

# Chapter 9

## TEACHING TAX COURSES VIA DISTANCE LEARNING

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The term "distance learning" is often associated with a high-technology learning delivery system where masses of students learn by sitting alone in front of a computer to read course material and complete assignments without peer interaction, receiving little feedback from a professor. Exams generally are assumed to be multiple choice and administered online or at a testing center. This vision of distance learning is often accompanied by the fear that it will diminish the learning process and severely reduce the need for faculty.

Although it is true that the above scenario is a form of distance learning, distance learning is broadly defined as any form of instructor-student communication where the student and instructor are separated during the process of education delivery (Swift et al. 1997). Therefore, distance learning can be noninteractive or interactive, and asynchronous or synchronous (real time). For purposes of this paper, I define "noninteractive course delivery" as one-way communication without any feedback from the instructor, fellow students, or interactive course materials (e.g., computer-based tutorials). Exhibit 1 classifies the basic forms of distance learning into distinct types, but many distance-education courses (including the ATAX program offered by the University of New South Wales in Australia and discussed by Chris Evans and Paul Macmullen in Chapter 10 of this monograph) combine different course delivery methods and may also include face-to-face classroom sessions.

### NONINTERACTIVE COURSE DELIVERY

#### **Noninteractive Asynchronous Course Delivery**

The oldest form of distance learning is the traditional correspondence course. This format is often employed in accounting by commercial enterprises that produce CPE courses. Originally, correspondence courses consisted of a packet of readings, assignments, and exams that were sent by the institution to the student who would then complete the assignments and/or take the exam(s) at his or her own pace. Upon completion, the student mailed the completed assignments back to the institution for grading.

Today, coursepacks may include videotaped lectures or multimedia presentations on diskette or CD-ROM. In addition, instead of mailing materials, students may download materials from the

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**EXHIBIT 1**  
**Distance Learning Classifications**

	Asynchronous	Synchronous
<b>Noninteractive</b>	<ul style="list-style-type: none"> <li>● Print correspondence</li> <li>● Video correspondence</li> <li>● Computer correspondence (print and/or video delivered via the Internet)</li> <li>● Taped television broadcasts</li> </ul>	<ul style="list-style-type: none"> <li>● One-way live broadcast (via cable television or possibly broadband Internet connection)</li> </ul>
<b>Interactive</b>	<ul style="list-style-type: none"> <li>● Computer-based using email, listserves, bulletin boards</li> </ul>	<ul style="list-style-type: none"> <li>● Two-way broadcasts (via satellite, compressed video or Internet) with two-way audio and possibly two-way video</li> <li>● Chatrooms and/or interactive applications</li> </ul>

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institution's web site and send completed assignments or exams back to the institution via email. Unfortunately, many web-based courses are not much more than ordinary correspondence courses once you strip away the "gee whiz" technology.

"Print only" tax courses are most appropriate for self-motivated students who already have a solid tax background (e.g., tax professionals) because their prior knowledge is necessary to comprehend and assimilate new technical knowledge. Students with little or no tax knowledge likely benefit more from video lectures and multimedia presentations, which provide them with detailed oral explanations and show them how to solve problems. This training generally allows them to gain a basic understanding of tax concepts, but may cause inexperienced students to miss the many nuances of tax law because there is no instructor to explain material.

#### **Noninteractive Synchronous Course Delivery**

Noninteractive synchronous course delivery is the distance-learning equivalent to teaching in a large-capacity lecture hall. The main difference is that students watch lectures on television (in their home or on campus) instead of in a large lecture hall.<sup>1</sup> Like a live mass lecture, students cannot ask questions during the class.

Although similar to noninteractive asynchronous course delivery, the synchronous form differs in that all or a portion of the course is live, rather than prerecorded. But like noninteractive asynchronous course delivery, the type of student most likely to benefit from noninteractive synchronous course delivery is again one who has a solid tax background and high degree of self-motivation.

### **INTERACTIVE COURSE DELIVERY**

Computers, and especially the Internet, have facilitated great advances in distance learning. Computer-based technology allows courses to be available anywhere students have access to a computer with an Internet connection. Additionally, advances in two-way audio/video delivery (satellite and compressed video television delivery as well as emerging web-based technologies) make it possible to bring live classes to populations that do not have a university in their area.

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<sup>1</sup> Of course, once a lecture is broadcast live, it can be rebroadcast at any time.

