




## Media Selection

### Overview

There are a wide variety of items to consider before you decide which media to use in your teaching. Considering these items in your lesson-planning stage will insure that your choice of media enriches the learning experiences of your students and that your teaching will elicit the intended learning outcomes.




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## Objectives

- When selecting media for teaching and learning, the learner will be able to select media based on situational criteria (i.e., grade levels, subject, etc.) and media characteristics.
- Given a set of technology integration experiences (which are to be retrieved from the KITE case library), the learner will be able to compare and contrast the experiences in terms of media appropriateness to situational criteria and media characteristics.
- Given a scenario for selecting media (or technology), the learner will be able to adapt the information from the scenario and past technology integration experiences (which are to be retrieved from the KITE case library) in selecting media for intended learning outcomes.

## Activity 1: Considerations for Media Selection

Read the following resources related to media selection. Then, contribute to the discussions about this topic.

### Resources related to media selection

- 13 things to consider when selecting media (See Appendix)  
This document provides a variety of items you should consider when selecting media for use in your instructional activities.
- Media Attributes and Examples with Its Strengths and Limitations (See Appendix)  
This document tabulates various media based on its attributes and provides its strengths and limitations with examples.
- [Media Selection Matrix](#)  
This web page categorizes media as "Low Tech," "Medium Tech," and "High Tech" based on instructional strategies.
- Instructional Media and Learning Objectives (See Appendix)  
This matrix suggests instructional media types based on learning objectives.



**Discussion Topic**

When you participate in the group discussion, relate your answers to the readings and your own personal experiences.

- What is the difference between lessons that use technology and learning that is facilitated by the use of technology?
- Does the use of technology guarantee an increase in learning?
- What are the critical factors that must be addressed when determining the appropriate media?

**Activity 2: Evaluating Technology Integration of KITE Cases**

Search through the KITE case library for 3 cases which use a technology (i.e. digital camera, internet searching, educational software, etc.) that is of interest to you and evaluate its media selection. You will evaluate each case based on its technology integration appropriateness in the discussion activity. Present the cases you have selected with a summary, reflection, and suggestion for improvement for each case.



Describe what you think would better the learning experience in terms of technology use for each case and provide an 'overall evaluation' regarding how each case is similar and different, and how each case can be improved in terms of media selection process by adapting solutions from other cases.

To begin your search for technology integration cases which use the same media and have similar situations such as topic and grade, prepare a simple table of your interests before you search for cases. Also, use the "Find Similar Cases" link provided in the KITE case to find similar examples of technology integration experiences.

The following are three sample reviews of KITE cases. Don't forget to read the overall evaluation provided after the third case. **This format should be used to complete the assignments in Activity 2 and Activity 3.**

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	KITE case <a href="#">3167-1</a>	KITE case <a href="#">8029-2</a>	KITE case <a href="#">3032-2</a>
Target audience	Grade 9	Grade 10	Kindergarten
Subject	World studies and western civilization	World History	Social studies
Technology Used	PowerPoint, Internet, Video camera	PowerPoint, Internet	PowerPoint
Purpose of using technology	<ul style="list-style-type: none"> <li>• To present students' research projects</li> <li>• To encourage learners to dig deeper</li> <li>• To meet technology standard</li> <li>• To motivate the learner</li> </ul>	<ul style="list-style-type: none"> <li>• Presentation</li> <li>• Information searching</li> </ul>	<ul style="list-style-type: none"> <li>• Presentation</li> <li>• Motivation</li> </ul>



### KITE case [3167-1](#)

**Target Audience:** Grade 9

**Subject:** World studies and western civilization

**Technology used:** PowerPoint, Internet, Video camera

**Purpose of using technology:** To present students' research projects / To encourage learners to dig deeper / To meet technology standard / To motivate the learner

**Summary:** This case provides two technology integration stories. One is a PowerPoint presentation and the other is a video brochure presentation. A teacher assigned research projects either to individuals or to a group and designed instructional activities around the projects. Both technology integration projects have the purpose of requiring students to find information and to present what they have found in their research about the certain regions. The PowerPoint project is for Africa and the video brochure project is for Southeast Asia. For both projects, the teacher provided 7 topics (i.e. the economy, the people, the history, and so on) and let students decided 4 or 5 topics among them. The students researched independently or with group members, made presentations, and presented in class. According to the teacher's reflection, technology had an impact on students' learning by

<http://www.coe.missouri.edu/~tile2003/teacher/ms.html>

encouraging them dig into a little deeper and focus on the topic. Also, at the end of the class, students were really proud of what they had done so far. The teacher assessed the students' projects based on the rubric and the rubric was presented to students earlier in order to make sure they knew the expectations.

