other devices or services of a personal nature.

A covered postsecondary institution may not deny a service to a student with a disability if that service is offered to nondisabled students. Students with disabilities must be given equal access to regular medical treatment and health services offered by the institution. For example, if a college's health care unit offers a cholesterol test, a student with a disability who requests this service must have it provided.

The provision of personal services relating to certain individual academic activities is not required of postsecondary institutions. Personal attendants and individually prescribed devices are the responsibility of the student who has a disability and not of the institution. For example, readers may be provided for classroom use but institutions are not required to provide readers for personal use or for help during individual study time.

**For More Information**

For more information on Section 504 and the ADA and their application to auxiliary aids and services for disabled students in postsecondary schools, please contact the Center for Access-Ability Resources Services (CAAR) at [http://www.niu.edu/caar/](http://www.niu.edu/caar/), 815.753.1303 (voice), 815.753.3000 (TTY), [caar@niu.edu](mailto:caar@niu.edu) and Fax: 815.753.9570.

To obtain additional assistance, see Office of Civil Rights’ list of its 12 offices, which contains the address and telephone number for the OCR office that services your area. Last update August 27, 1997.
Reference
Veterans in the Classroom

NIU currently enrolls over 500 veterans, and this number is expected to increase in the near future as more veterans complete their service and seek higher education opportunities. Universities play a large role in the transition veterans make when they return to civilian life and also benefit from veterans’ presence on their campuses.

Many students face challenges when they come to a university. The challenges may include how to study, manage their time, interact with their instructors and classmates, learn about campus support services, and university policies and procedures. For veterans, who are used to receiving direct orders and specific instructions, being at a large campus can be especially daunting. As students they have to interact with a civilian population and be responsible for their daily activities without having a direct chain of command to follow.

The skills and abilities that veterans bring to NIU can be an asset in many ways. Their service experience may make them more self-sufficient than other students, and their leadership skills are invaluable inside and outside the classroom. Veterans shared experiences lend a unique perspective that can enhance the learning experience for all students.

General Information about Veteran Students
During the fall 2009 semester, faculty development staff had an opportunity to meet with a group of veteran students at NIU and listen to their needs and challenges with respect to their experience at NIU. The characteristics listed below were excerpted from this meeting and from several sources that discuss the needs of veteran students in the classroom. See resources and references for more detailed information.

- Many veterans are older and may be more mature than traditional college-age students.
- Some veterans have more responsibilities, such as married life, children, and continuing military duties compared to traditional college-age students.
- Some veterans have seen overseas combat, but not all veteran students have been in combat situations or have been overseas.
- Some veterans have experienced war, death, horror, shock, fear, etc., and some may still be experiencing the physical and/or mental after-effects of deployment.
- Veterans are, in general, very motivated and self-disciplined students, and can contribute to the classroom and campus life.

The veteran students who met with faculty development staff had only positive things to say about faculty, teaching, and the support services available to veterans at NIU. They especially appreciated the special support provided by the Military Student Services office at NIU. They acknowledged that they could not speak for all veterans as veterans are as diverse as any other group, but offered a number of general suggestions on improving their experience at NIU, which are identified in the next section.
Accommodating the Needs of Student Veterans

Accommodating the needs of veterans does not mean that we have to drastically change how we teach. However, being aware of the issues veterans face and being accommodating to their needs can ease their transition from military life to the civilian classroom, and improve the educational experience for all students. Listed below are some issues to consider in meeting the needs of veteran students at NIU:

- Create a trusting and caring classroom environment through your approach to all students and your teaching style so that veteran students feel comfortable to approach you and discuss their unique needs and challenges.
- Encourage veteran students to contact you if they encounter circumstances that may impact their performance in your course.
- Accommodate any special needs expressed by veteran students. This may include (but not be limited to) wanting to sit in the last row of the class to avoid exposing their backs, sitting away from windows, being hesitant initially to participate in discussions and missing class due to VA appointments or reserve-duty commitments.
- Be willing to take the time to explain course, assignment, and university policies to veteran students as they may be used to following orders without question. Veteran students may not know they can ask for permission to submit assignments late for valid reasons, appeal grades, or request special accommodations, when necessary.
- Learn about disabilities, such as Post Traumatic Stress Disorder (PTSD) and Traumatic Brain Injury (TBI) some veterans may suffer so that they can be referred to appropriate campus services for necessary accommodations.
- Expect the same classroom responsibilities and performance from veteran students as non-veteran students (neither increased nor decreased expectations).
- Help veteran students to successfully work together with civilian students on team projects and interact with them effectively. Some veteran students may prefer working only with other veteran students yet it is important to help veteran students integrate with civilian students and vice versa.
- As with all students, know how to teach veteran students who have different life experiences, learning preferences and capabilities.
- Do not express in-class sentiments related to war or military personnel that could alienate veteran students or put them on the spot. All veterans deserve recognition and appreciation for their service regardless of our personal opinions.
- Involve veteran students, at their own comfort level, in course-related discussions where they can share their service experiences and enrich the learning experience of all students.
- When possible, engage veteran students in leadership opportunities to contribute to the development of other students. Veteran students can help to promote academic programs in recruitment meetings and open houses.
- Know the services available at NIU for veteran students and their academic and personal needs.
Summary
Meeting the needs of NIU’s veteran students is important as NIU strives to meet the needs of all its students. Everyone will benefit from veteran students’ experiences and perspectives by welcoming them to the NIU community.

On Campus Services for NIU Veterans and all Students
Click on the service unit name to access its home page.

**Military Student Services**
Adams Hall 409
815.753.0691

**The Family Center of NIU**
Wirtz Hall 146
815.753.1684

**The Counseling Lab**
Graham Hall
815.753.9312

**The Psychological Services Center**
Psych-Math Building 86
815.753.0591

**The Counseling and Student Development Center**
Campus Life 200
815.753.1206

**NIU Veterans Club On Facebook**

Selected Resources
Burns, B. (n.d.). *Helping returning veterans transition to college.*

[http://www.capecod.edu/c/document_library/get_file?uuid=cc16cfbf-4f8a-4377-945c-018ad0f6c4b7&groupId=33012](http://www.capecod.edu/c/document_library/get_file?uuid=cc16cfbf-4f8a-4377-945c-018ad0f6c4b7&groupId=33012)


[http://www.unco.edu/enrollmentmanagement/PDF/DisabilityServicesVeterans.pdf](http://www.unco.edu/enrollmentmanagement/PDF/DisabilityServicesVeterans.pdf)
Formative and Summative Assessment

Assessment is the process of gathering data. More specifically, assessment is the ways instructors gather data about their teaching and their students’ learning (Hanna & Dettmer, 2004). The data provide a picture of a range of activities using different forms of assessment such as: pre-tests, observations, and examinations. Once these data are gathered, you can then evaluate the student’s performance. Evaluation, therefore, draws on one’s judgment to determine the overall value of an outcome based on the assessment data. It is in the decision-making process then, where we design ways to improve the recognized weaknesses, gaps, or deficiencies.

The figure below represents the systematic process of assessment, evaluation, and decision-making. The results (data) of the assessment (examinations, observations, essays, self-reflections) are evaluated based on judgment of those data. What to do next—the decision making step, is based on the evaluation.

Types of Assessment
There are three types of assessment: diagnostic, formative, and summative. Although are three are generally referred to simply as assessment, there are distinct differences between the three.

1. Diagnostic Assessment
Diagostic assessment can help you identify your students’ current knowledge of a subject, their skill sets and capabilities, and to clarify misconceptions before teaching takes place (Just Science Now!, n.d.). Knowing students’ strengths and weaknesses can help you better plan what to teach and how to teach it.

Types of Diagnostic Assessments
- Pre-tests (on content and abilities)
- Self-assessments (identifying skills and competencies)
- Discussion board responses (on content-specific prompts)
- Interviews (brief, private, 10-minute interview of each student)

2. Formative Assessment
Formative assessment provides feedback and information during the instructional process, while learning is taking place, and while learning is occurring. Formative assessment measures student progress but it can also assess your own progress as an instructor. For example, when
implementing a new activity in class, you can, through observation and/or surveying the students, determine whether or not the activity should be used again (or modified). A primary focus of formative assessment is to identify areas that may need improvement. These assessments typically are not graded and act as a gauge to students’ learning progress and to determine teaching effectiveness (implementing appropriate methods and activities).

In another example, at the end of the third week of the semester, you can informally ask students questions which might be on a future exam to see if they truly understand the material. An exciting and efficient way to survey students’ grasp of knowledge is through the use of clickers. Clickers are interactive devices which can be used to assess students’ current knowledge on specific content. For example, after polling students you see that a large number of students did not correctly answer a question or seem confused about some particular content. At this point in the course you may need to go back and review that material or present it in such a way to make it more understandable to the students. This formative assessment has allowed you to “rethink” and then “re-deliver” that material to ensure students are on track. It is good practice to incorporate this type of assessment to “test” students’ knowledge before expecting all of them to do well on an examination.