### Interactive Asynchronous Course Delivery

Interactive asynchronous course delivery methods allow students to engage in discussions with instructors as well as fellow students, but it is not done in “real time.” The primary technologies involved are email, listserves, and bulletin boards. The primary advantage of asynchronous communications is that all parties communicating do not have to be available at the same time.

Email is very good for one-to-one correspondence (e.g., asking and answering personal questions) or for small groups with limited communication needs (e.g., group projects where each team member is responsible for his or her own part). Listserves<sup>2</sup> facilitate large-group discussions and dissemination of course material. For example, listserves enable students to respond to questions asked by other students, or allow students to submit assignments (such as case briefs) to the entire class. Bulletin boards are preferable to listserves for ongoing discussions because all communications are accessible to all readers in a single place.<sup>3</sup> In a tax research course, for example, the class can discuss a tax research assignment by posting various issues and letting others comment on them (e.g., appropriateness of the issue, the issue’s conclusion, and issue’s analysis).

Interactive asynchronous course-delivery methods can be used to provide effective tax courses for both undergraduates and graduates, but it requires more time and effort for both instructors and students to make these courses successful. Instructors need to create more materials for students than in a traditional face-to-face (FtF) class because students will do most of their learning on their own. For example, instead of delivering a lecture to a class, the instructor could create a multimedia presentation that students can view on their computer (e.g., a PowerPoint presentation with audio clips of the instructor explaining the slides). Instead of working out solutions on a chalkboard, solutions could be placed in documents with sound files containing the instructor’s explanation of the solution.

Both instructors and students need to be comfortable with communicating via computer instead of FtF. Students may have to spend more time going over problem solutions as they cannot ask questions while the instructor explains the solution in class. Assignments have to be completed by using computer applications (e.g., word processing or spreadsheet programs) and questions must be written instead of spoken. In addition, there is likely to be more material to read to make up for the lack of formal class time.

Although there are some drawbacks to using asynchronous interactive technology, there are many distinct benefits for both instructors and students. For example, instructors can encourage students to answer each other’s questions by having them send their questions to the class listserv (or post their questions to a class bulletin board) and awarding points for a correct answer to the question. When the instructor does answer student questions, he or she can research the answer first to be certain that the response is correct. In addition, after an instructor has invested considerable time preparing the course materials, he or she only has to update those materials to teach the same course again. For students, the primary advantage to interactive asynchronous course delivery is convenience. They do not have to go to a specific location or be online at a certain time. This is especially important for the growing number of nontraditional age students who often work full time.

<sup>2</sup> A listserv is an email-based distribution system in which email messages sent to the listserv are distributed to all members of that list (see Chapter 6 by Debra Callihan in this monograph for more information).

<sup>3</sup> A computerized bulletin board allows the students and instructor to post and respond to messages. Messages are displayed in a hierarchy based on topic, commonly called a “thread,” so that all messages and responses on a particular topic are grouped together. All users can see the order in which people responded to messages so a discussion can be easily followed from beginning to end.

## **Interactive Synchronous Course Delivery**

### ***Interactive Television***

Of the course-delivery methods discussed so far, two-way television is the most similar to a traditional classroom setting. Instead of teaching in a regular classroom, instructors teach in a specially equipped studio classroom to students in that classroom plus to students at one or more remote sites. There is two-way audio so students can ask questions or engage in discussions, and there may be two-way video (so instructors can see students at the remote sites, via voice activated cameras, when questions are asked). Instructors may have an engineer to operate the controls (switching between an instructor camera, student camera, computer, or desk camera [for hand-written notes]) or the instructor may operate the studio controls.

For small classes (either several students at a few locations, or several locations with few students at each location), this medium is similar to a live FtF classroom with minor inconveniences (e.g., one- or two-second communication delays, difficulty "reading" students' faces, or inability to see students if using one-way video). Since two-way television is similar to traditional FtF teaching, it is relatively easy to adapt any tax course to this medium.

### ***Online Synchronous Course Delivery***

Online synchronous course delivery, unlike two-way television, is very different from teaching a traditional FtF class. Students are required to "show up" to an online classroom at a certain time, but interaction usually requires instructor and students to type as interactive audio/video is not yet practical over the Internet due to bandwidth limitations.<sup>4</sup> The most practical use for online sessions is to discuss material and problems that students have already prepared. Advantages of synchronous online course delivery (relative to asynchronous online course delivery) are that students can get immediate responses to their questions, and there is a dynamic classroom community. A disadvantage of these chat-type sessions is that they are best suited for small classes, generally no more than 15–20 students.

