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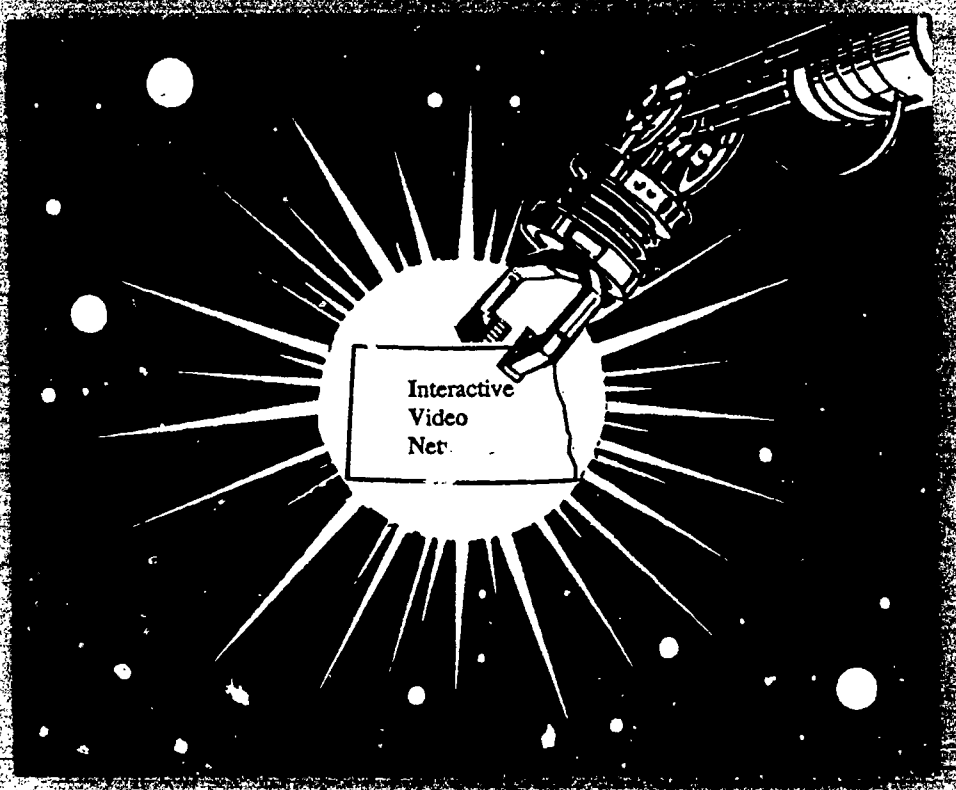
ABSTRACT

This handbook identifies the instructional models found to be effective for distance education using the Interactive Video Network (IVN) system. Each model is summarized briefly and followed by specific suggestions for the use of the model over the IVN system. For each model, information is given on instructor responsibility prior to, during, and as a follow-up to the lesson. Instructional models profiled are the following: advance organizer; concept attainment; direct instruction; dyads or groups; inductive thinking; inquiry training; jurisprudential; memorization; role playing; and synectics (analogies). The handbook also includes instructions for working in visual formats, suggestions to the teacher, and a bibliography listing 29 references for the various models. (KC)

Alternative Instructional Models for IVN Delivery



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A special note of thanks to all of the graduate students enrolled in Education 780 - Instructional Models during the Fall Semester of 1993. The graduate student suggestions for model operation over the IVN system were the basis for many of the recommendations of this handbook. Their honesty and willingness to try out the models over the system allowed the authors to provide specific details for the use of the models on the system. It must be noted here that several of the graduate students were IVN instructors at the secondary or post-secondary level which added insight into the model operation.

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INTRODUCTION

Distance educators have become increasingly familiar with the technology available to design and create effective learning environments. As technology becomes a major player in instructional design, it is imperative that instructional models providing effective instruction be identified.

Joyce, Weil, and Showers (1992) organized instructional models into families: social, information processing, personal, and behavioral systems. Each family contains several different instructional models with similar assumptions and outcomes.

This handbook is devoted to identifying the instructional models found to be effective when used over the Interactive Video Network (IVN) system. Each model is briefly summarized and followed by specific suggestions for the use of the model over the IVN system.

