The Skilful Use of Media in Instruction

Notes
The Skilful Use of Media in Instruction

CLASSROOM PRESENTATION SKILLS

Getting READY

Planning

An effective presentation begins with careful and thorough planning. These guidelines apply to classroom instruction as well as more formal presentations.

1. Analyze your learners. What are their needs, values, backgrounds, knowledge levels, and misconceptions?

2. Specify your objectives. What should students do? How much time do you have to present? Limit your objectives and content to the time available.

3. Specify benefits for the learners. Why is the message important for them? If you cannot answer this question, perhaps you should not give the presentation or lesson.

4. Identify the key points to cover. Brainstorm the main ideas. Put them on note cards or stick-on notes. Most presentations will have from five to nine main points.

5. Identify the sub-points and supporting details. Again use note cards or stick-on notes. Limit yourself to five to nine sub points for each main point.

6. Organize the entire presentation in a logical and sequential order. One organizing strategy is this: Tell them what you are going to tell them. Tell them. Tell them what you told them.

PREVIEW

Rehearsing

1. Use key word notes, not a script. Print key words on an index card. Never read from a script; written language is different from spoken language.

2. Mentally run through the presentation to review each idea in sequence.

3. Do a stand-up rehearsal of your presentation. Try to practice in the room where you will be presenting or teaching or one similar to it.

4. Give a simulated presentation or lesson, idea for idea (not word for word), using all media.

5. Practice answers to questions you anticipate from the learners.
6. Videotape (or audiotape) yourself or have a colleague sit in on your rehearsal and give you feedback.

**Setting Up**

1. Check your equipment in advance of your presentation. Change the arrangements, if necessary, to meet your needs. When the equipment is in place, make sure everything operates properly.

2. For films, slides, and video projection, place the screen front and centre.

3. Place the overhead projector screen or flip chart to a 45 degree angle and near the corner of the room. Place the overhead screen to your right if you are right-handed. Place flip chart to your left if you are right-handed. Each should be reversed if you are left-handed.

4. Position objects being studied in the front and centre. Remove them when they are no longer being studied.

**PRESENTING**

**Anxiety**

1. Nervousness and excitement are normal before and during a presentation. Some anxiety and concern are important for an enthusiastic and dynamic presentation.

2. Proper planning and preparation should reduce your anxiety.

3. Harness your nervous energy and use it positively with body movement, supporting gestures, and voice projection.

4. Breathe slowly and deeply. Your cardiovascular system will slow down and ease the symptoms of anxiety.

**Delivery**

1. Stand up when presenting or teaching. When you stand, you and your message command more attention.

2. Face the learners. Place your feet 25 to 30 centimetres apart and distribute your weight equally on both feet. Your knees should be unlocked, with hands out of your pockets and arms to your side. Facing the learners gives you eye contact with them and allows them to see your facial expressions.
3. When using chalkboards or wall charts, don’t talk with your back to the learners. In this position you lose eye contact and may not be heard as well. Write on the chalkboard, then talk.

4. Stand to one side of the lectern (if you must use one). Stepping to the side or in front of it places you on more personal terms with the audience or learners. It allows you to be seen and to be more natural.

5. Move while you speak. Instructors who stand in one spot and never gesture experience tension. Move and gesture, but don’t overdo it.

**Voice**

1. Use a natural, conversational style. Relate to your audience or learners in a direct and personal manner.

2. Don’t read your presentation or lesson. Don’t read from your overheads or handouts. If part of your presentation or lesson is just information transfer, give the students a copy and give them time to read it.

3. Use vocal variety. A monotone is usually caused by anxiety (rehearsal should help this). Relax with upper and lower body movements.

4. Use a comfortable pace. When you are anxious, your rate of speaking usually increases. Relax and speak in a conversational tone.

5. Speak up so you can be heard in the back of the room. If you speak up, your rate will slow down - solving two problems! Ask people in the back row if your volume is appropriate.

6. A pause (silence) after a key point is an excellent way to emphasize it. The more important the idea, the more important it is for you to pause and let the words sink in before going on to the next idea.

**Eye Contact**

1. Don’t speak until you have established eye contact with your audience. Eye contact will make your presentation similar to a one-on-one conversation.

2. An excellent way to keep your learner’s attention is to look eye-to-eye at each person for at least three seconds. Don’t quickly scorn the learner or look at the screen, or notes for long periods of time.

3. Maintain eye contact with individuals in your audience or with your learners. If you must write something on a flip chart, overhead, or chalkboard, stop talking while you write.
Gestures

1. Use natural gestures. Learn to gesture in front of a class or an audience as you would if you were having an animated conversation with a friend.

2. Don’t put your hands in your pockets too often, and definitely do not leave them there all the time. Don’t clap your hands behind your back. Don’t wring your hands nervously. Don’t play with a pen or other object.

Visuals

Visuals (1)

1. Visuals help to attract and hold learner interest. People like to see key words, diagrams, and drawings.

2. Reinforce and clarify verbal concepts with visuals. A picture might not be worth a thousand words, but it can help replace a lot of talking time.

3. Make key points memorable, and help the listener remember your message. Most people remember visuals longer than they remember words and numbers.

4. Visuals lose their effectiveness if overused. A guideline is to use about one visual per minute.

5. In designing visuals:
   - Use headlines only.
   - Eliminate unnecessary words.
   - Write large so words can be read from the back of the room.
   - Use drawings and diagrams whenever possible.
   - Limit to 36 words per visual (6 lines of 6 words each).