Like interactive asynchronous course delivery, online real-time course delivery can be used in undergraduate or graduate tax courses, but it requires more effort by both instructor and students. Instructors must prepare more material for students to work through on their own and students must spend more time preparing for class.

## **Summary**

Distance learning takes many forms, from paper-and-pencil correspondence courses to synchronous interactive online applications. Since each form of distance learning course delivery has distinct advantages and disadvantages, a truly effective distance-learning course will incorporate multiple forms of course delivery to meet institutional and individual objectives (see Ronald Tidd's "Know the Objectives" section in Chapter 8 of this monograph). The next section will illustrate how several different course delivery methods can be integrated to enrich the distance learning experience.

## **TEACHING TAX COURSES ON INTERACTIVE TELEVISION**

At Old Dominion University (ODU), we regularly offer all of our tax courses (undergraduate and Master's of Taxation courses) on interactive television (ITV). This section is based on my

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<sup>4</sup> However, Internet service provided by cable television companies will make audio/video over the Internet practical because the bandwidth is approximately 100 times greater than a 28.8K modem.

experiences teaching three graduate tax courses—Tax Research, Taxation of Corporate Reorganizations and Consolidations, and U.S. Taxation of International Transactions—and a four semester-hour M.B.A. financial and managerial accounting course. The discussion is divided into the following categories: (1) a description of ITV, (2) the differences between teaching on ITV vs. a traditional FtF classroom, (3) teaching approaches, (4) suggestions to improve the ITV teaching experience, and (5) the benefits and drawbacks of teaching on ITV.

### **Interactive Television: How Does It Work?**

#### ***Overview***

ITV classes are broadcast from a specially equipped studio classroom via satellite or compressed video to specially equipped receiving classrooms. At ODU, we broadcast to over 50 locations via satellite in and outside of Virginia (primarily to community colleges, but also military bases and corporate locations) using one-way video (students can see the instructor, but the instructor cannot see students at distant sites) and two-way audio. Community college sites within Virginia were selected as the primary distant sites because college students could earn their associates degree through the community college and then transfer to ODU for their upper-division courses without having to travel away from home.

#### ***Capital Investment***

Teaching on ITV requires a large investment in infrastructure and personnel. ODU recently built a new building dedicated to delivering distance-learning courses for most University programs. The building includes ten broadcast studios (which can also receive transmissions from other broadcast sites), production facilities, and offices for administrative staff, instructional design personnel, and a document distribution center. The building has its own satellite dishes for broadcasting over several satellite channels (satellite time is purchased from an independent provider). Distant sites are also equipped with a satellite for specially equipped classrooms. The remainder of this subsection contains a discussion of the broadcast and receiving classrooms.

#### ***Broadcast Studio Classroom***

The studio classroom contains many tools for the instructor. They include an instructor workstation, a remote-controlled video camera focused on the instructor (the camera can also focus on the studio class when using the classroom for video conferencing or two-way video broadcasts),<sup>5</sup> and a television monitor for the instructor (the instructor can view exactly what the students see). The instructor station contains a computer (with access to the campus network and the Internet), a smartboard,<sup>6</sup> a light-pen (like the telestrators used by football commentators), an overhead camera focused on an 11 × 8½ inch pad of paper, a VCR, a slide projector, and an input cable for connecting a laptop.

The instructor may use a control panel to determine which image (e.g., computer, instructor camera, overhead camera) is viewed on the monitors, or the classroom engineer can manipulate the images for the instructor.<sup>7</sup> In addition, the instructor is not confined to a seated position. He

<sup>5</sup> At the present time, only a few sites have the capacity for two-way video.

<sup>6</sup> A smartboard is an electronic whiteboard that serves as a computer input device. The image is appears in a window on the computer so it can be viewed by students. The instructor writes on a whiteboard (using different color markers, and an eraser) and the image is transmitted to the computer. The instructor can also save the images for future reference. Chalkboards and regular whiteboards cannot be used because they are not “camera friendly.”

<sup>7</sup> The engineer can combine images (e.g., put the instructor in the corner of the screen while either the computer or overhead camera is being displayed), but the instructor control panel does not currently have this capability (probably to make the control panel easier to operate).

or she can freely move about the classroom thanks to a wireless microphone (equipped with a sensor for the autotracking instructor camera) and a combination remote control (replacing the control panel) and wireless mouse.

