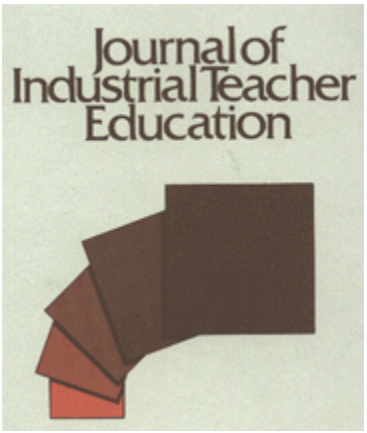


Current Editor:
Janet Z Burns jburns@gsu.edu

**Winter 2004** **Volume 41, Number 4**

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# Articles

## Creation of a Faculty Task List for Teaching in a Televised Distance Learning Environment

**John E. Turner**
**Philip A. Reed**
**Old Dominion University**

Teaching and learning from remote sites is certainly nothing new. Correspondence courses and instruction by radio and television were commonplace in many parts of the world throughout much of the 20th century. Satellites, the Internet, and other technologies have expanded the options for providing distance education. The Open University, founded in 1971 in Buckinghamshire, England, is perhaps one of the most widely recognized worldwide. The wealth of available tools and methods has allowed most universities to utilize some form of distance education.

The question no longer is whether or not universities should become involved in distance education. The supply and demand for distance education is clear (Smallwood & Zargari, 2000; Ndahi & Ritz, 2002). For institutions

concerned with return on investment, a study of 30 distance education institutions in the United States showed that costs were reduced by an average of 40%, with a savings range of 20% to 84% (Twigg, 2003). Questions now seem to revolve around quality issues associated with distance education. Reviews of seven accrediting agencies by the U.S. General Accounting Office showed that agencies used varying review criteria for evaluating distance education programs (U.S. General Accounting Office, 2002, 2004).

## The Problem

An issue for technology, industrial, and technical teacher educators is the paradox of distance education and the tradition of hands-on laboratory activities. With regard to this issue, Ndahi (1999) noted that many of the faculty members he surveyed (88.6%) would like to use distance learning technologies; but they lacked information on the technologies. Likewise, 94.4% of the respondents noted that training was vital if they were to use the technology effectively. There was also clear evidence that these faculty members wanted to be involved with plans to implement distance learning (Ndahi).

This article describes a process whereby faculty were directly involved in the determination of tasks critical to the success of distance learning. Although specific suggestions were not made for addressing hands-on laboratory activities, the study was designed to help faculty prepare to use new instructional technology and implement distance education so they could take the first steps towards proficiency. While there are issues related to both institutional and faculty perspectives, this article focused on faculty preparation. Occasional reference is made to institutional concerns as they impact faculty delivery of instruction. Unless otherwise noted, distance learning is defined throughout the article as site-based televised instruction consisting of one-way video and two-way audio.

## Review of the Literature

A majority of the distance education research in technology, industrial, and technical teacher education involved the use of surveys (Burgess, 2003; Flowers, 2001; Schmidt, 2002; Wells, 2000; Zirkle, 2002). These studies focused on two primary groups, students and faculty, in an attempt to identify the current state of distance education. Additionally, many of these studies discuss multiple forms of distance learning, not just televised instruction.

A number of the issues addressed in this study were discussed throughout the distance learning literature in technology, industrial, and technical teacher education. For example, Flowers (2001) recommended that providers of online technology education courses should ensure high quality in the online learning experience. Additionally, Burgess (2003) recommended research on the pedagogical methods employed in using e-learning tools.

Reflection on teaching practice and preparation was recommended for instructors in a study that compared traditional classroom teaching and online learning of undergraduate students (Schmidt, 2002). With regard to adult learners (e.g., community college teachers enrolled in a graduate course), Wells (2000) found evidence that basic computer skills did not need to be taught and that advanced skills were not necessary. These findings suggest that distance learning instructors need to be proficient at designing, assigning, and managing student assignments for their respective student populations.

Zirkle (2002) recommended that instructors seek out mechanisms to decrease the feeling of isolation perceived by distance education students. A second recommendation in Zirkle's study was to have career and technical education instructors learn how to use information technologies as a precursor to implementing effective trade and industrial education via distance education.