**Reflection:** This case is an excellent example of incorporating technology to make students more engaged in their learning process, and thus enhancing learning. The teacher designed the experience well and managed the technology integration in the class by considering almost all important elements for media selection. First, the teacher used technologies to support the students' learning activities and help them to achieve the learning goals; which were understanding the regions and being able to present what they have researched. Also, the Internet was used as one of the research tools. Second, the technologies used seemed to be appropriate for the grade level of students. However, the teacher understood that students had different levels of technology competency and accessibility. For example, the teacher considered the students' socio-economic level that has an impact on their exposure to technology. Thus, the teacher took that into account and prepared other ways for the students to achieve the learning outcomes (i.e. poster board). Also, the teacher let students know that they could get help the teacher at any time during the project. Third, the time-line had been carefully scheduled to manage the class including the time needed for preparing students to be able to manipulate the technology well enough for them to make a presentation. For instance, the teacher provided instruction on filming techniques for the video brochure project. Fourth, the teacher made it clear what was expected by providing clear assignment descriptions with exemplary projects from previous years and by providing rubrics. These helped the students focus on the content and prevented them from just focusing on learning the technology.

**Suggestions for Improvement:** This case could be improved by considering the direct and indirect costs to the student more in the design stage of technology integration. Although the teacher was aware of the students' different exposure and accessibility to use a particular technology such as a digital camcorder, and the media center had 3 or 4 camcorders available for students to check out, it might not have been enough. Also, students' prior knowledge and skills and affordability of technology had an impact on the quality of making the presentations. For instance, students who had access to a scanner and had experience of using iMovie made fancier PowerPoint presentation and video brochure than other students. Thus, the teacher should take this into consideration when assessing the students' projects.



KITE case [8029-2](#)

**Target Audience:** Grade 10

**Subject:** World History

**Technology used:** PowerPoint, Internet

**Purpose of using technology:** Presentation, Information searching

**Summary:** After covering the French Revolution in detail, a teacher assigned a research project to students which involved studying Latin American Revolutionaries individually and then required them to do PowerPoint presentations as a backdrop for an oral report. The teacher hoped that the students would become acquainted with famous people from other revolutions. They researched online in the computer lab and spent three days creating PowerPoint presentations. The students used online clip-art and images from the Internet. The teacher reflected that more guidance should have been provided in using technology to transfer information more effectively and which would have reduced the amount of difficulties in managing the students because they wanted to try every single element in PowerPoint.

**Reflection:** In this case, the teacher used technology as a tool to present what students have researched and the difficulty level of technology seemed to be appropriate to the target audience. The teacher had a hard time during class due to the incapability of the computers in the school to hold a large number of examples. The teacher could have reduced this problem by examining the technology capability ahead of time. With this problem, the students were frustrated. In addition, the students were not sure how they would be assessed.

**Suggestions for Improvement:** This case could be improved by explaining the task to the students more clearly including the teacher's expectations for the final product. For this, the teacher could have provided a rubric to students with examples of work. This rubric could have been used when the teacher assessed the students' work. Also, if the teacher had known the capacity limitation of the school computers, a plan could have been made for another way for students to present or bring up what they have prepared. Finally, the class activities need to be more structured.



KITE case [3032-2](#)

**Target Audience:** Kindergarten

**Subject:** Social studies

**Technology used:** PowerPoint

**Purpose of using technology:** Presentation / Motivation

**Summary:** A kindergarten teacher wanted students to make a presentation using Hyper Studio and to see some other uses of technology besides playing games with it. But the teacher did not own the program, and thus she used PowerPoint instead of Hyper Studio. The teacher assumed that the students would be able to do the activity by themselves after she showed how to do it. However, it turned out that the program was too complicated for little children to use and they could not do the activity by themselves. Thus, the teacher changed the activity and let students decorate the printed pages and they made a book.