Types of Formative Assessment
- Observations during in-class activities; of students non-verbal feedback during lecture
- Homework exercises as review for exams and class discussions
- Reflections journals that are reviewed periodically during the semester
- Question and answer sessions, both formal—planned and informal—spontaneous
- Conferences between the instructor and student at various points in the semester
- In-class activities where students informally present their results
- Student feedback collected by periodically answering specific question about the instruction and their self-evaluation of performance and progress

3. Summative Assessment
Summative assessment takes place after the learning has been completed and provides information and feedback that sums up the teaching and learning process. Typically, no more formal learning is taking place at this stage, other than incidental learning which might take place through the completion of projects and assignments.

Rubrics, often developed around a set of standards or expectations, can be used for summative assessment. Rubrics can be given to students before they begin working on a particular project so they know what is
Rubrics also can help you to be more objective when deriving a final, summative grade by following the same criteria students used to complete the project.

Summative assessment is more product-oriented and assesses the final product, whereas formative assessment focuses on the process toward completing the product. High-stakes summative assessments typically are given to students at the end of a set point during or at the end of the semester to assess what has been learned and how well it was learned. Grades are usually an outcome of summative assessment: they indicate whether the student has an acceptable level of knowledge-gain—is the student able to effectively progress to the next part of the class? To the next course in the curriculum? To the next level of academic standing? See the section “Grading” for further information on grading and its affect on student achievement.

Types of Summative Assessment
- Examinations (major, high-stakes exams)
- Final examination (a truly summative assessment)
- Term papers (drafts submitted throughout the semester would be a formative assessment)
- Projects (project phases submitted at various completion points could be formatively assessed)
- Portfolios (could also be assessed during it’s development as a formative assessment)
- Performances
- Student evaluation of the course (teaching effectiveness)
- Instructor self-evaluation

Summary
Assessment measures if and how students are learning and if the teaching methods are effectively relaying the intended messages. Hanna and Dettmer (2004) suggest that you should strive to develop a range of assessments strategies that match all aspects of their instructional plans. Instead of trying to differentiate between formative and summative assessments it may be more beneficial to begin planning assessment strategies to match instructional goals and objectives at the beginning of the semester and implement them throughout the entire instructional experience. The selection of appropriate assessments should also match course and program objectives necessary for accreditation requirements.
References

Peer- and Self-Assessment

Part of a student’s well-rounded learning experience is to take an active role in group activities, group projects, and group presentations. Even though you would expect all group members to be equally involved, we know that some students will do more than others. To find out how well each of the students performed in the group and to round out the “group experience,” allow students to assess the performance of their group. Often, the group is asked to assess each other’s performance using guidelines or a rubric which allows for both quantitative and qualitative feedback. In addition to the peer feedback, each group member could also reflect on their own performance within the group. When combined with the instructor’s assessment, peer- and self-assessment can provide a more comprehensive picture of a student’s performance as depicted in Figure 1 below.

**Formative Assessment**

Figure 1 illustrates peer- and self-assessment at the *formative stage*—where each group member will begin to assess the performance of one another, including themselves. Formative assessment is useful in that it allows the group to assess their ongoing performance and to make changes, adjustments, and modifications of their initial plans toward the final product.

**Summative Assessment**

*Summative assessment* occurs during the group’s final presentation or after the project has been submitted. As before, the group will assess each other’s performance, but now that assessment is based on the final performance or project. It is at this point the instructor provides his or her assessment, using the same or similar guidelines or rubrics used by the students. Both formative and summative assessments can be identified on one form.

---

*When combined with the instructor’s assessment, peer- and self-assessment can provide a more comprehensive picture of a student’s performance*
Before the group projects begin, discuss with students the fundamentals of assessment and the benefits of peer- and self-assessment. Provide specifics of both formative (ongoing) and summative (end of the project) assessment and give them an opportunity to practice these methods. For example, students could practice their assessment skills by evaluating each other’s performance during an in-class activity after which they compare and discuss their comments and ratings with the instructor’s marks. This discussion activity will help students learn the basics of assessment and to reflect on the process. Also, make clear to students your expectations and provide guidelines and rubrics to help them objectively assess their peers and themselves.

Benefits of Peer- and Self-Assessment
- Peer- and self-assessment gives students the opportunity to critically assess the performance of group members and themselves.
- Peer- and self-assessment has shown that group members will be more likely to be personally accountable for their share of the work load knowing that their peers will be assessing one another.
- Peer- and self-assessment promotes self-reflection.
- Peer- and self-assessment data can be used in calculating final grades. This can help increase the objectivity of the final group grade.

Concerns with Peer-and Self-Assessment
- Inability to assess – some students may have difficulty assessing their peers and themselves and give inappropriate negative feedback and/or inflated positive feedback.
- “Hitchhiking” – some students will work off of other students to appear as though they have done their portion of the project.
- Misleading high or low marks and comments – this could raise or lower the final grade.
- Unequal scores – sometimes self-assessment scores can be higher than peer scores – meet with the student to discuss any issues which might have led to the score.
- Collusion between students – minimize this by providing detailed guidelines and rules of conduct for both the project and the assessment rubric.
- Taking assessment lightly – reduce students’ apathy about peer- and self-assessment by involving them in developing the criteria they will apply to each other’s work. Also, walk students through “mock” peer- and self-assessments to make them more comfortable when assessing their own work and the work of others.
Summary
Peer- and self-assessment gives students the opportunity to take an active role in the ongoing and final performance of their peers and themselves in group activities. Peer- and self-assessment further encourages students to be cooperative, responsible, and productive members of a group. Finally, peer- and self-assessment promotes reflection and helps build an awareness of students’ learning.

Resources


Reflective Journals and Learning Logs

Reflective journals are personal records of students’ learning experiences. Students typically are asked by their instructors to record learning-related incidents, sometimes during the learning process but more often just after they occur. Entries in journals and learning logs can be prompted by questions about course content, assignments, exams, students’ own ideas or students’ thought processes about what happened in a particular class period. Journals and learning logs are then submitted to the instructor for feedback. Both paper-based and online journals or logs can be turned in before or after each class period or at any other designated time.

A student’s writing style for journals and logs can be informal and sometimes inappropriate. However, to help students learn more about a particular subject or content, you can require students to write more formal entries using correct terminology, facts, and connections to course content. Consider providing guidelines and/or rules to help students write meaningful and authentic journals or logs.

Journals have long been used in exploratory writing activities but also can benefit the student beyond learning how to write.

...there is evidence that the art of reflection can help boost students’ critical thinking skills, encourage students to think about their own thinking (meta-cognition), and help students prepare for assignments and examinations...

Journals and learning logs can be used to reflect on a range of issues and situations from numerous viewpoints and perspectives.

Types of Reflections

Journals and learning logs can be used to reflect on a range of issues and situations from numerous viewpoints and perspectives (RMIT, 2006). RMIT (2006) lists six types of reflections. The following descriptions depict a reflection on university student groups and drinking. Possible student comments are in italics.

Observations—At this stage a student would write about what they actually saw or their viewpoint on a particular event. For example, At the pre-game parties outside the stadium I saw student groups guzzling buckets of beer.
Questions—Upon reflection, the student could ask the question, Why do the all of the student groups drink together at football games but don’t seem to get along when they don’t drink?

Speculations—After thinking about the situation, the student could reflect, Maybe it’s possible that that student groups drink because it’s easier to socialize that way. Or, maybe they think that they have to drink because everyone else does!

Self-awareness—At this point a student may place himself or herself in the situation by considering the ramifications. I really don’t think I need to drink to be able to socialize with my friends and think we would get into trouble if we decided to drink as much as the groups do.

Integration of theory and ideas—By reflecting on theories or ideas about cultural norms the student has connected the experience with what he or she has learned. The student might write, Social norm theory explains that particular group members think other group members drink more than their group does.

Critique—This is where the student may self-reflect on or “critique” the situation by writing, I can now reflect on my own drinking experiences to see if I really drink because my friends do.

The Reflection Cycle
Reflecting is a cyclical process, where recording ones thoughts (reflecting) “leads to improvement and/or insight” (RMIT, 2006). Improvement could mean progress, development, growth, maturity, enhancement, or any number of words which could imply change. In education, we want students to change for the better, to grow while learning and to mature into knowledgeable adults. Recording what has happened, reflecting on processes and analyzing to improve deeper learning all can lead to new dimensions of students’ inner selves. See Figure 1 below.

Figure 1
Adapted from (RMIT, 2006)
There are a number of stages through which students progress when writing reflective journals or learning logs. Each source outlines the stage or process somewhat differently yet with a similar approach. The essence of these models is presented below as the fundamental method of reflective journal and learning log entries. Note that each of the items below could be modified to fit a personal situation (for the reflective journal) or a learning environment/situation (for the learning log).

Method of Creating Reflective Journals and Learning Logs
It is suggested that students capture all formal and informal events which will prove useful when the time comes to return to the reflective journal or learning log for review. Students should focus on the areas which pose the most problems or difficulty in addition to those which are less problematic. Key to reflective journals and learning logs is to see progression over a period of time and to “gain a sense of achievement” (Dalhousie University, n.d.).

