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ABSTRACT

In order to promote successful distance education techniques, the University of Minnesota developed a training program to prepare faculty to teach via their instructional television (ITV) delivery system. The need for specific areas of faculty development were assessed through a survey of current practitioners, as well as a content analysis of existing training materials from other institutions. In the information gathered from surveys, interviews, and a review of the literature, the most frequently mentioned faculty training and content development needs were for maximizing interaction and feedback and developing lectures for TV. These two instructional design issues both emphasize that distance education requires more attention to strategies that promote interactions: questioning techniques, discussions, and active learning. The instructional methods that are most frequently cited as successful all involve plans which stimulate active learning by using procedures that purposefully increase a dynamic student participation with their own learning process. By creating an environment that advocates peer interactions, social support, and interpersonal communications, cooperative learning models can help attain the sense of learning community which is frequently lacking in distance education experiences. A review of various cooperative learning models and the types of learning activities each supports are investigated for practical applications in distance education. Three tables present a description of matrix categories and sub-topics, results from individual matrixes, and a model lesson plan. (Contains 22 references.) (AEF)

Distance Education: A Delivery System In Need Of Cooperative Learning

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The use of cooperative learning methods in distance education should provide an extremely pertinent instructional strategy, which should be particularly effective at "overcoming the distance" "maximizing interactions", and providing social support. In the information gathered from surveys, interviews and a review of the literature, these are the most frequently occuring constraints to the distance learner's motivation and achievement. They are also key contributors to the high drop-out rate in many distance education courses. By actively creating a learning environment that advocates peer interactions, "social support", and "promotive interpersonal communications", cooperative learning models can help attain that sense of a learning community which is frequently lacking in distance education experiences. A review of various cooperative learning models and the types of learning activities each supports are investigated for practical applications in a distance education setting.

In order to promote successful distance education techniques, the University of Minnesota developed a training program to prepare faculty to instruct via their ITV delivery system. The need for specific areas of faculty development were assessed through a survey of current practitioners, as well as a content analysis of existing training materials from other institutions. This resulted in the creation of an information matrix that was categorized into distinct topics and associated sub-classifications of the prominent training issues concerning distance education. The matrix categories were developed by using a "Delphi technique", a review of the literature, and interviews conducted with identified experts in the field. Individual matrixes were developed for each institution and compiled into an overview matrix which demonstrated the overall frequency of key elements based on survey responses (Kochery, 1995; see Tables 1&2).

The matrix revealed that the most frequently occurring sub-categories of faculty training and content development needs were: "Maximizing Interactions and Feedback" and "Developing TV Lectures ". These two instructional "design" issues both emphasize that distance education requires more attention to strategies that promote interactions: questioning techniques, discussions, active learning. The matrix results concur with the current emphasis found in the literature on the need for "maximizing interactions" in a distance education environment (Cyrs and Smith, 1990; Wagner, 1993; Willis, 1993). There is prevailing evidence that a major concern of many practitioners is to identify design and delivery strategies that prevent a potential barrier to this form of instruction by "overcoming the distance". The instructional methods that are most frequently cited all involve plans which stimulate active learning, by using procedures that purposefully increase a dynamic student participation with their own learning process.

There are many special concerns that influence the increased importance of interactions for distance learning situations. One of these is the fact that many distance learners feel isolated and alone in the essential social transactions that are manifested in most educational settings. These learners not only feel separated from interactive feedback with the instructor, but they also feel separated from meaningful exchanges and the sense of a shared experience with their fellow students. The sense of isolation and the lack of social support have frequently been cited as primary reasons for the disturbingly high drop-out rate during many distance education courses. Distance learners feel the lack of emotional intimacy that exists for personalized constructive feedback and they are often frustrated by the "unapproachable" physical condition which detaches them from the instructor. "It is the physical separation that leads to a psychological and communications gap, a space of potential misunderstanding between the inputs of the instructor and those of the learner, and this is the transactional distance." (Moore, 1992)

Many strategies have been suggested to "maximize interactions", however most are still dependent on a teacher-centered design and delivery of instruction. The true "distance" of the communication problem remains the same: the teacher is still viewed as the central figure who controls and transmits knowledge to a receiving audience. Effective learning is dependent on active negotiations and explorations of "meaning", not a passive individual experience based on mere exposition, reception, and retention. Distance learners frequently feel isolated and removed from their educational experience which is in direct opposition to one of the primary tenets of many educators that learning is essentially a "social process" (Brown & Duguid, 1993). In essence it is considered to be a fundamental part of the learning process that people actively construct and reconstruct their worlds during interactions which are facilitated by social affiliation.