**Reflection:** This case shows the importance of learner analysis in terms of their ability in using technology, especially when you want them to manipulate certain software by themselves. The teacher assumed that the students possessed a certain level of technology competency, and they would be able to follow a demonstration. However, they could not. The teacher ended up with a different activity for the students which required the students to make a book by decorating printed pages. The case did not describe whether the revised activity was aligned with the original goals. It is obvious when the teacher changed the program from Hyper Studio to PowerPoint based on the practical factor of program availability, user expertise and user familiarity in using technology was not considered.

**Suggestions for Improvement:** The learning situation in this case could have been improved if the teacher had used a simpler and easier technology which would be more appropriate for kindergarten students and if the teacher had planned the activity ahead in detail. In order to do that, the teacher would need to have knowledge and understanding about the students' ability to understand abstract symbols, reading, and so on. If possible, the teacher could have done a test with one or two children in order to make that kind of judgment.

#### **Overall Evaluation**

The preceding three cases have each used PowerPoint as the technology for the students' task. These three cases are very similar in that the students were required to present information with PowerPoint. The target audiences for the first two cases (KITE case NO. 3167-1 and KITE case NO. 8029-2) are about the same age level. The students in both cases

did research on the Internet and made the PowerPoint presentations in order to present their research results in class. In the second case the teacher could adapt the first case teacher's methods to solve the problems in the class; the students' lack of knowledge and skills in using PowerPoint to present information effectively. The teacher could have done the following to improve the learning experience:

- Provide clear assignment descriptions with exemplary projects from previous years and provide rubrics in order to make sure students are aware of the expectations for the task.
- Plan the details of the instruction ahead of time.

The first case teacher could also benefit from some information from the second case teacher. For instance, the first case teacher mentioned that the students who had a scanner or other technologies to use at home made fancier PowerPoint presentations than other students who did not have access to those technologies. In the second case, the first case teacher might adopt some solutions for this problem to make it possible for student to use online clip-art and download images from the Internet.

Although the third case has a different target audience from the two other cases, the third case teacher could benefit from the other cases regarding what to consider when using technology in class; students' technology competency, how to structure learning activities appropriate to the target audience, and how to prepare a backup plan.

#### **Rubric for Activity 2 Assignment**

"A" range	The report contains a table of case details, three detailed case summaries, an in-depth reflection on each case, and suggestions for improvement for each case. The overall evaluation is complete and discusses how the cases could be improved using ideas from other cases.
"B" range	The report contains a table of case details, three case summaries, a reflection on each case, and suggestions for improvement for each case. The overall evaluation is complete and discusses how the cases could be improved.
"C" range	The report contains a table of case details, three case summaries, some reflection on each case, and suggestions for improvement for each case. The overall evaluation discusses how the cases could be improved.
"D" range	Failure to complete assignment.

### Activity 3: Selecting Technology for Intended Learning Outcomes

#### Scenario

After attending a recent teacher workshop on technology integration, you start thinking that you would like to be able to use technology in order to support your students' decision making. In the past, you have taught your students using traditional methods, explaining how to make a decision.

Although you did this activity with several real-world examples and let the students practice, the students did not show the desired level of understanding.



You are planning to teach the same topic soon, and so you decide to hear how other teachers designed their learning activities for the learning outcome and instructional activity.

#### Assignment

Search through the [KITE case library](#) for cases in a grade and subject of your interest. Select three cases to evaluate in the same format as above.

Your report should include a table for each case, case details as shown above and the overall evaluation for the three cases.

#### Rubric for Activity 3 Assignment

<p>"A" range</p>	<p>The index of interests is well defined and based on the scenario. Selected technology(s) is aligned with intended learning outcome and instructional activities. The learning activity and technology used is appropriate to the target audience and subject. Technology(s) selection is based on identified similarities and differences among retrieved KITE cases using KITE index terms, and appropriate case components for the situation are well defined. In addition, the reason of choosing the technology(s) is well described including a concrete description of how it will support the purpose of using it.</p>
<p>"B" range</p>	<p>The index of interests is briefly defined and based on the scenario. Selected technology(s) is somewhat aligned with intended learning outcome and instructional activities. The learning activity and technology used is appropriate to the target audience and subject. Technology(s) selection is closely related to identified similarities and differences among retrieved KITE cases using KITE index terms, and appropriate case components for the situation are somewhat defined. In addition, the reason of choosing the technology(s) is briefly described including a</p>