6. After using visuals, redirect learner attention back to you.
   - Shut off the overhead projector when there is a lengthy explanation and there is no need for the audience or class to see the transparency. Don’t turn the machine off and on so frequently that it becomes distracting (thirty seconds is a guideline).
   - Turn a flip-chart page to a blank one when you are finished referring to it. If the flip-chart pages have been prepared in advance, leave blank pages between each prepared sheet so the next prepared page will not show through.
   - Erase any writing on the chalkboard or whiteboard when it is no longer needed.
   - Break up slide presentations by inserting a black or translucent slide at points where an explanation it needed or where questions will be asked or answered.
• Show or demonstrate an object by revealing it when needed, and covering it when it is no longer in use. Otherwise, your audience will look at the object and be distracted from your presentation. Avoid passing an object around the audience. Instead, walk around the audience and show the object to everyone briefly and make it available at the end of the presentation.

VISUALS (2)

Advantages

• Realistic format. Visuals provide a representation of verbal information.
• Readily available. Visuals are readily available in books, magazines, newspapers, catalogues, calendars, and printed off the internet.
• Easy to use. Visuals are easy to use because they do not require any equipment. Relatively inexpensive. Most visuals can be obtained at little or no cost.

Disadvantages

• Size. Some visuals are simply too small to use with a large group, and enlarging can be an expensive process: However, the opaque projector can project an enlarged image before a class.
• Two-dimensional Visuals lack the three-dimensionality of the real object or scene. However, by providing a series of visuals of the same object or scene from several different angles, this limitation can be addressed.
• Lack of motion. Visuals are static and cannot show motion. However, a series of sequential still pictures can suggest motion.

VISUALS (3)

Visuals include photographs, diagrams, posters, charts, and drawings.

• Keep visuals simple (avoid too much realism in visuals).
• Place visuals as near the related text as possible.
• Use larger visuals if more detail is required.

Informational/Instructional Purposes

• Use drawings and diagrams whenever possible to illustrate ideas.
• Use graphs to present data.
• Present a single concept in each visual.
• Break down complex visuals into simpler ones or build them up step by step.
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Graphic Picture Elements

- Use visuals that are neither too abstract nor too realistic.
- Eliminate distracting backgrounds.
- If feeling of depth is important, use another object to create the foreground.

Text/Lettering Elements

- Centre title at top of visual
- Use short, concise, meaningful, descriptive titles that contain key words.
- Eliminate unnecessary words.
- Use italics, boldface, underlining, colour, or a change in lettering style for emphasis.
- Minimize text on each visual; use a maximum of six words per line and six lines per visual.
- Spacing between lines should be 1/2 times word height.

Colour

- Use brightest and lightest colour to focus attention on important elements.
- Use lettering and visuals that contrast with background colour.
- Select colours that are harmonious.
- Use consistent background colours in a series of visuals.
- Limit the number of colours in a visual to five.

Layout

- Make visuals as simple as possible; avoid excessive detail.
- Use size, relationships, perspective, and such visual tools as colour and space to emphasize important elements.
- Use a horizontal format for overhead transparencies and slides.
- Use a pleasing layout that appears balanced and orderly.

NONPROJECTED VISUALS SKILLS

- Use large visuals that everyone can see simultaneously. (If visuals are not large enough for all to see, use one of the projection techniques).
- Use visuals that are not cluttered with illegible details.
- Cover irrelevant material with plain paper.
- Hold visuals steady when showing them to a group by resting them against a desk or table or putting them on an easel.
- Limit the number of pictures used in a given period of time. It is better to use a few visuals well than to overwhelm your audience with an abundance of underexplained visuals.
- Keep your audience’s attention and help them learn from a visual by asking direct questions about it.
• Teach your audience to interpret visuals.
• Display pertinent questions alongside each visual. Cover the answers with flaps of paper. Have each student immediately check his or her own response for accuracy.
• Provide written or verbal cues to highlight important information contained in the visuals.

REAL OBJECTS AND MODELS

Real objects do not lend themselves to design by teachers. However, there are some models available for purchase that can be assembled by teachers. There are plastic model kits of various animals, including dinosaurs, and of parts of the human body, such as the eye, ear, nose, and skull. These models can be modified and coloured with paint to meet your needs. Models can also be built from readily available materials, for example, in creating small buildings using matchboxes or other readily available packaging material. Teachers can also make models for instruction (for example, athletic balls, can be used to model the solar system, etc.).

Advantages

• Less abstract and more concrete. Real objects and models provide hands-on learning experiences and emphasize real-world applications.
• Readily available. These materials are readily available in the environment, around school, and in the home.
• Attract students’ attention. Students respond very positively to both real objects and their models.

Disadvantages

• Storage. Large objects can pose special problems. Caring for living materials such as plants and animals can take a lot of time.
• Possible damage. Materials are often complex and fragile. Parts may be lost or broken.

TEXT

Advantages

• Readily available. Printed materials are readily available in a wide range of topics and formats.
• Very flexible. Printed materials may be used in any lighted environment. They are very portable. Properly designed text is very user-friendly and easy to use. It provides organization of the content.
• *Economical.* Text can be used again and again by many students.

**Disadvantages**

• *Reading level of learners.* Many students are non-readers or poor readers. Some critics say textbooks promote memorization rather than higher-level thinking skills.

• *Passive.* Others contend that text promotes solitary learning rather than cooperative group processes. Textbooks may be used to dictate the curriculum rather than to support the Curriculum.

**DISPLAY BOARDS**

**Advantages**

• *Readily available in classrooms.* Display boards do not usually have to be scheduled.

• *Versatile.* Display boards can be used for a wide variety of purposes by both students and teachers.

• *Colourful.* Display boards provide colour and add interest to the classroom or hallway.

• *Involvement.* Students can benefit from designing and using display boards.

**Disadvantages**

• *Commonplace.* Instructors often neglect to give display boards the attention and respect they deserve as instructional devices. Displays can quickly lose their effectiveness if left in place too long.

