

# Teaching to Diverse Learner Needs

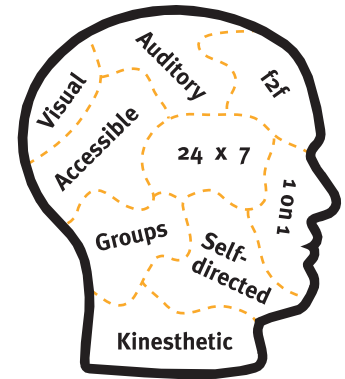
BY JULIE LITTLE

## Ask yourself the following:

- How do you learn?
- What most often motivates you to learn?
- What interferes with your learning process?
- When learning something challenging, what helps you learn most easily?
- Do you tend to focus more on the process in which you are engaged or on the product you are working to produce? Why?
- How do you typically organize information in your mind?
- How do you remember information?
- How can other people help you in your learning process?
- How would you describe your ideal work environment?

If we posted your answers with the other 2,000+ Faculty and GTAs on our campus, the responses, while varied, would certainly fit a pattern based on diverse learning styles, sociability, experience, and interests. Similarly, if you canvassed the learners in your courses, a pattern would emerge based on their diverse learner needs.

As teachers, we want our learners to be successful. The question, then, is how do we differentiate instruction to meet diverse learner needs? The challenge is how do we translate this into manageable teaching practices?



### What are Learning Styles?

“Learning style” refers to the way you perceive, organize, process, and understand information. For example, do you prefer to use a tape recorder during lectures or to take notes and rely on instructor handouts? Do you prefer to work alone or in a group? Do you prefer to read a software technical manual or to explore the software via the interface? Do you prefer to listen to an explanation of a process or to look at a graphic depiction? Do you prefer to be given all of the project criteria or to negotiate aspects?

### Learning Styles Inventories

The first step to addressing the earlier question (how do we differentiate instruction to meet diverse learner needs) is to identify your learning style. Complete a learning styles inventory such as “Index of Learning Styles” (Soloman & Felder, 1999) or “VARK: A Guide to Learning Styles” (Fleming, 2001). Offer these tools to your students to help them understand their learning preferences while increasing your awareness of their differences.

Identifying your learning preferences will assist with identifying your teaching preferences, because we primarily teach to the way *we* learn best. So what happens to students with different learning needs? How do we reconcile these differences?

### Bridging Differences

In 1987, Arthur W. Chickering and Zelda Gamson published the “Seven Principles for Good Practice in Undergraduate Education” with support from the American Association of Higher Education (AAHE), the Association of American Colleges (ACE), and the Johnson and Lilly Foundations. The seventh principle states: *Good practice respects diverse talents and ways of learning.*

“There are many roads to learning. People bring different talents and styles of learning to college. Brilliant students in the seminar room may be all thumbs in the lab or art studio. Students rich in hands-on experience may not do so well in theory. Students need opportunity to show their talents and learn in ways that work for them. Then they can be pushed to learn in new ways that do not come so easily.” (Chickering & Gamson, 1991).

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# Learning and Teaching Styles

The notion of learning styles is fairly well-known – the idea that students learn best when the teaching method matches their preferred method of learning. However, the less discussed flip side to learning styles is teaching styles. Teachers also have a comfort zone when selecting the teaching strategies they employ in their classes. Typically, a teacher's favorite teaching style corresponds to his/her own preferred learning style. Intrigued?

Well, once you identify your teaching style and understand which teaching strategies are preferred by different types of learners, you may be compelled to investigate ways to expand your teaching repertoire. From lecture to class discussion to group projects, regardless of your teaching style, technology can help you address a variety of learner needs by providing alternate ways to present information. If you are interested in exploring this topic further, please register for the ITC workshop LS 151: Supporting Teaching/Learning Styles with Technology or visit the online notes at <http://itc.utk.edu/workshops/l151>

## Fast Facts

**73%** of college students say they use the Internet more than the library for information searching.

**79%** of college students agree that Internet use has had a positive impact on their college academic experience.

Facts based on the report: "The Internet Goes to College: How Students are Living in the Future with Today's Technology," at <http://www.pewinternet.org/reports/toc.asp?Report=71>

## Teaching to Diverse Learner Needs (continued from pg 1)

### Some questions to ask yourself:

- Do you encourage students to speak up when they do not understand?
- Do you select readings and design activities related to the background of your students?
- Do you provide extra material or activities for students who lack essential background knowledge or skills?
- Do you find out about your students' learning styles, interests, or backgrounds at the beginning of each course?
- Are your course materials accessible – face-to-face and online?
- Do you use different assessment methods – written, oral, projects, presentations, etc.?

The most effective teaching strategy is variability. Understanding how different learning styles affect approaches to learning can assist teachers in developing strategies that best serve individual differences.

### Some approaches to consider:

- Use different activities in class – videos, discussion, lecture, groups, pairs, etc.
- Use mind mapping for visual presentations.
- Engage in full-group discussion following small-group discussion.
- Encourage the use of email or bulletin boards.
- Value every answer and find some relevance to encourage participation.
- Offer contract learning to help students define their own objectives, determine the learning activities, and define the criteria and methods of evaluation.
- Utilize multimedia presentations.
- Consider field trips – physical and virtual.
- Diversify delivery methods.
- Give students a problem to solve that has multiple solutions.