## Description of the Study

The purpose of this study was to develop a task list from which a self-check readiness evaluation tool could be developed to assist faculty who were unfamiliar with televised distance instruction. The self-check tool would consist of a list of prerequisite skills, major duties, and tasks unique to teaching on a site-based televised instruction platform, although it could also be useful for other distance learning platforms. The study's results should provide guidance to new faculty in identifying both self-directed and assisted staff development activities in preparation for implementing distance education.

### *Research Methods*

A survey of experienced distance learning faculty at a major eastern university was utilized for data collection. Initial survey items came from distance learning literature (English, 1998; Learning Peaks, 2004), as well as interviews and feedback from six faculty members experienced in televised instruction. The six faculty members also helped develop and validate the survey duty and task statements. This method of item construction was adopted from straw-list techniques that are often utilized in modified Delphi studies (Custer, Scarcella, & Stewart, 1999).

At the request of the researchers, the university vice-president of distance learning identified a pool of experienced distance learning instructors from each of the colleges. Three faculty members from each college were then randomly selected. These 18 faculty members were contacted via an e-mail letter explaining the intent of the research and asking for their participation. Two of the faculty members initially contacted declined the invitation to participate. Two additional names were then randomly drawn from the pool for these two colleges and contacted. Three faculty members from each of the six colleges agreed to review the duty and task statements on the survey instrument and to indicate if a task should be (a) retained as written, (b) retained with editing, or (c) deleted.

The sample (response panel) was limited to this one university for several reasons. Primarily, the researchers wanted to insure that all members were experienced in the same type/format of distance learning (site-based televised instruction consisting of one-way video and two-way audio). Secondly, the university is one of the pioneers in televised distance education programs in the U.S.: the university began broadcasting courses to students at remote sites via satellite in 1984.

Currently, the university's televised instruction program, with over 21,000 registrations per academic year, is the largest site-based baccalaureate completion satellite-delivered distance-learning provider of its kind in the U.S. Students complete their first two years at one of the state's community college campuses. The third and fourth years of undergraduate work are completed via satellite transmission from the university by attending classes in the televised instruction classrooms located at the community college campuses. Additionally, by way of voluntary agreements, many of these programs are also available to students at 12 downlink sites in seven other states, plus Washington, DC, and the Bahamas.

## Findings

All 18 participants completed and returned the survey. The following tables list the duty areas and task statements and the respondents' choices related to each item. Table 1 contains the suggested prerequisite skills for faculty teaching via televised instruction. The majority of respondents indicated agreement regarding the tasks. Interestingly, the items with the lowest agreement, those with 61% and 72%, often had comments regarding specific subject area needs. For example, because business and engineering instructors often have content containing elaborate formulas and tables, several respondents felt these technologies did not suit their particular disciplines. A simple document camera and writing tablet often worked better than electronic technologies (e.g., web pages, slides, digitized writing tablet). Additionally, some respondents did not feel that

understanding adult learners and practicing for televised instruction was as important as other areas. However, it should be noted that this finding does not agree with the results of Wells (2000) on adult learners.

Table 1
*Suggested Faculty Prerequisite Skills*

| Task | Agreement |
|---|---|
| 1. Recognized as a content specialist | 94% |
| 2. Demonstrated effective instructional skills | 94% |
| a. Student ratings | |
| b. Administrative analysis | |
| c. Peer analysis | |
| 3. Demonstrated instructional technology skills | 61% |
| a. Design, post, and edit Website | |
| b. Design and use of electronic slides | |
| c. Use of Blackboard software package | |
| 4. Knowledge of characteristics of adult learners | 72% |
| 5. Willingness to conduct television instruction | 94% |
| 6. Willingness to work with experienced mentor | 78% |
| 7. Optional application/practice | 72% |
| a. Present one-two short teaching sessions | |
| b. View and self-critique microteaching | |

Tables 2 through 9 list skill requirements in the form of broad duty areas with specific tasks/subtasks outlined in each area. The percentages following each task represent the combined percentage of respondents who stated that the task should be (a) retained as is, or (b) retained but edited.