It is hoped that this handbook will aid IVN instructors in their quest to use a variety of effective teaching models on the system.

GENERAL SUGGESTIONS FOR IVN INSTRUCTION

Instructor Responsibilities Prior to Lesson:

-Determine goals and objectives for the lesson.
-Prepare visual aids.
-Mail or Fax material to other sites.
-Make sure all sites are on-line prior to starting.
-Make sure computer generated transparencies are prepared, in order, and ready for class. Have hard copy back-ups in case of computer problems.
-Verify that all sites received materials and that there are no technical difficulties.
-Pre-determine time limits and other constraints to be considered.
-Make sure you (the instructor) can operate equipment.
-Make sure all students can see and hear.
-Look into camera.
-Watch the time.
-Speak into the microphone.

Instructor Responsibilities During the Lesson:

-Look into the camera.
-Speak into the microphone.
-Explain and formulate rules and procedures.
-Give out examples of lesson.
-Stimulate and monitor class discussion.
-Watch the time.
-Make sure that students identify their location and themselves to allow camera time to respond.
-Turn off microphones in non-involved groups/sites.
-Make sure groups can communicate over the IVN system.
-Make sure groups are not interfering with each other (noise level).
-Monitor student progress at all sites, prompt as needed.
-Make sure students are aware of the goals and outcomes for this class.
-Get input from all sites.
-Create a friendly and learning environment.

GENERAL SUGGESTIONS FOR IVN INSTRUCTION

Instructor Follow-up Responsibilities:

-Evaluate process as well as content.
-Collect materials and grade when appropriate.
-Analyze IVN usage of teaching model. Note any changes that would improve the effectiveness of the model over the system.
-Provide clear assignments and directions.
-Answer questions and clarify material.
-Involve all IVN sites.
-Seek feedback on lesson.
-Fax or mail future lesson materials.
-Allow time for questions prior to the shut down of the system.
-Use appropriate reinforcements for student participation.

ADVANCE ORGANIZER

The advance organizer model is designed to clarify the goals and objectives of a class session by presenting material in a clear manner, with numerous examples related to students' prior knowledge. Material is presented in a precise order involving students at the end of the lesson in summarizing concept and providing new examples or relationships using the concept (Joyce, B., Weil, M. & Showers, B., 1992).

Instructor Responsibilities Prior to Lesson:

-Prepare and organize material for presentation of the concept.
-Determine central theme from which sub-themes may branch.
-Identify examples that will be most familiar to the students.
-Be aware of the student's relevant knowledge and experience.

Instructor Responsibilities During the Lesson:

-Explain advance organizer if students are unfamiliar with it.
-Instructor supplies defining attributes, examples where appropriate, context, logical order, and links material to the organizer, while remembering to integrate material.
-Connect the organizer to the material throughout lesson.
-Respond to students reactions and help clarify the meaning of the new material.
-Organize learning material so students have an overall sense of direction.
-Link new material to the organizer.
-Remind students of larger picture.
-Ask for summary of major attributes.
-Uses concepts, terms, and propositions that are familiar to students, as well as appropriate illustrations and analogies.

Instructor Follow-up Responsibilities:

-If students have questions or something is unclear, clarify by giving additional information or by applying the ideas to new information.
-Ask students to describe, examine, and verbalize the essence of material.

CONCEPT ATTAINMENT

Concept attainment is used by instructors to promote critical thinking. Instructors provide students with examples and non-examples of the concept identified appropriately. Additional examples and non-examples are given and students are asked to identify common characteristics of the examples. Additional examples are provided and students are asked to hypothesize about what the concept might be. Once students think they know the concept, the remaining examples are identified as examples or non-examples. The students then create new examples of the concept (Joyce, B., Weil, M. & Showers, B., 1992).

Instructor Responsibilities Prior to Lesson:

-Design the lesson with numerous examples and non-examples of the concept.
-Select, organize and sequence the positive and negative examples.
-Prepare a time line of activities and provide time for students to test hypotheses and design new examples.
-Instructor must fully understand the characteristics of the concept the examples and non-examples.
-Begin with a simple concept when first using this lesson.

