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ABSTRACT

Sometimes multimedia presentations can provide an abundance of glamour without a clear vision of communicative content and direction. These may be called "show and show" displays. A presentation with a more apparent message or purpose could fall into either the "show and tell" or the "show and sell" category. Used appropriately, multimedia accommodates all of the many topics, learning styles, and unique personalities represented in today's increasingly multiethnic classrooms. When preparing a multimedia presentation for such a classroom, a presenter may want to guard against certain pitfalls: creating screens too densely packed with information, causing "information indigestion" with excessive branching of concepts using "visual noises" or pointless graphical embellishment, or not simplifying the instructional design enough. A flow chart is presented which offers advice on choosing an effective instructional medium for different learning content. As curriculum becomes more technology-based, developers of that curriculum will have to keep multiethnic learning styles in mind. (BEW)

MULTIMEDIA AND MULTIETHNIC LEARNING: VISIONARIES AND ILLUSIONARIES

by
Ann Cunningham

Have you ever been at a multimedia show augmented with a host of high-tech equipment where you thoroughly enjoyed the show, but do not remember what it was all about? And did you ever wonder why that is?

Chances are, the show was created by a team of equipment experts with a flare for showmanship, but who lack expertise in visual communication and learning. Today, many multimedia presentation techniques adopted for instructional purposes have similar format and style. They somehow give a false vision that the more glamorous the show, the better for everyone. They are the illusionaries in the educational presentation business.

In order to create an effective technology-based presentation, the creator must have a clear vision on the many aspects involved in the development of a show. A visionary will identify characteristics of the audience, organize presentation content appropriately, and match them with the technological tools best suited for specific information presentation.

This paper introduces the concept and role of multimedia presentation, and investigates implications of its uses and misuses in the learning environment. Additionally, guidelines are provided for those who plan to integrate various types of instructional tools to enhance learning.

Multimedia Defined

The term Multimedia is interpretec in a wide variety of ways depending on the interpreter's prior knowledge and experience. A librarian may consider a CD-ROM database installed at a computer workstation a multimedia station. A full-service Learning Resource Center director may insist that a true multimedia presentation requires a host of innovative technological tools such as a laser disc player, camcorder, voice synthesizer, video board, and audio board, in addition to a computer workstation with a gigabyte CPU and Super VGA monitor.

The simple truth is, multimedia means a collection of two or more presentation mediums of any type. Generally speaking, a presentation medium is a vehicle (print/non print) or mechanism (projected/non projected) to deliver information. It encompasses a broad range of materials and equipment.

Role of Mediated Presentation

Depending on the purpose and target audience, technology-assisted presentations may be categorized into three main types. They are: *Show and Show*, *Show and Tell*, and *Show and Sell*. Although they may not have distinctive features which can be identified as such, one can easily sense it during the presentation through the narrator's tone of voice, type of visual/special effects, and orientation of information.

Show and Show usually shows off their "stuff" without much thought in planning or goals to be achieved. The main purpose of such presentations, often fast-paced attention-getting image sequences with upbeat soundtracks, but without noticeable script or verbal information, is to entertain or impress the audience. Demonstration shows are prime examples. This type of presentation is rarely suitable as a tool to convey instructional information.

Show and Tell, on the other hand, has a story to tell or a message to convey. The audience may or may not agree with the story or message, but that is entirely beside the point. The topic of the presentation may be on religion, politics, or other special interests and events. Its content and method can be instructional and it is widely used in classrooms, especially for young learners.

Finally, *Show and Sell* has a clearly defined purpose or objective. The presenter must convince the audience, and prompt an immediate action by having the audience agree with the message being presented. Commercials are prime examples of this type of presentation. Learning activities such as debates and panel discussions can be transformed into this type of presentation by emphasizing the importance of current issues of differing viewpoints.

Teaching and learning is a cause and effect relationship between the instructor and the learner. Figure 1 illustrates the role of various media in an educational setting where it can be utilized to support and strengthen the interaction between the instructor and the learner. Depending on the teaching methods and media selected by the instructor, the outcome could vary significantly. Teaching methods procedures selected to help learners achieve the prescribed objectives through internalization of information presented. Media, on the other hand, are vehicles that deliver instructions between a source and a receiver. A particular medium may produce different results depending on learner characteristics such as the size of group, prior experience, and type of learning tasks.