Students sit at tables equipped with microphones, which can be used with a voice-activated camera to focus on whichever student is talking.<sup>8</sup> Studio students must use the microphone to talk so their comments can be broadcast to students at distant sites. There are several television monitors strategically placed for students to view the class (even the studio class watches the monitors because visual materials are only displayed on the television monitors). Studio classrooms range in size from approximately 18 students to a 45-student, tiered, executive-style semi-circular classroom.

### ***Receiving Classrooms***

Receiving classrooms have the same basic features as the studio classrooms, except there is no instructor workstation, and the site director monitors broadcasts to all classrooms from a central control room instead of having an individual engineer for each class. Classroom size varies from five to 40 or more. Often two or more students share a microphone. When students press the microphone button to talk, they cannot hear the instructor or students at other sites. Quantity and size of the television monitors varies, but most sites use at least 27-inch monitors.

### **How Is Teaching Tax Different on Interactive Television?**

Teaching on ITV is not inherently different from teaching a traditional FtF class. Although there are some differences between ITV and FtF classes due to the medium and location of students, the difference that has the most profound effect on teaching style and classroom dynamics is class size. Therefore, many issues concerning ITV become small-class vs. large-class issues instead of FtF vs. ITV issues.

In an ITV class the instructor's presence is only as large as the television set on which students view the class. This means that everything he or she does will be reduced (or enlarged) to approximately a two-foot square with the slightly diminished clarity of a television picture. To compensate for the reduced size and clarity, notes must be sufficiently large (at least 32 point type) and clear.

Since students are watching a television in a classroom, it is more difficult to hold their attention. Lecturing without any visual aids may be sufficient to hold students' attention in a FtF classroom if one effectively modulates his or her voice and uses hand and body language for emphasis. However, in an ITV classroom, such an instructor will just be a "talking head" and will quickly lose students' attention. Presentation software is particularly effective in this medium as the use of color, graphics, and animation help to keep students' attention focused on the television.

Another way to keep students engaged is to ask many questions throughout the lecture, directed at specific students or sites. Although this is more time consuming than straight lecturing, it is necessary to help students feel like they are part of a classroom community instead of people in a room watching television. In addition, it provides the instructor with feedback on how well students understand the material. Getting feedback is especially important because of the inability of the instructor to see the faces of students in their class (except for students in the studio classroom).

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<sup>8</sup> The voice-activated camera feature is usually not used for one-way video distance-learning classes because studio students feel it is unfair that only they have to be on television (and not the majority of the students who are at distant sites).

### *Class Size*

One of the missions of a distance-learning program is to bring university courses to students who would otherwise not have access to them. Increasing the population served by the university also increases class size. Graduate classes in ODU's two-year-old MTX program average between 20 and 40 students, and enrollments are increasing as the program becomes more established and the number of sites increases. Undergraduate tax classes have had enrollments of 75 students. Other disciplines and majors have much higher enrollments (undergraduate management and business-law enrollments consistently exceed 100, nursing and education classes often approach 300 students per class).

Large class size requires instructors to rethink their teaching style. Instructors who teach writing-intensive courses such as tax research must find ways to reduce the amount of grading to provide feedback in a timely manner. Some changes that can be used to reduce (or spread out) grading load are assigning fewer research problems, assigning group research projects, and using a preparer-reviewer scheme (preparers turn in their assignments after the first week and reviewers turn in their work after the second week).

Similar accommodations must be made for exams. I favor a combination of objective questions (20 to 40 percent of the exam) and short-answer questions. To help control the length of the responses, I indicate in each question how long I expect the answer to be (e.g., one or two sentences, no more than a paragraph).

### *Discussions*

Engaging in classroom discussions on ITV is problematic due to the technology employed as well as teaching larger-than-usual size classes. The two technological limitations are (1) the time lag (about one second) between when the instructor or student makes a comment and when the rest of the class hears the comment, and (2) students cannot hear others (including the instructor) when their microphones are engaged.<sup>9</sup>

<sup>9</sup> The following is an example of a typical exchange between an instructor and students:

Instructor: Let's talk to Bob at Piedmont. Bob, are you there?

<Pause>

Bob: Yes, I'm here.