Instructor Responsibilities During the Lesson:

-Explain concept attainment if students are unfamiliar with it.
-Remind students to write down characteristics of the examples.
-Record and keep track of characteristics and concepts as mentioned.
-Give cues to prompt students.
-Present additional examples if needed.
-Give support to students' hypotheses.
-Sharing numerous examples to reinforce concept taught.
-Ask students to describe their thinking as they arrived at the concept.
-Provide independent practice and monitor closely.
-Make sure students are aware of the goals and expected outcomes.
-Allow student to work in groups to develop hypotheses but set a time limit.

Instructor Follow-up Responsibilities:

-Evaluate self, content, and structure of the lesson.
-Ask students to find additional examples when appropriate.
-Present model and have students work by themselves or with a group.

DIRECT INSTRUCTION

The direct instruction model is based on the concept of teaching students to pace themselves for optimal performance, regulating their learning progress. The material to be learned is organized into small, sequenced, instructional "modules" presented with embedded learning assessment (Joyce, B., Weil, M. & Showers, B., 1992).

Instructors Responsibility Prior to Lesson:

-Determine objectives for students; academic, behavior, social.
-Determine group cooperative activities to be used to involve students.
-Must have a "Plan B" in case the system or computer slide equipment fail.
-Determine the goals, the process, and the system to be used.
-Establish a framework for the lesson -- structure, goals and expected outcomes.

Instructor Responsibility During the Lesson:

-Ask questions to clarify and assist in student learning.
-Present new material to the class.
-Demonstrate new concepts and make the presentation as clear as possible.
-Check for understanding.

Instructor Follow-up Responsibilities:

-Encourage students to learn more on their own.
-Ask students to evaluate their own learning in a discussion setting.
-Review test results and/or student responses as to the level of understanding achieved.

DYADS - GROUPS

In group or cooperative learning, the students discover a question or seek discovery of a topic; students explore reactions to the questions; students organize into groups to breakdown the task; students study independently and in groups; as students study they analyze the progress and the study or learning process; the recycle the activity (Joyce, B., Weil, M. & Showers, B., 1992).

Instructor Responsibilities Prior to Lesson:

-Determine number of students needed to work effectively in dyads or groups.
-Devise ways to ensure equal participation/division of labor in each group.
-Devise tasks related to partnerships and implement.

Instructor Responsibilities During the Lesson:

-Structure the course to encourage participation and interaction among students.
-Provide support and directional statements.
-Guide participants into formulating and structuring the problem for themselves.
-Observe, lead and listen as participants organize and work towards a solution.
-Become a counselor, consultant and friendly critic.
-Provide clear instructions.
-Stress the expected outcomes for cooperative learning exercise.

Instructor Follow-up Responsibilities:

-Solicit feedback on the lesson and the model.
-Answer questions that students may have at the end of class.
-Summarize what the students learned.

INDUCTIVE THINKING

Inductive thinking is based on three assumptions: thinking can be taught; thinking is an active transaction between the individual and data; thinking is a thought process evolving in a sequence. Teacher's questions lead students to identify critical aspects of the data, the interpretation of data or relationships in which hypothesis are built; and/or apply principles to explain new phenomena or predict sequences from established conditions (Joyce, B., Weil, M. & Showers, B., 1992).

Instructor Responsibilities Prior to Lesson:

-Determine a topic all class members are able to discuss.
-Anticipate the outcome and how your students might arrive at it.
-Predict the types of questions your students will raise.
-Plan presentation for your students so optimal learning occurs.
-Prepare relevant data that could help in solving the problem.
-Match tasks to the level of students.
-Remember the time structure and limitations of your class.
-Develops labels for categories.
-Understand inductive sequence.

Instructor Responsibilities During the Lesson:

-Formulate questions requiring students to list, group and categorize.
-Ask students to predict consequences by explaining or give reasons to support their predictions.
-Encourage students to verify their predictions.
-Observe the process and make sure students are on task.
-Be aware of the students abilities to grasp the concepts and encourage movement to higher thought levels as appropriate.
-Elicit questions from students about the process.
-Guide students through organization. interpretation, association, etc.
-Monitor formation of concepts and direct students to analyze and interpret data to develop the principles/predications the concept is designed to determine.
-Clarify categories presented by the participants. Assist in recording categories but allow students to do the grouping.
-Examine how individual students process information. Check for progressions and/or sequences.
-Keep focus on generating hypotheses, interpreting data, and developing constructs and not the identification of facts.