“Write, record
Describe the situation (the course, the context)
Who was involved with the situation?
What did they have to do with the situation?

Reflect, think about
What are your reactions?
What are your feelings?
What are the good and the bad aspects of the situation?
What you have learned?

Analyze, explain, gain insight
What was really going on?
What sense can you make of the situation?
Can you integrate theory into the experience/situation?
Can you demonstrate an improved awareness and self-development because of the situation?

Conclusions
What can be concluded in a general and specific sense from this situation/experience and the analyses you have undertaken?

Personal action plan
What are you going to do differently in this type of situation next time?
What steps are you going to take on the basis of what you have learned?”

(Sources include: Homik, M. & Melis, E., 2007; Johnson, S., n.d.; RMIT, 2006)

Summary
Reflective journals and learning logs can be useful as a teaching and learning tool. Either format can be adopted in any discipline where you can determine
what students are learning and in what areas they need assistance. Be open to read entries by students who might request feedback more often than scheduled.

References


Selected Resources


Writing to learn learning logs (n.d.). http://www.wku.edu/3kinds/mfllmpg.html#Independent%20Study
Rubrics for Assessment

A rubric is an explicit set of criteria used for assessing a particular type of work or performance (TLT Group, n.d.) and provides more details than a single grade or mark. Rubrics, therefore, will help you grade more objectively.

Have your students ever asked, “Why did you grade me that way?” or stated, “You never told us that we would be graded on grammar!” As a grading tool, rubrics can address these and other issues related to assessment: they reduce grading time; they increase objectivity and reduce subjectivity; they convey timely feedback to students and they improve students’ ability to include required elements of an assignment (Stevens & Levi, 2005). Grading rubrics can be used to assess a range of activities in any subject area:

<table>
<thead>
<tr>
<th>Assignments</th>
<th>Homework</th>
<th>Participation</th>
<th>Projects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Essay exams</td>
<td>In-class activities</td>
<td>Performances</td>
<td>Self-assessment</td>
</tr>
<tr>
<td>Group work</td>
<td>Lab reports</td>
<td>portfolios</td>
<td>Term papers</td>
</tr>
</tbody>
</table>

**Elements of a Rubric**

Typically designed as a grid-type structure, a grading rubric includes criteria, levels of performance, scores, and descriptors which become unique assessment tools for any given assignment. Figure 1 illustrates a simple grading rubric with each of the four elements for a history research paper.

**Figure 1**
Simple Grading Rubric

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Excellent</th>
<th>Good</th>
<th>Poor</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Number of sources</strong></td>
<td>Ten to twelve</td>
<td>Five to nine</td>
<td>One to four</td>
</tr>
<tr>
<td><strong>Historical accuracy</strong></td>
<td>No apparent inaccuracies</td>
<td>Few inaccuracies</td>
<td>Lots of historical inaccuracies</td>
</tr>
<tr>
<td><strong>Organization</strong></td>
<td>Can easily tell from which sources information was drawn</td>
<td>Can tell with difficulty from where information came</td>
<td>Cannot tell from which source information came</td>
</tr>
<tr>
<td><strong>Bibliography</strong></td>
<td>All relevant bibliographic information is included</td>
<td>Bibliography contains most relevant information</td>
<td>Bibliography contains very little information</td>
</tr>
</tbody>
</table>

**Descriptor**
When developing a rubric, begin with a task description which is the actual assignment or performance.

- *Task example:* Writing an Effective History Research Paper

1. **Criteria** identify the trait, feature or dimension which is to be measured and include a definition and example to clarify the meaning of each trait being assessed. Each assignment or performance will determine the number of criteria to be scored. Criteria are derived from assignments, checklists, grading sheets or colleagues.

   **Criteria example for a term paper:**
   - Introduction
   - Thesis
   - Arguments/analysis
   - Grammar and punctuation
   - Spelling
   - Internal citations
   - Conclusion
   - References

2. **Levels of performance** are often labeled as adjectives which describe the performance levels. Levels of performance determine the degree of performance which has been met and will provide for consistent and objective assessment and better feedback to students. These levels tell students what they are expected to do. Levels of performance can be used without descriptors but descriptors help in achieving objectivity. Words used for levels of performance could influence a student’s interpretation of performance level (such as superior, moderate, poor or above or below average).

   **Levels of performance example:**
   - Excellent, Good, Fair, Poor
   - Master, Apprentice, Beginner
   - Exemplary, Accomplished, Developing, Beginning, Undeveloped
   - Complete, Incomplete
   - Yes, No

3. **Scores** make up the system of numbers or values used to rate each criterion and often are combined with levels of performance. Begin by asking how many points are needed to adequately describe the range of performance you expect to see in students’ work. Consider the range of possible performance level.

   **Score example:** 1, 2, 3, 4, 5 or 2, 4, 6, 8

4. **Descriptors** are explicit descriptions of the performance and show how the score is derived and what is expected of the students. Descriptors spell out each level (gradation) of performance for each criterion and describe what performance at a particular level looks like. Descriptors describe how well students’ work is distinguished from the work of their peers and will help you to distinguish between each student’s work. Finally, the
same descriptors can be used for different criteria within one rubric. For example, the three level of performance: Excellent, Good, Fair and Poor can be used for the separate criteria of Accuracy, Organization, Punctuation & Grammar, and Spelling. Descriptors should be detailed enough to differentiate between the different level and increase the objectivity of the rater.

<table>
<thead>
<tr>
<th>Level of Performance</th>
<th>Descriptor example in italics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Criterion</td>
<td>Excellent</td>
</tr>
<tr>
<td>Spelling</td>
<td>No spelling errors.</td>
</tr>
</tbody>
</table>

Developing a Grading Rubric

First, consider using any of a number of existing rubrics available online. Many rubrics can be used “as is.” Or, you could modify a rubric by adding or deleting elements or combining others for one that will suit your needs. Finally, you could create a completely customized rubric using specifically designed rubric software or just by creating a table with the rubric elements. The following steps will help you develop a rubric no matter which option you choose.

1. Select a performance/assignment to be assessed. Begin with a performance or assignment which may be difficult to grade and where you want to reduce subjectivity. Is the performance/assignment an authentic task related to learning goals and/or objectives? Are students replicating meaningful tasks found in the real world? Are you encouraging students to problem solve and apply knowledge? Answer these questions as you begin to develop the criteria for your rubric.
2. **List criteria.** Begin by brainstorming a list of all criteria, traits or dimensions associated task. Reduce the list by chunking similar criteria and eliminating others until you produce a range of appropriate criteria. A rubric designed for formative and diagnostic assessments might have more criteria than those rubrics rating summative performances (Dodge, 2001). Keep the list of criteria manageable and reasonable.

3. **Write criteria descriptions.** Keep criteria descriptions brief, understandable, and in a logical order for students to follow as they work on the task.

4. **Determine level of performance adjectives.** Select words or phrases that will explain what performance looks like at each level, making sure they are discrete enough to show real differences. Levels of performance should match the related criterion.

5. **Develop scores.** The scores will determine the ranges of performance in numerical value. Make sure the values make sense in terms of the total points possible: What is the difference between getting 10 points versus 100 points versus 1,000 points? The best and worst performance scores are placed at the ends of the continuum and the other scores are placed appropriately in between. It is suggested to start with fewer levels and to distinguish between work that does not meet the criteria. Also, it is difficult to make fine distinctions using qualitative levels such as never, sometimes, usually or limited acceptance, proficient or NA, poor, fair, good, very good, excellent. How will you make the distinctions?

6. **Write the descriptors.** As a student is judged to move up the performance continuum, previous level descriptions are considered achieved in subsequent description levels. Therefore, it is not necessary to include “beginning level” descriptors in the same box where new skills are introduced.

7. **Evaluate the rubric.** As with any instructional tool, evaluate the rubric each time it is used to ensure it matches instructional goals and objectives. Be sure students understand each criterion and how they can use the rubric to their advantage. Consider providing more details about each of the rubric’s areas to further clarify these sections to students. Pilot test new rubrics if possible, review the rubric with a colleague, and solicit students’ feedback for further refinements.

**Types of Rubrics**
Determining which type of rubric to use depends on what and how you plan to evaluate. There are several types of rubrics including holistic, analytical, general, and task-specific. Each of these will be described below.

- **Holistic**—all criteria are assessed as a single score. Holistic rubrics are good for evaluating overall performance on a task. Because only one score is given, holistic rubrics tend to be easier to score. However, holistic rubrics do
Rubrics can help clarify your expectations and will show students how to meet them, making students accountable for their performance in an easy-to-follow format.

not provide detailed information on student performance for each criterion; the levels of performance are treated as a whole.