### Using Instructional Technology to Support Diverse Learner Needs

The Innovative Technology Center is undertaking a thematic approach to our faculty workshop Spring 03 curriculum. Our focus is to work with you to identify solutions for meeting diverse learner needs that are manageable, cut across diverse groups of learners, and reflect best practices for effective use of instructional technology. This thematic approach will provide you with concentrated opportunities to examine how technology can help you vary your teaching strategies to meet diverse learner needs.

Join us for a semester-long exploration reflected in this newsletter, integrated in the hands-on and online faculty workshops, and extended through interactive readings available on our Web site.

To register for workshops, learn more about learning styles, access resources cited in this newsletter, and engage in an online discussion forum focused on meeting diverse learner needs, please visit: [http://itc.utk.edu/learner\\_needs](http://itc.utk.edu/learner_needs) □

**4th biannual ITC faculty survey to be administered online in January. Faculty will receive separate information via campus mail.**

## Are Your Course Materials Accessible?

**S**tudents come to us with learning styles developed over many years, rooted in their culture, their family backgrounds, and their prior educational experience. Many of us use the Internet to enhance and supplement our courses by posting course materials online. We are developing stand-alone course Web sites and using Online@UT to deliver our course materials. We are going beyond text to take advantage of the wide range of media formats afforded to us by the Internet. We are incorporating technologies such as online audio, video, and computer-generated graphics into our courses. Additional learning resources are also available today from textbook vendors, including companion Web sites, CD-ROMs which include videos, interactive exercises, glossaries, online quizzes, and other internet resources. The wealth of instructional material formats available to us poses both unique opportunities and special challenges for reaching students with disabilities. Course Web sites and Web-based course materials must be accessible to all students, including those with disabilities. How accessible are your Web-based course materials? Why should you care? How would you know?



### Why should you care?

Consider how a user who is blind or visually impaired navigates or reads the content of a Web site, or how a user who is deaf or hearing-impaired understands the audio portion of video on the Web. People with sensory impairments, such as those who are blind, often use specialized software to access and operate their computers. Called “screen readers,” such software reads the elements on the screen, window, or Web browser to the user. Users who are deaf depend on Web designers to provide captioned text that is synchronized with audio clips on the Web site. And users with certain learning disabilities greatly appreciate and benefit from Web sites that are well-designed and uncluttered.

Certain laws, such as the Americans with Disabilities Act (ADA) which dictates that all persons be given equal access to education and public buildings, may also apply to educational materials placed on the Web. Although there is a growing body of state laws and policies that addresses accessibility of information technologies, Tennessee has yet to establish such a state statute.

### How would you know?

Web accessibility involves a set of simple guidelines that ensure your Web pages will be readable by everyone. Most pages will require only a few minor changes. Many people have the misconception that to make a Web site accessible, you have to strip the site of images and color, make it boring, or “dumb it down” in terms of design sophistication. That is not the case at all. The World Wide Web Consortium (W3C) has developed a set of standards that encapsulate good design techniques and assure accessible pages. The standards are broken down into a set of Priority Levels (Level 1-Level 3). At a minimum, your Web site should meet Priority Level 1 standards. To determine if your site meets that level, go to <http://bobby.watchfire.com> □

## Quick Tips for Accessibility

- ▶ **Images and animations.** Use the *alt* tag to describe the function of each visual.
- ▶ **PDF Files.** Use the accessibility checker option in Adobe Acrobat 5.
- ▶ **Image maps.** Use the client-side map element and text for hotspots.
- ▶ **Multimedia.** Provide captioning and transcripts of audio, and descriptions of video.
- ▶ **Hypertext links.** Use text that makes sense when read out of context. For example, avoid “click here.”
- ▶ **Page organization.** Use headings, lists, and consistent structure.
- ▶ **Graphs and charts.** Summarize or use the *longdesc* tag.
- ▶ **Scripts, applets, and plug-ins.** Provide alternative content in case active features are inaccessible or unsupported.
- ▶ **Frames.** Use the *noframes* tag and meaningful titles.
- ▶ **Tables.** Make line-by-line reading sensible. Summarize.
- ▶ **Check your work.** Validate. Use tools, checklists, and available guidelines.
- ▶ **Learn more.** Attend the ITC workshop WebIT 135: Accessible Web Design Basics.

If you are interested in exploring this topic further, please register for the ITC workshop WebIT 135: Accessible Web Design Basics or visit the online notes at <http://itc.utk.edu/workshops/webit135>

**Learn more about OIT's new IT Security Group (ITSG) by attending their special topics session scheduled through ITC's Spring workshops or visiting <http://oit.utk.edu/infosec/>**

# Quick and Easy Tips for Technology

By now you have noticed that this issue of the ITC newsletter is focusing on the theme “meeting diverse learner needs.” While there are thousands of ways to do this, we would like to direct your attention to the “Quick and Easy Tips for Technology” section of the ITC Web site at [http://itc.utk.edu/learner\\_needs/](http://itc.utk.edu/learner_needs/). This new section will describe one or more new “Low Threshold Applications” (LTAs) every semester.

So what is a Low Threshold Application? According to the Teaching, Learning, and Technology (TLT) group, which developed and promotes the implementation of LTAs, “A Low Threshold Application (LTA) is a teaching/learning application of information technology that is reliable, accessible, easy to learn, non-intimidating and (incrementally) inexpensive.” See the LTA section of the TLT Web site at <http://www.tltgroup.org/resources/rltas.html> for additional information.