• *Not portable.* Most display boards are not movable and must be used where they are.

**General**

Displays may be created by students or the teacher. The following guidelines apply to chalkboards and especially bulletin board displays since they are prepared in advance and kept in place for days or weeks. Do not leave these displays in place too long, or they will lose their effectiveness.

• Limit the display to one topic.

• Generate a theme and incorporate it into a headline. It is a challenge to work out a catchy theme that will entice the viewer into further examination of the display. Wording should be simple, couched in the students’ language, and visually integrated into the arrangement of the display.

• Work out a rough layout. The blueprint you develop should reflect these guidelines:
  • Emphatic - conveys message quickly and clearly;
  • Attractive - colour and arrangement catch and hold interest;
  • Balanced - objects arranged so stability is perceived;
• Unified - repeated shapes or colours or use of borders holds display together visually;
• Interactive - involves the student;
• Legible - lettering and visuals can be read from across the room;
• Lettered properly - spelled correctly, plain typeface, use of lowercase except where capitals are required;
• Durable - well-constructed physically, items securely attached.

**CHALKBOARD AND MULTIPURPOSE BOARD SKILLS**

• Put extensive drawing or writing on the board before class. Taking too much time to write or draw creates restlessness and may lead to discipline problems.
• Organize in advance what you plan and where you plan to write it.
• Cover material such as a test or extensive lesson materials with wrapping paper, newspaper, or a pull-down map until you are ready to use it.
• Eye contact with students is important! Face the class when you are talking. Do not talk to the board. Do not turn your back to the class unless it is absolutely necessary.
• Vary your presentation techniques. Do not overuse or rely entirely on the board. Use handouts, the overhead projector, flip charts, and other media during instruction when appropriate.
• Print neatly rather than using script. For a 10-metre-long classroom, the letters should be 5-6 cms high and the line forming the letters should be 1 cm thick.
• Check the visibility of the board from several positions around the room to be sure there is no glare on the surface. In case of glare, move the board (if portable) or pull down the window shades.

**Writing on the board:**

• If your printing normally runs “uphill” or downhill,’ use water-soluble felt-tip pen markers as temporary guidelines for straighter printing. The guidelines will not be wiped off by a chalk eraser but may be washed off when no longer needed.
• Hold the chalk or marker at an angle so that it does not make scratching or squeaking noises.
• Use colour for emphasis, but don’t overuse it. Two or three different colours work best.
• Move around so you do not block what you have written on the board. Do not stand in front of what you have written.
• Use drawing aids such as rulers, stencils, and templates to save time and improve the quality of your drawings.
• For frequently drawn shapes, use a template cut from wood or heavy cardboard. A dresser drawer knob or empty thread spool mounted on the template makes it easier to hold in position while tracing around it.
• Outline your drawings with barely visible lines beforehand, and then fill them in with bold lines in front of the class. Your audience will think you are an artist!
FLIP CHART SKILLS

- Keep the flip chart at an angle so everyone can see in the left front corner as you face the audience, and in the right front corner if your audience is left handed.
- Check that the easel is properly assembled and the pages are fastened so the flip chart will not fall apart during use.
- Lettering and visuals should be done in advance or outline using a light-blue pencil; then trace them during group-generated responses, draw lettering guideline with a blue pencil.
- Lettering and visuals should be simple but large enough to see.
- You can use more than one colour, but not more than four.
- Use broad-tip marking pens that provide contrast, but will not bleed through to the next sheet.
- Print rather than use cursive writing.
- Keep words short or use well-understood abbreviations.
- Include simple drawings, symbols, and charts.
- Talk to the audience, not to the flip chart.
- Avoid blocking the audience’s view of the flip chart.
- Be sure your materials are in proper sequence.
- Have a blank sheet exposed when not referring to the full choice.
- Reveal pages only when you are ready to discuss them and not before.
- Put summary points on the last sheet rather than paging back as you make your summary.

WORKING WITH TEXT (handouts, etc.)

The word processor (for example, Microsoft Word) is one of the most valuable tools a teacher can have. Word processors make it easy to produce printed materials and to revise them to meet the changing needs of your students.

Headings

- Headings and subheadings should be used to separate and identify sections and to show the organization or the content. Introductions may have to be written in order to relate a series of key ideas so there is a smooth transition from one section to the next one.
- Headings should be briefly worded and explicit so they communicate quickly and effectively. By glancing at a set of sequential headings, the student should gain a clear overview of the topic.
- Use side heads (e.g., words in left margin) to call attention to important concepts.

Style

- State the main ideas or theme at the beginning of the text.
- Put topic sentences at the beginning of each paragraph.
- Use simple sentences and a clear writing style.
• Use active voice where possible.
• Include definitions with technical terms so they won’t be misconstrued.

Page Layout

• Be clear and consistent in page layout (use the same type of text in the same typeface, size, and layout from page to page) to facilitate reading, note-taking, and
• Provide ample white space (use wide margins and uncluttered format) location of information for review. White space can separate elements and create a feeling of openness.
• Increase the space between lines in note-taking handouts to allow room for student notes.
• Use unjustified or ragged right margins. By justifying both margins, extra space is created between words, which makes text more difficult to read. However, one may consider justification if cleanliness of appearance is a priority.

Type Style Mechanics

• Choose typeface styles with simple designs.
• Use upper and lowercase letters for ease and speed in reading. Use uppercase words only for emphasis and to attract attention.
• Use 9 to 12 point type for most text.
• If the material is typed, use a space and a half between lines for ease of reading
• Avoid breaking words (hyphenating) at the end of lines.

Highlighting

• Highlighting techniques for printed materials include colour, size of type, italics, and boldfacing. Do not use capitals, because they are difficult to read within text. Capitals are OK for short headings
• Highlight important ideas to help students locate key points.
• Use bullets (●) to present ideas in a list (as used in this section).
• Avoid underlining except to point out negatives (e.g. not), as it has little or no effect on retention of content.

