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A Blueprint for Providing Entry-Level Training
to Paraeducators via Interactive Television

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Abstract

This article summarizes the process and procedures that were used to provide a 2-credit course (18 contact hours) to 27 paraeducators in Vermont using Interactive Television. It describes how the curriculum entitled *Paraeducator Entry-Level Training for Supporting Students with Disabilities* (CichoskiKelly, Backus, Giangreco & Sherman-Tucker, 2000) was utilized for this purpose. Paraeducators who participated in the course served students with disabilities within general education settings. The course was provided at three separate sites across the state. A description of the curriculum, objectives, students, procedures, findings and recommendations regarding using the Interactive Television format for training paraeducators are presented.

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The project "Model for Paraprofessional and Supervisor Training Designed to Meet the Needs of Students with Disabilities in General Education Settings" was a three-year grant funded by the U.S. Department of Education, Office of Special Education Programs as a project of national significance conducted at the Center on Disability and Community Inclusion at the University of Vermont (UVM). Its purpose was to develop and field-test a series of paraeducator training materials in a variety of formats (e.g., traditional classroom, intensive institute, and via interactive television). More information about the project and materials is available at www.uvm.edu/~cdci/paraprep/.

The first set of training materials in the series was *Paraeducator Entry-Level Training for Supporting Students with Disabilities* (CichoskiKelly, Backus, Giangreco & Sherman-Tucker, 2000). An overview of the curriculum components can be found in Table 1 (p.4). It was field-tested to establish the usefulness and effectiveness of materials in a variety of formats including: a traditional face-to-face arrangement for three hours per week ("regular format"), intensive summer-institute for one week, in-service training days over two months, and broadcast via Interactive Television (ITV) (Giangreco, Backus, CichoskiKelly, Sherman-Tucker & Mavropoulos, 2002). That study indicated that critical aspects of the materials such as readings, lesson plans, and in-class activities were rated highly by paraeducators and instructors in all formats, including the Interactive Television format.

Table 1

Summary of “Paraeducator Entry-Level Training”

<u>Category</u>	<u>Characteristics</u>
<i>Philosophical Orientation:</i>	Emphasizes the role of the paraeducator as a valued member of a collaborative team and practices that are family-centered and culturally sensitive in inclusive settings.
<i>Focus and Topical Content:</i>	Focuses on the initial and most essential entry-level knowledge and skills necessary for paraeducators. Includes six, 3-hour units: (1) Collaborative Teamwork, (2) Inclusive Education, (3) Families and Cultural Sensitivity, (4) Characteristics of Children and Youth with Various Disabilities, (5) Roles and Responsibilities of Paraeducators and Other Team Members, (6) Paraeducators Implementing Teacher-Planned Instruction.
<i>Basis for Materials:</i>	Literature review, national survey of training needs, input from national and field-based experts.
<i>Suggested Roles of Paraeducators:</i>	Emphasizes the roles of paraeducators assisting in the implementation of instructional and non-instructional plans designed by qualified professionals. Establishes an expectation that paraeducators <i>not</i> be the “exclusive or primary instructors” for a student with disabilities.
<i>Level of Replicability:</i>	Includes Instructor and Participant manuals. A variety of features are included to enhance replicability (e.g., unit objectives, agendas, lesson plans, readings, in-class activities, overhead transparencies, practicum requirements, knowledge reviews [post-tests]). <i>Note:</i> Readings were a combination of new and previously published (reprinted with permission).
<i>Availability:</i>	Available on a nonprofit, cost-recovery basis from National Clearinghouse of Rehabilitation Materials (NCRTM) at Oklahoma State University Instructor Manual: \$23.80 (Order No. 650.048A) Participant Manual: \$25.20 (Order No. 650.048B) or from the UVM Center on Disability and Community Inclusion, 101 Cherry Street, Suite 450, Burlington, VT 05401. (802) 656-4130.
<i>Other Features:</i>	Includes a web site, http://www.uvm.edu/~cdci/paraprep/ with topical slide shows, interactive quizzes, activities, and related web links for each of the six unit topics.

The present article describes (a) the procedures used for implementing and field-testing of the curriculum in the ITV format, (b) findings, (c) challenges (both equipment and student-related) faced in both the planning and implementation phases, and (d) recommendations for using the curriculum in the interactive television format to train paraeducators.