- **Analytical**—each criterion is assessed separately, using different descriptive ratings. Each criterion receives a separate score. Analytical rubrics take more time to score but provide more detailed feedback.
  - “Judging complex performances . . . involving several significant [criteria] . . .
  - Providing more specific information or feedback to students . . .” (Arter & McTighe, 2001, p 22)

- **Generic**—contains criteria that are general across tasks and can be used for similar tasks or performances. Criteria are assessed separately, as in an analytical rubric.
  - “[Use] when students will not all be doing exactly the same task; when students have a choice as to what evidence will be chosen to show competence on a particular skill or product.
  - [Use] when instructors are trying to judge consistently in different course sections” (Arter & McTighe, 2001, p 30)

- **Task-specific**—assesses a specific task. Unique criteria are assessed separately. However, it may not be possible to account for each and every criterion involved in a particular task which could overlook a student’s unique solution (Arter & McTighe, 2001).
  - “It’s easier and faster to get consistent scoring
  - [Use] in large-scale and “high-stakes” contexts, such as state-level accountability assessments
  - [Use when] you want to know whether students know particular facts, equations, methods, or procedures” (Arter & McTighe, 2001, p 28)

**Summary**

Grading rubrics are effective and efficient tools which allow for objective and consistent assessment of a range of performances, assignments, and activities. Rubrics can help clarify your expectations and will show students how to meet them, making students accountable for their performance in an easy-to-follow format. The feedback that students receive through a grading rubric can help them improve their performance on revised or subsequent work. Rubrics can help to rationalize grades when students ask about your method of assessment. Rubrics also allow for consistency in grading for those who team teach the same course, for TAs assigned to the task of grading, and serve as good documentation for accreditation purposes. Several online sources exist which can be used in the creation of customized grading rubrics; a few of these are listed below.
References


The Teaching, Learning, and Technology Group (n.d.). *Rubrics: Definition, tools, examples, references.*
http://www.tltgroup.org/resources/flashlight/rubrics.htm

Suggested Resources
Dodge, B. (2001). *Creating a rubric on a given task.*
http://webquest.sdsu.edu/rubrics/rubrics.html


Rubric Builders and Generators
http://www.emints.org/webquest/rubric.shtml

General Rubric Generator.
http://www.teach-nology.com/web_tools/rubrics/general/

RubiStar (2008). *Create rubrics for your project-based learning activities.*
http://rubistar.4teachers.org/index.php
The Process of Grading

Grades provide a snapshot of student achievement on assignments, performances, and examinations. Grades symbolize the level of achievement of a particular task and communicate both to you and the student whether or not the student has met the instructional goals set forth at the beginning of a reporting period (Frisbie & Waltman, 1992).

As a member of The North Central Association and the Higher Learning Commission, NIU’s faculty are required to assess student learning through term papers, examinations, or other means; link assessment activities to instructional goals and objectives; ensure assessment measures are valid and reliable; directly involve faculty; use assessment outcomes to improve teaching and learning; and ensure assessment is included in curricular, course, and budget plans (Walvoord and Anderson, 1998). Through the mandate, it becomes clear that grading is a crucial part of teaching that requires careful planning and follow-through.

Walvoord and Anderson, in *Effective Grading: A Tool for Learning and Assessment*, present 12 principles to help faculty understand and work through the complexity of grading:

1. **Appreciate the complexity of grading:** Use it as a tool for learning—grades take on different meanings for each student and can be used to enhance learning.
2. **Substitute judgment for objectivity**—employ clear, thoughtful, standard’s based judgment to enhance your grading practice.
3. **Distribute time effectively**—spend enough time to make consistent, thoughtful and sound judgment. More time spent grading does not correlate to better grading or better grades.
4. **Be open to change**—use grading systems that work in context with the students’ current level of performance, subject, curriculum, university.
5. **Listen and observe**—derive clearly stated grading criteria and ensure your students understand them.
6. **Communicate and collaborate with students**—help students attain goals and objectives through communication and collaboration between you and your students. Show students that you learn from them as they can learn from you.
7. **Integrate grading with other key processes**—plan and tie grading criteria and schemes with course goals, objectives, methods, and activities so they are relevant and meaningful.
8. **Seize the teachable moment**—as with the actual task of teaching, giving grades can elicit a variety of feedback. Take notice when students question grades and turn the situation into a learning experience instead of a gripe session. Through careful listening and questioning, both you and your students can benefit from the situation.
9. **Make student learning the primary goal**—when equitably and carefully considered, grading can positively affect student learning.
Tying one’s grading system to instructional methods which encourage student-faculty and student-student cooperation and engagement and active learning has been shown to positively affect students’ self-esteem and learning. Also, faculty who emphasize high expectations in realistic time frames, give prompt feedback, and respect students’ diverse talents and learning styles tend to use grading to enhance rather than drive the learning process (Walvoord and Anderson, 1998, citing Astin and Chickering and Gamson).

10. **Be a teacher first, a gatekeeper last**—strive to help students learn in ways that address their learning preferences rather than using a cookie-cutter approach where everyone is treated the same.

11. **Encourage learning-centered motivation**—personally encourage students to learn for learning sake rather than to achieve grades. Stress the fact that hard work does pay off, that one can learn as much from failure as from a passing grade, and that personal motivation will move them forward in life.

12. **Emphasize student involvement**—students will be more motivated learners if they are involved in different aspects of instructional planning including assessment and grading. (Walvoord and Anderson, 1998, pp. 10-16)

---

**Developing a Personal Grading Philosophy**

Grading involves a number of elements that vary from your style of teaching and preference of grading strategies to the course content and how you perceive success in your class. Frisbie and Waltman (1992) developed an instructional module to help instructors develop defensible, effective, and fair grading practices. The module poses questions to ask yourself which may be helpful as you develop a personal grading philosophy:

1. **What meaning should each grade symbol carry?** Provide a description of each letter grade used in the class to help students understand the level of performance expected for each graded assignment, performance, or examination.

2. **What should “failure” mean?** Grades tend to take on a universal meaning and failure can be perceived differently by different people. Therefore, provide an array of “failure” scenarios. For example, does it mean that the student didn’t learn anything? Did the student not perform as others did in the group? Did the student receive a failing mark because they cheated on the test or plagiarized on a major research paper? Turn failure into a teachable moment to help the student learn from the situation.

3. **What elements of performance should be incorporated in a grade?** What elements should be used in determining each grade level? Will writing skills, attitude, and motivation be included for each project or just for the final project? Rubrics are useful tools to help organize the elements of a project into discrete sections which are assessed separately yet contribute to the whole.
4. **How should grades in a class be distributed?** Consider whether or not you plan to curve the final grade, distribute an equal number of grades, or give everyone the same grade if they satisfy certain course competencies.

5. **What should the components be like/include which go into a final grade?** If students are allowed to submit draft material, will that count toward the final grade? How do you handle test items which the majority of the students missed? How do you combine all grades earned in the class?

6. **How should components of the grade be combined?** Will you weight grades for individual projects? Do regular examinations count less than the final exam? Are written papers worth more than a regular exam?

7. **What method should be used to assign final grades?** After all assignments and exams have been graded, how will you determine the final grade? If your grading policy for each project is based on a ten percent scale (90%=A, 80%=B, etc.), then the final grade should follow the same standard.

8. **Should borderline cases be reviewed?** Reviewing your policy for these cases with the students at the beginning of the class could prevent students from contesting their final grade. If you do consider borderline cases, will you consider every student who is borderline? What is the absolute cut-off and what will you factor in when considering these cases (extra credit, attendance, attitude, motivation, overall improvement)?

9. **What other factors can influence the philosophy of grading?** Does the university or department have written and approved policies which dictate how you grade? Consider how you have graded in the past and determine if you plan to follow the same principles. (Frisbie & Waltman, 1952, p. 2)

**Summary**

Becoming an efficient grader takes time and practice and strategies will change depending on content and curriculum. The nature of the grading will change with each course but it is best to use similar grading strategies for different sections of the same course to maintain consistency. Using the suggestions described here can help you develop your own grading philosophy and should help you adjust your instructional approach as you teach new and revise old courses.

**References**


Academic Regulations for Classroom Management

By: Tim Griffin, University Ombudsman
Northern Illinois University

This section identifies NIU academic regulations related to classroom management about which most frequently have questions. Available space precludes an exhaustive listing of all policies and procedures that potentially relate to classroom management issues. Regulations regarding academic integrity, including academic misconduct, can be found in other sections of this resource.

In addition to following established formal regulations you are encouraged to communicate reasonable standards of classroom conduct and decorum expected of students in their classrooms. Topics of such classroom behavioral expectations often include such things as general civility and respectfulness, terms of address, hand-raising, tardiness/leaving early/anticipated absences, bathroom/illness procedures, phones and pagers, side conversations, text messaging, use of laptops, eating, sleeping, and the degree to which student collaboration on assignments is permitted. You should also be prepared to themselves abide by the rules of decorum they establish. Questions about the reasonability of such discretionary rules are best directed to your department chair or the ombudsman.

Foundational Statements
You are encouraged to read the first section of the “Statement on Professional Behavior of Employees” [http://www.niu.edu/provost/policies/appm/II21.shtml] and the second section of the “Statement of Professional Ethics for Faculty at Northern Illinois University.” [http://www.niu.edu/u_council/faculty_senate/bylaws/index.shtml#ethics] These brief statements provide a foundation on which to base otherwise unstipulated regulations related to the faculty/student relationship.