This semester’s featured LTAs are “Using Microsoft PowerPoint and Adobe Acrobat to improve student note taking” and “Using email distribution lists to increase the frequency and improve the quality of communication in your course,” which describes a process for easily creating email distribution lists to facilitate direct communications between faculty and groups of students or among the members of student groups within a class.

## Fast Facts

**95%** of all college students access the Internet on a weekly basis with an average of 20 hours online every week.

**85%** of all college students own their own computer.

Facts based on the report: “The Internet Goes to College: How Students are Living in the Future with Today’s Technology,” at <http://www.pewinternet.org/reports/toc.asp?Report=71>

## LTA number 1

### Using Microsoft PowerPoint and Adobe Acrobat to improve student note taking

Many students struggle with mastering basic survival skills for college. One of these skills is taking notes during lecture. As an instructor, you have the unique opportunity to provide a template for taking notes during your lectures and help students identify important points. If you are already using MS PowerPoint to provide a visual anchor for your lectures, there are only a few more steps to creating a note-taking guide.

Taking notes during lecture helps students:

- Listen and test their understanding of material,
- Read the text-based material, and
- Recall information later.

Instructors reinforce key ideas through:

- Statement of the key points to be covered prior to the beginning of lecture,
- Repetition of key points,
- Emphasis through vocalization, focus, and examples,
- End-of-lecture summaries, and
- Reviews provided at the beginning of the following lecture.

Whether you use MS PowerPoint during lecture or not, you can provide your students with a guide for taking notes by giving them the lecture framework and outline, equations and charts, and key-words. The key to this guide is the format you provide students for printing. Once you have created your MS PowerPoint presentation, go to [http://itc.utk.edu/learner\\_needs/quicktips](http://itc.utk.edu/learner_needs/quicktips) and follow the steps to create a class guide for taking notes.

## LTA number 2

### Using email distribution lists to increase the frequency and improve the quality of communication in your course

Distribution lists facilitate direct communications between faculty and groups of students or among the members of student groups within a class. This can help to achieve the goal of meeting diverse learner needs. Members of the group have the opportunity to bring their own unique strengths and talents to the discussion. Students have the opportunity to reflect before responding.

You can use the email distribution list to create the “anticipatory set” prior to the next class meeting. By directing students’ attention to activities and readings related to an upcoming class session, you can increase student readiness for discussion. Once the groups become engaged in the discussions via the distribution list, you only need to submit a question or comment, and monitor the discussion occasionally to ensure that it doesn’t stray too far afield. By attaching images or files to email messages, you can engage those students with more visual or auditory styles. Try it! You’ll discover that you have hundreds of ideas for getting the members of the groups engaged with the content and each other. See detailed instructions for several popular email programs at [http://itc.utk.edu/learner\\_needs/quicktips](http://itc.utk.edu/learner_needs/quicktips)



# ITC's Spring 2003 Workshops

You want your learners to be successful. So do we. This semester, the ITC is focusing on a theme, Meeting Diverse Learner Needs, and anchoring each of our workshops to that theme. You will leave each workshop having learned not only how to use the tools, but also when and, most importantly, why to use them. Register online at <http://itc.utk.edu/workshops/register.shtml>

## Online@UT Course Management System (CMS)

### CMS 110 Introduction to Online@UT

Jan 6 10:10 - 12:10	GTA Priority	Jan 7 10:10 - 12:10
Jan 8 1:30 - 3:30		Jan 9 1:30 - 3:30
Jan 13 1:30 - 3:30	GTA Priority	Jan 15 10:10 - 12:10
Feb 19 10:10 - 12:10		Mar 5 10:10 - 12:10
Apr 7 1:30 - 3:30	GTA Priority	

One way to meet the diverse needs of students is to augment face-to-face lectures with extra readings, audio clips, video, etc. Online@UT makes it easy to organize and post these materials online for students to access anytime from anywhere via the Web. In this introduction to Online@UT's course management system, participants will access their online course site, receive an overview of instructor development tools and resources, and create an online syllabus. **This workshop is required to obtain access to your Online@UT course site.**

### CMS 111 Organizing Materials in Online@UT

Jan 16 1:30 - 3:30	Mar 12 10:10 - 12:10
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"How can I design my Online@UT course site to meet the diverse needs of my students?" This workshop will use the "Seven Principles of Good Practice" as a benchmark to design and organize online materials that encourage interaction, participation, and collaboration; communicate high expectations; and address diverse learning styles. **Prerequisite: CMS 110**

### CMS 114 Incorporating Visuals in Online@UT

Jan 23 1:30 - 3:30	Mar 26 10:10 - 12:10
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"Is there another way I can present information online to help students with diverse learning styles?" This workshop will help you enhance your Online@UT course with visuals by incorporating graphics, photos, and MS PowerPoint presentations. Participants will also discuss appropriate use of different media types.

**Prerequisite: CMS 110**

**Have you taken the Digital Media classes and want to get started, but don't have the equipment? The ITC can help! Faculty and teaching staff can check out a variety of cameras and other tools for instructional purposes, including:**

- Digital Still Cameras
- Digital Video Cameras
- Tripods
- Kaiden VR Tripod Heads

If you don't have the time to do it yourself, hire the ITC to develop an instructional project for you.