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	description of how it will support the purpose of using it.
"C" range	The index of interests is not defined enough to retrieve cases and does not effectively capture the core attributes of the scenario. Selected technology(s) is somewhat aligned with intended learning outcome and instructional activities. It is not clear if selected technology(s) is appropriate to the target audience and subject. Technology(s) selection is not based on identified similarities and differences among retrieved KITE cases using KITE index terms, and appropriate case components for the situation are not defined. The technology selection process does not show reasoning process and fails to describe how it will support the purpose of using it.
"D" range	Failure to complete assignment.

## Appendix

### 13 things to consider when selecting media

1. Think pedagogy first, technology second.

Don't put the priority on technology. Always think first in terms of what is the intended learning outcome, in other words, what you want students to achieve or to do at the end of your lesson or activity (refer to your learning objectives), then select media that will support this. Think about what will best teach this topic.

Also consider the tools that the student must work with and the prior experiences of the students. Do not spend the entire class time on teaching how to use a very sophisticated media unless that is your learning objective.

Be careful that you aren't using media for media's sake. It is easy to slip into this. What are students accomplishing in the activity? Is the activity itself even needed? Can students get the same result through a re-designed activity that relies on a lower level of technology? Are you using technology just to get the students attention and motivate them? Is there another way that you can do this?

2. Identify the characteristics of the learners

Identify the characteristics of the learners in terms of their ability to read, to understand abstract symbols, and so on. Also, consider the learners' familiarity with the operation of the media.

3. Analyze your course to determine your needs.

Determine the instructional type of your learning activities. Will your activity be instructor-led, self-paced, or group learning?

Different learning tasks may require different media. For instance, when you want your students to be able to build their own concept maps, your class might be divided into four parts; introduction to concept mapping, demonstration of building a concept map with software (i.e., Inspiration), the student activity of building a concept map using the software, and assessment of the product.

For the demonstration part, you might want to use a smart board in order for all students to be able to see your demonstration. For the students' activities, you need to make sure that each computer that will be used has the software installed.

4. Consider all your technology options.

Don't automatically assume that you always need higher-level technologies for students to achieve your learning objectives. Often, the objectives can be achieved with other types of media.

For instance, you can also demonstrate how to build a concept map in a whiteboard when you do not have access to a smart board. Also, students can build their own concept map on paper.

5. Think about student's level of competency with regard to technology use.

Don't assume that students possess a certain level of competency in using technology, especially when you want them to manipulate media. Always consider students' prior knowledge and skills for the media use, and plan ahead how you will help them use technology for learning activities. Technology should not be an obstacle for learning.

If you plan to use a certain media in your teaching, don't assume that students will have access to the technologies you want to use; often they do not. For example, will they have access to a computer? What optional media selection will you have for those without access to the technology you've planned for?

6. Select media based on practical factors.

Select media based on practical factors; cost, equipment availability, user expertise, and other general considerations. Certain types of media might not be a practical choice even though you are sure that your students will benefit from it. This may be for many reasons including budget, media availability, and so on. For example, it is not practical to wait a fourth of the available class time for stunning video clips to download from the web. The simpler and easier media that you can use and still meet your instructional objectives, the better.

If you want to develop the media as your instructional activity, consider development timelines and budgets.

7. Consider time available.

When you plan for media selection, consider the overall time needed such as preparation time of the media and the time needed for students to master the media, especially if students will use the media for learning. Also, consider given all the other tasks the student must carry out (textbook reading, studying lesson pages, doing homework, etc.), how much additional time are you asking them to spend in activities using technologies? You might want to supply some "givens" to get students on to the real learning you are interested in more quickly.

8. Plan for alternate media where possible.

Prepare for the potential that the technology you have chosen might fail. Also make a plan for an alternate way for students to submit lessons or complete assignments if the technology is not operational.

9. Provide a clear, well-organized structure and good directions.

This is critical, especially for self-instruction activities. If the students cannot get immediate help from an instructor, the lessons should be designed well and provide good directions.