<Pause>

Instructor: O.K. If the fourth Circuit Court of Appeals has ruled against taxpayers in a similar situation as your Virginian client, but the ninth Circuit has ruled in favor of taxpayers in similar cases, where should your client litigate her case?

<Pause>

No response.

Instructor: Which trial court should your client choose to litigate her case?

<Bob interjects in the middle of the instructor's sentence because he started talking before he heard the instructor's response>

Bob: I'm not sure what you mean?

<Pause>

Instructor: Bob, which trial court should your client choose to litigate her case?

<Pause>

Bob: I don't know.

<Pause>

Instructor: Can somebody help out Bob?

<Pause>

<Three voices almost simultaneously>

Student 1: Tax Court.

Student 2: Court of Claims.

Student 3: Court of Claims.

Instructor: Who was the second female voice?

<Pause>

Student 3: I was.

<Pause>

Instructor: Who are you, and why did you choose the Court of Claims?

Student 3: Sheila from Central Virginia. I chose the Court of Claims because. . . .

To facilitate discussions, instructors should set rules at the beginning of the semester for how to respond to questions. For example, students should (1) always identify themselves by name and location when making a comment, (2) watch the monitor when answering questions so they can see if the instructor is signaling them to stop (thereby allowing the instructor to make a comment), and (3) wait until the instructor calls on them if several students speak at once.

Another way to improve discussions is to direct them. The instructor should identify which student will be called on before starting the question to make sure that particular student is paying attention. In an "open" discussion, the instructor should call on specific students (or sites) to respond to another student's comments. The instructor should open up the discussion to the entire class only after the discussion has died down (when the last few students called on have nothing to add to the discussion), because one is less likely to get multiple responses at that point.

One example of how I use the above techniques in my tax research class is to ask specific students to identify an issue. I write down their names and issues. When two consecutive students cannot come up with a new issue, I ask if other students have a new issue. After identifying the issues, I ask other students for their conclusions on specific issues. Then I ask one or two students if they agree with the conclusion. If they all concur with the conclusion, I ask if any students disagree with the conclusion.

### ***Group Projects***

Group projects in a distance-learning environment offer a unique opportunity to teach students how to communicate via computer technology. At ODU, I provide each group with their own bulletin board and chatroom. Usually, students rely on email unless I require that they use the bulletin boards and/or chatrooms. Students who are technologically oriented or those who use similar technologies at work appreciate my efforts, but students who do not like group projects or are uncomfortable using computers tend to dislike working in electronic groups. In addition to learning how technology can improve interaction between distant co-workers, they also learn about the limitations of the technology.

I have used electronic group projects in graduate tax research and M.B.A. accounting principles. I believe M.B.A. students are generally more receptive to the electronic groups than are the tax research students because the M.B.A.s tend to be full-time students and the tax research students tend to be part-time students with full-time professional careers (many of the graduate tax students are CPAs).

### ***In-Class Presentations***

Using in-class student presentations in an ITV course presents many challenges, especially when live video cannot be broadcast from distant locations.

One option is to have students tape their presentations and send the videotape to the instructor to be shown in class. Each site is equipped with a video camera and students can make appointments to use the camera. The main drawback is that many sites do not have data projectors (or LCD panels), so students cannot capture computer-based presentations on tape. They may be limited to using transparencies or a large flip chart for their visual aids.

In addition, students need sufficient lead time to make arrangements to record their presentations and submit the tape. However, having presentations on videotape provides the flexibility of playing the tape when it fits into the class schedule, and instructors can view presentations before and/or after it is presented in class. Additionally, instructors can stop the tape to make comments or pose questions.

Another option is for students to prepare their presentations using PowerPoint or other presentation software and email the file to the instructor. During the presentation, the instructor then acts as a slideshow operator by advancing the slides upon the student's cue (if the student has not made the slideshow self-running).<sup>10</sup> As with videotaped presentations, the instructor can pause the slideshow to make comments or pose questions.

### ***Access to Reference Materials***

In any distance-learning program, it is essential that distant students have access to all necessary reference materials. In tax courses, this means having access to tax research libraries (e.g., RIA, CCH, BNA), including primary authorities, which can be accomplished by obtaining subscriptions to one or more online tax research libraries. Many of the online products are domain specific so students (and faculty) can access the database from either a university computer or through their own computer via a proxy server.<sup>11</sup> Reference materials that are only available in hard copy present a challenge. At ODU, the library can digitize materials such as journal articles and make them available to the entire class as part of the digital reserves collection.