## Communication Tools for Instruction (CT)

### CT 185 Using the SMART Technology

Jan 7 11:00 - 11:50	Jan 7 2:00 - 2:50
Jan 8 11:00 - 11:50	Jan 8 2:00 - 2:50
Jan 9 11:00 - 11:50	Jan 9 2:00 - 2:50
Jan 10 11:00 - 11:50	Jan 10 2:00 - 2:50
Jan 27 10:10 - 11:00	GTA Priority

There are two SMART technologies available on campus to enhance your teaching capabilities. You can connect a laptop to the SMART Board or SMART Sympodium and project your computer screen to a larger display. Both technologies use SMART Software. The SMART Sympodium, which is an interactive electronic lectern, features a screen console and an electromagnetic stylus. The SMART Board works like a combination touchpad/whiteboard. Participants will learn how to set up their computer for use with these technologies and how to use the interactive features of each to meet diverse learner needs. *NOTE: These workshops are specific to equipment located in various classrooms across campus. Before selecting a workshop, please check <http://itc.utk.edu/resources/smartclassrooms/> to verify which workshop is appropriate for the room in which you will be teaching.*

## Digital Media for Instruction (DM)

### DM 144 Beyond Text

Jan 29 1:30 - 3:30	Mar 25 10:10 - 12:10
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"How do visuals and multimedia enhance learning materials and address diverse learning styles?" Attend this introductory workshop and learn how your students will benefit from still graphics, animation, and audio and video files. Participants will explore Web sites utilizing these elements in their design, discuss the instructional value of incorporating various media types into content, and receive an overview of related ITC workshops.

### DM 147 Capturing, Editing, and Delivering Digital Video using iMovie 2 and Cleaner 5

Feb 5 1:30 - 3:30	Apr 3 1:30 - 3:30
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Video captures and captivates with sound, image, and movement. The power of observation is brought to life with the incorporation of digital video into your classroom. Video is a great tool for both instructional delivery and student assessment. In this workshop we will explore different techniques for enhancing your curriculum through the examination of good working models. Technical aspects to be covered include iMovie software, pre-planning and production, digital transfer, rough-cut editing, file compression, and delivery methods.

**Digital Media for Instruction (DM)****DM 240 *Creating Web Graphics with Adobe Photoshop***

Feb 19 1:30 - 3:30      Apr 1 10:10 - 12:10

Visual learners learn better by seeing. Discover basic strategies and criteria for reinforcing your online content with engaging imagery. Learn to evaluate what constitutes a good image, and then apply that knowledge using one of today's leading image creation tools, Adobe Photoshop. This workshop you will teach you to create, improve, and prepare your images for digital display within an online learning environment.

**DM 244 *Capturing and Editing Audio***

Feb 12 1:30 - 3:30      Apr 10 1:30 - 3:30

Some students are auditory learners - their learning is reinforced and enhanced by hearing narratives, explanations, and descriptions. One way to enhance the learning experience for these students is to make audio clips available on your course Web site. Putting audio clips on your course Web site is a quick, easy way to address the diversity of learning styles of your students and to provide another rich media source for all of your students, regardless of their preferred learning style. UT has a Digital Media Services center at Hodges Library that will assist you with the creation and distribution of digital audio files for instruction. Participants in this workshop will learn guidelines for the appropriate instructional use of digital audio and techniques for acquiring, capturing, and editing digital audio using the audio editing tool GoldWave to create digital audio clips for use in their courses.

**Creating Websites for Instruction (HTML)****HTML 106 *Introduction to Macromedia Dreamweaver***Mar 10 10:10 - 12:10 *GTA Priority*      Apr 14 1:30 - 3:30 *GTA Priority*

Macromedia Dreamweaver is one of the most popular HTML editors available, allowing users to build instructional Web sites containing interactive multimedia. This introductory course will cover the fundamentals of the Dreamweaver interface, including defining a site, creating templates, and adding tables, graphics, text, and hypertext links. Participants will learn how to plan and organize their content to meet diverse learner needs and will create a basic page using Dreamweaver.

**Learning Strategies (LS)****LS 151 *Supporting Teaching/Learning Styles with Technology***

Jan 15 1:30 - 3:30      Mar 6 1:30 - 3:30

Once you identify your teaching style and understand which teaching strategies are preferred by different types of learners, you may be compelled to investigate ways to expand your teaching repertoire. This workshop will help participants identify their preferred teaching style and students' learning styles as well as ways that technology can be used to support teaching techniques and enhance instructional effectiveness.

**Productivity Tools for Instruction (PT)****PT 165 *Introduction to Camtasia***

Feb 17 1:30 - 3:30      Apr 8 10:10 - 12:10

Looking for easy and rapid development of multimedia software demonstrations, training, and tutorials? For example: a just-in-time video clip helping students with a particular learning concept or technical feature of your course. They are now easier to create. Camtasia Studio is a suite of five applications that allow instructors to create high-quality, full-motion videos, highly compressed, for use in enhancing the materials you have placed online for students' learning. **This workshop is restricted to faculty and limited to eight participants.** Each faculty participant will receive a full version of the software. Faculty will be expected to develop one "best practice" model using the tool and share their work at an IT@UT session in Fall 03.

▶ **MICROSOFT POWERPOINT****PT 160 *Preparing a Lecture Using MS PowerPoint***

Mar 3 1:30 - 3:30      Apr 15 10:10 - 12:10

This workshop will use MS PowerPoint to focus on designing an instructional presentation based on lecture material. Participants will storyboard an idea and then use auto-layouts for efficient construction of slide shows, selecting and inserting graphics, and printing handouts to enhance the effectiveness of information. Adding audio, visual illustrations, and note-taking handouts improves student learning by addressing diverse learning styles.