INDUCTIVE THINKING

Instructor Follow-up Responsibilities:

-Try to develop additional inquiry strategies in order to assist the students in making clearer statements and supporting statements.
-Collect additional up-to-date resource materials that are relevant to the topic.
-Identify additional topics and/or situations that could be effectively learned using this model.

INQUIRY TRAINING

Students attempt to solve a set of a set of puzzling problems by collecting and verifying data, developing concepts, and building and testing hypothesis (Joyce, B., Weil, M. & Showers, B., 1992).

Instructors Responsibility Prior to Lesson:

-Select appropriate puzzling events for inquiry - events/problems which capture student interest.
-Prepare questions (yes/no) that will draw out facts.
-Plan an explanation of inquiry procedures.

Instructor Responsibility During the Lesson:

-Maintain a supportive, nonjudgemental atmosphere.
-Sequence and guide dialogue.
-Assist students intellectualize their mental processes and draw the model to a close.
-Set up groups and establish ground rules for the lesson.
-Ask students to rephrase questions that would "give away" the solution.
-Encourage students to develop a hypothesis to explain the puzzling event.
-Encourage experimentation.
-Do not evaluate student hypotheses/theories but make sure students provide support for their theories.
-Direct students to spend 10-15 minutes on gathering and verifying information while at the same time exploring new information.
-Validate facts of the situation - answer questions- change questioning pattern, if necessary.

Instructor Follow-up Responsibilities:

-Evaluate the learning experience from instructor and student point of view.
-Ask students to summarize knowledge created and state the process used to arrive at the solution.
-Analyze strategy/discuss others that my be more effective.

JURISPRUDENTIAL

The jurisprudential model incorporates Socratic dialogue. The teacher introduces the material and reviews facts, while students synthesize facts into public policy issue(s). The students take a position and state it in terms of social value or consequences of the decision, explore the position by proving the desirability of the consequences of the position, refine and qualify the position, identify factual assumptions and determine relevance (Joyce, B., Weil, M. & Showers, B., 1992).

Instructor Responsibilities Prior to Lesson:

-Identify an appropriate problem to use as a case.
-Assign activity and allow enough time for research and collection of data.
-Provide information establishing the ground rules or basis for social values.
-Prepare self for taking a confrontational role.
-Prepare examples of similar situations to the case.
-Think of probing questions to ask which will prompt students to think.
-Consider the skills of your students and determine who may best present positions.
-Check accuracy of facts.
-Ensure topic is age appropriate.
-Develop basic "trigger" questions to help steer the group.
-Be aware of student interests in selecting a conflict that involves public issues or value conflicts.

Instructor Responsibilities During the Lesson:

-Help define and clarify those issues through appropriate "Socratic" dialogue.
-Assure everyone has a chance to state their opinion.
-Assess class with respect to group discussion of situation.
-Maintain confrontational dialogue.
-Avoid making a stand. Try to maintain a balance of value stances.
-Explore the patterns of argumentation -- ask probing questions.
-Help students sort out issues and values.
-Allow time to discuss alternatives.
-Allow time for students to evaluate the lesson.
-Push students to defend what they say.
-Allow students an adequate period of time to work through the case, allowing for the opportunity to acquire information, reflect on the ideas, and build courage.
-Maintain peace, uphold dignity of all involved, be non-evaluative.
-Anticipate students' value claims and deal with appropriately.

JURISPRUDENTIAL

Instructor Follow-up Responsibilities:

-Follow-up evaluation.
-Determine how well the students made their decision, based on the facts and merits of the case, not on the merits of the student's persuasion skills.
-Recognize the factual assumptions and help the students determine if they are relevant.
-Provide ample time for students to share additional insights not presented during the exercise.
-Allow students to do further research outside of class and continue discussion.

MEMORIZATION

The memorization model decreases dependence on the teacher and provides students with different ways to memorize material. The process may include: listing and reflection; key-word, substitute-word, and link-word systems, ridiculous association and exaggeration; and recall of material until it is completely learned (Joyce, B., Weil, M. & Showers, B., 1992).