Table 2
*Designing Courses for Televised Instruction*

| Task | Agreement |
|---|---|
| 1. Develop instructional communication documents | 100% |
| a. Detailed syllabus | |

| | |
|---|---|
| b. Class policy | |
| c. Schedule/course planner | |
| d. Detailed assignment explanations | |
| e. Providing student feedback | |
| 2. Effective methods for teaching | 94% |
| a. Designing strategies | |
| b. Adapting strategies | |
| c. Designing lab experiences | |
| 3. Structure your televised instruction lesson | 89% |
| a. Preview structure | |
| b. Consider visuals | |
| c. Structure breaks | |
| d. Perceive yourself as a teacher | |
| 4. Develop a plan for managing time demands | 100% |
| a. Anticipate lead time for posting documents | |
| b. Anticipate scheduling of events | |
| c. Establish e-mail folders | |
| d. Time to answer e-mail | |
| e. Establish availability to students | |
| 5. Understanding assignment delivery/return systems | 100% |
| a. Televised instruction mail distribution | |
| b. Electronic delivery/digital sender | |
| c. E-mail | |
| d. Evaluation/response strategy | |
| 6. Emulating/extending main campus capabilities | 83% |
| a. Library | |
| b. Labs | |
| c. Guest speakers | |

Respondents were uniform regarding the tasks under the duty area of designing televised courses (Table 2). There was 83% agreement on the task of extending the main campus capabilities. This area is a significant issue for industrial and technical teacher educators (Ndahi, 1999; Ndahi & Ritz, 2002).

Table 3 highlights the duty area of communication and interactivity. The seven tasks focus on communication between the students and with the instructor. Agreement was high for each task, with the lowest area being the task dealing with group activities (83%).

Respondents felt strongly that the World Wide Web should be utilized in televised instruction. In fact, participants all agreed that televised instruction faculty should utilize university systems and understand the issues of protecting faculty material (see Table 4).

However, when asked about specific instructional support, agreement was not as strong (see Table 5): 72% of respondents felt that utilizing a digitized writing

pad/tablet was an important skill, and 83% thought that using the overhead camera was an important task. Table 6 highlights the tasks associated with studio technology. Coordinating instructional needs with the studio technician was deemed very important by 17 of the 18 participants.

Issues involving evaluation and the posting of grades received mixed support (see Table 7). There was strong support for privacy and security issues, but less support for evaluation methods such as class participation and grading rubrics. Planning was identified as an important part of the evaluation process by 16 of the respondents (89%).

Table 8 highlights three tasks that fall under the duty area of camera presence. Respondents unanimously felt that making students feel connected during class was important. However, participants felt that issues dealing with the instructor, such as professional dress and instructor movement, were not as important.

Table 3
*Communication and Interactivity*

| Task | Agreement |
|---|---|
| 1. Establish your communication plan | 100% |
| a. During class time | |
| b. E-mail/telephone | |
| c. Electronic discussion forum | |
| 2. Attaining appropriate levels of student instructional interaction | 89% |
| a. Students enrolled at studio | |
| b. Students at distant sites | |
| c. Students participating via video streaming | |
| d. Students participating via synchronous postings | |
| e. Students taking class via tape | |
| 3. Organizing/recognizing student input | 94% |
| a. Decide whether to grade student participation | |
| b. Determine how to limit interaction when needed | |
| c. Determine how to encourage interaction | |
| d. Establishing means of students communicating | |
| e. Including rules for interaction in syllabus | |
| 4. Making effective use of groups in televised instruction | 83% |
| a. What to do with students attending alone at a site | |
| b. How to manage sites with large numbers of students | |
| c. Using the microphones to link sites as a virtual group | |
| 5. Incorporating student presentations | 89% |
| a. Students located in studio | |
| b. Students within driving distance of campus | |
| c. Students not within driving distance | |

| | |
|---|---|
| d. Presenting from downlink sites | |
| e. Presenting via tape/DVD | |
| f. Group presentations | |
| 6. Using e-mail, discussion forums (asynchronous and synchronous) | 89% |
| a. Deciding how to utilize TA to manage part of e-mail | |
| b. Deciding the parameters to enter new discussion topics | |
| c. Working with students that do not post | |
| d. Working with students that send posting to instructor | |
| e. Managing synchronous discussions | |
| 7. Developing a learning community | 94% |
| a. Deciding how, from whom, and from what students will learn | |
| b. Students learning from the instructor | |
| c. Students learning from posted Web material | |
| d. Students learning from the course text | |
| e. Students learning from other students | |
| f. Students learning from experts in their geographical area | |
| g. Students learning from guest lecturers/speakers | |
| h. Students learning from projects/peer presentations | |