OVERHEAD TRANSPARENCIES

Advantages

• Versatility. The overhead can be used in normal room lighting. The projector is operated from the front of the room, with the presenter facing the audience and maintaining eye contact. All projectors are simple to operate.
• Instructor control. Projected materials can be manipulated by the presenter or teacher, who can point to important items, highlight them with coloured pens, add details by marking on the transparency with a pen, or cover part of the message and progressively reveal information in a step-by-step procedure.
Disadvantages

- **Instructor dependent.** The effectiveness of overhead projection presentations is heavily dependent on the teacher. The overhead projector cannot be programmed to display information by itself. The overhead system does not lend itself to independent study. The projection system is designed for large-group presentation.
- **Preparation required.** Printed materials and other non-transparent items, such as magazine illustrations, cannot be projected immediately but must be made into transparencies by means of some production process.

**OHP Skills**

In addition to the general utilization practices, here are some hints for making the greatest impact with your overhead presentation:

- **Get attention.** Shift viewers’ attention to the screen by turning on the projector; direct it back to yourself by turning it off. Don’t turn on the projector again until you are ready for viewers to look at the screen.
- **Reveal sections.** For a complex visual or wordy illustration, cover the transparency with a sheet of paper and reveal one portion at a time as you talk about that portion.
- **Build ideas.** Use overlays to add sequential information. Build up a complex idea by superimposing transparencies one on top of another; up to four overlays can be used.
- **Make transitions.** Avoid jarring viewers with a glaring white screen between transparencies. Instead, simply place the new one on top of the old one, then slide the lower one out. If both hands are free, you can obtain a “dissolve” effect by sliding the existing transparency off the stage while you lower the new one into place.
- **Point to images.** You can use a pen or pencil as a pointer. Lay the pen directly on the transparency (any elevation would put the pointer out of focus, and any slight hand movement would be greatly exaggerated on the screen).
- **Be spontaneous.** Plan ways to add meaningful details to the image during projection; this infuses an element of spontaneity and helps maintain viewer interest and active participation. If the transparency is a valuable one, cover it with a blank acetate sheet before writing on it.
- **Use notes.** Write your presenter’s notes (key words) on the frame of the transparency. This will allow you to speak naturally instead of reading from a script.
- **Create uniformity.** You will make the most professional impression if your transparencies are consistent in size and style. If all of them are framed, you can tape a guide onto the projector stage to keep the images uniformly aligned.
- **Avoid doodling.** For random notes, use the chalkboard. Don’t diminish the dramatic impact of your presentation by using the overhead as a doodle pad.

**Overhead Transparencies**

When preparing your transparencies, keep in mind these guide-lines based on research and practical experience.
General

- Present a single concept on each transparency. A complex transparency may be confusing and unreadable for the viewer.
- Design a series of transparencies rather than a crowded single transparency.
- Use transparencies to present visual ideas through the use of diagrams, graphs, and charts.
- Include minimum verbiage, with no more than six words per line and six or fewer lines per transparency.
- Avoid preparing a transparency directly from a paragraph of printed material. Select key points or concepts to summarize the information, and then elaborate on them verbally.
- Use key words to help the audience remember each point.
- Use letters at least 4 cms high to ensure legibility. One quick way to check it is to lay the transparency on the floor over a piece of white paper. If you can read it from a standing position, your students should be able to read it when projected.
- Use a horizontal format to better fit the rectangular screen. Avoid mixing horizontal and vertical transparencies in a presentation, as this can be annoying to the students and bothersome to you.
- Simplify a complex diagram by dividing it into segments for separate transparencies or by using masking or overlay techniques. Overlays can explain complex ideas by adding information sequentially to the base transparency.

SLIDES

Advantages

- Instructor preparation. Teachers can easily prepare their own transparencies. Information that might otherwise have to be placed on a chalkboard during a class session may be prepared in advance for presentation at the proper time.
- Flexibility. Because slides can be arranged and rearranged into many different sequences, they are more flexible than film-strips, videos, or other fixed sequence materials.
- Easy to produce. Cameras with automatic exposure controls, easy focusing, and high-speed colour films allow teachers and students to easily produce their own high-quality slides.
- Ease of use. Some projectors offer the convenience of remote control, allowing the presenter to remain at the front of the room while advancing the slides via a push-button unit.
- Availability. The general availability and ease of producing slides allows one to build up permanent collections for instructional purposes easily.
Disadvantages

- **Lack of sequence.** Because slides come as individual units, they can easily become disorganized. Even when stored in trays, the slides can be spilled if the locking ring is loosened.

- **Jamming.** Slides can be mounted in cardboard, plastic, or glass of varying thicknesses. This lack of standardization can lead to jamming in the slide changing mechanism. Cardboard mounts become dog-eared; plastic mounts swell or warp in the heat of the lamps; thick glass mounts fail to drop into showing position.

- **Damage.** Slides that are not enclosed in glass covers are susceptible to accumulation of dust and fingerprints.

- Careless storage or handling can easily lead to permanent damage.

- The proliferation of digital cameras has made finding and developing slide film a difficult process, as not all photography outlets carry slide film.

**SLIDES SKILLS**

In addition to the general guidelines for utilization here are several specific practices that can add professionalism to your slide presentations

- **Use remote control.** Use a remote control device; this will allow you to stand at the side of the room. From this position you can keep an eye on the slides while maintaining some eye contact with the audience.

- **Double check slides.** Make certain your slides are in sequential order and right-side up. Disarrangement can be on embarrassment to you and an annoyance to your audience. Thumb Spot slides for a foolproof method of marking slides.