▶ **ADOBE ACROBAT****PT 162 *Introduction to Adobe Acrobat***

Mar 10 1:30 - 3:30      Apr 10 10:10 - 12:10

"How can I best utilize digital document exchange in the teaching and learning environment?" This workshop will cover strategies for using Adobe Acrobat to convert documents into an easily accessible format that is not platform or application dependent. From engaging students in face-to-face lectures to providing rich-and-timely feedback, Acrobat is flexible enough to meet the needs of instructors and students alike. Participants will learn how to encourage student note-taking and the advantages of digital grading of assignments.

***Can't make it to the workshop you want?***

**Get at least seven faculty members, GTAs, and/or teaching staff together, and we'll schedule a Lucky 7 class time just for you!**  
**Call Janet Miles at 974-9670 or sign up online at <http://itc.utk.edu/cgi-bin/lucky7/requestform.pl>**

**Register for Spring 2003 ITC Workshops at <http://itc.utk.edu/workshops/>**

## Web Instructional Technology (WebIT)

### WebIT 135 *Accessible Web Design Basics*

Jan 22 1:30 - 3:30      Mar 13 1:30 - 3:30

The wide range of media formats afforded to us by the Internet has allowed us to respond to the diverse learning styles of our students. At the same time, these formats pose both unique opportunities and special challenges for reaching students with disabilities. How accessible are your Web-based course materials? Why should you care? How would you know? In this workshop the participants will receive an overview of Web accessibility issues, tools, and techniques available to instructors to ensure course Web sites comply with acceptable standards for accessibility.

### WebIT 137 *So, You're Thinking About Teaching Online*

Feb 17 10:10 - 12:10 GTA Priority

As a teaching and learning environment, the Web lends itself to meeting a wide variety of learner needs. The availability of multimedia and telecommunications tools provides new opportunities to deliver content and engage with students. However, there is much to be considered when moving a classroom-based course into the online environment. Let the experts at the ITC help you understand how teaching online differs from a traditional experience; how to get started rethinking your course content; what influences good pedagogical practice for online teaching; and where faculty can go for additional assistance.

## Special Topics (ST)

### Special Topics 021 *Security Awareness Training & Discussion*

Jan 30 10:10 - 11:10      Feb 24 1:30 - 2:30

Mar 28 10:10 - 11:10

This workshop will center on discussion of the new Information Technology Security Group's role in helping faculty become sensitive to the security issues on campus and on the Internet. Both proactive and reactive mechanisms, including such items as "How do I report an incident or attack?", "How do I get information on current guidelines?", and "How do I protect my system from hackers?", will be discussed.

## Instructional Technology (IT)

### IT 125 *Using the Technology Enhanced Classrooms*

Jan 6 4 workshops      Jan 7 4 workshops

Jan 8 6 workshops      Jan 9 6 workshops

Jan 10 6 workshops      Jan 13 1 workshop

Learn how to use the projectors, VCRs, DVD players, and other equipment in the technology-enhanced classrooms to structure your course delivery to meet diverse learner needs. This hands-on workshop will give you the confidence to use new technology in your class. *NOTE: These workshops are specific to equipment located in various classrooms across campus. Before selecting a workshop, please check <http://itc.utk.edu/resources/smartclassrooms/> to verify which workshop is appropriate for the room in which you will be teaching.*

## Instructional Technology @ UT

### How about a FREE LUNCH?

*Come to an Instructional Technology at UT session!*

**This spring ITC will host two IT@UT series where faculty discuss and demonstrate their uses of technology over lunch. Two sessions are planned and they will both present ways that Web-based instructional modules meet different learner needs. The first 15 people who register for each of these sessions will be provided with a free lunch.**

### March 5 12:30 - 2:00

#### *Principles of Taxation*

**Dan Murphy, Accounting and Business Law**

The module leads students through the development of four tax strategy models that measure the impact of taxes on investment/financing decisions.

#### *Technology at Tennessee: Putting Good Practice in its Place*

**Jennifer Gramling, Instructional Technology, Curriculum & Evaluation**

This module discusses how Chickering and Gamson's seven principles for good practice in undergraduate education can be put into practice using technology in the curriculum.

#### *Linguistic Analysis of the ASL Classifier System*

**Jeffrey Davis, Counseling, Deafness, & Human Services**

The module contains a description of the ASL Classifier System, which is one of the most complex and challenging aspects of learning ASL. It provides students with video examples, practice exercises, and on-line/Web-based assignments to reinforce the content.

### April 11 12:30 - 2:00

#### *Diagnosis of Retinal Disease in Animals*

**Daniel Ward, Small Animal Clinical Services**

This module teaches the proper methods of visualizing animal retinas and is used by veterinary students as an initial exposure to diagnosis of retinal disease in animals.

#### *Planning for Instruction*

**Blanche O'Bannon, Instructional Technology, Curriculum & Evaluation**

This module assists pre-service teachers who are learning to develop curriculum by serving as an introduction to lesson plan development.

#### *Thinking Visually*

**Mark D. Harmon, Broadcasting, College of Communications**

This module introduces Broadcasting students to the basic elements of television production and certain aspects of "visual language."