Multimedia as Instructional Media

Instructional media is a set of tools or materials adopted for learning. Some technological tools are better suited for learning than others. While each medium has its advantages in conveying information, not everyone learns efficiently with techniques selected by the presenter. Therefore, it is imperative to examine positive and negative qualities of each medium to be adopted in order to ascertain the potentials and limitations.

Figure 1. The Role of Presentation Media in Learning

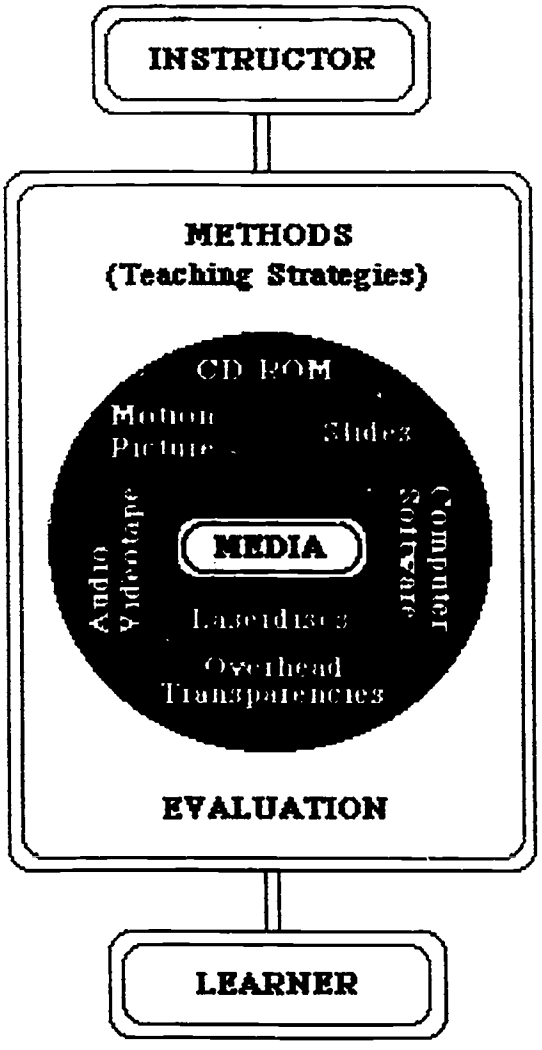


Figure 2 illustrates how a typical technology-based multimedia station is designed. This system, if adopted effectively, would accommodate both the individualized and group instruction for a wide variety of learners and topics. More often than not, the selection of the technological tools are made by teachers not based on the students' needs, but as a way to substitute an unprepared lesson, or a desperate attempt to stay current in

the field of instructional technology. Teachers sometimes feel left out by not becoming a part of all the hooplas in the marketplace, and try to 'dabble on' this and that. Such approach will produce meager improvement, if any, in final learner achievement partly because it relies on patchwork rather than holistic curriculum.

Each ethnic group possesses unique qualities in how they react and relate to different sources of information. Thus, there exists multiple learning styles within a group of students who study the same learning content. This multiplicity generates compound effects on the learning outcome as each medium is added as a delivery tool for instruction. A visionary takes these factors into consideration when designing and developing learning activities for a group of multiethnic learners.

Visual Communication and Visual Learning

Educators and presentation professionals are keenly aware of virtually limitless possibilities of multimedia-oriented presentations. Nevertheless, just *putting together* a show simply will not do in today's complex learning environment. We live in a Global Society where the instructor must deal with a multiplicity of effects of socioeconomic, cultural, and linguistic differences. Furthermore, certain groups of people may be less opted for, or intimidated by the *gadgetry* employed to make a presentation.

The majority of technology-based multimedia learning activities are composed of pictorial images. Pictorial images are the basis of visual