Attendance/Absences
As stated in the Undergraduate Catalog, “Each instructor decides whether to excuse class absences and determines how to permit makeup work.” [“Attendance” in http://catalog.niu.edu/content.php?catoid=9&navoid=236#oth_e_acad_poli]

Accommodations for Students
You are required to make reasonable accommodations for students with disabilities that have been certified through the Center for Access-Ability Resources. You are encouraged to make reasonable accommodations for students presenting other truly exceptional situations.

- Disability accommodations must be officially certified by the student through the Center for Access-Ability Resources, and formally requested by the student of the specific faculty member, prior to any requirement for accommodation. [http://www.niu.edu/caar/guidelines/index.shtml]

You should also be prepared to themselves abide by the rules of decorum they establish.

You are required to make reasonable accommodations for students with disabilities that have been certified through the Center for Access-Ability Resources.
• Health/Medical accommodations (not formally certified as disabilities) may be made on a case by case basis at the discretion of the individual faculty member. You may request that the student provide documentation from a medical service provider or other appropriate source as a requirement for accommodation. You must, however, treat all students with similar situations within the same class in a similar manner. {“Attendance” in http://catalog.niu.edu/content.php?catoid=9&navoid=236#othe_acad_pol_i}

• Hardship situations such as a death in the family, unanticipated transportation difficulties, etc., may be accommodated at the discretion of the individual faculty member as long as all students in that class presenting similar situations are treated in a similar manner. {“Attendance” in http://catalog.niu.edu/content.php?catoid=9&navoid=236#othe_acad_pol_i}

• Student conflicts between religious observances and the academic schedule may be accommodated at the discretion of the faculty member. Students should be encouraged to make such requests well in advance. {http://www.niu.edu/provost/policies/appm/I7.shtml}

Classroom Disruption
You are responsible for maintaining a classroom environment conducive to the educational process. Should a student fail to comply with reasonable requests to alter his or her behavior to achieve that end, the faculty member has the responsibility to ask the student to leave the room. See the classroom disruption policy for additional information regarding requirements and procedures. {http://catalog.niu.edu/content.php?catoid=9&navoid=236#othe_acad_pol_i}

Emergencies
You are strongly urged to immediately call 911 in the case of any imminent threat to personal safety. They are also urged to become familiar with the “NIU Emergency Guide” that is available in each campus room. It addresses specific concerns such as medical and mental health emergencies, menacing behavior, fire and severe weather evacuation procedures, and emergency communications.

Office Hours
Faculty members who teach are expected to maintain regular office hours or other means for promoting student-faculty consultation approved by the department. {http://www.niu.edu/provost/policies/appm/I125.shtml}

Privacy
In accordance with federal law, students have the right to certain standards of privacy in regard to their grades and other educational records. As it relates to classroom management, you are encouraged to return graded work to students and/or communicate assignment or final grades to students in a manner that does
All graded student work not returned to students and all grade books and other records pertinent to determining student final grades are to be retained for at least thirteen months after the course is completed.

Not allow for access to any other student’s score or grade.

Retention of Records
All graded student work not returned to students and all grade books and other records pertinent to determining student final grades are to be retained for at least thirteen months after the course is completed. See F. in http://www.niu.edu/provost/policies/appm/III5.shtml

Student Evaluation of Instruction
With rare exception, near the close of the semester you must administer formal course evaluations developed by departments. This may not be done during the final exam period, and the faculty member may not be present when the evaluations are being completed.

http://www.niu.edu/provost/policies/appm/II14.shtml

Syllabus
There are university policies that relate to the course syllabus. The Undergraduate Catalog stipulates that: “You are expected during the first week of a semester to indicate clearly the requirements in a course and the level of competence to be associated with each of the possible letter grades.” The undergraduate grade appeal procedure and the graduate grade appeal procedure both refer to a deviation from the grading standards delineated in the course syllabus as one of several criteria on which a grade appeal can be based, “the assignment of a grade by a substantial departure from the instructor's criteria distributed in writing during the first fourth of a course.” In addition, many departments require that a copy of the syllabus for every course be submitted and kept on file in the departmental office.

Summary
Your department, school and/or college may have regulations other than those that are presented here. Ask your chair and/or dean for regulations that may be specific to your department, school or college.
Blended Learning

What is Blended Learning?
Blended learning combines face-to-face “methods with computer-mediated activities to form an integrated instructional approach” (Pennsylvania State University, 2009, para. 1). In the broadest sense of the term, a blended learning environment could be completely face-to-face (F2F) where the instructor blends a variety of teaching methods, activities, assessments, and technologies. Today, however, the term blended learning narrows to represent a combination of F2F and online learning activities where the online activities replace actual “seat-time” in the classroom. It is the blend that makes each course unique; thus, blended courses can take on different attributes. For example, a course might include online discussions, Web tutorials and research activities, and student responses to a podcast. The combination of online and F2F activities is almost limitless.

Designing a Blended Course

1. Redesigning a traditional course for blended learning will take more time and effort due to the requisite technologies used for the online portion of the class. Effective course design considerations should include student learning preferences and alignment of course goals and objectives with F2F and online activities.
2. Media used in blended learning environments are not limited to the Internet and a set of computers. For example, students on the go use mobile technologies—MP3 devices, iPods, GPS systems, digital cameras, laptops and tablet PCs. All of these comprise the mobile communication culture of today’s students (Milne, 2006). Mobile learning (mLearning) is yet another way instructors can blend course content and better meet the requirements of students on the go.

3. Consider both the physical and virtual “classroom” space for learning and how they complement one another. Blended learning environments do not occur strictly between a traditional classroom and someone’s home office. If team work is a course expectation, provide opportunities for team work to occur both in and out of the classroom by designing in-class activities which can be completed after class: Blackboard groups and discussion fora, social networks to foster online learning communities, course-related Wikis (collaborative website), and electronic peer assessment.

Advantages of Blended Learning

**Flexibility**—Blended learning environments allow students to access a variety of media which support different learning preferences—video for visual learners, podcasts for auditory learners, and hands-on activities for kinesthetic learners.

**Social atmosphere**—Online learning components such as synchronous chats, question and answer sessions, and asynchronous case studies and group work give all students, especially those who tend to be quiet in face-to-face classrooms, the opportunity to speak up in a safe and open learning environment. Also, group collaboration can be easily facilitated by allowing students the ability to share files, create discussion threads, and participate in virtual chat.

**Reusable learning objects**—Materials such as tutorials, simulations, case studies, and assessments can be repurposed for use in other learning environments to save on design and development time.

Challenges of Blended Learning

**New course design**—You cannot take an existing course and just “put it” online. Initially, identify which content would best be presented face-to-face and which content would be presented online and be accessed 24/7. Align course learning goals and objectives with instructional strategies, activities and assessments that work best face-to-face and online.

**Technology adaptation**—Instructors and students must be given time to adapt. Blending an existing course by small increments will allow everyone to work out challenges and difficulties they might encounter with the technology. Discussing with students the purpose of using the technologies in the course can help them to adapt more quickly as well.
Roles and responsibilities—Students who are new to blended learning environments must learn to adapt to this mode of delivery which often requires more writing than face-to-face courses. Students also must make use of good time management skills as blended courses require them to balance both online and face-to-face course activities. Finally, as more content is presented online, the instructor’s role will shift from being a presenter of information to a facilitator of knowledge (Northeastern University, 2007). Although the instructor creates the blended learning environment, the technology takes center stage as students interact with the technology through its delivery, accessibility, flow, content and activities.

Summary
Through careful planning, blended learning can help impart knowledge in new and exciting ways. Traditional face-to-face courses can be modified to fit a blended model which meets student learning needs and expectations and the pedagogical requirements of the instructor. With time and practice, blended learning will become a standard and expected method of instructional delivery.

References

Northeastern University (2007). *Hybrid course design*. [http://www.northeastern.edu/edtech/teaching_learning/online_pedagogy/hybrid_course_design](http://www.northeastern.edu/edtech/teaching_learning/online_pedagogy/hybrid_course_design)

Blogs for Teaching and Learning

Web logs, more commonly referred to as blogs, have become commonplace for online communication. A blog is a type of website that includes entries made in the same fashion as a diary or journal, only in reverse chronological order. The individual who posts to the blog (aka: “blogger”) is able to quickly make new entries without any advanced knowledge of HTML scripting. Blog posts can be configured to permit comments, whereby readers are able to respond to the content of the postings. In early 2006, over 50 million blogs are reported to be in existence, with at least one new blog created every second of every day. A Pew Internet study found that 8% of current U.S. Internet users are actively using blogs as a means of creative, personal expression (Lenhart & Fox, 2011).

So why all the interest in blogs? Some faculty members have turned to blogs as a means for personal self-expression and self-publication, while others have incorporated blogging into their class activities. The ease of use for both contributors and readers coupled with the ability for the content to be syndicated to others through the process of Really Simple Syndication (RSS) are among the many contributing factors leading to the prominence of blogging among the various modes of computer mediated communication. RSS makes it possible for readers to use an aggregator to check for updates from numerous blogs simultaneously and view the content of new postings without physically having to revisit the source blogs.