Procedures

Interactive Television (ITV) was chosen as a distance learning approach for three reasons. ITV increases ease of access to training by overcoming some geographic barriers. Many paraeducators in Vermont work in relatively isolated settings in rural areas and find it difficult to travel long distances to universities or other institutions of higher learning. ITV costs may be equivalent or lower than typical costs of providing traditional college level campus-based coursework. At times paraeducators do not receive reimbursements for training costs. Their typically their low salaries often preclude them from affording full tuition along with the costs which may be associated with travel to classes. ITV also provides an opportunity for faculty to train people simultaneously at more than one site, an effective approach for addressing shortages of qualified university instructors (Spooner, Spooner, Algozzine & Jordan, 1998).

Audience

The participants for field-testing in the ITV format were all paraeducators drawn from three regions in the state of Vermont (i.e., Burlington, n=11; St. Johnsbury, n=10; Bennington, n=6). They included individuals working as paraeducators at both elementary and secondary levels, all of whom worked

with students receiving special education services. Prior educational and work experience of the participants varied significantly, as did their educational backgrounds which ranged from those with a high school diploma to those who had attained a bachelor's degree. All of the participants were female. A total of 27 participants began the program, and 20 completed the program. Of the seven who dropped, four were from a distance site and indicated that the class did not meet their needs because they preferred more personalized interaction with instructors. Three dropped because they reported that they thought the amount of reading was too great given their other time constraints, and they found it difficult to complete their practicum.

Initial Course Planning

Negotiations initiated by the project faculty with the University's Continuing Education, Distance Learning Division and the Community College of Vermont (credit-granting institution) began approximately six months prior to the first broadcast. Early conversations focused on determining the best method to use (e.g., satellite transmission or line transmission). Satellite transmission was more costly (approximately \$500/hr), and although it could be broadcast to greater distances to a much larger audience, the decision to go with Interactive Television meant fewer sites, less distance capability, but two-way transmission was possible and this alternative was less costly (approximately \$190/hr). Decisions were made regarding which sites around the state would be the most effective for providing as much coverage as possible distributed geographically and across rural and other settings. Other considerations were time of day for the broadcasts. The time of day that was most convenient for participants was from 4:00 - 7:00 PM (after

school) times. However, these times are also the busiest times for distance learning activities. Many graduate classes are being broadcast at the same time for teachers and other working professionals.

During the next five weeks, the course description and recruitment materials were sent to selected schools, registration procedures and forms were mailed, the course materials were approved at the Community College, materials were prepared for students and instructors, adaptations to materials were made. And negotiations regarding site technicians, schedules and dates were finalized. The course was then offered for six consecutive weeks.

Course Delivery and Content

Prior to attending the first class, participants were expected to have read a series of articles provided in the "Participant's Manual" for the first of the six units. They were also expected to have contacted a supervisor at their place of employment who agreed to assist them in completing the practicum requirements. These activities were designed to help students apply knowledge they had learned in class.

The course was delivered in six weekly three-hour classes over the Vermont Interactive Television network, broadcast from the University of Vermont Continuing Education facilities. Collaboration between UVM and the Community College of Vermont (CCV) provided college credit for the course.

Two instructors, both UVM faculty, co-taught the course using the entry-level training materials (CichoskiKelly, Backus, Giangreco and Sherman-Tucker, 2000). Grant funding paid for the instructors and the ITV costs for field-testing. These costs would normally be covered by the college offering the credits. The instructors were located at the main ITV classroom in Burlington

and the course was broadcast to Bennington and St. Johnsbury ITV sites. The number of students at each site was limited to a maximum of 10 because of challenges posed when interacting with more than that number of people at each of the distance sites. Each class was designed to address three “knowledge” objectives and one “skill” objective corresponding to each of the six topical units listed in Table 1 (p.4). Topics covered were: (1) Collaborative Teaming, (2) Inclusive Education, (3) Families and Cultural Sensitivity, (4) Characteristics of Children and Youth with Disabilities, (5) Roles and Responsibilities of Paraeducators and Other Team Members, (6) Implementing Teacher-Planned Instruction. The skill objectives subsequently became the basis of practicum activities that each participant needed to complete under supervision (in their employing school) with an on-site supervisor.