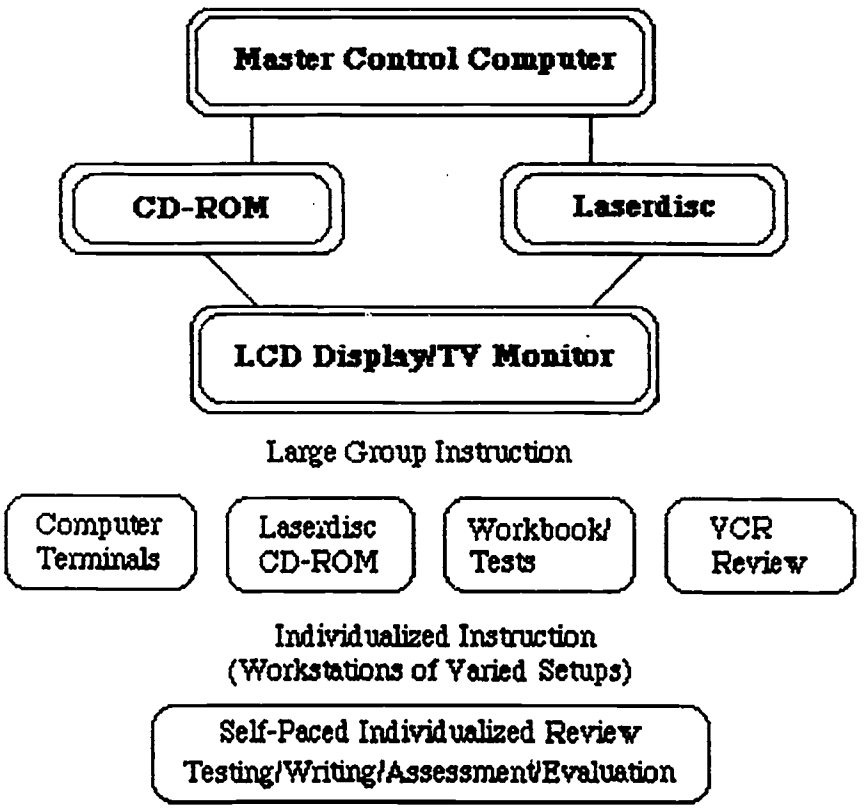


Figure 2. Multimedia System

communication which influcnces visual learning. Therefore, to optimize visual learning, the presenter must be able to integrate tools and materials for successful visual communication between the information source and learners.

This can be accomplished only when the media reflects the accurate level of audience visual literacy because a picture that could be worth a thousand words can also become a thousand confusions if not presented appropriately. This factor is especially important to consider in the areas where an influx of newly arrived immigrant children begin their schooling.

While there are visual learners who can easily transfer pictorial images into verbal information, there are verbal learners who feel the pictures are in their way of information processing. As a consequence, some individuals would rather read a book than see a motion picture to learn a story, direction, or events. It all depends on how each individual differs based on their prior experiences in terms of pictorial images and symbols. It is up to the presenter to make a careful analysis and assumptions before launching a graphics presentation project. The following are some of the aspects to be considered when planning a visual learning activity.

Information Density

The amount of information, either verbal or visual, in one projected visual (approximately 20 words per page or screen) or one presentation segment (approximately 20 minutes) should be observed, to insure proper digestion of presentation. The larger the number of words or longer segment of the presentation, the less effective the presentation will become because the audience will lose interest and the ability to concentrate. Furthermore, projected presentation should be used to convey key ideas and concepts. If additional information needs to be provided, it should be in the form of handouts or reading material.

Information Indigestion

Many of the multi-mediated instructions are driven by a nonlinear random-access information linking technique through the use of an authoring tool such as Hypercard (Macintosh), LinkWay (IBM), or Toolbook. The techniques often lead to an excessive branching which cause the learners to become overwhelmed by the amount of information offered to them. Hence, they become completely lost within a segment of instruction. Worse yet, they are unable to relate one area of topic and subtopic to another. As a result, the learners are unable to digest the data being presented.