Those interested in blogging have a wide array of approaches available for blog creation. Many free or low-cost hosted services are emerging that cater to instructional applications of blogging within higher education. Using one such free service, edublogs (http://www.edublogs.org), faculty can easily register for an account, create a blog and begin contributing to it within a matter of minutes. A sister service under the same name (eudblogs.com) but different URL (http://www.uniblogs.org), provides university students with similar blog creation and contribution capabilities. If one has a server and the ability to make some technical configurations, the open source software powering many common hosted solutions such as WordPress (http://www.wordpress.org) or bBlog (http://www.bblog.org) can be downloaded for free.

Blackboard, NIU’s course management software, now provides a blogging tool for further communication and collaboration opportunities with your students. Visit the Faculty Development website for more information on how to use blogs in Blackboard at http://www.niu.edu/blackboard/communicate/blogs.shtml

While blogging is becoming increasingly popular within higher education contexts, it is important for those engaged in blogging to be cognizant of the full spectrum of associated issues. Here are a few important considerations to keep in mind when deciding whether to use a blog for personal or academic purposes:
Access
The content of blogs is typically available to anyone online. While this may be desirable when attempting to broadcast your message to a vast number of individuals, the information is in fact available to anyone, anywhere with an Internet connection.

Syndication
RSS makes it possible for blog contributions to be read in a variety of different contexts, including directly within another Web page. All one needs is the URL of the RSS feed for a blog to syndicate the content of that blog to any other Web site.

Credibility
Anyone with Internet access can setup a blog and post to it. Therefore, the credibility of content found on some blogs can be questionable and should not be considered comparable to peer-reviewed publications.

Longevity
Online communications, via blogs or other electronic media, are convenient ways to communicate with students and others. However, online communications, no matter who the sender or the receiver, should be considered permanent and may be difficult, if not impossible, to delete in the future.

Summary
Once a blog has been posted it can provide a wide array of viewpoints on a given topic. Blogs may provide the impetus to encourage students to hone their writing skills. Also, blogs can also help those students who tend not to participate in class a way to discover their inner voice. Blogging is one of the many emerging online technologies that can be utilized today to enhance the learning experience of students.

Resources

Suggested Resource

Podcasting

Podcasting is powerful technology involving the selective subscription of media content which is delivered over the Internet. Podcasting is an amalgam of two words, ‘iPod’ and ‘broadcasting’ and represents a method of publishing online content such as audio, video, images, or text files, and allows users to receive the content in an automated fashion. This last feature distinguishes podcasting from the traditional method of acquiring online information. The traditional method requires users to locate the desired online information and ‘pull’ it to their computer every time. The newer method only requires users to seek out the information, in the form of a podcast, one time only, where a user can subscribe to an RSS feed. An RSS expansion feed is the heart of every podcast, making possible the automatic syndication and aggregation of new media content; any future additions to the podcast or ‘episodes’ will be ‘pushed’ to the user’s computer. This method is similar to subscribing to journals, magazines, or newspapers in that the subscriber automatically receives materials. Subscribing to a podcast is typically free (the term “subscription” refers to signing up for new episodes) and no payment is required. An individual subscribes to content that can be viewed on a computer or mobile device.

Depending on the type of podcast, users can view the content on either a computer or audio mp3 player/or video-enabled iPod unit. Types of podcasts include:

- **Audio podcast**—music, lectures, news broadcast
- **Enhanced podcast**—synchronizing images (PowerPoint/Keynote slide presentations with audio files, only available with Macs)
- **Video podcast or vodcast**—video clips formatted to play on computers or vide-enabled iPods or MP4 players
- **An attachment**—class notes, word processing documents, PDFs, spreadsheets and photos

**Advantages of Podcasting in Teaching and Learning**
Supporters of podcasting see a number of advantages in this relatively new teaching technology.

- Some educators promote podcasting on the basis of the power of the spoken word, which can appeal to auditory learners.
- Podcasts also are promoted on the basis of offering anytime/anyplace learning, also referred to as mobile or mLearning and personal on-demand instruction. Using the free podcatching software ‘iTunes’, students can view podcast episodes multiple times for review on their computer or download them to portable media players.
- When effectively implemented, podcasts can lead to a deeper understanding of course content by providing students opportunities to review material.
Podcasting requires little investment of expensive hardware and software. Typically, all that is necessary to develop a podcast is access to the Internet, a computer and podcasting software.

Podcasts require considerably less bandwidth than standard videos.

**Drawbacks of Podcasting in Teaching and Learning**

- Critics of podcasting charge that this form of instruction is not the same as actively engaging students with material in class, where learning occurs through a process of interacting by critical questioning.
- By making lectures and class notes available for download, students will be less likely to attend class sessions. Advocates respond by noting that pedagogically, podcasts should be integrated into the existing curriculum and used as supplemental rather than as stand-alone teaching units. Podcast material could be preparatory work for class sessions such as having students view video clips, listen to music pieces, or read in-class assignments, saving more time for face-to-face instruction.
- Faculty concerned about students missing classes might choose to implement a class attendance policy. Students could still benefit from viewing notes as well as listening to lectures following class.
- A major faculty concern of implementing podcasting is the level of commitment and support provided by one’s institution. NIUs Faculty Development and Instructional Design Center is at the forefront in podcasting for education and offers workshops on podcasting and related technologies such as RSS Feeds and Podcasting in Blackboard. The Center staff also can consult with faculty and teaching staff on effective ways they can be successfully used for teaching and learning.

**Using Podcasts in Blackboard**

In conjunction with the upgrade of Blackboard from version 8.3 to 9.1, NIU has installed a building block to Blackboard that affords the hosting and management of podcasts in Blackboard. As a result, NIU faculty and staff using the Blackboard course management system are now able to take prepared content and create a course Podcast for each of their classes using Blackboard. Visit the FacDev Web site for further information on podcasting in Blackboard at [http://www.facdev.niu.edu/blackboard/resources/podcasting.shtml](http://www.facdev.niu.edu/blackboard/resources/podcasting.shtml)

**Summary**

Podcasting can be an effective new way of delivering information in today’s media-rich, on-the-go teaching and learning environments. With careful planning and development, podcasts can provide another method of information delivery for online and blended/hybrid courses in any academic discipline.
Preparation Presentation Media for Teaching

Whether you are a seasoned presenter or are looking for some basic tips and techniques, this guide will help you create and deliver effective and impressive presentations.

Organize your Material

1. Use the title of your presentation as a guide to your discussion.
2. Look over your material and focus on important key points.
3. Prioritize content to ensure that you cover the most important aspects of your presentation.
4. Organize your presentation to include time for questions and answers. Or, if you are giving a more formal presentation, ask the audience to hold their questions to the end of your presentation to ensure you cover your material.
5. Leave about ten minutes for questions and answers.

Electronic Presentations Materials

Creating an effective PowerPoint presentation is not as complicated as you might think. By following the points below, your PowerPoint presentation will be effective, efficient, and engaging. Overhead transparencies can be just as effective by following applicable points below.

Limit slides – typically, show one slide per minute.
1. Use color for emphasis. Dark backgrounds such as blue, purple, green and brown and light typeface such as white or beige are easy to read in a large room. Conversely, using a light background such as white, yellow, or beige with a dark typeface such as black, dark blue, or green can be used for a different look.
2. Use a sans serif typeface such as Arial, Calibri, or Tahoma (see Figure 1). These are monotype letters—they are the same thickness throughout each letter and do not have the fine lines seen at the edges of letters in serif typeface. Serifs are fine lines which finish the end of lettering (see Figure 2). Letter clarity can be reduced by using serif typefaces, thus making the presentation look potentially fuzzy when used in projected media (see Figure 2).
3. Ensure the typeface is large enough. Titles and headings should be no less than 32-40 points and the subtext should be no less than 28 points.
4. Use clip art (graphics) sparingly and only when they support the content being projected. Inappropriate or too many graphics interfere with the message being relayed.
5. Photographs can be effectively used to add realism. They can be used to fill an entire slide or incorporated in a slide with text.
6. Add motion, sound, or music only when necessary.
7. Check for spelling and correct word usage.
Print-Based Handouts
Many participants like to have something to read and write on. As stand-alone documents, paper handouts can effectively outline your presentation and provide a summary of important points. Print-based handouts can also augment electronic presentations. As with any document, consider the following points:

1. If you plan to distribute PowerPoint handouts, use the Print Handouts option, with three to six slides per page. Or, consider distributing the outline of the presentation rather than a number of slide per page.
2. Limit the amount of text on the page and chunk like-information in bullet points, boxes, or paragraphs.
3. Use headings to organize and emphasize material.
4. Use a serif typeface, such as Times New Roman (what you are now reading). See Figure 3.

Presentation Tips and Techniques
Learning new presentation tips and techniques can help you become an even better presenter in front of your students and colleagues.