For solutions to textbook problems, many publishers provide solutions in word-processing files on their web sites. Instructors can download the files, edit them (if necessary), and post the files on their web site for students to download for themselves.

### ***Office Hours and Email***

As one might guess, ITV instructors have fewer students coming to their office for help. However, it is still important to establish regular office hours at convenient times for students (night/weekend students would likely prefer office hours during the evening) so they can reach the instructor by telephone as some situations are difficult to resolve through email. Instructors can also hold online office hours in a chatroom so students can get experience communicating electronically to get help. I have had very few students participate in online office hours. Students told me that they would rather pay for a long-distance call than use a chatroom.

The overwhelming majority of an instructor's interaction with students is by email. Instructors can control the amount of email to which they respond by setting rules at the beginning of the semester concerning how and when they will respond to email. Instructors may state that they will only respond to email during office hours, state that they will respond to email within a certain length of time (e.g., 48 or 72 hours), and/or that certain types of questions will be addressed in the next class session. Similarly, and as mentioned earlier, responses to some questions may be sent to all students either by listserve or distribution list, or they may be posted to a bulletin board.

### **Teaching Approaches**

When teaching on ITV, instructors need to adapt their teaching style and use of teaching aids to fit the medium. The discussion below contains descriptions of high-tech and low-tech approaches to teaching on ITV that have been successfully used by ODU tax and accounting faculty. Elements of both approaches (see Exhibit 2) can be combined to suit individual needs.

<sup>10</sup> In PowerPoint, the length of time between slides can be preset. During the slideshow preset timing can be altered by manually pausing or advancing slides.

<sup>11</sup> A proxy server allows a home computer to be seen by other computers as having a university address. This function is usually only available to university faculty, students, and staff. See <http://www.lib.odu.edu/help/proxyfaq.shtml> for an example of how ODU employs a proxy server.

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**EXHIBIT 2**  
**Summary of ITV Teaching Approaches**

<u>High-Tech Approach</u>	<u>Low-Tech Approach</u>
<p><b>In Class</b></p> <ul style="list-style-type: none"> <li>Presentation Software</li> <li>Spreadsheets</li> <li>Word Processors</li> <li>Specialized Software</li> <li>Digital Writing Tablet</li> <li>Laptop Computer</li> </ul> <p><b>Distribution and Collection</b></p> <ul style="list-style-type: none"> <li>Web Pages</li> <li>Email Attachments</li> <li>Bulletin Boards</li> <li>Listserves</li> </ul> <p><b>Communication</b></p> <ul style="list-style-type: none"> <li>Email</li> <li>Bulletin Board</li> <li>Chatroom</li> <li>Web Pages</li> </ul>	<p><b>In Class</b></p> <ul style="list-style-type: none"> <li>Paper Version of Transparencies</li> </ul> <p><b>Distribution and Collection</b></p> <ul style="list-style-type: none"> <li>Coursepacks</li> <li>Overnight Delivery Services</li> </ul> <p><b>Communication</b></p> <ul style="list-style-type: none"> <li>Email</li> <li>Telephone</li> <li>Fax</li> </ul>

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***High-Tech Approach***

Teaching on ITV lends itself to using computer-aided instruction because hardware is already installed in the classroom and computer-generated images shows up very well on the television monitors. Presentation software such as PowerPoint is an effective alternative to using a chalkboard, whiteboard, or overhead transparencies because computer images are television-friendly (text and/or graphics) and screen animation (text, graphics, and whole slides appearing and disappearing in various ways) helps keep students visually stimulated. Pre-Windows 95 presentation software limited instructors to presenting slides in a linear sequence, but current versions of presentation applications allow the creation of hyperlinks which provides much more flexibility (an example of such an application is at <http://PhDuh.com/dist-lrn/index.htm>). The main drawback to using presentation software is that it can be very time consuming, especially for new users.<sup>12</sup> However, most undergraduate tax textbooks (and some graduate texts) have ready-made PowerPoint slideshows, so often the instructor only has to edit existing slides instead of creating entire presentations from scratch.