> Most learning in most settings is a communal activity, a sharing of culture. It is not just that the child must make his knowledge his own, but that he must make it his own in the community of those who share his sense of belonging to a culture.
>
> (Bruner, 1983)

Rationale for Cooperative Learning

All forms of distance education, regardless of the method of delivery, need to utilize one of the most direct means of increasing student involvement, participation, and interaction with their own learning environment - cooperative learning. Indeed, one of the primary effects of cooperative learning is an increased sense of social support and an emphasis on positive personal interactions. This is manifested through instruction that emphasizes the benefits of helpful peer interactions and positive group experiences. Formal cooperative learning has socially interactive qualities to help overcome the "transactional distance" and feelings of alienation, while positively effecting student performance and satisfaction. While maintaining and eliciting interactions in any educational setting are important, there are many special concerns that influence the importance of creating increased opportunities for interactions in distance learning situations:

> Results of perceptions indicate that distance education students experience less involvement, less ability to ask questions and less overall enjoyment. In this situation, interaction may need to be more structured to compensate for the limitations of the particular communication system. Those in the traditional setting experienced more comfort, had greater opportunity to ask questions, and felt they were more involved in the instructional process than those in the distance education group. (Ritchie and Newby, 1989)

Cooperative learning is based on grouping students together to help each other attain common learning goals. The success of the group process is dependent on "encouraging students to discuss, debate, disagree and ultimately to teach one another" (Slavin, 1991). Cooperation becomes a function of the combined efforts of peers working together in such a manner that the actions of neither party actively opposes the productive efforts of the other party, rather they support, promote and share actions. Learning becomes viewed as a dynamic dialogue between the internal cognitions of each student and the sharing of those perceptions with peers. In a meta-analysis of the existing research (Johnson, Johnson, and Maruyama, 1983) found that cooperative learning produces a positive effect on student's motivation, self-esteem, and academic achievement:

> Learners tend to generate higher level reasoning strategies, a greater diversity of ideas and procedures, more critical thinking, and more creative responses when they are actively learning in cooperative groups than when they learn individualistically or competitively.

More recently, Johnson and Johnson (1991) found that in addition to the above results, cooperative learning strategies also promote: higher retention rates, better attitudes towards instruction, increased on-task behavior, and greater collaborative skills. Slavin (1991) reports that cooperative learning increases academic achievement at a variety of grade levels and across diverse subject matter areas. He has also found evidence that cooperative learning improves intergroup relations, it improves the relations between handicapped "mainstream" students and their "normal-progressed" peers, and it improves most student's self-esteem. He maintains that: "Cooperative learning methods generally work equally well for all types of students". There is also evidence, that both low achievers and high achievers benefit from the "exchange of elaborated explanations" (Webb, 1985) which apparently stimulates cognitive growth and restructuring.

Many studies have shown that cooperative learning with CAI positively effects student motivation and learning outcomes (Beckwith, 1993; Dalton, Hannifan, & Hooper ,1989; Johnson, Johnson and Stanne, 1985). Other studies have demonstrated the benefits of cooperative learning and distance education transmitted across computer networks (Davies, 1988; O'Malley and Scanlon, 1990; Riel, 1990). Investigations have also been made which indicate that group work and more frequent interactions will have a positive effect on televised instruction (Ritchie and Newby, 1989; Klein and Pridemore, 1992).

These findings would appear to be particularly applicable to distance education concerns, where the normal opportunities for interactions and socializations that can be found in a traditional classroom are confounded by physical distance. The very nature of the feedback becomes an artificial representation of a "live" social interaction, because there are always some major channels of communication such as touch, body movements and interpersonal distance which are absent.

Electronic communications systems often create an interpersonal distance, a barrier in the form of a"public distance zone", which lacks personal intimacy and connotes feelings of differential social status and a formal communication atmosphere.