Table 4
*Use of the World Wide Web*

| Task | Agreement |
|---|---|
| 1. Using the Web as an instructional tool | 94% |
| a. Static resource | |
| b. Instructional support | |
| c. Interactive site | |
| 2. University systems to support Web | 100% |
| a. Blackboard | |
| b. FSCS | |
| c. Lotus Sametime | |
| d. Independent site | |
| 3. Understanding issues related to protection of material | 100% |
| a. How to limit material to class only | |
| b. Protecting your electronic Web posting | |

Table 5

*Using Instructional Support Materials*

| Task | Agreement |
|---|---|
| 1. Utilizing video tapes effectively | 94% |
| a. Copyright-protected tapes | |
| b. Instructor produced tapes | |
| c. Student-produced tapes | |
| d. Obtaining permission for showing tapes to minors | |
| e. Understanding limits of copyright materials | |
| f. Instructor/student prepared videos | |
| 2. Utilizing CDs/DVDs | 89% |
| a. Copyright issues as in item a. above | |
| b. Format compatibility of CDs with studio equipment | |
| c. Compatibility of development and studio software | |
| d. Compatibility of drives | |
| 3. Developing effective electronic presentations | 94% |
| a. Colors, font style/size | |
| b. Words per line, lines per page | |
| c. Animations/transitions/sound | |
| d. Restrictions of animations/transitions | |
| e. Special considerations for video streaming | |
| 4. Using the digitized writing pad | 72% |
| 5. Using the camera with writing pad, slide masters, etc. | 83% |
| 6. Preparing back-up material | 94% |

Table 6

*Studio Technology*

| Task | Agreement |
|---|---|
| 1. Coordinating needs with studio technician | 94% |
| a. Meeting technician prior to first class | |
| b. With technician in control of IT | |
| c. With faculty in control of IT | |

Table 7

*Evaluation and Grade Posting*

| Task | Agreement |
|---|---|
| 1. Using/evaluating student class participation | 83% |
| 2. Understanding student privacy and security issues | 94% |
| 3. Developing and using grading rubrics | 83% |
| 4. Planning for response time/documentation of evaluation | 89% |

Table 8 highlights three tasks that fall under the duty area of camera presence. Respondents unanimously felt that making students feel connected during class was important. However, participants felt that issues dealing with the instructor, such as professional dress and instructor movement, were not as important.

Table 8
*Camera Presence*

| Task | Agreement |
|---|---|
| 1. Dress for success | 83% |
| 2. Assists students to feel connected during class | 100% |
| 3. Effective instructor animation/movement | 89% |

The final duty area, working with televised instruction partners, is highlighted in Table 9. These tasks had a wide range of support. Working with a teaching assistant did not receive widespread agreement (78%). However, most of the respondents felt there should be strong support and/or communication with site directors, studio technicians, and instructional staff (94%). All of the participants agreed that knowing what support was available was an important task.

Table 9
*Working With Televised Instruction Partners*

| Task | Agreement |
|---|---|
| 1. Becoming a team with your teaching assistant | 78% |
| 2. Supporting and gaining support from the site directors | 94% |
| 3. Effectively communicating your needs with technician | 94% |
| 4. Building an effective relationship with support staff | 94% |
| 5. Understanding the resource assistance available | 100% |

## Discussion

In addition to the percentages reported for each task within the preceding tables, several informal observations can be made from the respondents written and verbal comments when completing or discussing the survey. First, there was a high level of agreement to retain the majority of tasks as initially listed. However, very few task statements escaped the attention of respondents' editorial comments.

Second, as mentioned earlier, there were interesting differences of opinion among respondents regarding two of the suggested prerequisite task/skill statements and two of the tasks listed under the eight duty areas: the need for having an understanding of the unique characteristics of adult learners; the need for a practice session or guest appearance prior to beginning a first course; the ability to design, post, and edit Web support materials for a televised course; and emulating/extending main campus capabilities. Informal verbal comments, via phone and in person, along with written editorial comments on the response forms, provide clues regarding the lower scores on these items.