- **Use visual variety.** Mix the types of slides, using verbal title slides to help break the presentation into segments.

- **Maintain reading light.** Prepare a way to light up your script after the room lights are dimmed; a penlight or flashlight will serve this purpose.

- **Keep it moving.** Limit your discussion of each slide. Even a minute of narration can seem long to your audience unless there is a complex visual to be examined at the same time.

**SLIDES AND FILMSTRIPS**

You can produce your own slides, but producing your own film-strips is impractical and unnecessary. Although principles of photography are beyond the scope of this book, we will describe some general guidelines for designing slides.
General

- Determine the topic for your slides.
- Prepare a list of the slides you need.
- Take several shots of the same scene at different angles and distances. It is cheaper to take several shots originally than to return to the location if none of the original slides meets your needs. If it is a special event that occurs only once, take extra shots in order to have enough slides for your instructional program.
- When your slides are returned, compare the multiple shots by projecting them or by viewing them with a light box.
- Select the specific slides you want to use, and put them in sequence.
- Prepare your narration on note cards (one card for each slide).
- Deliver the narration live by talking through the slides with your note cards. Don’t read directly from the cards; make it conversational.
- As an alternative, record your narration on audiotape as described in the next section. Slide-and-audiotape combinations are great for self-instruction.

FILMSTRIPS

Advantages

- **Cost.** Filmstrips are relatively low cost. A commercially distributed filmstrip costs substantially less per frame than a set of comparable slides or overhead transparencies.
- **Sequential.** The sequential order of frames in a filmstrip can be an advantage. A chronological or step-by-step process can be presented in order without fear of having any of the pictures out of sequence or upside down, as can sometimes happen with slides.
- **Control.** The pace of viewing filmstrips can be controlled by the teacher or student. This capability is especially relevant for independent study, but is also important for teacher-controlled group showings.
- **Independent study.** Many types of tabletop viewers are made especially for individual or small-group use.
- Young children have no difficulty loading filmstrips into these viewers.

Disadvantages

- **Fixed sequence.** The main drawback is that it is not possible to alter the sequence of pictures without destroying the filmstrip. Backtracking to an earlier picture or skipping over frames is cumbersome.
- **Damage.** Because the filmstrip is pulled through the projector by means of toothed sprocket wheels, there is the constant possibility of tearing the sprocket holes and damaging the filmstrip. Improper threading or rough use can cause tears, which are very difficult to repair.
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• **Old technology.** The use of film projectors is limited because the video and DVD players have replaced the projector in all but the rarest of cases. However, for the projection of really clear images (for example related to art), filmstrips remain superior to other technologies.

**FILMSTRIP SKILLS**

The general media utilization guidelines apply fully to filmstrips. There are several additional tips, though, that pertain especially to filmstrips

• **Pause for discussion.** Get students actively involved by asking relevant questions during the presentation. You may want to ask students to take turns reading the captions (if there are any) aloud; this is a useful reading activity for early elementary students.

• **Test visually.** Since the filmstrip presumably has visual information, consider using the filmstrip test the mastery of visual concepts. You can, for project individual frames without the caption or track and ask individual students to make on or discrimination.

**OPAQUE PROJECTION SKILLS**

The general media utilization guidelines apply fully to opaque projection. There are several additional tips, though, that pertain especially to filmstrips

• **Use complete darkness.** Because opaque projectors require near-total room darkening, be prepared to operate in the dark. A student should be stationed at the light switch to help you avoid tripping over people’s feet, power cords, or other obstacles in getting to and from the projector in the dark. Although the projector does spill quite a bit of light around its sides, you may need a flashlight to follow any prepared notes.

• **Use the optical pointer.** Most opaque projectors are equipped with a built-in optical pointer - an arrow that can be aimed at any point on the screen. Experiment ahead of time so that you will be able to aim the pointer effectively during the presentation.

• **Arrange pictures in sequence.** For some purposes, especially to show a series of pictures in sequence - such as illustrations accompanying a storybook - it is handy to arrange the pictures on a long strip or roll of paper. This keeps the illustrations in sequence, simulating the flow of a filmstrip.

• **Size images on screen.** The opaque projector will accept a wide range of image sizes. When you are setting up the projector, be sure to use the largest of your pictures to fill the screen. If you use a smaller picture, the bigger one will extend beyond the edges of the screen when you show it, thus distracting your students as you attempt to adjust the projector.
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AUDIO TAPES

Advantages

- **Student and teacher preparation.** Students and teachers can record their own tapes easily and when the material becomes outdated, the tape can be erased and reused.
- **Familiarity.** Most students and teachers have been using audiocassette recorders since they were very young.
- **Verbal message.** Students who cannot read can learn from audio media. For nonreading students, audio can provide basic language experiences.
- **Stimulating.** Audio media can provide a stimulating alternative to reading and listening to the teacher. Audio can present verbal messages more dramatically than text can.
- **Portable.** Audiocassette recorders are very portable and can even be used “in the field” with battery power. Cassette recordings are ideal for home study since many students already have their own cassette players.

Disadvantages

- **Fixed sequence.** Audiotapes fix the sequence of a presentation, even though it is possible to rewind or advance the tape to a desired portion.
- It is difficult to scan audio materials as you would printed text materials.
- **Lack of attention.** Students’ attention may wander while they are listening to audiotapes. They may hear the message but not listen to or comprehend it.
- **Pacing.** Presenting information at the appropriate pace can be difficult if your students have a wide range of skills and background experiences.
- **Accidental erasure.** Just as audiotapes can be quickly and easily erased when no longer needed, they can be accidentally erased when they should be saved.

AUDIO

A major advantage of audiotapes is the ease with which they can be easily prepared by teachers and students. All that is needed is a blank audiotape, a tape recorder, and a bit of know-how.