10. Prepare yourself to teach with this media.

There are two parts to this: the first part is becoming comfortable with using the media yourself, and the second is to plan how you will teach with it.

How familiar are you with what you want to use? Will you require training? If so, how will you get it? Plan to practice prior to instruction.

11. Count the direct and indirect costs to the student.

If you will ask your students to use a particular technology, count the direct and indirect costs to the student. For example, when developing a custom program, is there commercially available software that would reduce/eliminate the need to custom build so much?

Development costs are passed on to the student, at least in part. The learning gains for the student should be justifiable for the additional cost incurred.

There are also direct costs to the student for software purchases and Internet access, for example. Be careful not to drive up the cost of the learning activity by requiring too much technology.

12. Arrange for copyright clearance if you use materials not your own.

Any media which you have obtained from others (images and text from the Web or a software program are just two examples) may well be copyrighted, and using them without permission could be an infringement subject to legal action.

13. Be sure to license any software you distribute.

Some software (Netscape Navigator and SoftArc's FirstClass are two examples) requires no licensing and may be freely distributed. Most other software (Apple's QuickTime, Macromedia runtime files created in Authorware, Attain or Director, as examples) do require a standard license agreement in order to be legally distributed.

**Reference**

<http://web.pdx.edu/~mmlynch/MediaSelection3.doc>

<From The World Campus at Penn State, 'Faculty Development 101 Course, Lesson 6, 'Choosing a Technology Mix' for distance education>

**Media Attributes and Examples with Its Strengths and Limitations**

**TEXT**

Examples	Strengths	Limitations
Books Handouts Manuals Magazines Brochures Newsletters Catalogs	<ul style="list-style-type: none"><li>• Relatively inexpensive to produce and duplicate</li><li>• Can be produced quickly</li><li>• Permanent record of instruction</li><li>• Largely time-independent</li><li>• Support individual student use</li><li>• Require no equipment for use</li><li>• Eminently portable</li><li>• Highly accessible</li><li>• Provide easy random access by page numbers and indexing</li></ul>	<ul style="list-style-type: none"><li>• Requires the reading ability of the learner</li><li>• Changing content can be difficult because of its unchangeable characteristics</li><li>• When a very large, worldwide distribution is needed, distribution costs increase</li><li>• Quality printing can be expensive</li><li>• No interactions are built-in</li></ul>

<http://www.coe.missouri.edu/~tile2003/teacher/ms.html>

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	<ul style="list-style-type: none"> <li>• Can be annotated by learners to reflect their personal elaborations and emphases</li> <li>• Can add graphics to enrich contents</li> </ul>	
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### AUDIO

Examples	Strengths	Limitations
<b>Overall Characteristics</b>	<ul style="list-style-type: none"> <li>• Ideal for extending voice and music</li> <li>• Costs are relatively inexpensive (compared to video)</li> <li>• Good for the less literate (or aural learners)</li> <li>• Good for stimulating listener's imagination</li> <li>• Good for evoking emotional responses</li> </ul>	<ul style="list-style-type: none"> <li>• More linear structure</li> <li>• No visual element can be added</li> <li>• Requires playback device</li> </ul>
Telephone Voicemail	<ul style="list-style-type: none"> <li>• Low cost (can be expensive based on distance)</li> <li>• Easy to use</li> <li>• Has feedback feature</li> </ul>	<ul style="list-style-type: none"> <li>• Length may be limited</li> <li>• May involve toll charges</li> </ul>
Audiotape Digital audio Compact disks	<ul style="list-style-type: none"> <li>• Inexpensive (costs are not related to distance)</li> <li>• Easily accessible</li> <li>• Easily duplicated</li> </ul>	<ul style="list-style-type: none"> <li>• Require specific device</li> <li>• Hard to modify the recordings once produced and distributed</li> </ul>
Audio conference (Teleconferencing)	<ul style="list-style-type: none"> <li>• Easy to set up</li> <li>• Has feedback feature</li> <li>• Remove distance constraint</li> </ul>	<ul style="list-style-type: none"> <li>• Requires specific device</li> <li>• Challenging to schedule a time when everyone can participate</li> </ul>