Each class began with a brief activity in which participants either worked in small groups or pairs to address an issue dealt with in the readings. A short informational didactic lesson using content from the overheads (via Power Point) usually followed. The central part of the class was generally made up of group activities designed to allow participants an opportunity to practice or apply concepts that were demonstrated and covered in readings. After each activity, the small groups would report their findings to the entire class or they would demonstrate the skill or objective learned in the activity. The last part of the class was devoted to students responding to a 10 question “Knowledge Review,” completion of class evaluations, and review of homework assignments for the next class.

Equipment and Broadcast Preparation

Delivering this course over ITV required some extra preparation for using the different types of equipment. Approximately 20 minutes before the official start time of each class (4:00 PM) the sites would be linked together for a video/audio check conducted by the site technician and the instructor. Once students were seated and all the equipment and sound checks were completed, the instructors would do a series of conversational “check-ins” with each site. A discernible delay in audio transmission (about 1 second) meant that the flow and process of conversation had to be adjusted somewhat, with all participants getting accustomed to the "delay" so that it didn't interfere substantially with communication. In addition, in order to have the video switch to each site as someone was speaking, each participant had to speak into a microphone, identify herself, and pause before speaking so that there would be audio matched with video. Although this allowed for matching video with audio, it also resulted in limited spontaneity of communication. Audio adjustments were made to equalize volume across sites and to eliminate echoes and extraneous noise.

The equipment at the broadcast site consisted of an IBM computer with CD Rom and Internet access, video broadcast cameras, which transmitted via a T1 line to UVM Regional Centers and to Vermont Interactive TV sites in the state ("end sites"). This provided for synchronous communication in two way audio/two way video format in real time. The small studio/classroom at the broadcast had a table for seating 10, an “Elmo” which replaces an overhead projector by broadcasting images (text or hardcopy) via video to the end sites. Other equipment included a VCR link-up, and microphones. The classroom

also included a white board and two monitors. A switching system was operated by a technician (however, it could be operated by the instructor) which determined what is being transmitted across lines (video image, computer output such as Power Point or Elmo output). The video camera that transmits the instructor's image is moveable and voice activated. The site broadcast switching device is also activated via microphone, so that the instructor sees only the site which is transmitting sound via individual microphones.

Adaptations/conversion of materials

Many of the materials in the curriculum were adapted for use on the interactive television network. For instance, the curriculum is designed with traditional "overheads" that can be copied and used by the instructor. Most interactive studios broadcast using software programs such as PowerPoint™. Thus, it was necessary to convert the vertical layout on the overheads to the landscape layout for generating computer slides. The use of the Elmo, also required the conversion to landscape for text documents and pictures (again because of the broadcast requirements). When broadcasting written information, it became important to account for the visual aspects of the material by using larger fonts, and a landscape presentation. Use of the whiteboard was very ineffective because handwriting could not be photographed and broadcast with enough clarity. All materials (readings, activity sheets, notes, etc.) were distributed prior to the beginning of class either by mail or fax as it is impossible for the instructor to spontaneously distribute a "handout" as might be the case in a traditional class.

Adaptations to activities

A number of activities were also adapted. For instance, activities that required moving of chairs and tables were not possible because of the fixed nature of the tables and microphones from the broadcast studio. It was necessary to make sure that the end-site users felt included in all class interactions. This was challenging at times, because it is not natural to speak to a monitor as if it were a group of people or an individual. We implemented a rotational "check-in" in which we would begin each activity and round of discussion at a different site each time. We also assured that side conversations were not taking place at the host site. The ITV format also made informal conversation more challenging.

It was relatively easy to adapt in-class activities to the Interactive TV format. Generally, when small groups were created, students within each site became their own small group and worked together on their activities. During breaks when students were to either be working on a group project or taking a break, the microphones were turned off. Some activities required that students become very comfortable and conversant with the technology, which they did quickly. For instance, a role play in the beginning of the course, in the first session and a debate in the fifth session lent themselves nicely to the ITV format.

The curriculum was designed so that students had to complete all the activities, including the practicum activities (to be done at their place of employment) in order to pass the course. Students could attend all the classes, take and pass all the quizzes, and, even with these completed - still not "pass" the course because of incomplete practicum requirements. There

were times when students had not completed practicum requirements until two months after the coursework had been completed. This method of implementing practical application of didactic coursework was not ideal because of the length of the delay between when a student learned a concept and applied it. Additionally, the instructor(s) needed to change grades long after the course was completed.