1. Consider the diverse make-up of the audience and the need to address a variety of expectations, points-of-view and personal feelings.
2. Use humor sparingly and with discretion. Avoid the use of slang or inappropriate language.
3. Keep your voice strong and dynamic.
4. Use an active and positive voice.
5. Maintain eye contact with everyone in the audience.
6. Move during your presentation – approach the audience to engage them.
7. Use a laser pointer instead of your finger when pointing to projected material.
8. Consider the use of color or graphics such as lines, grids and charts for visual emphasis.

Resource Materials
If you plan to provide references and resources for your participants, keep the materials brief and organized. Consider providing a URL for Web sources.

1. Include your name on all electronic and print materials.
2. Bring your business card for future contacts.

Summary
Effective presentations can be achieved through careful planning and incorporating simple yet helpful design techniques. Carefully proof your work and ask a colleague to review your final presentation to check for accuracy and errors. Finally, make notes of your presentation once it is over to refine it for future use.
Selected Resources


Teaching with PowerPoint

PowerPoint, when effectively planned and used, can enhance instruction. People are divided on the effectiveness of this ubiquitous software—some say that PowerPoint is wonderful while others bemoan its pervasiveness. No matter which side you take, there are effective ways to use PowerPoint which can be used to enhance instruction. This section is organized in three major sections: Part one will help faculty identify and use basic but important design elements; Part two will cover ways to enhance teaching and learning with PowerPoint; Part three will list ways to engage students with PowerPoint.

PowerPoint can be an effective tool to present material in the classroom and encourage student learning. PowerPoint can be used to project visuals which would otherwise be difficult to bring to class. For example, in an anthropology class, a single PowerPoint presentation could project images of an anthropological dig from a remote area, questions which ask students about the topic, a chart of related statistics, and a mini quiz about what was just discussed that provides students with information that is visual, challenging and engaging.

This article will highlight ways to design effective PowerPoint presentations as well as show best practice when using this powerful software.

PART I — Designing the PowerPoint Presentation

Preparing for the presentation
- Consider time and effort in preparing a PP presentation—give yourself plenty of lead time for design and development.
- PowerPoint is especially useful when providing course material online.
- Student technology compatibility with PowerPoint material put on the Web—ensure images and graphics have been compressed for access by computers using dial-up connection.
- Student accessibility—visually impaired may not be able to fully access a PowerPoint presentation, especially those with graphics and images.
- Copyrighted material—be sure to properly cite source material. This is especially important when using visuals obtained from the Internet or other sources.
- Message interpretation—will students be able understand material in a PowerPoint presentation outside of the classroom? Will you need to provide notes and other material to help students understand complex information, data, or graphics?
- If you will be using your own laptop, be sure the classroom is equipped with the proper cables, drivers, and other means to display your presentation the way you have intended.

Slide content
- Avoid text-dense slides—it’s better to have more slides than trying to place too much text on one slide.
- Use brief points instead of long sentences or paragraphs.
– Use PowerPoint to cue and guide the presentation rather than project long and complete sentences.
– Use the Notes Pages feature to add content to your presentation which the audience will not see.
– Relate PowerPoint material to course objectives to reinforce their purpose.

Number of slides
– As a rule of thumb, plan to show one slide per minute to account for discussion and time and for students to absorb the material.
– Reduce redundant or text heavy sentences or bullets to ensure a more professional appearance.

Emphasizing content
– Use italics, bold and color for emphasizing content.
– Use of a light background (white, beige, yellow) with dark typeface or a dark background (blue, purple, brown) with a light typeface is easy to read in a large room.
– Consider using different color slide backgrounds to change the pace of the presentation (or when you shift to new major content).
– Avoid using underlines for emphasis which typically signifies hypertext in digital media.

Typeface
– Use a sans serif typeface such as Arial, Helvetica, or Tahoma. The text you are now reading is Arial.
– Limit the number of typeface styles to no more than two per slide.

Point size
– Ensure the typeface is large enough to read from anywhere in the room: titles and headings should be no less than 36-40 points.
– The subtext should be no less than 32 points.

Clip art and graphics
– Use clip art and graphics sparingly. Research shows that it’s best to use graphics only when they support the content.
– Photographs can be effectively used to add realism.
– Size and place graphics appropriately on the slide – consider wrapping text around a graphic.
– Use two-dimensional pie and bar graphs rather than 3-D styles which can interfere with the intended message.

Animation and sound
– Add motion, sound, or music only when necessary. When in doubt, do without!
– Excessive movement within or between slides can interfere with the message and can be annoying. Avoid or use only simple screen transitions.
Final check
- Check for spelling, correct word usage, flow of material and overall appearance of the presentation.
- Colleagues can be especially helpful to check your presentation for accuracy and appeal. Note: Typos are more obvious when they are projected.
- Schedule at least one practice session to check for timing and flow.
- PowerPoint’s Slide Sorter View is especially helpful to check slides for proper sequencing and information gaps and redundancy.
- Prepare for plan “B” in case you have trouble with the technology in the classroom – how will you provide material which is located on your flash drive or computer?

PowerPoint Handouts
PowerPoint provides a number of print-based handouts that can be distributed at various points in the class—before class: students like having materials available to help them prepare and formulate questions before the class period; during class: use this time for a planned break and to discuss the material on the handout; after class: some instructors wait to make the presentation available after the class period so students concentrate on the presentation rather than reading the handout.

- **Handouts.** PowerPoint slides can be printed in the form of handouts—with one, two, three, four, six, or nine slides on a page—that can be given to the students for reference during and after the presentation. The three-slides-per-page handout includes lined space to assist in note-taking.

- **Notes Pages.** Detailed notes can be printed and used during the presentation or, if they are notes intended for students, they can be distributed before the presentation.

- **Outline View.** PowerPoint presentations can be printed as an outline which provides all of the text from each slide. Outlines provide a welcome alternative to slide handouts and can be modified from the original presentation to provide more or less information than the projected presentation.

The Presentation
Alley, Schreiber, Ramsdell and Muffo suggest that PowerPoint slide headlines design “affects audience retention,” and conclude that “succinct sentence headlines are more effective” in information recall than headlines of short phrases or single words (2006, p. 233). In other words, create slide titles with as much information used for newspapers and journals to help students better understand the content of the slide.

- PowerPoint should provide key words, concepts, and images to enhance your presentation (but PowerPoint should not replace you as the presenter).

- Avoid reading from the slide—reading the material can be perceived as though you don’t know the material. If you must read the material, provide it in a handout instead of a projected PowerPoint slide.

Avoid “laser shows” by discretely using laser pointers.

*PowerPoint’s Slide Sorter View is especially helpful to check slides for proper sequencing and information gaps and redundancy.*

*Notes Pages provide detailed notes [that] can be printed and used during the presentation...*
Avoid rapidly moving the laser pointer across the slide. Also, use a laser pointer with a dot large enough to be seen from all areas of the room.

Allow no more than one to two slides per minute of content.

Incorporate blank slides to allow students to reflect on what has just been discussed or to gain their attention (Press B for a black screen or W for a white screen—press these keys again to return to the live presentation). This pause can also be used for a break period and when transitioning to new content.

Stand to one side of the screen and face the audience while presenting.

Leave classroom lights on and turn off lights directly over the projection screen if possible.

Learn to use PowerPoint efficiently and have a back-up plan in case of technical failure.

Give yourself enough time to finish the presentation. Trying to rush through slides can give the impression of an unorganized presentation and may be difficult for students to follow.

**PART II — Enhancing Teaching and Learning with PowerPoint**

**Class Preparation**

PowerPoint can be used to prepare lectures and presentations by helping instructors refine their material to salient points and content. Class lectures can be typed in outline format which can then be refined as slides. Lecture notes can be printed as notes pages and can also be given as handouts to accompany the presentation.

**Student’s Learning Preferences**

Using PowerPoint can address students’ learning preferences through the projection of: color, images, video and shapes for visual learners; sound and music for auditory learners; and interactive slides which ask students to do something for kinesthetic learners which involve group or class activities where students can practice or review concepts (see Engaging Students with PowerPoint below).

**Type-on Live Slides**

PowerPoint allows users to type directly during the slide show which provides another form of interaction. These write-on slides can be used to project students’ comments and ideas for the entire class to see. When the presentation is over, the new material can be saved to the original file and posted electronically.

**Just-In-Time Course Material**

You can make your PowerPoint slides and notes pages available online 24/7 through Blackboard and other Web sites. Students can review the material before class, bring printouts to class and be better prepared for listening rather than taking a lot of notes during the class period.
PART III — Engaging Students with PowerPoint

The following techniques can be incorporated into PowerPoint presentations to increase interactivity and engagement between students and students and the instructor. Each technique can be projected as a separate PowerPoint slide. For example, “Take a moment to reflect on the concept we just reviewed” can be typed on its own slide.

Running Slide Show as Students Arrive in the Classroom
This technique provides visual interest and can also have a series of questions students can answer as they sit waiting for the class to begin. These questions could be future texts or quizzes.