### VISUAL AIDS

Examples	Strengths	Limitations
Posters Film strips	<ul style="list-style-type: none"> <li>• Easy and inexpensive to make and update</li> <li>• Lower cost of producing multiple copies</li> <li>• Portable and transportable</li> </ul>	<ul style="list-style-type: none"> <li>• Unsuitable for large groups</li> <li>• Anxiety might increase if an instructor has poor handwriting or poor spelling</li> <li>• The sequence of visuals is</li> </ul>

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		fixed
Film slides	<ul style="list-style-type: none"> <li>• Don't need to re-shoot every film slide in order to make a change for one film.</li> <li>• Teacher can decide which slides are to be shown</li> <li>• Professional in appearance</li> <li>• Slides stand up to wear and tear better than film strips</li> <li>• Good for large groups</li> </ul>	<ul style="list-style-type: none"> <li>• Shown in the dark</li> <li>• Not good for simultaneous discussion and interaction</li> <li>• More difficult to update than other visual aids</li> <li>• Requires special equipment</li> </ul>
Overhead Transparencies	<ul style="list-style-type: none"> <li>• Easy to create, update, and transport</li> <li>• Provides an informal atmosphere</li> <li>• Open for interaction with groups</li> <li>• Good for large groups</li> </ul>	<ul style="list-style-type: none"> <li>• Impermanent; they yellow with age</li> <li>• Requires less common equipment</li> </ul>
Photographic slides	<ul style="list-style-type: none"> <li>• Provide color images that are realistic, intense, and bright</li> <li>• Can use superimposed attention-directing devices</li> <li>• Can show close-up, enlarged details of an image with unmatched clarity</li> <li>• Convenient, portable, and effective image medium</li> <li>• Economical to shoot (compared with motion media)</li> <li>• Good for large or small groups</li> </ul>	<ul style="list-style-type: none"> <li>• No motion (still images)</li> <li>• Easy to scratch and bend</li> <li>• Not easy to duplicate in quantity</li> <li>• Requires projection equipment</li> </ul>
Computer Projections (i.e., PowerPoint)	<ul style="list-style-type: none"> <li>• Easy to update</li> <li>• Professional in appearance</li> <li>• Easy to integrate with classroom discussion</li> <li>• Possibility for animation</li> <li>• Good for large or small group</li> </ul>	<ul style="list-style-type: none"> <li>• Requires special equipment/facilities</li> <li>• Requires initial training to create</li> <li>• Requires significant time to create</li> <li>• Requires basic graphics/composition skills</li> </ul>
Digital Photography	<ul style="list-style-type: none"> <li>• Can be downloaded directly to your computer and seen immediately</li> <li>• Ready for use on the computer immediately</li> </ul>	<ul style="list-style-type: none"> <li>• Can be expensive (for higher quality)</li> <li>• Not tangible to hold in your hand</li> <li>• Requires a device to output</li> </ul>

	<ul style="list-style-type: none"> <li>• Cheap (for lower quality)</li> </ul>	or show its images
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**REAL OBJECTS**

Examples	Strengths	Limitations
Samples, Examples, and Mock-Ups	<ul style="list-style-type: none"> <li>• Authentic</li> <li>• Three dimensional</li> <li>• Sometimes inexpensive and readily available</li> <li>• Experience may be tactile/auditory as well as visual</li> </ul>	<ul style="list-style-type: none"> <li>• Sometimes difficult or impossible to acquire</li> <li>• Often difficult to handle or distribute</li> <li>• Requires storage space</li> <li>• Requires time to create</li> </ul>