Cooperative Learning Models

There are many methods of cooperative learning, but they are all predicated on creating learning environments where students exchange their perspectives, promote mutual individual development, and maximize the achievement of the group . Robert Slavin's Student Team Learning (STL), emphasizes "group rewards" to motivate student performance: "... the students' tasks are not to do something as a team, but to learn something as a team." (Slavin,1991). The central element of the STL is the "Team Rewards" which are based on the group achievement of specified criterion. A second element is "Individual Accountability": the responsibility of each team member to learn, and the group's responsibility for explaining concepts to one another and thus assuring the individual development that will ultimately benefit the overall team achievement. The last major element of the STL is "Equal Opportunity for Success", which means that each student contributes to their team by constantly improving their individual performance.

The "Jigsaw" method by Elliot Aronson (1978) depends on academic material being broken down into separate sections. Student groups are formed and each member of a given "home" group is given the responsibility of a specific topic of the course content or project. Each member of these "home" groups then disbands to meet with students from different teams, who have been assigned to study the same content section or investigate a particular task, to form an "expert group". Within these "expert groups" information is researched, shared and refined in order to arrive at an informed consensus concerning their assigned subject matter area or activity. The "expert groups" then disperse and return to their "regular" teams, where each "expert member" teaches the other group members about their content section. The only way for the students to learn about the material outside their assigned section is to depend on the knowledge and the instructional resources of their teammates.

Sharan and Sharan (1980) have developed a Group Investigation method(GI) which is based on cooperative inquiry and classroom collaboration. Students choose their own groups, select a sub-topic from the unit of classroom study, divide this sub-topic into individual assignments, and then present a group report to the entire class. Emphasis is placed on the interdependence of the larger classroom group to these smaller investigation groups, and evaluation occurs at many levels. The team presentations are usually evaluated by the class and the instructor, while an individual's contributions to the group's performance are evaluated both by the instructor and the other group members.

The Johnson and Johnson model "Learning Together" (1975) focuses on interactive social processes and team building activities which are predicated on developing important interpersonal social skills (leadership, trust-building, constructive communications, conflict management). Students are assigned to completely heterogeneous groups based on diverse ability, gender, race, and cultures. They also consider the analysis and evaluation of the actual "group process" to be an integral component of the learning experience: "Such processing enables learning groups to focus on group maintenance, facilitates the learning of social skills, ensures that members receive feedback on their participation, and reminds students to practice the small group skills required to work cooperatively." (Johnson and Johnson, 1991). The Johnson and Johnson cooperative learning model is predicated on structuring the learning experience to promote collaborative activities by implementing these following five basic elements:

1. Positive Interdependence: Mutual goals and shared rewards linked together in such a way that one member of the group cannot succeed unless the other members of the group succeed
2. Face to Face Promotive Interaction: Establishing the behaviors of helping, assisting, encouraging and supporting each other's actions
3. Individual Accountability: Each individual student's performance is assessed and is based on the extent to which they have mastered specific materials and provided support and assistance to the group
4. Interpersonal and Small Group Skills: Developing the social and communication skills of leadership, decision-making, trust-building, and conflict-management which support a group problem solving attitude
5. Group Processing: Dynamic analysis and improvement of group operations, communications and performance

It would appear that the implementation of structured method of cooperative learning would greatly benefit the achievement and the affect of distance learners. By actively creating a learning environment that advocates cognitive interactions with peers, stimulates "social support", and instigates "promotive interpersonal communications", cooperative

learning models can help attain that sense of a learning community which is frequently lacking in distance education experiences.

Cooperative Learning Techniques

These cooperative learning models supply instructional strategies which should positively effect the distance learners. "Turn to Your Partner" or "Bookends" involves breaking down instructional material into manageable thematic "chunks" and having learner dyads discuss these key question or review points. This presentation method aids in the pacing, processing, and retention of the content material. Some examples of using this method are: pose a direct discussion question or problem which asks for the analysis or synthesis of information; have the learning pairs generate a question or problem for class conversation; have the students elaborate on existing content and relate it to previous material, or have them reflect and react to a theory or concept. Have the learners work in pairs to process the information through some form of dialogue and follow this forum or methodology:

1. Each student independently formulates his or her answer
2. Students share their answer with their partner
3. Students listen carefully to their partner's answer
4. Pairs create a new answer based on associating, building upon, and synthesizing each others thoughts