Physical Environment

- Record in an area that is as free as possible from noise and sound reverberations, A small room such as an office is preferable to a normal-size classroom.
- Place the recording setup at least six feet from the chalkboard, windows, or hard walls
- Have a glass of water nearby to ‘lubricate’ your throat if necessary.
Tape Recorder

- Familiarize yourself with the operation of the tape recorder you intend to use.
- Advance the tape beyond the leader before recording (about ten seconds). You cannot record on the clear plastic, nonmagnetic leader of the tape.
- Record an excerpt of about a minute and play it back to make sure the recorder and microphone are operating properly.
- If an error is made while recording, stop the tape recorder, rewind to a segment of tape containing a natural pause, engage the record mode, and continue recording. It is unusual to make an entire tape without making mistakes or mispronunciations.
- Once the recording has been completed, play back the entire recording. Listen carefully for any errors. It is better to catch imperfections and correct them immediately than to read the tape later.

Audio recording Microphone

- Place the microphone on a desk or table with a sound-absorbing towel or other soft cloth under the microphone.
- Turn off fans and other sources of noise that may be picked up by the microphone.
- Handle note cards and pages quietly to avoid possible paper rustle.
- Maintain a constant distance from the microphone. As a rule of thumb, your mouth should be about a foot from the microphone.
- Speak over the top of the microphone, not directly into it.

CDs

Advantages

- Locating selections. Students and teachers can quickly locate selections on CDs and even program the machine to play in any desired sequence. Information can be selectively retrieved by students or programmed by the teacher.
- Resistance to damage. There are no grooves to scratch or tape to tangle and break. Stains can be washed off and ordinary scratches do not affect playback of the recording.
- Easily recordable. With cd recorders becoming a normal part of pc hardware, it is quite easy to record a cd to be used in a lesson. A knowledge of the different file formats and compressions for audio is useful, as is the ability to use a microphone on a pc.

Disadvantages

- The Nature of the media. Unless cared for, cd’s can be easily scratched with the resultant loss of audio on them.
VIDEO AND FILM

Advantages

- **Motion.** Moving images can effectively portray procedures (such as tying knots or operating a potter’s wheel) in which motion is essential. Operations, such as science experiments, in which sequential movement is critical, can be shown more effectively by means of motion media.
- **Real-life experiences.** Video and film allow learners to observe phenomena that might be dangerous to view directly—such as an eclipse of the sun, a volcanic eruption, or warfare.
- **Repetition.** Research indicates that mastery of physical skills requires repeated observation and practice; through the recorded media a performance can be viewed over and over again for emulation.

Disadvantages

- **Fixed pace.** Film and video programs tend to run at a fixed pace; some viewers are likely to fall behind, while others are waiting impatiently for the next point.
- **Expense.** The video or dvd version of a program is generally cheaper than the film version, and the combination of a video or dvd player and video monitor costs less than a film projector and screen.
- **Scheduling.** Videos and films have to be ordered well in advance of their intended use. Arrangements also have to be made for the proper equipment to be available. The complexity of the logistics discourages some teachers in schools where equipment is not easy to come by.

Video and film skills

Just as it is impractical to make your own filmstrips, it is quite practical to make your own educational video films. Both students and teachers can produce effective videotapes for instructional purposes. All that is required is a camera, a microphone (often built into the camera), and a videotape.

- Use a zoom lens rather than a fixed-focal-length lens to allow flexibility in selecting a view from a range of magnifications without having to move the camera closer to or farther from the subject.
- Do not aim the camera at the sun or other bright light, since that can damage the videotube.
- Turn the camera off when it will not be used for a period of time.
- Cap the lens when the camera is not in use.
- Keep the lens clean by dusting with a soft camel-hair brush.
The Skilful use of Media in Instruction

Video Microphone

Handheld cameras usually come with a microphone built into the front of the camera. This microphone has automatic level control, which automatically adjusts the recording volume to keep the sound at an audible level. At times this may cause problems.

Videotape

- Use high-quality, brand-name videotape. Other tapes may be manufacturer’s seconds or tapes that were improperly stored. Logically, this does not apply in the case of digital video recorders.
- Your video production may be pre-planned or live action.
- If you are recording local landmarks for presentation in your classroom, determine what shots you will take before you go. If you are recording an event, simply videotape it as it happens.
- Planning a videotape recording is similar to planning other instructional materials. Organize the content and plan the method of visualizing the subject to be videotaped. Pay special attention to the motion involved.
- Movement is basic to successful videotape recordings - otherwise, use slides or overhead transparencies.
- When taping people, use a full-body shot for motion (e.g., athletics, dancing, etc.) and a head-and-shoulder shot for speaking.

The following are some generic tips that apply equally to the enhancement of video or film presentations:

- **Sight lines.** Check lighting, seating, and volume control to be sure that everyone can see and hear the presentation.
- **Mental set.** Get students mentally prepared by briefly reviewing previous related study and evoking questions about the current topic.
- **Advance organizer.** List on the chalkboard the main points to be covered in the presentation.
- **Vocabulary.** Preview any new vocabulary.
- **Role model.** Most important, get involved in the program yourself. Watch attentively and respond when the presenter asks for a response. Highlight major points by adding them to the chalkboard during the lesson.
- **Follow up.** Reinforce the presentation with meaningful follow-up activities.
- **Light control.** When using video projection with videotape or dvd, dim the light. Turn lights off if dimming is not available. The same light setting should be used for showing films. If you are using a video monitor you can use normal room lighting. It is recommended you dim the lights above and behind the monitor if possible.

Although no longer so common, here are some tips that apply specifically to film showings:

Light control Many classrooms have a wall-mounted screen at the front of the room. In some
classrooms a door with a window in it is near the front of the room. The window allows light from the hallway to fall on the screen, dimming the projected image. Remedy this by covering the window or moving the projector closer to the screen.