**VIDEO (MOTION)**

Examples	Strengths	Limitations
<b>Overall characteristics</b>	<ul style="list-style-type: none"> <li>• Capable for display of images, motion and color, along with sound</li> <li>• Zoom in for enlarged close-ups or zoom out for a telephoto view</li> <li>• Good when your message content is best communicated via sight, sound, and motion</li> <li>• Helps learners visualize a process</li> <li>• Produces a change in affect (feelings)</li> <li>• Provides more motivation</li> <li>• Professional in appearance</li> </ul>	<ul style="list-style-type: none"> <li>• More expensive than other visual aids</li> <li>• Requires special equipment</li> <li>• Not good for discussion and interaction</li> <li>• Production equipment is needed</li> <li>• Talent and technical knowledge are needed or require experts' help</li> </ul>
DVDs Videotape Desktop video	<ul style="list-style-type: none"> <li>• Can compress time (i.e., time lapse) or expand time (i.e., slow motion) to attract learners' attention</li> <li>• Good for large or small groups</li> </ul>	<ul style="list-style-type: none"> <li>• Expensive to produce</li> <li>• Requires time to produce</li> <li>• Requires playback equipment</li> </ul>
Satellite delivery Broadcast	<ul style="list-style-type: none"> <li>• Real time</li> <li>• Good for large and dispersed audience</li> </ul>	<ul style="list-style-type: none"> <li>• Has time constraint</li> <li>• Cost of transmission</li> <li>• Limited bandwidth</li> </ul>
Video Conferencing	<ul style="list-style-type: none"> <li>• Allow "real time" visual contact between students and the instructor or among students at different sites.</li> <li>• Enables connection with</li> </ul>	<ul style="list-style-type: none"> <li>• Initial cost of the equipment and leasing the lines to transmit conferences may be prohibitive.</li> <li>• Companies which produce</li> </ul>

	<p>experts in other geographical locations</p> <ul style="list-style-type: none"> <li>• Can provide access for at-risk or special needs students</li> <li>• Provides additional access for students at remote sites.</li> </ul> <p><b>TYPES</b></p> <ul style="list-style-type: none"> <li>• <i>Small room videoconferencing</i> This system is designed primarily for small groups (1-12 participants) at all sites seated around a conference table.</li> <li>• <i>Classroom videoconferencing</i> This type of system usually uses high quality AV components, codecs, and an interface that allows all participants to be seen on the monitors.</li> <li>• <i>Desktop videoconferencing</i> This system utilizes a personal computer and videoconferencing software. These systems are less expensive, but offer limited resolution. They are most effective for individual and small group use.</li> </ul>	<p>codecs have each developed unique methods of compression which are incompatible, although protocols have been established to allow communication among brand names. However, this "universal standard" compromises resolution and quality to a certain degree.</p> <ul style="list-style-type: none"> <li>• Unless a strong effort is made by the instructor, students not located with the instructor may remain uninvolved.</li> <li>• If visuals, like handwritten or copied materials, are not properly prepared, students may have a difficult time reading them.</li> <li>• If the "pipe" that carries the transmission among sites is not large enough, the students may observe "ghost images" when rapid movement occurs in real time.</li> <li>• If the system is not properly configured, class members may observe an audio "echo" effect. The result is audio interference that detracts from the learning environment.</li> </ul>
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**MULTIMEDIA**

Examples	Strengths	Limitations
<b>Overall characteristics</b>	<ul style="list-style-type: none"> <li>• Delivers dynamic graphics</li> <li>• Can foster a high level of interactivity</li> <li>• The ability of adaptation</li> <li>• Can control other media such as video-tape/disk players, slide projectors, and so on, and use these media and devices in an interactive way</li> <li>• Allows exact duplication of instruction at remote</li> </ul>	<ul style="list-style-type: none"> <li>• Can be impersonal</li> <li>• Can require expensive equipment</li> <li>• Might require some players</li> </ul>

Technology Integration Learning Environment

	<p>sites</p> <ul style="list-style-type: none"> <li>• Primary strength lies in its ability to display images, in motion and color, along with sound</li> <li>• Good when individualized instruction and learning are desired</li> </ul>	
CD-ROM	<ul style="list-style-type: none"> <li>• Portable</li> <li>• Easy to handle</li> <li>• Can have interactive function</li> <li>• Good for individualized learning</li> </ul>	<ul style="list-style-type: none"> <li>• Hard to make a change once produced and distributed</li> </ul>
Computer	<ul style="list-style-type: none"> <li>• Holds a great deal of information in its memory</li> <li>• Manipulates information rapidly</li> <li>• Can adjust the type of feedback to the response of the learner</li> <li>• Can retain and analyze records of the progress of the learner and use this information to adapt future instruction sequences to the needs of the learner</li> <li>• Can maintain a high level of control over what the learner is allowed to attend to at one time, or it can put this control in the hands of the learner.</li> <li>• When coupled with a CD-ROM drive, some limitations are overcome, such as lengthy segments of high-quality audio</li> </ul>	<ul style="list-style-type: none"> <li>• The computer alone cannot efficiently present lengthy segments of high-quality audio, particularly voice</li> <li>• The computer alone, as of this writing, cannot efficiently present full-screen, smooth motion graphics of the same quality as a videotape</li> </ul>
World Wide Web	<ul style="list-style-type: none"> <li>• Ubiquitous multimedia container</li> <li>• Time and location independent (with internet access)</li> <li>• Can access a seemingly limitless amount and range of information over networks, including local area networks, such as an organization's library and shared databases, and wider networks, including the internet and World Wide Web</li> </ul>	<ul style="list-style-type: none"> <li>• Requires development time and cost</li> <li>• Requires certain level of hardware, software, and browser</li> <li>• Transmission restrictions (bandwidth)</li> </ul>