JANUARY 2003	S	M	Tu	W	Th	F	S
				1	2	3	4
5		6 IT 125 (multiple)* CMS 110 10:10-12:10	7 IT 125 (multiple)* CMS 110 10:10-12:10 CT 185 (multiple)*	8 IT 125 (multiple)* CMS 110 1:30- 3:30 CT 185 (multiple)*	9 IT 125 (multiple)* CMS 110 1:30- 3:30 CT 185 (multiple)*	10 IT 125 (multiple)* CT 185 (multiple)*	11
12		13 IT 125 10:10-11:00 CMS 110 1:30- 3:30	14	15 CMS 110 10:10-12:10 LS 151 1:30- 3:30	16 CMS 111 1:30- 3:30	17	18
19		20	21	22 WebIT 135 1:30- 3:30	23 CMS 114 1:30- 3:30	24	25
26		27 CT 185 10:10-11:00	28	29 DM 144 1:30-3:30	30 ST 021 10:10-11:10	31	

FEBRUARY 2003	S	M	Tu	W	Th	F	S
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2		3	4	5 DM 147 1:30- 3:30	6	7	8
9		10	11	12 DM 244 1:30- 3:30	13	14	15
16		17 WebIT 137 10:10-12:10 PT 165 1:30- 3:30	18	19 CMS 110 10:10-12:10 DM 240 1:30- 3:30	20	21	22
23		24 ST 021 1:30- 3:30	25	26	27	28	

MARCH 2003	S	M	Tu	W	Th	F	S
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2		3 PT 160 1:30- 3:30	4	5 CMS 110 10:10-12:10 IT@UT 12:30- 2:00	6 LS 151 1:30- 3:30	7	8
9		10 HTML 106 10:10-12:10 PT 162 1:30- 3:30	11	12 CMS 111 10:10-12:10	13 WebIT 135 1:30- 3:30	14	15
16		17	18	19	20	21	22
23		24	25 DM 144 10:10-12:10	26 CMS 114 10:10-12:10	27	28 ST 021 10:10-11:00	29
30		31					

APRIL 2003	S	M	Tu	W	Th	F	S
			1	2	3	4	5
6		7 CMS 110 1:30- 3:30	8 PT 165 10:10-12:10	9	10 PT 162 10:10-12:10 DM 244 1:30- 3:30	11 IT@UT 12:30- 2:00	12
13		14 HTML 106 1:30- 3:30	15 PT 160 10:10-12:10	16	17	18	19
20		21	22	23	24	25	26
27		28	29	30			

\* Visit the online registration page for specific times and room locations.

Register for Spring 2003 ITC Workshops at <http://itc.utk.edu/workshops/>



## See It, Hear It, Read It: Meeting Visual Learners' Needs

**Y**ou may be surprised to learn that many students entering college today can best be categorized as visual learners – preferring, when choices are available, to learn through visual, aural, and kinesthetic means. This is primarily due to the image-centric, iconographic, visual culture in which they were raised. MTV and video games have created a dependency on messages that intertwine word, image, sound, and, in some cases, interactivity. Ben Davis describes this culture in his benchmark article *Image Learning*:



We live in a world of images. The electronic transmission of video (sound and picture) has literally wrapped the planet in an envelope of imagery. To navigate this realm we have relied on the passive medium of television. All of us have become image interpreters. (1991, retrieved from <http://www.mit.edu/people/davis/ImageLearn.html>)

Today's media-centric culture propels us to look for new and meaningful ways to present learning material. The visual learner's classroom experience can be enhanced by incorporating learner-centered choice with the inclusion of additional media elements such as pictures, audio, or video. These additional elements heighten the students' understanding of the desired subject while simultaneously stimulating active engagement from within online learning environments.

While the visual learner has the ability to read and comprehend text, consider how your perception of a sporting event is altered based on the mode of delivery:

**Text:** Reading the sports page in the local newspaper.

**Image:** Deciphering facts about the players through charts and graphs, viewing photographs of decisive moments captured in time.

**Video:** Watching the nightly television news highlights.

**Audio:** Listening to your favorite radio personality describing the crowd.

### Explore ITC's Digital Media-related workshops

In the overview workshop, Digital Media: Beyond Text (DM 144), explore the many possibilities for making your message understood. If you want to harvest new ideas and get inspired, this is the place to begin.

Appeal to your learners' sense of vision by implementing the use of imagery. Photography strengthens and enhances textual meaning by lending credibility and realistically portraying events and people. Illustrations bring intangible, complex ideas and objects into focus. Illustrations can also clarify the emotional intent of the written word. The interwoven message of word and image underscores and illuminates your point. Learn how to enhance your photographs and images with Digital Media: Adobe Photoshop (DM 240).

Appeal to the sense of immediacy, reality, or emotion with audio. Songs are a good example of how deeply one can be affected by aural stimuli. Time, place, and feeling can be recalled by hearing a familiar tune. Digital audio elements should always accompany the written word to aid online accessibility of your content. Learn about audio capturing, editing, and compressing in Digital Media: Capturing and Editing Audio (DM 244).

Further support your ideas in context to your written word by adding short video clips to your online teaching materials. Video offers learners access to otherwise inaccessible, historical, or even dangerous events. Steps and processes can be studied prior to an actual hands-on experience. Video makes the unfamiliar familiar. Learn the steps involved in Digital Media: Capturing, Editing, and Delivering Digital Video using iMovie 2 and Cleaner 5 (DM 147). □

## Grant Opportunities

### ► Faculty First Program 2003

The Innovative Technology Center (ITC) invites applications from individual full-time faculty members interested in receiving design and development assistance to reshape a course or course component to enhance its delivery with traditional or emerging technologies.