After the pairs have processed the information, randomly call on any student in any group to provide their group answer. Asking questions in this manner helps to assure individual accountability: that the pairs have shared and explained their perspectives, that one student has not dominated, or that one member has not been a "free -rider" on the other's efforts. While this is more conducive to a "live" synchronous learning experience - or in an ITV classroom separated only by location - it can also work with asynchronous learners who are separated by space and time. Assign distance learners to "study pairs" and have them communicate through email, conferencing software, or telephone - their individual responses can be shared synchronously or asynchronously and easily stored or documented. One benefit to this form of communication is that all contributions to the group process are actually recorded and can be monitored by the instructor to promote individual accountability. These same forms of communication can also be used to elicit "live" dynamic responses from the pairs or they can be assigned to document and "hand-in" their exchange of perspectives for assessment. This form of interaction may not be as dynamic as "live" discussion, but it accommodates to the needs of a distant learner, while still providing a social exchange of ideas and a forum to arrive at a consensus.

Slavin's STL and the Sharans' GI models provide excellent methods for building cohesiveness and a sense of group identity with asynchronous learners and at remote sites. Team building exercises should be employed that encourage unity, which can be easily started by having the groups create names and mottos. It is important that the teams strive to define an agreeable set of group goals that provide a focused sense of purpose and instill self-motivation. An initial group task should be a collaborative effort to create a mission statement that helps elaborate on the group's intentions and expectations of performance:

1. Define Mutual Goals: merely achieve passing grade; increase knowledge of subject matter; gain skill competency ; create a publishable research paper
2. Group Reward Structure: group success if project receives a high grade; celebration/party if group achieves a specific group GPA;
3. Set Standards of Achievement: all members get a B or better; all members contribute and participate; avoid conflict; provide constructive feedback
4. Define Problems and Solutions: what are the group's tasks; methods for achievement; individual roles and responsibilities

The "team" concept and external group competition should be used as a metaphor to stimulate academic interest and *esprit de corps*, while the structure of the course should provide a focus on group homogeneity and achieving some agreed upon academic standard. However, a mild -mannered "gaming" format along the lines of the "College Bowl", "Jeopardy" or "The Hollywood Squares" can help build a sense of solidarity by grouping remote learners, while also providing a less-threatening academic activity that invites participation. Meanwhile, a more literal example of implementing Robert Slavin's Student Team Learning (STL) model might be as follows:

- "Team Rewards": all team members must achieve above 80%; complete assigned tasks of the research project
- "Individual Accountability": structured by giving a group grade based on an average of the individual members scores; peer evaluations
- "Equal Opportunity for Success": improved performance by individual group members on papers/tests; group participation

Teams can also be effectively engaged in role-playing simulations, where they must adopt, represent and advocate a certain perspective. At Pennsylvania State University, students participating in Project Vision courses - which emphasizes the use of communication technologies to promote asynchronous, anytime, anywhere instruction - are asked to simulate a public debate on the efficacy of a particular spot for use as a nuclear waste site. The students are assigned to groups and asked to characterize one of the factions having various interests or responsibilities for the waste site: Department of Environmental Protection, The Real Estate Coalition, Chamber of Commerce, Concerned Citizens Environmental Coalition, City Council. Each student group must research the concerns of their adopted "special interest group" and role play those viewpoints in a "virtual" on-line town meeting that is transmitted through conferencing software or a compressed video format.

The Sharon's Group Investigation model provides an excellent procedure for assigning group presentations and an opportunity for peer teaching. Groups can be formed based on shared areas of interest, physical location (remote sites), or created by assigning asynchronous learners to "virtual groups" that will collaborate via various forms of communication. For typical ITV courses where the sessions are synchronous but separated by a distance, the student groups can share their presentation with remote sites by transmitting over compressed video. These "real time" presentations can use various media to illustrate concepts (video, computer graphics, presentation software). or they can include other modes of expression such as staging a play or a panel debate. For asynchronous learners separated by time as well as place, these group reports can be attached through email, posted as web pages, or produced as short videos. Similarly, fellow classmates can engage the presenters with questions or comments about the reports thorough email or by creating "virtual" hours with the presenters via phone or software conferences. The groups are responsible for educating their fellow students, while the remaining class audience must also be held accountable for processing the information content that is delivered. It is critical that evaluation and assessment be conducted on a number of levels: group project, individual contributions, knowledge acquisition/participation by whole class.