- Opening Question—project an opening question—Take a moment to reflect on ______.
- Think-Pair-Share—can be projected at different intervals of a presentation to allow students to concentrate on, and discuss with a partner, what has been presented.
  o Think of what you know about ______.
  o Turn to a partner and share your knowledge about ______.
  o Share with the class what you have discussed with your partner.
- Focused Listing—list as many characteristics of ______ or write down as many words related to ______ (this technique helps with recall of pertinent information).
- Brainstorm—what do you know about __________? Start with your clearest thoughts and then move on to those what are kind of “out there” (this technique stretches the mind, promotes deep thinking and recall of prior knowledge).
- Questions—ask students if they have any questions so far—do this about every 15 minutes or so. (This technique provides time for students to reflect and is also a good time for a scheduled break and for the instructor to interact with students).
- Note Check—take a few minutes to compare notes with a partner—to summarize the most important information—identify and clarify any sticking points.
- Questions and Answer Pairs—take a minute to come with one question then see if you can stump your partner!
- Two-Minute Paper—summarize the most important points of today’s lecture—submit the paper at the end of class. (This technique allows the instructor to check the class progress).
- If You Could Ask One Last Question—What Would it be? (This technique allows for students to think more deeply about the topic and to apply what they have learned in a question format).
- Classroom Opinion Poll—do you believe in __________ or what are your thoughts on ____________ (This technique provides a sense of where students are on certain topics).
- Muddiest Point—what is the muddiest point of today’s material? (This technique allows anonymous feedback to inform the instructor if changes and or additions need to be made to the class).
PowerPoint supports multimedia such as video, audio, images and animation.

Positive Features of PowerPoint
- PowerPoint saves time and energy once the presentation has been created, is easy to update and can be modified for other courses.
- PowerPoint is portable and can be easily shared with students and colleagues.
- PowerPoint supports multimedia such as video, audio, images and animation.

Drawbacks of PowerPoint
- PowerPoint can reduce the opportunity for classroom interaction (by being the primary method of information dissemination).
- PowerPoint can lead to information overload, especially with long sentences and paragraphs.
- PowerPoint can “drive” the instruction and minimize the opportunity for spontaneity and creative teaching.

Summary
As with any technology, the way PowerPoint is used will determine its pedagogical effectiveness. By strategically using the points described above, PowerPoint can be used to enhance instruction and engage students.

References

Selected Resources

University of Minnesota, Center for Teaching and Learning (2006). Active Learning with PowerPoint.
http://www1.umn.edu/ohr/teachlearn/tutorials/powerpoint/index.html
Teaching with Technology

Learning is seen as essentially a social process, requiring communication among learner, teacher and others. This social process cannot effectively be replaced by technology, although technology may facilitate it. (Bates & Poole, 2003, p. 35)

To assist those who use technology in the classroom, literally hundreds of books, articles and Internet sites have been written about teaching and learning with technology. Many of these resources focus on the principle that technology is only as good as it is used in the classroom. In other words, we should use technology “at the right time, in the right way, and for the right purpose,” (Lever-Duffy & McDonald, 2008, p.1). In addition, by following educational theory and practice, technology can have more purpose and help generate more positive outcomes.

Technology Terminology
Over the years a number of terms have been used in educational settings in reference to technology. The word technology can take on different meanings for different people and technology can be subject- or domain-specific such as “engineering technology,” “instructional technology” or chemical technology.” To help clarify and better understand various “technology” terms, some definitions are provided here.

Technology—can be a process such as the systematic design of a class session, editing a video for a podcast, or engineering the design and production of a product. On the other hand, technology can refer to the physical tools (often associated with computers) used for instruction and learning such as PowerPoint presentations, clickers, white boards, MP3 players and computer hardware. Technology tools can also refer to books (both paper and electronic), musical instruments, 3-D models, mathematical formulae, statistical notation, and computer software. Even pens, pencils and sticky notes are a form of technology. Finally, computer software, virtual technologies and the Internet (in the sense of its use) are forms of non-material technology tools.

Smaldino, Lowther and Russell (2008) bring together the varying definitions of technology as,

1. “A process of devising reliable and repeatable solutions to a task

2. The hardware and software (i.e., the product) that result from the application of technological processes

3. A mix of process and product, used in instances where the context refers to the combination of technological processes and resultant products of where the process is inseparable from the product” (p. 374).
Instructional/Educational Technology—specifically selected “hardware, software [tools], and/or processes [crafts] to facilitate learning” (Smaldino, Lowther, & Russell, 2008, p. 371).

Information Technology—“Anything related to computing technology, such as networking, hardware, software, the Internet, or the people that work with these technologies” (TechTerms, 2008, para. 1).

Technology and Instruction
Using an instructional design model can be helpful when designing instruction which incorporates technology. Many instructional design models comprise the five steps below which are presented in the order in which instruction should be planned. By following a systematic approach to instruction, you can be assured that you have provided meaningful learning opportunities for all students. Following each step is a “technology link,” which illustrates how technology can be used during the entire design process.

Design—theoretical principles and procedures of theories and research found in general systems theory; psychological theory and research; instructional theory and teaching-learning research; and communications theory and perception-attention research.
Technology link: Bloom’s taxonomy; journals; online resources

Development—print, audiovisual, computer-based, and integrated technologies further defined through theoretical principles but namely from communication such as television and mass media; visual thinking and learning such as the elements and principles of line, shape, color, texture, composition, arrangement, balance and unity.
Technology link: Computer-generated documentation

Utilization—teaching, diffusion of, and use of knowledge.
Technology link: Document camera to project an object

Management—coordination and administration of resources as well as support and transformation of knowledge.
Technology link: Blackboard or spreadsheets to maintain course grades

Evaluation—the systematic and (often) criterion-referenced assessment and analysis of performance in a meaningful and helpful way.
Technology link: Scantron forms; rubrics

Media
Media are defined as the technology used for communicating information between the source (instructor) and the receiver (student) or vice versa. Types of instructional media are categorized as follows:

Print—handouts, workbooks and rubrics (with or without images)
Models—3-D structures representing real objects (architectural structures/machines/furniture) or concepts (molecular structures/organizational hierarchies)

Projected visuals—using PowerPoint, document camera and computers

Non-projected visuals—typically involve images on bulletin boards and walls (posters, flyers, maps)

Audio—podcasts: voice, musical and sound recordings

Video—digital capture of motion, sound and imagery (typically in the form of a CD or DVD); videoconferencing

Technology Support
Selecting and using appropriate technology can be of benefit to both you and your students. Being familiar with selected technologies allows you to seamlessly integrate technology in the teaching. There are times, however, when new technologies necessitate the need for training and times when the technologies do not function as planned. Various campus support units are available to assist everyone involved in learning new technologies and their effective integration in the classroom as well as technical assistance.

Faculty Development and Instructional Design Center
- Offers monthly and other special workshops on a wide range of technologies which include hardware, software and/or processes to facilitate learning.
- Provides consultations, guidance, tips and techniques for best practice in technology-supported teaching activities.

Information Technology Services (ITS)
- Provides technical assistance in campus-wide technologies such as Blackboard, Clickers, Smart classrooms, Internet and communications (email and telephone).

Media Services
- Provides a wide variety of media production and technical support services including video, audio, graphics and photography production, video and audio facility design and installation. Smart Classroom and mediated facility design and support and live, real-time video streaming.

Considerations When Using Technology
Accessibility—ask yourself, “Are all students equally prepared to utilize all forms of technology in the classroom?” What alternative strategies will be employed to accommodate those students who do not have access to a computer as required in the course?

Disabilities and equal access—when developing instruction which involves technology, you must consider those students with visual, auditory,
cognitive and mobility impairments. For example, when using projected technology such as PowerPoint, pay attention to document length, design considerations, automated functions, text presentation (for persons with visual impairments), tone and articulation of voice, speed at which information is presented and availability of course material (for persons with auditory impairments).

**Ethical considerations**—technology allows for information to be quickly accessed and communication to flow in an instant. Information is available at the click of a button and must be considered for its validity and whether or not it is properly cited. Communicating a message via technology can easily be misinterpreted and may not be appropriate for a particular audience. Quickly typed and unedited email messages, poorly designed PowerPoint presentations and use of certain words and phrases all can lead to incorrect messages received by an audience. Care must be taken to ensure intended messages are appropriately received.

**Where to Begin**
Here are some ways to help you integrate technology in your teaching:

1. Start small, using those technologies with which you are familiar and are relatively simple and easy to integrate in your teaching.
2. Observe and discuss with colleagues their use of technology in the classroom.
3. Self-assess current teaching practices for currency and effectiveness in the dissemination of information which can be affected by the integration of technology.
4. Learn how to effectively integrate technology in your teaching by following a systematic approach of instructional design (Faculty Development and Instructional Design Center offers workshops on course design and related topics).

**Summary**
"Technology will play a large role in instigating the changes in both our society in general and education in particular,” (Lever-Duffy & McDonald, 2008, p. 425) and Moore’s Law claims that the power of computers doubles every 18 months. Whether or not these statements are true, technology is making significant changes in the way we teach. Classrooms of the future will continue to draw on common pedagogic practices but the role of the instructor may change as new technologies emerge. Careful planning along with continued training and accepting new technologies will assist you as you continue to improve your teaching and learning experiences.

**References**


http://www.techterms.com/definition/it