	<ul style="list-style-type: none"> <li>• Good for inquiry learning</li> </ul>	
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**PEOPLE**

Examples	Strengths	Limitations
Expert(s) Instructor(s) Teacher(s)	<ul style="list-style-type: none"> <li>• Highly interactive (depending on the mood or wishes of the person)</li> <li>• Highly adaptable and flexible (depending on the skills and attitude of the person)</li> <li>• Possesses and reflects empathy</li> <li>• Simultaneously processes multiple sensory inputs from various sources and selects those that are most critical to the current situation</li> </ul>	<ul style="list-style-type: none"> <li>• Can be expensive</li> <li>• Same content cannot be delivered every time</li> <li>• Highly dependent on the person's ability to instruct</li> <li>• Unreliable for doing the same thing over and over in exactly the same way.</li> </ul>

**References**

Smith, P. L., & Ragan, T. J. (1999). *Instructional design* (2nd ed.). Upper Saddle River, NJ: Prentice-Hall.

Gagné, R. M., Briggs, L. J., & Wager, W. W. (1992). *Principles of Instructional Design* (4th ed.). Fort Worth, TX: Harcourt Brace Jovanovich College Publishers.

Robert A. Reiser & Rober M. Gagne, *Selecting Media for Instruction*, Educational Technology Publications, Englewood Cliffs, New Jersey

Romiszowski, A. J. (1998) *The selection and use of instructional media: for improved classroom teaching and for interactive, individualized instruction* (2nd ed.). London : K. Page ; New York : Nichols Pub.

Heinich R, Molenda M, and Russell J.D. (1982) *Instructional Media and the New Technologies of Instruction* (2nd ed.) John Wiley & Sons, Inc.

<http://ltu.cce.umn.edu/medium/choices.htm>

<http://www.uwex.edu/disted/techselect.html>

<http://www.coe.missouri.edu/~tile2003/teacher/ms.html>

<http://www.uab.edu/uasomume/cdm/media.htm#t>

<http://www.lab404.com/media/>

[http://classweb.gmu.edu/ndabbagh/Resources/IDKB/delivery\\_media.htm#hypermedia](http://classweb.gmu.edu/ndabbagh/Resources/IDKB/delivery_media.htm#hypermedia)

### Instructional Media and Learning Objectives

Source: "Media Stimuli and Types of Learning." Audiovisual Instruction. Reprinted by permission of Association for Educational Communications and Technology.

Examples	Learning Factual Information	Learning Visual Identifications	Learning Principles, Concepts, and Rules	Learning Procedures	Performing Skilled Perceptual-Motor Acts	Developing Desirable Attitudes, Opinions, and Motivations
Still pictures	Medium	<b>HIGH</b>	Medium	Medium	low	low
Motion pictures	Medium	<b>HIGH</b>	<b>HIGH</b>	<b>HIGH</b>	Medium	Medium
Television	Medium	Medium	<b>HIGH</b>	Medium	low	Medium
3-D objects	low	<b>HIGH</b>	low	low	low	low
Audio recordings	Medium	low	low	Medium	low	Medium
Programmed instruction	Medium	Medium	Medium	<b>HIGH</b>	low	Medium
Demonstration	low	Medium	low	<b>HIGH</b>	Medium	Medium
Printed textbooks	Medium	low	Medium	Medium	low	Medium
Oral presentation	Medium	low	Medium	Medium	low	Medium

<http://www.coe.missouri.edu/~tile2003/teacher/ms.html>