Remember, a smaller, brighter image is better than a larger, dimmer one.

- **Preset focus and volume.** Always set the focus and the sound level before the class assembles and note the correct volume setting. Then turn the volume control back down to zero and run the film back to the beginning. The film will then start in focus, and you can smoothly turn the volume up to a comfortable level.
- **Avoid showing leader:** It is poor showmanship to project the film leader (the strip of film with the number countdown on it). The first image the audience should see is the title or opening scene.
- **Smooth startup.** (1) Start the projector, (2) turn on the lamp, (3) turn the volume up to the preset level, and (4) adjust the focus and volume.
- **Restarting.** If you stop the film and then restart it, the viewer may miss a few seconds of dialogue because it takes this long for the sound to stabilize when restarting. Remedy this by (1) reducing the volume, (2) advancing the film a few feet, and (3) going through the startup procedure just mentioned.
- **Smooth ending.** When the film is over, (1) turn the lamp off, (2) reduce the volume, and (3) stop the film. This will give a smooth ending rather than a jarring stop. Run any remaining film through after class.
- **Rewind.** Rewind the film if you are going to show it again or if it belongs to you. If it is borrowed from a rental agency, the agency will probably want to rewind it as part of the film inspection process. So if you used the same size take-up reel that the film came on, you can just put it back in the container. Secure the end of the film with a piece of tape.

**TELEVISION**

**Advantages**

- **Instantaneous.** Television has the advantage of bringing actual world events into the classroom as they happen. Viewers across large geographic areas can experience a live event simultaneously.
- **Cost.** By means of broadcasting, satellites, and cable, large audiences can be reached at a very low cost per student influence. Television has the ability to affect the attitudes of students. The reality of current events and broadcast programs provides a basis for follow-up discussions.

**Disadvantages**

- **Technical problems.** Television requires a production crew to match the quality of commercial networks and the expectations of students. Technical problems can be very frustrating and interrupt the learning process. There may be interruptions in the transmission of the television signal. In addition, classroom television receivers may malfunction.
• **Cost.** Basic television equipment (cameras and receivers) is expensive. Sophisticated equipment (satellite dishes and cable or digital distribution systems) also costs quite a great deal of money.

Teachers tend not to produce live television, so we will not discuss studio television production techniques here.

If you ever produce live television, refer to a book on the subject

**DVD**

**Advantages**

- **Storage capacity.** DVDs can normally store over 8 gigabytes of data, showing well over three hours of video and thousands of still images.
- **Rapid access.** DVD players can rapidly access any still image or video sequence on a DVD usually in no more than a few seconds. Teachers or students can access the images using a remote control, or via computer connection.
- **Extra material.** Most commercially produced DVDs will contain extra material (often interactive) in addition to the main feature being presented on it. These can be extremely useful in the language classroom, as the features often demand understanding as a pre-requisite to interactivity.
- **Multi-language.** Many manufacturers include multiple language audio tracks to make the DVDs accessible to different audiences.
- **Durability.** DVDs are exceedingly durable. Unlike videotape, DVDs do not lose quality after repeated playing. There is no physical wear when the DVD is played.
- **Image quality and cost.** DVDs have high image quality, superior to that of most VCRs. In addition, because the cost of replicating DVDs is relatively low, the cost per image can be very low compared to other media such as slides.

**Disadvantages**

- **Expense.** DVDs players are slightly more expensive in the main than VCRs and slide projectors. In addition, while the cost per image can be low, commercially recorded DVDs can be expensive. Many of better training DVDs cost an excessive amount of money.

**COMPUTER SOFTWARE**

**Advantages**

- **Interactivity.** The key element of computers is interaction with the user. The computer can present information, elicit the learner's response, and evaluate the response.
Individualization. The computer’s branching capabilities allow instruction to be tailored to the individual. The computer can provide immediate feedback and monitor the learner’s performance.

Consistency. Individualization results in different instructional paths for different learners. But it can be equally important to ensure that specific topics are dealt with in the same way for all learners.

Motivation. Many learners find computers to be motivating. Computers can provide variety through the use of varied feedback, different approaches to content, and, of course, multiple media.

Learner control. Computers can give the user control of both the pace and the sequencing of the instruction. Fast learners can speed through the program, while slower learners can take as much time as needed.

Disadvantages

Equipment requirements. Although computers have become less expensive and more widely available in recent years, cost and access can still be barriers, especially with the limited budgets of many schools.

Compatibility. The lack of compatibility among the various brands of personal computers limits the transportability of CAL. Developers cannot create a single CAL package that will work across all types of computers.

Start-up costs. The cost of the computer itself and the necessary software may be limiting. Although delivery costs often are low, start-up and development costs for CAL tend to be high.

Limited modalities. Most CAL relies on text and graphics (along with more recent use of animation). A heavy demand is placed on the learner’s reading and visual skills. The visual and auditory cues that are common to live instruction tend to be absent from CAL.

Limited intelligence. Most computer software is limited in its capacity for genuine interaction with the learner. Much of the more common CAL relies on simple multiple choice or true-false questions for assessing the learner’s progress. Logically, with the development of faster processors, and the possibility afforded by broadband internet, diversification of response methodology is a given.

The development of computer software may be too time consuming for most teachers. However, the most recent authoring systems make it possible for teachers to develop their own computer software without knowledge of computer programming.

General

• Make good use of the computer’s capabilities and employ a high level of interactivity.
• Allow for individualization through learner control, branching, and other appropriate techniques
• Provide informative feedback to the learner. Tell the learner why particular responses are correct or incorrect.
• Keep screen displays simple. Usually, present only one major concept per screen.
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- Follow the guidelines for textual material when presenting text via the computer.
- Use graphics where visual presentation is appropriate.
- Keep the learners informed of their progress and performance.