Aronson's "Jigsaw" method creates discrete subject matter responsibilities and a sense of "positive interdependence" between individuals and their groups . This model lends itself well to case-method or problem-based learning situations, where the problems, tasks and subject matter can be readily divided-up. The "home" and "expert" groups can be purposely structured to expose participants to a mix of conditions and interactions with other learners: sometimes they may be separated by distance or time, sometimes they may be in a synchronous or asynchronous condition. Once again, it is necessary to provide various means of communication dependent on the nature and condition of the audience . The Aronson model simulates one real life benefit of groups, which is an increased productivity and efficiency through a division of labor. However, it is crucial that the final product is not merely a series of independent efforts and tasks which are loosely tied together. Individuals need to develop and share expertise with their groups and the remaining group members need to process and assimilate the information provided by individual members. It may be beneficial to have each group member attempt to create a "draft" of the final paper or project in order to promote both personal comprehension and the process of integrating the various pieces of information.

The Johnsons' "Learning Together" (LT) model is extremely useful for addressing some of the issues and problems which normally arise when employing a cooperative learning method. Cooperative learning is more than merely placing students into small groups and expecting positive interactions. The five basic elements of the LT model provide a structure that promotes the creation of a learning environment which is conducive to cooperative behaviors. In order to have successful interactions it is necessary that learning groups are placed in a setting based on: positive interdependence, personal accountability, interpersonal skills, a shared sense of responsibility for each other's and the group's achievement, and an awareness of evaluating the group processes (Johnson and Johnson, 1991). The various methods that can be used to implement the five basic elements provide some clear guidelines for valued behaviors. The Johnsons believe that is critical to create the proper conditions that allow cooperative learning to be effective and productive.

There are many barriers and many factors which can inhibit group performance and they have been tied together into a construct called "group effects". The framework provided by the cooperative elements of the LT model help to purposely structure activities and create lesson plans which encourage appropriate group behaviors. They provide a mechanism to avoid some of the common barriers to successful group performance: reticent or dominating participants, "free riding" on the efforts of others, social loafing, social status, task involvement, self-oriented needs, group think, and destructive conflict. LT

assists by providing a context for practicing individual roles and duties that are dependent on appropriate behaviors that will facilitate the group process: "checker", "recorder", "facilitator" (see Table 3). Therefore, it is implicit within the Johnson & Johnson model that the development of interpersonal communication skills and group work become fundamental goals of the instruction. In order for cooperative learning to succeed, it must be integrated into the coursework and given a percentage of the tasks, practice, feedback and evaluation normally devoted to the subject matter content.

Conclusion

Because the various group effects and inhibitions can cause negative group functioning, cooperative learning will usually not be effective without structured strategies and training. Just as there must be changes to the focus and structure of learning activities, cooperative learning also emphasizes changes in assessment methods. Learners must learn how to give and receive peer evaluations in a positive manner. Furthermore they must also become aware of their own metacognitive processes allowing them to provide accurate self-evaluation. Collaborative instructional strategies require changes in the professor's attitudes and behaviors as well as changes in students' attitudes and behaviors. For example, professors must learn to share ownership of classroom activities with students and make the transition from "the sage on the stage" to the "guide on the side". Likewise, students must take on more responsibility for their own learning and strive to become active participants with the educational process, not merely passive recepients.

However, it is frequently the situation that both faculty and students are asked to work collaboratively and yet are not given training and support to help them acquire group communications and group problem-solving skills. Dedicated instruction needs to be provided that allows an opportunity for the following skills to be learned and developed: systematic problem solving, deferred judgment, checking for misunderstandings by paraphrasing, acceptance of conflict and conflict resolution, leadership, group management practices, understanding the stages of group progress (e.g., "forming, storming, norming, performing"), and using role differentiation. The study and practice of collaborative skills has to become incorporated into ongoing learning activities and interwoven throughout the curriculum as well as class assignments. The development of coop behaviors is a long-term process that cannot be attained through short-term interventions. These skills are also very difficult to advance from a distance, therefore instructors need to create methods that "check-in" and monitor the evolution of the group process.