Spreadsheets and word-processing software can be helpful for presenting problem solutions. An instructor can prepare partially completed spreadsheets before class or build a spreadsheet right in class. Such use not only shows students how to solve the problems, but it also illustrates a practical application of spreadsheets. Word-processing software can be used to display problem text as well as solutions. In addition, one can use word-processing software to record a list of student responses to a given question (such as identifying issues in a tax research problem) instead of writing them by hand.<sup>13</sup>

<sup>12</sup> One suggestion to save time making slideshows is to make a template. Using the "master slide" view, global settings can be made for slide colors, font sizes, slide backgrounds, and slideshow animation.

<sup>13</sup> Handwritten notes can be difficult to see on a television unless they are sufficiently large and clearly written.

A helpful piece of hardware to increase the flexibility of computer applications is a digital writing tablet. Applications such as PowerPoint allow the user to make handwritten notations (“pen” mode) directly on slides while in slideshow mode. If one is using a mouse (or touchpad), it is difficult to even underline key items on the screen, but a writing tablet uses a digital “pen” as the input device so instructors can add notations to their slides.<sup>14</sup> An instructor can deliberately leave critical items off of the slides and fill them in during the lecture (perhaps by asking students for the answer).<sup>15</sup> Other software is available that allows for the composition of handwritten notes in a separate window (which can be saved in a separate file) or elsewhere on the screen.

Specialized software (e.g., electronic tax research libraries, tax-return preparation software) should be used regularly in class as an alternative to computer-lab training sessions to teach students how to use the software. For example, in a tax research course, the instructor can ask students to formulate keyword searches, select databases, and choose documents in an online tax research library.

Incorporating computer applications into an ITV class (or any class) is much easier when using a laptop (also called a “notebook”) computer (or a laptop on loan for the semester), which has all of the instructor’s applications and data files preloaded and various system and application settings customized. Such use avoids having to get permission and arrange for a technician to load software on the classroom computer, which often needs to be done several weeks before the beginning of the semester.

One potential bottleneck in a distance-learning course is the distribution and collection of course material. Physically moving paper to and from remote sites is time consuming, not to mention expensive (i.e., overnight delivery charges).<sup>16</sup> To reduce the delays caused by physically moving paper, electronic delivery and collection can be used for all documents except exams. Class notes and assignments can be posted on the instructor’s web site, and students can be required to submit assignments as email attachments. If the instructor has trouble reading a student’s file, he or she simply sends an email to the student to have them resubmit the file in one or more different formats (it helps to have the latest versions of both WordPerfect and Word). To make it easier for me to keep track of the students’ files, I specify what file name to use. For example, Assignment #1 from Thomas A. Xyman would be “A1-xyman.doc.”

In addition, instead of using departmental resources by printing out each student’s file, the instructor can grade assignments on-screen. Comments can either be typed directly in the original file or made in a separate review-comment document (creating document templates for each type of assignment streamlines the grading process). After grading the assignments and saving them

<sup>14</sup> A cautionary note about digital writing tablets: it takes a while to learn how to write with them because the “pen” does not leave a mark on the pad. The only way to see the writing is to look at the screen.

<sup>15</sup> Other Office 2000 applications allow for the addition of notations by using a digital writing tablet.

<sup>16</sup> Consider the following example. A homework assignment is due in class, which is held on Tuesday afternoon. The remote sites collect the homework and get it ready for shipping on Wednesday morning (an entry is made in a logbook for each assignment received at the site and a routing slip is included in the package so that the homework gets delivered to the correct instructor). The overnight shipper picks up the package on Wednesday and delivers to the distribution center on campus Thursday morning. The distribution center sorts and bundles the homework assignments together and has it ready for delivery to the instructor Thursday afternoon.

The instructor grades papers all weekend and sorts the homework by site. A separate routing slip is prepared for each site (either by the instructor or a distance-learning assistant). On Monday morning, the graded homework problems are delivered to the distribution center where they are sent overnight back to the sites for a Tuesday delivery. Each site (which has its own distribution center) then delivers the graded homework to the students for their class that afternoon. Any delay in this process (e.g., distribution centers being overwhelmed by the sheer volume of paper during midterms and finals) can cause delays in the process of several days. Generally, sending exams and other material three days in advance (not including weekends) is sufficient to ensure that they arrive on time.

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**EXHIBIT 3**  
**Suggestions to Improve the ITV Teaching Experience**

◆ **Attitude**

- **Have a positive attitude.**

Instructors who look at teaching on ITV as an opportunity to improve their teaching skills have a better teaching experience.