MULTIMEDIA

Advantages

- Better learning and retention. Interactive multimedia produces multiple learning modalities and actively involves the learner
- Addresses different learning styles and preferences. The incorporation of multiple modalities provides opportunities for teaching individual learners. For example, those with weak reading skills can use aural and visual skills to process verbal information.
- Effectiveness across learning domains. Interactive multimedia instruction has been shown to be effective in all learning domains. It can be used for psychomotor training such as learning CPR techniques; to present simulations that provide opportunities for problem-solving and higher-order thinking skills; and even to address affective components of learning.
- Realism. Interactive multimedia provides a high degree of realism. Instead of merely reading about a speech by Dr. Martin Luther King, students can actually see and hear the speech as originally presented.
- Motivation. Learners show consistently positive attitudes toward interactive multimedia. For today’s MTV conscious youth, multimedia instruction represents a natural avenue for exploring the information revolution.

Disadvantages

- Equipment requirements. The equipment requirements for multimedia can be an impediment. While basic systems may involve only the computer and its built-in components, more complex systems may involve data projectors, CD-ROM and DVD players, audio playback speakers, and so on. These can, at times (if separate from the computer hardware), be difficult to hook up and maintain.
- Start-up costs. Start-up costs can be high. The computer itself can be expensive. When additional components are added, additional costs can be incurred.
- Complexity and lack of standardization. Interactive multimedia systems can be quite complex. Sometimes it is a challenge just to get the individual components to work together. The novice may become hopelessly lost. This is complicated by the fact that there is a lack of standardization today in many facets of multimedia. However, modern technology has improved user-friendliness massively.

Even more complex and time consuming is the development of computer-based multimedia materials. The specifics of this process are beyond the scope of these notes, but here are some guidelines to assist you if you decide to try your hand at the process.
General

- Follow the guidelines given above for computer software.
- Select the best media for addressing particular learning objectives. Whenever possible, provide for different learning preferences; that is, provide the same content via text, audio, and visual modalities.
- Ensure that different media are properly synchronized with one another.
- Keep navigation as simple and transparent as possible. Learners can become lost and confused in complex multimedia environments. Provide navigational aids such as maps and position markers.
- Use embedded cues to assist learners in locating and using information.

THE INTERNET

Advantages

- **Variety of media.** The Internet is a versatile means of delivering information to learners around the world. Internet sites may contain a variety of media, including text, audio, graphics, animation, video, and downloadable software.
- **Up-to-date information access.** Until recently, educators were limited to the resources in their classrooms or school buildings. Now, with the ability to connect to resources in the community and throughout the world, new vistas on teaching and learning have opened up. Students can access libraries and databases well beyond the limits of their own community; this expands the horizons for smaller and rural schools as well as for individuals participating in home schooling.
- **Navigation.** A primary advantage of the Internet is the ability to move easily within and among documents. With the push of a button or the click of a mouse, users can search a variety of documents in multiple locations without moving from their computers.
- **Idea exchange.** Students can engage in "conversation" with experts in specific fields of study. Further, they can participate in activities that allow them to exchange ideas with other students, even those living in other countries.
- **Convenient communication.** The Internet allows people in various locations to share ideas, just as they do now on the telephone, but without playing "telephone tag" so common among busy people. Users can "speak" to each other at different times and respond at their own convenience. Records are kept of their exchanges. Voice exchanges over VOIP are also very common.
- **Low cost.** The costs of hardware, software, telephone time, broadband, and telecommunication services are nominal and are decreasing limitations

Disadvantages

- **Age-inappropriate material.** One concern is that some of the topics discussed on computer networks, especially on the Internet, are not appropriate for younger students. Pornography, as well as tobacco and alcohol ads are on the Internet along with games and music kids enjoy. Students can find their way, innocently enough, into
topics that might be too advanced for their understanding or too adult for their viewing. Close supervision is essential. There is no organization or agency controlling activity on some computer networks. Control is in the hands of individuals; consequently, students may access questionable materials. Software is available to prohibit access to topics specified by the teacher or parent.

- **Copyright.** Because information is so easily accessible, it is also very simple for an individual to quickly download a file and, with a few changes, illegally appropriate it. Thus, students may turn in a paper or project that is not their own work.

- **Unprecedented growth.** It is estimated that several thousand new Websites, blogs, wikis and other pages are added to the Internet every day. This growth makes finding information extremely difficult. To assist in information retrieval, several commercial companies and universities provide search engines that follow Web links and return results matching your query.

- **Support.** Good technical support needs to be readily available. Without such support and thoughtful management, a computer network may die quickly. Problems on a network can disable a lab or even shut down an entire school or corporation. Technical supervisors are needed to set up and maintain networks.

- **Access.** Whether by means of a hardwired system, a modem, cable or dsl, all users must have a way of connecting to the network.

- **Access speed.** Another limitation is the speed at which some users can access information. Lengthy wait times can be prevented through prudent Web page design. Web pages designed for modem users should contain text and no individual graphic larger than 50K. Another way to reduce wait time is to install Integrated Services Digital Network (ISDN) digital communication lines capable of transmitting information at speeds of 128 kilobytes per second (kbps). More modern use of broadband and cable connections is making access faster and faster, and the ability to download streaming video and audio strengthening the possibility of the use of the net for instructional purposes.

- **Lack of quality control.** Users need to be critical thinkers and readers who know how to evaluate information. Everything posted on the Internet is not "gospel." Anybody can post anything on the Web, including unsubstantiated, erroneous, or untruthful information.

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**FURTHER READING:**


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Ċorġ Mallia (2007)