Instructor Responsibilities Prior to Lesson:

-Generate the links to be used for memorizing the important aspects of the topics to be taught.
-Create the activities involved in the memorization process.
-Select learning aids to be used.
-Determine the process to be used.
-Collect or make graphics necessary for the lesson.
-Decide what material needs to be memorized.
-Determine link words, key words, and additional associations to be used along with examples.
-Plan for an "attention grabber."
-Have an understanding of phonetic rules of long vowel sounds.

Instructor Responsibilities During the Lesson:

-Describe the memorization method to be used.
-Monitor students attainment of the memorization principles.
-Present overheads/computer notes of the 4 phases of memorization.
-Have students practice, creating their own visual images and links.
-Divide the class into groups/dyads and have students prepare memorization "lessons" for class.
-Help class identify key items, pairs, images, offering suggestions, keeping in mind the students' frame of reference.
-Include concrete aids, films, pictures, AV materials pertinent to the lesson and material.
-Practice recall.
-Use sensory images.

MEMORIZATION

Instructor Follow-up Responsibilities:

-Solicit feedback on lesson from student's perspective.
-Evaluate process as well as content.
-Allow time for follow-up questions/concerns/discussion.
-Praise the learning and memorization.
-Challenge the groups to continue using memorization model.
-Provide practice re-call sessions until the material is learned completely.

ROLE PLAYING

Role playing is used to immerse students in learning. The process used is critical to the success of the learning activity. There are several steps to follow when using the model: identify the problem, assign roles, restate roles and get inside the problem situation, assign observation tasks, act out the situation, review actions of the role play, reenact or suggest alternatives, discuss and evaluate role playing, and relate to real experiences and current problems (Joyce, B., Weil, M. & Showers, B., 1992).

Instructor Responsibilities Prior to Lesson:

-Select topics of concern and interest to the students related to subject matter.
-Prepare briefing sheets on the topic and roles if necessary.
-Explain operation of the role playing model.
-Select the students to play the roles.
-Provide instructions to the role players and select participants carefully.
-Instruct observers to remain quiet so as not to interfere with role playing.
-Provide observers with questions to think about and specific people to observe.

Instructor Responsibilities During the Lesson:

-Initiate and guide students through all steps of the model.
-Remind students there are different ways to act in all of the roles.
-Facilitate discussion to enable students to give feedback pertaining to character development or character changes for reenactments.
-Suggest alternative role strategies if students are unable to identify different reactions.
-Analyze roles and select role players taking into consideration the IVN system (participants can be at various locations and carry out roles as if they were at the same location, as long as they are well informed and have time to prepare).
-Begin, maintain and break role play. Intervene only when necessary.
-Break when solution is achieved or if enactment becomes too heated.
-Do not assign a role to someone suggested for it or stereotype students.
-Watch for "socially acceptable" solutions which could dampen discussion.
-Allow the role playing to occur spontaneously, but keep non-role playing students involved with questions, comments, and observations.
-Remain non-judgmental.
-Sensitize students to problem and create a climate of acceptance so all views will be explored.

ROLE PLAYING

Instructor Follow-up Responsibilities:

-Review the effectiveness of the model, was everyone a part of it? Did everyone benefit? Did students at all sites have the opportunity to participate?
-Encourage students to give suggestions/alternatives to models.
-Increase student awareness of feelings by reflection.
-Allow students to relate real-life experiences to this model.
-It might be better (if student numbers permit), to have all the role players at one site and observers at the other sites. It would allow for a more realistic role playing situation.

SYNECTICS

The synectics model uses analogies to make the unfamiliar familiar. The teacher provides information on a new topic using a direct analogy and then asks the students to describe the analogy. The students are then asked to "become" one of the direct analogies and offer descriptions. At this point, students point out similarities between the new material and the direct analogy as well as discrepancies. Students examine the original topic and provide their own direct analogy, exploring similarities and differences (Joyce, B., Weil, M. & Showers, B., 1992).