- **Relax, be flexible, and bring your sense of humor.**

An ITV class is a complex production. When something goes wrong, inform students of the problem, deal with it, and move on.

- **Be yourself (do not try to be a TV anchorperson).**
- **Adapt your teaching style to ITV (do not completely abandon it).**

◆ **Preparation**

- **Do more advanced preparation (do not "wing it").**

Visual aids (e.g., prepared notes) are necessary to hold students' attention, and these materials must be prepared several days in advance to accommodate the distribution system.

- **Do not use bold colors for computer presentations (and never use red).**

Televisions do not display colors as well as computer monitors. For presentations, it is best to use a blue background with white text or a light pastel background with black text.

- **Font size for computer presentations should be at least 32 points.**

In addition, sans serif fonts such as Arial appear much crisper than fonts with serifs such as Times Roman.

- **Practice with the technology before using it.**
- **Practice teaching in an ITV classroom before going on the air.**

◆ **Presentation**

- **Do not wear white, vivid colors, or bold patterns.**

These colors and patterns cause various distortions to the television picture. Solid pastels work the best.

- **Look at the camera, not at yourself or your students.**

When instructors do not look directly into the camera, it appears as if they are not talking to their class.

- **Make sure the television image changes periodically (keep the picture moving).** Since instructors' voice modulations and gestures are greatly diminished on television, it is important to make sure that there is sufficient movement on the screen to hold students' attention.

◆ **Interaction**

- **Ask questions to make students feel like part of a classroom community.**
  - **Encourage outside interaction by assigning group projects and homework groups.**
  - **Use listserves and bulletin boards to bring students together.**
  - **Find ways to limit email.**
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in a file format compatible with most word-processing software, the instructor sends them back to each student as an email attachment.

Students can distribute documents to the rest of the class by either posting them to a listserv or bulletin board. This type of distribution is particularly useful when students are required to present case briefs or other material to the rest of the class.

Email can be used as the primary mode of communication in distance-learning classes. Listserves and distribution lists can help reduce the volume of email by forwarding responses to students' emailed questions to the entire class. Another alternative is to create a FAQ (a list of Frequently Asked Questions and their responses) on the instructor's web site or on a bulletin board. In addition, instructors should regularly update their web pages (usually once or twice per week) with information concerning changes in class assignments, due dates, grades, additional class notes, and links to reference materials.

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**EXHIBIT 4**  
**Benefits and Drawbacks of Teaching on ITV**

◆ **Benefits**

● **Faculty Development**

- **Achieve better course organization.**
- **Become more cognizant of the learning process.**
- **Improve technology skills.**

Computer-equipped classrooms and course delivery via television monitors facilitate use of multimedia presentations. In addition, technology (e.g., Web, email, listserves, bulletin boards) can be used to overcome distribution problems and stimulate discussions not possible in large classrooms.

- **Improve teaching effectiveness.**

Increased preparation, becoming more cognizant of the learning process, and incorporating technology in classes helps instructors improve their teaching effectiveness.

- **Host your own television show.**

● **Faculty/Student Convenience**

- **Pre-tape classes for planned absences.**
- **Videotape guest lectures.**
- **Allow students to view tapes at a later date.**

● **Faculty/Student Interaction**

Students often reveal more about themselves through email communication than they do during face-to-face (FtF) conversations.

◆ **Drawbacks**

● **Greater Time Commitment**

- **Preparation.**

Selecting textbooks that provide high-quality electronic presentations and solutions can reduce the time spent preparing multimedia presentations for information that usually is written on a chalkboard during class.

- **Training (new technology skills).**

Attending training classes and consulting others can reduce the time spent learning new technologies. Limiting the pace at which technology is incorporated into the class can also help.

- **Email.**

Following the suggestions presented earlier in this paper can reduce the time spent responding to email.

- **Grading.**

Spending time up front redesigning homework assignments and exams can reduce the increased grading load due to larger classes.

● **Lack of Rewards**

- **Traditional reward structure.**

The traditional reward structure does not compensate faculty for ITV teaching. Working with the department, college, and university to create policies and procedures to formally recognize and reward instructors for the extra effort required to teach on ITV can contribute to a broader reward structure.

- **Student evaluations.**

Student evaluations tend to be lower for ITV courses than for FtF courses. Advising students at the beginning of the semester to have realistic expectations about the course can minimize the negative impact of ITV on student evaluations.

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