Of course the methods of implementing cooperative learning techniques are going to be dependent on numerous factors created by the circumstances and context of the instruction. What are the fundamental educational goals? Who is the primary audience? Where does instruction need to be conducted? How does it need to be delivered? In a situation that requires distance education, the nature and environment of both the audience and the content material will be critical factors in determining the appropriate methods of delivery which will help ascertain the cooperative learning methods that will be most effective. The various forms of electronic delivery (FAX, ITV, Internet, computer and phone conferencing, email) each facilitate different modes of expression and communication. Indeed, attempting to merge the various capabilities and nuances of these new technologies with cooperative learning strategies and learner needs is a challenging proposition. Not to mention, that due to the varying degree of learner competency within these forms of communication, additional instructional time must be devoted not only to the "mechanics" of using these technologies, but also to providing examples of appropriate etiquette within these discourse formats: competent and effective email correspondence, the structure of an efficient computer conference (role of a mediator, equal participation, topics, categories of responses). However, it is also important not to overlook the need for some basic strategies to help overcome the "transactional distance", such as the social facilitation offered by attempting to arrange "live - face-to-face" interactions.

The use of cooperative learning methods in distance education should provide an extremely pertinent instructional strategy, which would be particularly effective at "overcoming the distance" and "maximizing interactions". The new communication technologies enable educators to expand cooperative efforts between remote sites, diverse cultures, and "distant" expertise. The variety of electronic communications will now support more access to a range of perspectives and insights - providing the potential to build a global "web" of contacts and interfaces. These expanded modes of access and communications become an advantageous resource for all forms of distance education and they depend on a system of collaboration. Therefore, it would only seem practical, necessary and relevant to merge the instructional methods of cooperative learning with the new "enabling technologies" of these delivery systems. Learning needs to be viewed as a dynamic dialogue between the internal cognitions of each student and the sharing of those perceptions with peers:

> Learning is a dynamic process, with communication and interaction the principle forces behind this dynamism. A recurring theme (for distance education) is the nature of student-to-student interactions and the belief that communication among learners is critical to information application. (Willis, 1992)

TABLE 1. Description of Matrix Categories and Sub-topics

1.) Overview of the ITV System/Network
- **Purpose and Vision:** system mission/goals/objectives, intended audience and services
- **System Hardware/Design:** the overall technical configuration, transmission capabilities
- **Operations:** descriptions of individual sites, their capacities, facilities and equipment
- **Advantages and disadvantages of ITV:** its limitations, capabilities and appropriate use

2.) Electronic Classroom Layout and Equipment
- **Design of the teleclassroom;** explanations and diagrams of hardware, seating capacity etc.
- **Instructor's Console:** diagram/design of its controls and functions
- **ITV Equipment:** overview of basic transmission equipment - operations and functions
- **Auxiliary modes of communication:** modems, telephones, e-mail, FAX
- **Instructional aids:** Microscopic Camera, Videodisc Player, VCR, Slides, Visual Presenter, Computer(software, video signal), Marlite Board, Video CG etc.

3.) Support System
- **Personnel and Staff:** skill positions of an ITV team (technicians, designers, administrators)
- **Roles and Responsibilities of ITV team:** specific relationships, duties and processes
- **Initial training:** prerequisite skills, familiarity with terminology, equipment
- **Ongoing training**: formative development of delivery skills, technical skills, design skills

4.) Technical issues
- **Standard Operating Procedures:** sequence of basic processes for transmission
- **Troubleshooting:** identify equipment difficulties/causes, minor vs. major, "easy fixes"
- **Emergencies/contacts:** transmission breakdowns, alternatives, and support

5.) Planning and Organizing an Electronic Course
- **Developing a detailed syllabus:** course schedule, objectives, criteria, assignments, sources
- **Study guide/ class agenda:** lecture outline, learning cues, activities, additional graphics
- **Legal issues/Policies:** copyright, release forms, confidentiality
- **Remote Logistics and Support:** mail, courier service, libraries, labs, study groups

6.) Design and Development of an Electronic Class
- **Designing ITV graphics:** TV colors/aspect ratio, animations, charts, multiple visual aids
- **Questioning strategies:** procedural, discussion, evaluative, review
- **Maximizing interactions/feedback:** active learning, hands on activities, group work
- **Developing ITV lectures:** advanced organizers, more Q/A sessions, discussions

7.) Presentation and Delivery Techniques
- **Oral presentation techniques:** inflections, pauses, being "off camera"
- **Appearance/Screen Presence:** clothing, jewelry, eyeglasses, make-up, camera moves
- **Body Language:** movement on camera, use of gestures, eye contact, non-verbal cues
- **Pacing/stimulus variation:** slower transitions, more activities and visuals