Instructor Responsibilities Prior to Lesson:

-Prepare material to present the two strategies used in the synectics model.
-Review the process and become familiar with the principles and steps used in synectics.
-Have material (including media presentation) ready for class.
-Create a work space/environment to provide for creativity needs of small groups.
-Be very familiar with IVN system to use properly with model.
-Initial topics need to be very familiar to the students in order to facilitate the learning of the model.

Instructor Responsibilities During the Lesson:

-Guard against premature closure and analyses.
-Increase students' understanding and internalizing new or difficult material.
-Sequence and guide the use of the operational mechanisms and intellectualize students' mental processes.
-Facilitate the creative process of "opening the students minds and accepting all student responses."
-Divide the large group into smaller groups.
-Reflect on what students say to push students into more creative analogies.
-Facilitate discussion so that the comparisons do not occur too soon.

Instructor Follow-up Responsibilities:

-Encourage greater creativity, empathy, and social relations among students.
-Use reactions or responses the next time this concept is taught.
-Determine if the items or examples used developed creative thinking in the students.

Visual Formats

The visuals you prepare for use on IVN are vital to the overall effectiveness of the intended presentation. A complete graphics presentation software package is most useful in presentation development. It should give you everything you need to produce a professional-looking presentation -- word processing, outlining, drawing, graphics, and presentation management tools. It is suggested that you refer to the Visual Aids for the North Dakota IVN for specific suggestions on format limitations. The following are suggestions as they relate to computer generated presentations on the IVN system.

Graphics:

Make sure they are clean, crisp, and clear prior to usage. Graphics should focus on essential concepts and include minimal detail. The more detailed concept should be developed as a class handout. Use the landscape format for all graphics.

Text & Lines:

Large font sizes, 44 - 48 - 54, work best on the IVN monitors. Keep the font easy to read, Ariel will work very well in most cases. Use upper- and lower-case letters in titles and word graphics. Use the minimal amount of words possible. Keep the slides as simple as possible, major topics only. Fill in the spaces with discussion or other methods. ***Do not*** put everything on the slide. It is suggested to limit each slide to no more than 12 - 20 words. Use key words instead of complete sentences. If needed break down lengthy materials into a series of simple slides.

Color:

Color schemes can add or detract from your presentation in dramatic fashion. A color scheme is a coordinated set of colors chosen to complement each other and work together on-screen, on-slides, and on-IVN. Remember the colors you are choosing are designed for:

Background: the color that appears behind all the other items. Avoid white.
Text and Lines: the color of the body text or lines around.
Title Text: the color of the text for the title slide.

It has been identified by users that a dark blue background with yellow letters works well over the IVN system. Always check to see what the projected materials and colors look like on the system prior to doing your presentation. Computer generated materials may appear in different colors when used on different machines with different settings.

General:

When using IVN graphics and texts remember the ratio of size. Keep your projected materials within a 3 X 4 unit area. Allow for a border area of 10% on all materials. Avoid hand written and type written notes.

Conclusions

The following concepts underlie successful presentations via Interactive Video Networks. In one way or another, they have been articulated in the first portions of this handbook.

Concept 1: Know your format

Most of us spend so much time on reading, research, and writing that we forget to step back and look at the presentation itself in a critical way. If we wish sincerely to communicate our efforts or subject matter to others, we need to think carefully about something besides content. Thus, review the materials, giving it an organization that others can follow easily. Then decide what needs to be displayed, made visible. Then cut it some more.

Concept 2: Know your audience

Tied to the time that we have spent on our materials is the value that we assume that they have. Others do not necessarily share our enthusiasm and faith. We must do more, then, than review our materials quickly and reverently.

Concept 3: Know yourself

Be critical and ask your friends and colleagues to do so, too. Know what not to be and how to look. Ask yourself, "How long does it take me to deliver this material?"

Concept 4: Know your setting

Does your setting or course coordinator have the details taken care of? What details are left to you? Do not be surprised!

Concept 5: Know your limits

None of us can be everything to everyone. None of us can do all that this handbook advises every time. We slip. We are only human. So, keep studying your materials and deliveries. Do not become too satisfied, too sure that there is nothing more to do. There usually is.

Enjoy teaching on IVN!

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ROLE PLAYING

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Notes

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