The primary focus of the Faculty First Program is development and technical assistance. You offer the ideas and serve as subject matter expert, and we do the development for you.

You will be partnered with an ITC staff member for the duration of your project. We have visual designers, instructional designers, and programmers to make your ideas become a reality and enhance learning for your students.

If you would like to talk through your ideas, you can schedule a one-on-one consultation with an ITC staff member before submitting your proposal. Call Jerry Riehl at 974-9309 or email [riehlj@itc.utk.edu](mailto:riehlj@itc.utk.edu).

The application deadline for the Faculty First Program is January 24, 2003. Additional information about the Faculty First call for proposals is available at <http://itc.utk.edu>

### ► GTA @ ITC

The ITC is pleased to announce a grant opportunity for University of Tennessee, Knoxville Graduate Teaching Assistants and Associates. The ITC recognizes the importance of preparing future faculty for teaching and scholarship in the digital age. This grant program gives GTAs an opportunity to use instructional design principles and Web-based learning strategies while improving their teaching practice. GTAs with sole responsibility for teaching a class are eligible to apply.

For more information, including proposal guidelines, please visit <http://itc.utk.edu/> or email [gta@itc.utk.edu](mailto:gta@itc.utk.edu)

#### Fall 2002 GTA @ ITC Grant Recipients

**Andrea Hale**, Education  
Enhancing Cultural Studies 400 by Using an On-line Component

**William Wendorff**, Arts & Sciences  
English 102: Moving Forward with a Web Presence

## Online Resources for Faculty Development

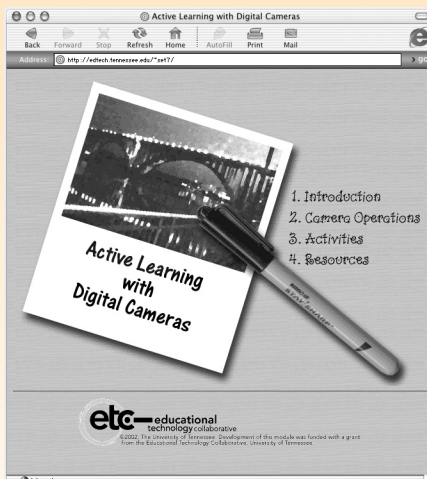
Last year the UT Educational Technology Collaborative (ETC) funded the development of 10 Project SET (Sharing Educational Technology) Web-based modules representing a range of topics to assist faculty in using technology for instruction. These modules are delivered completely online and are structured so users can progress through them in a self-directed manner at any time, from any place.

The 2002 modules are now available for faculty, staff, and other interested parties to review online at <http://edtech.tennessee.edu/modules.html>

### Topics include:

- Designing Online Learning
- Using Digital Cameras
- Evaluating Websites
- Videoconferencing
- Online Collaboration
- AGRICOLA Online Index
- Fundamental Computing Skills
- PowerPoint Instructional Modules
- Good Technology Practice in Education
- Assessing Linguistic Proficiency

For more information about Project SET, go to <http://edtech.tennessee.edu>



A Project SET Module by Aileen S. Nonis & William Wishart

## 2003 Teaching with Technology Grant Recipients Announced

The Innovative Technology Center (ITC) recently announced the recipients of the 2003 Teaching with Technology (TWT) Grants. The focus of the grant is the creation of modular pieces of instruction for Web-based delivery. The grant was awarded to five departments that each have two to five faculty members working collaboratively to create at least five modular pieces of instruction. Departments are awarded \$15,000 each, which can be used to purchase computing equipment and/or hire students for development tasks. The ITC provides training, support, and ongoing consultation throughout the grant cycle. For information about past grant projects, please see [http://itc.utk.edu/grants/grant\\_list.shtml](http://itc.utk.edu/grants/grant_list.shtml)

### Department of Child and Family Studies

**Developing Critical Thinking through Visual Literacy:  
The Role of Technology in Educating Undergraduate Students**  
Mary Jane Moran, Assistant Professor  
Deborah Tegano, Associate Professor  
Kathy Fitzgerald, Instructor  
Kathy Kidd, Instructor  
Ted Fletcher, Instructor

### Department of Forestry, Wildlife and Fisheries

**Teaching/Learning Modules for FWF 317:  
Principles of Wildlife and Fisheries Science**  
Sammy King, Assistant Professor  
Stephen Nodvin, Associate Professor  
Richard Strange, Professor

### Department of Mechanical, Aerospace, and Biomedical Engineering

**An Asynchronous Mechanics Module to Transition from Textbooks to Realistic Problems**  
Richard Bennett, Professor  
Toby Boulet, Associate Professor  
Joe Iannelli, Associate Professor  
Arnold Lumsdaine, Associate Professor  
Jack Wasserman, Professor

### Department of Physics and Astronomy

**Interactive Modules for Teaching Fundamental Concepts in Introductory Physics**  
Marianne Breinig, Professor  
Mike Guidry, Professor

### Department of Plant Sciences and Landscape Systems

**Plant Propagation**  
Dennis Deyton, Professor  
Carl Sams, Professor

## Best Practices@UT Showcase Highlights Strategies for Meeting Learners' Needs

Every fall, the Innovative Technology Center (ITC) recognizes excellence in using technology to support teaching and learning at the University of Tennessee by presenting the Best Practices@UT Showcase. Technology, integrated into the learning environment, offers multiple opportunities to enhance student learning, to engage them, and to construct a richer learning environment. Reach all of your students and offer them opportunities that will speak to their diverse learner needs. Below are some examples:

### Accessible Course Materials

Making sure that well-crafted course materials are available to support student learning is a challenge that the College of Engineering works hard to meet.