8.) Implementation of the Electronic Course
- **Administration and scheduling:** procedures /protocol, registration, constraints, class size
- **Class management:** time flexibility, correspondence, on site facilitators
- **Logistics/Distribution of materials:** advanced planning-exams, assignments, sources
- **Establishing Interpersonal Rapport:** instructor access, student support, visit remote sites

9.) **Evaluation**

- **Formative and Summative methods for the course**
- **Formative and Summative methods for the instructor**
- **Formative and Summative methods for student performance**: alternative assessments
- **Audience Needs/Attitudes:** learner analysis, student comfort levels, cultural diversity

TABLE 2. Results from Individual Matrixes

Overview Matrix of Distance Education Training Materials

1. Overview of the ITV System/Network

Purpose/Vision	System Hardware/Design	Operations/Site facilities	Pros/Cons(ITV)
24	27	27	19

2. Electronic Classroom Layout and Equipment

Classroom Design	Instructor's Console	ITV Equipment	Aux. Communication	Instructional Aids
24	19	24	26	19

3. Support System

Personnel/Staff	Roles /Responsibilities	Initial Training	Ongoing Training
24	24	16	8

4. Technical Issues

Standard Operating Procedures	Troubleshooting	Emergencies/Contacts
21	16	18

5. Planning and Organizing a Media Assisted Course

Syllabus/Goals/Criteria	Study Guide/Class Agenda	Legal Issues/Policies	Remote Logistics/Support
26	18	18	26

6. Design and Development of a Media Assisted Class

Designing ITV Graphics	Questioning Strategies	Maximizing Interactions	Developing ITV lectures
22	22	29	29

7. Presentation and Delivery Techniques

Oral Presentations	Appearance/Presence	ITV Body Language	Pacing/Stimulus Variation
21	22	21	22

8. Implementation of the Media Assisted Course

Administration/Schedules	Class Management	Distribution/Logistics	Interpersonal Rapport
21	22	24	27

9. Evaluation (Formative/Summative)

Methods for the Course	Methods for the Instructor	Student Performance	Attitudes/Needs
19	16	16	14

Amounts are the total frequency of responses per category (Based on a total of 32 responses)

TABLE 3. Lesson plan based on the Johnson&Johnson model

Grade Level: Adults **Subject Area:** Team Building

I. **Lesson:** Conducting an effective meeting

II. **Grouping Decisions**

Group Size: 5

Assignment to Groups: existing groups, based on heterogeneous mix of duties

Room Arrangement: round or oval style table is best

Materials needed for each Group: copies of the enclosed materials on conducting effective team meetings

Assigning Roles: Randomly assign all group members to one of the following roles; each member will rotate functions for next meeting until all members have participated in each role

Facilitator: Initiate discussions; Act as gate-keepers: direct the conversation in a productive manner; Keep the meeting from digressing by developing and having group adhere to agenda

Recorder: Write down the meeting proceedings; major decisions, responsibilities, timetables and deadlines for projects, notes for next meeting's agenda

Checker: Seek information and opinions; Clarify or elaborate an idea; Check for understanding of main issues by all group members

Summarizer: Express the group's feelings and ask others to verify that impression; Test for consensus and initiate decision-making

Encourager: Compromise and be creative in resolving differences; Try to ease tension in the group and work through difficult matters; Praise and correct others with equal fairness; promote everyone's participation

III. **Set the Lesson:**

Task: Perform team meetings in accordance to a set agenda with timetables and defined roles/responsibilities; have all group members read and be familiar with the enclosed text packet "Conducting Effective Meetings". Each member of the group will take on one of the described roles for successful team meetings and all members will rotate roles until all members have performed each role. All meetings will be conducted under the auspices of an "observer" who will chart meeting performance and conduct an evaluation/group discussion of the meetings. Group processing will be conducted based on individual responses to questionnaire. Administer final individual test on meeting procedures.