*Adult Learners*

As noted by the U.S. General Accounting Office (2002), approximately 1.5 million undergraduate students out of 19 million enrolled (in the 1999-2000 school year) took at least one course via the distance learning format. Students enrolled in the distance-learning group differed from the traditional enrollment group in several ways. For example, students enrolled via a distance-learning format tended to be older and were more often employed. In the current study, three of the 18 respondents indicated that understanding the unique learning needs of adult students should be deleted from the task list. It is believed by the authors that the lower score may lie in the respondents' definition of adult learners. For example, several of the respondents instruct primarily undergraduate students. From the responses, it is difficult to determine if panel members considered undergraduate students to fall within their definition of adult learner. If not, then they may have selected delete due to a difference in definition of adult learners. This task statement may need to be refined in order to elicit a more definitive response.

*Practice Sessions*

Three respondents indicated that they felt the optional prerequisite task of completing a practice session or guest appearance was unnecessary and should be deleted. However, there was little written or spoken rationale given for this choice. Based on the lack of rationale, the statement will be retained in the second round in order to allow the 18 panel members to rank the task in terms of criticality. The issue of criticality may be more pertinent to this prerequisite task than the choice of keeping the statement in the survey form versus deleting it.

*Web Support Material*

Four respondents did not feel that the ability to design, post, and edit Web pages was necessary. One panel member indicated that all of their student information regarding course requirements, procedures, handouts, etc., is provided via a coursepak. A coursepak is an instructor-designed hard copy of syllabus, schedules, handouts, activities, etc., that may be provided to students at the beginning of a course. In the university's system for distributing materials, the coursepak would be distributed much like a course text via the university bookstore or the independent book distributor contracted by the university. A charge sufficient to recover cost to the university is levied for each coursepak.

In yet another instance, a respondent cited the lack of need for the instructor to design Web materials due to the use of the Blackboard software package to provide a structure for designing and housing course materials for Web distribution. Blackboard allows the instructor to post or attach word-processed documents to a Blackboard account, thus eliminating the need to design Web products.

Finally, a third respondent indicated that in his/her opinion, the university should provide the service of designing, posting, and editing Web material in support of a televised course. Faculty members should simply provide word-processed files to be converted to Web documents by support personnel. This response/rationale does not directly address the need for Web material to support the course; rather, it addresses the issue of who should have the responsibility.

*Emulating and Extending Main Campus Capabilities*

While the overall response to retaining this task statement was 83%, informal discussion with two respondents again pointed to the faculty member answering the questionnaire based on a feeling that this task was not the faculty's responsibility; rather, that it should be an administrative responsibility. Like one of the responses to the Web support task, these two (delete) responses do not appear to clearly indicate the importance of the faculty member's role in extending campus capabilities to the distance-learning student. For example, the faculty's role in helping the distance student to complete lab assignments with available lab facilities needs to be clarified. The authors feel the two negative responses to this task statement may be due to task statement wording/understanding.

*Differences Across Colleges/Content Areas*

As noted by Twigg (2003), a number of student learning characteristics and preferences necessitate different approaches to instructional strategies/delivery techniques. The same may be said for instructors and, possibly, content areas. For example, it was noted by one respondent that no specific reference was made to graphic capabilities in the electronic slide preparation task statement. The respondent was referring to the use of graphs and charts to depict statistical comparisons. It was noted by this respondent that this is a major visual application in their discipline. Other respondents did not note this omission. That only one of the 18 respondents indicated a need for inclusion does not mean it is not important, just that it may only be important for that instructor or discipline. This editorial addition by the one respondent may be significant from two perspectives: one, that it reinforces the idea that no two instructors approach teaching in the same way, and two, those different content areas may require different instructional strategies/visuals/instructor skills.

## Recommended Research

Like many research efforts, this study serves to highlight the need for further effort to find answers to new research questions. For example, what, if any, are the differences in the strategies faculty should use when instructing graduate versus undergraduate students participating via distance learning? Are there unique differences between colleges or content areas in terms of tasks to be performed by faculty teaching in distance learning formats? Finally, as noted in earlier studies by Ndahi (1999) and Ndahi and Ritz (2002), a continuing concern for industrial and technical teacher educators: how to provide laboratory experiences for students enrolled in courses that require applied learning.

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Turner is Associate Professor and Reed is Assistant Professor in the Department of Occupational and Technical Studies at Old Dominion University in Norfolk, Virginia. Turner can be reached at jturner@odu.edu. Reed can be reached at preed@odu.edu.

Send questions or comments to:
DLA, University Libraries
Virginia Tech, P.O. Box 90001,
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