Findings

This paraeducator training project gathered information to determine how Interactive Television (ITV), as an instructional format, affected acquisition of knowledge and instructor-student interaction and communication. In addition, accommodations for using ITV for course delivery were noted. In the process, significant issues regarding equipment and technical problems were encountered. Last, the ITV format also had an effect on our ability to meet other student needs. These findings and observations were drawn from instructor field notes taken after each class, instructor observations, data from post-tests (“Knowledge Reviews”), participant evaluation surveys completed at the end of each class session, and surveys of equipment and technology from the Distance Learning Network.

Impact on acquisition of knowledge

Field-test data indicates that the posttest scores from the Knowledge Reviews from the curriculum *Paraeducator Entry-Level Training for Supporting Students with Disabilities* were in the upper ranges across all units in both alternate (e.g. ITV, extended summer-institutes) and traditional class formats (Giangreco et al., 2002). The mean scores (out of 10 points) ranged from 9.06 – 9.58 for participants who took the course using an alternative format

(including ITV). This indicates that although there may be challenges in this method of course delivery, the participants did master the basic knowledge competencies.

Impact on interaction and communication

Initially, the participants at the end sites were hesitant to initiate responses and waited until called upon to respond to the group. It became clear to me that the participants at the end sites felt that we were not including them into the instructional sequence as well as we could have. These participants often complained of feeling left out of instructional activities or being ignored because the instructors responded so readily to the participants who were in the studio. From the instructor's standpoint, it was much more natural to respond to questions, body language, signals given by live participants than those seen on a small TV monitor. This observation has been commonly noted in the literature. Foegen, Howe, Deno & Robinson (1998) note that maintaining active participation is often difficult.

Eliciting and maintaining active student participation is a challenge for instructors in traditional classrooms; it is even more difficult in a distance education context. Because they are often unable to see their students distance education instructors are limited in the degree to which they can evaluate student engagement. While frequent opportunities for student responses might be incorporated in many formats, the degree to which any individual student actively participates in the discussion may be limited by the complexities of managing input from remote sites, (p. 136).

Considerations for course delivery

There are a number of implications for course delivery in the use of ITV for training paraeducators. The first is that there is a compromise in the interpersonal nature of teaching which can, at times, affect spontaneity and responsiveness on the part of the instructor and students. Another shortcoming is that the instructor cannot spontaneously distribute supplementary materials to participants. All materials must be mailed to participants at the distance sites. If students have access to a computer, printer or FAX materials can be sent in those ways. But that would also require the ability to duplicate materials sent via FAX. The lesson we learned was to have everything the student might need available in the hard copy of the Participant's manual.

Equipment/technician/personnel shortages

In addition to the inherent limitations of the ITV technology (e.g., audio delay, spontaneity), the equipment itself (and the technical support needed to run the equipment) was challenging. Many times we were without audio or video either sending or receiving to one or more sites because of either equipment breakdown, or inability of the technician to trouble shoot the problem. Since classes were held in the afternoon and early evening, the only technicians available were often graduate students or people who work part-time. This type of job, although requiring a relatively sophisticated level of skills, did not pay well enough in Vermont to support a person with the necessary technical expertise. Consequently, the late afternoon time slot was one that was not readily filled with highly qualified technicians.

Access to a technician to intervene with glitches in the technology was an important component at each site. These technicians were invaluable in trouble shooting the system. Despite the provision of this support, there were a number of classes where one site or another was either not transmitting audio/and sometimes video was down. The Randolph site initially been part of the statewide IT network, but because of scheduling conflicts an alternate site had to be found. That end site was subsequently changed to a hospital site that was part of a health training network. This site did not have a technician, and therefore, the participants had to learn how to operate the equipment, how to trouble shoot it, and how to adjust it themselves. This site was ultimately the one with the least amount of down time attributable due to technological glitches.

We learned very quickly that the most difficult technological breakdown to overcome was audio breakdown. Video breakdown can be overcome easily, however, an audio disruption (with video continuing) ultimately means that the instructor must write all messages and broadcast written messages across the system. This is possible, but very time consuming.

One of the features of this program that was necessary was that back-up video tapes were being made of the class, so that participants whose sites were not receiving adequate audio or video would still have access to the class. Students could then order the videotape of the class and watch it at home. Although this did not allow them to interact, ask questions, or be involved, it was at least a recording of what happened during class.