Positive Interdependence:

Group Goal: conduct efficient and effective team meetings that meet the timelines, address the agenda issues and develop plans of action

Reward: groups that succesfully rotate roles, pass the Observation checks and all individual members score 90% or better on individual test will be given a free lunch/celebration

Role: each member will complete the role of a Facilitator, Recorder, Checker, Summarizer and Encourager; all are responsible for keeping the meeting on time and for checking/understanding final group decisions

Task Interdependence: all members are responsible for performing their specific roles and promoting the overall effectiveness and efficiency of the meeting

Individual Accountability: Perform all the individual role functions of a group meeting by rotating roles; achieve 90% on individual test of meeting format, agendas, role/responsibilities

Criteria for Succcess: Group successfully performs a series of meetings with all group members rotating and performing all the individual roles; encourage equal participation by all members (no dominating); each individual member must also achieve 90% correct responses on individual written test of meeting format, agendas, role/responsibilities

REFERENCES

Aronson, E., Stephan, C., Sikes,J., Blaney,N., & Snapp, M.. (1978). The Jigsaw Classroom.. Beverly Hills, CA: Sage Publications.

Beckwith, D. (1993). Creative group problem-solving: An innovative computer application to facilitate learning and retention of difficult scientific principles. Collegiate Microcomputer. 11 (2). 70-75.

Brown, J.S. and Duguid,P. (1993). Stolen knowledge. Educational Technology. 23(3). 10-16.

Bruner, J. (1983). Education as social invention. Journal of Social Issues. 39(4). 129-141.

Dalton, D., Hannafin, M., and Hooper, S. (1989). Effects of individual and cooperative computer-assisted instruction on student performance and attitude. Educational Technology Research and Development. 37. 15-24.

Davies, D. (1988). Computer-supported co-operative learning systems: Interactive group technologies and open learning. Programmed Learning and Educational Technology. 25(3). 205-215.

Johnson, D., Johnson, R.,Maruyama, G. (1983). Interdependence and interpersonal attraction among heterogeneous and homogeneous individuals: A theoretical formulation and a meta-analysis of the research. Review of Educational Research. 58. 119-150.

Johnson, D., Johnson, R., and Stanne, M. (1985). Effects of cooperative, competitive, and individualistic goal structures on computer-assisted instruction. Journal of Educational Psychology. 77. 668-677.

Johnson, D., Johnson, R., and Smith, K. (1991). Active Learning: Cooperation in the College Classroom. Interaction Book Company: Edina, MN.

Klein, J. and Pridemore, D. (1992). Effects of cooperative learning and need for affiliation on performance, time on task, and satisfaction. Educational Technology Research and Development. 40. 39-49.

Kochery, T. (1995, February). An Analysis of Faculty Development Needs for ITV Distance Education. Paper presented at the Association of Educational and Communications Technology Conference, Anaheim, CA.

Moore, M. Distance Education Theory. (1992). The American Journal of Distance Education. 5(3). 1-7.

O'Malley, C. and Scanlon, E. (1990). Computer-supported collaborative learning; problem solving and distance education. Computers and Education. 15. 127-136.

Nastasi, B.K., & Clements, D.H. (1991). Research on cooperative learning: Implications for practice. School Psychology Review, 20, 110-131.

Riel, M. (1990). Cooperative learning across classrooms in electronic learning circles. Instructional Science. 19. 445-466.

Ritchie, H. and Newby, T. (1989). Classroom lecture/discussion vs. live televised instruction: a comparison of effects on student performance, attitude, and interaction. The American Journal of Distance Education.. 3(3). 36-45.

Sharan, S., Kussell, P., Sharan, Y., & Bejarano, Y. (1984). Cooperative learning: Background and implementation of this study. In S. Sharan, P. Kussell, R. Hertz-Lazarowitz, Y. Berano, S. Raviv, & Y. Sharan (Eds.). Cooperative learning in the classroom: Research in desegregated schools. (pp. 1-45). Hillsdale, NJ: Lawrence Erlbaum Associates.

Silvernail, D. and Johnson, J. (1992). The impact of interactive televised instruction on student evaluations of their instructors. Educational Technology. 22(6). 47-51.

Slavin, R. (1991). Synthesis of research on cooperative learning. Educational Leadership. 48(5). 71-82.

Webb, N. Verbal interaction and learning in peer directed groups. Theory into Practice. 24. 1985. 32-39.

Willis, B. (1992). Making distance learning effective: key roles and responsibilities. Educational Technology. 22(6). 35-38.

Willis, B. Distance Education: A Practical Guide. Educational Technology Publications: Englewood Cliffs, NJ. 1993.

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