#### Engineering Fundamentals 101

Through collaboration, Dr. Richard Bennett, Dr. Raj Raman, and William Schleiter make sure that the 500 students in their engineering fundamentals course learn in a rich and consistent way. Their strategies include a Web site containing all course materials, a custom Web-based database system, and a lecture/quiz system. The goal is an information-rich learning environment that will ensure a high level of consistency between lecture sections.

### Building Essential Skills Effectively

Preparing students for deep learning and dynamic discussion involves making sure that basic principles are learned thoroughly and effectively. Philosophy professor Dr. Glenn Graber wanted that to happen in ethics discussions.

#### Philosophy 344: Ethical Theory Module

Using an ITC Faculty First grant, Dr. Graber worked with ITC staff to create a self-paced Web-based module on the difference between right and wrong. The module began life as a 30-page essay, a print-based form that was simply not an effective method of engaging students with complex material.

The result of the grant is a module, lively and interactive, which communicates fundamental concepts of ethical theory. Students can review and re-review to achieve confidence with the difficult material. Because they proceed through the module before class meets, they arrive in class ready to discuss the issues in depth. Dr. Graber notes that the module has alleviated persistent confusions that, in the past, have marred later assignments and discussions.

### Designing Learning Activities

The legal profession today is more complex than ever, and this complexity poses challenges for law professors in the field of entrepreneurial law. Dr. Joan Heminway met that challenge with the help of technology.

#### Law 833: Representing Enterprises

In order to communicate the complexities of a modern law firm, Dr. Heminway created a simulation of a multi-site law firm operation in the negotiation and documentation of a multi-party stock merger transaction. Because the class was twice as large as had been anticipated, this Web site proved to be an effective way of working with students. The technology made assessment more manageable. It also permitted and encouraged substantive out-of-class student-instructor interactions that would have otherwise been difficult with such a large group.

To view the full list of participants and University service organizations who took part, please visit <http://itc.utk.edu/showcase/bestpractices2002> □

## 2003 Project SET Recipients Announced

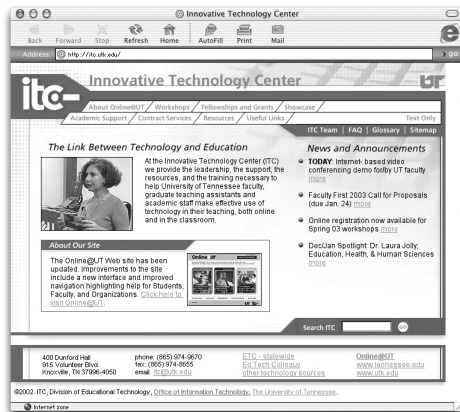
The Project SET (Sharing Educational Technology) initiative is developing reusable, online instructional modules to serve as professional development opportunities for UT faculty members on topics related to using technology to enhance teaching practices.

Ten modules were selected for development funding in 2003. Abstracts are available online at <http://edtech.tennessee.edu/2003/modules.html>

- ▶ **John C. Cummins, UT Knoxville**  
Broadening Web Audience:  
Accessible Web Design
- ▶ **Thilla Sivakumaran & William Wishart, UT Knoxville**  
Designing and Implementing  
Successful Online Learning
- ▶ **Alison McNabb Lockett, UT Preston Medical Library**  
Designing User Interfaces for  
Online Instructional Delivery
- ▶ **Sanjay Ratnakant, UT Health Science Center**  
Developing Multimedia Presentations from  
Clinical Data and Imaging Resources
- ▶ **Eric Lingerfelt & Mike Guidry, UT Knoxville**  
Developing Reusable Components in Flash MX
- ▶ **Christina M. Goode, UT Knoxville**  
Engaging Your Learners Through  
Interactive Whiteboards
- ▶ **Timpe, Motl, Eichner, Helms & Amarshi, UT Health Sciences Center**  
Facilitating Use of the Internet as  
a Health Information Resource
- ▶ **Wood, Gibbs, Cleavelin, & Likens, UT Health Sciences Center**  
Online Assessment of Student Learning  
Styles and Instructor Teaching Styles
- ▶ **Betsy DeGeorge, UT Knoxville**  
Publication and Communication
- ▶ **Yi Li & Dan Goldowitz, UT Health Science Center**  
Automatic Update of Web site Content  
Using Mini-Fetch

# Teaching to Diverse Learner Needs

**T**he Innovative Technology Center is undertaking a thematic approach to our faculty workshop Spring 03 curriculum. Our focus is to work with you to identify solutions for meeting diverse learner needs that are manageable, cut across diverse groups of learners, and reflect best practices for effective use of instructional technology. This thematic approach will provide you with concentrated opportunities to examine how technology can help you vary your teaching strategies to meet diverse learner needs.



To register for workshops, learn more about learning styles, access resources cited in this newsletter, and engage in an online discussion forum focused on meeting diverse learner needs, please visit: [http://itc.utk.edu/learner\\_needs](http://itc.utk.edu/learner_needs)



**ITC TOPICS ► SPRING 2003**

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