Challenges regarding student needs

We found that many paraeducators were not familiar with (or were uncomfortable) with academic requirements of a college-level course, with the use of email, computers and distance learning formats. They struggled with the formality of the equipment. Many reported test anxiety, and a number dropped the course because they felt the reading and amount of work was too intimidating for them. Since many were working full time and raising families, they worried about the workload and their ability to handle multiple demands and the complex demands of family life, employee, and student. So although the course may have been geographically convenient, other supports such as an instructor to personally meet with them when concerns arose were not available.

Although most of the paraeducators who participated in the field testing of the curriculum were capable of handling the academic reading and writing requirements, some paraeducators were not. There was no official prerequisite for entering the course in terms of academic skill. Normally, the Community College has an entry testing requirement to assess basic literacy. This was waived for field-testing, though the Community College indicated it would be used in the future.

The training materials provide the instructor with a list of activities students can engage in during their work day at school designed to fulfill skill (or practicum) requirements. Once these students completed their practicum activities, the immediate site supervisor was to initial a form indicating the activities were completed. Many students found this challenging because although their on-site supervisor had been informed of the requirements and

activities, at times they were not familiar with the coursework that preceded the activity. Sometimes the paraeducator's supervisor was not a special educator and was not familiar with the field, sometimes the supervisor felt this expectation was creating more work for them, specifically, work they were not being reimbursed for. When this occurred, the paraeducator would hesitate to pursue other options. The option most often used, was to wait until the end of the course, and not submit any practicum work. Negotiating different or alternative practicum requirements and their adaptations generally required a face-to-face meeting with the instructor. However, the students at the end sites preferred to try to talk over the ITV system to have these discussions. Providing feedback and monitoring for applied (out of class) activities (either homework or practicum) was a challenge. No discussions could be had with students at the distance sites before or after class to problem solve or brainstorm practicum issues. Communication had to be via email or telephone. Not surprisingly, the completion of practicum requirements was lower at distance sites.

Summary and Recommendations

We found both advantages and disadvantages to using interactive television as a distance learning vehicle to train paraeducators in the basic knowledge competencies necessary for working with students with disabilities in general education settings. Advantages included decreasing driving time and travel distances for the participants. Within rural states this may be the only way to get training opportunities to a large number of employees. Another advantage is the general flow of didactic, small group and interactive activities is not severely disrupted, given some minor adaptations. Last, the data we have gathered from both evaluating this field-test and post-testing through

"knowledge reviews" show that paraeducators were able to achieve the knowledge objectives of the course through this medium.

Disadvantages included challenges around interactivity, class participation, likelihood of technical failure, and the difficulties in providing more individualized support for the academic needs of paraeducators new to the higher education experience.

We would recommend that others who consider using the Interactive TV format to train paraeducators attend to the following considerations in planning the course:

- (1) Assure that there is always a contingency plan in place in case of either audio or video failure at each and all sites. Videotaping the class and then distributing the video partially addresses this problem, but cannot, in and of itself, substitute for the important give and take of class discussions.
- (2) Activities designed to elicit discussion need to be carefully planned and implemented. Opportunities for frequent activities, role plays and discussions are important in order to keep students engaged. Personalizing communications as much as possible becomes very important.
- (3) If possible, students should have the opportunity to meet with each other (live) and with the instructor prior to beginning the distance learning course.
- (4) Instructors should obtain frequent feedback from participants regarding both the participant's acquisition of knowledge, and an assessment of the effectiveness of instruction and quality of audio/video and graphic information.

- (5) Prior preparation of materials is essential, and the more self-contained they are the better. There is little opportunity for spontaneous or last minute changes in handouts or materials.
- (6) It is helpful to have a person who is discussion facilitator or group leader at each of the sites to lead group discussions and to report back to the instructor and other sites. Students can take turns in this role, or at times the instructor can visit the site(s).
- (7) Students, especially new paraeducators who may be unfamiliar with a higher education milieu, may need to have a more structured advising situation in which a mentor or advisor meets periodically with them as they proceed through the coursework.
- (8) Future versions of the present curriculum should allow separate credit for completing the coursework and the applied practicum activities, because at times it was not possible for students to complete both simultaneously.

As in all teaching endeavors, the use of Interactive Television can be an effective tool when it is considered to be one approach among many to help participants learn new skills through varied avenues that reflect their individual learning styles, needs and competencies. It can be an effective way to provide information and knowledge to individuals across distant geographic regions. Careful attention to instructional methodology and materials can enhance the effectiveness of this medium, shown to be appropriate for working professionals and paraeducators.

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