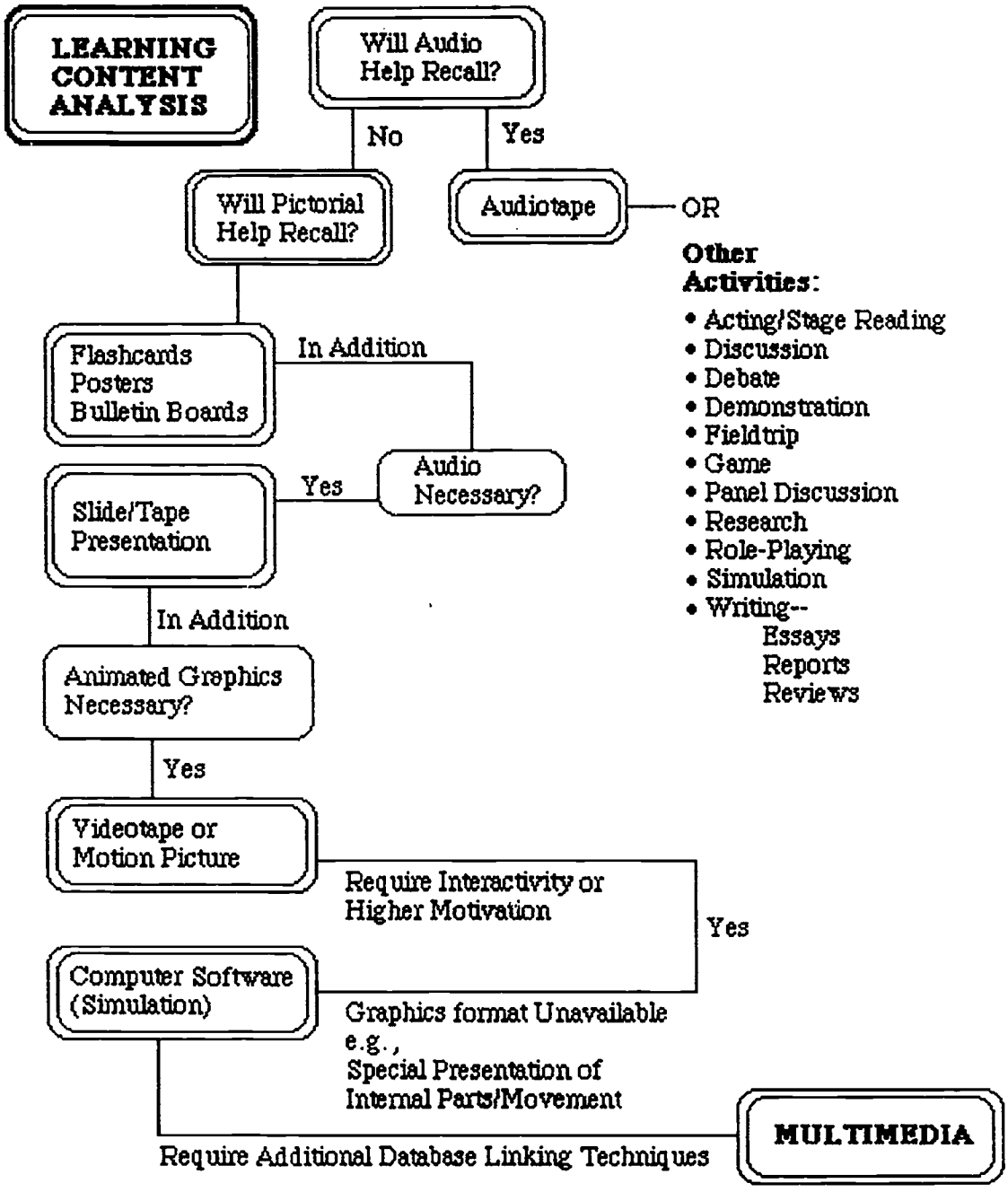
Visual Noises

When dealing with graphic images, the project/program designer should avoid embellishment graphics (pure decoration) whenever possible, especially with older audiences, because those images and symbols can become excess baggage or visual noise in one's cognitive process. They are like a jumble of meaningless words that can be very distracting. Embodiment graphics, on the other hand, are pictorial elements that support and supplement the verbal information being accompanied, which are useful in clarifying similar concepts or ideas.

Instructional Design

Rather than selecting a medium and finding a way to use it, one should focus on the learning content analysis and ascertain the level of complexity of the information. Among media buffs and professionals, there is a tendency to make simple things much more esoteric than they need to be by trying to present the same information through a different medium. Such approaches often lead to an overkill.

Figure 3. Learning Content Analysis



Gagné, Briggs, and Wager (1988) developed a flowchart to demonstrate how certain types of medium can be selected by examining the learning content. They provided a systematic approach in examining the efficacy of learner outcome through a careful analysis of the design and development of instruction. Figure 3, developed by the author, which is based on Gagné and his colleagues' principles in instructional design, is a diagram that illustrates the criteria on how to reach the decision in selecting multimedia as a delivery mechanism.

According to this diagram, it is entirely possible to achieve the same level of learner achievement by using flash cards as opposed to a computer drill/practice program. The use of computer software, therefore, should be considered an alternative or supplement to the main teaching methods rather than for use in place of planned teaching activities. It is also important to note that there are a variety of other human-interactive activities that can be more stimulating, thought-provoking, challenging, realistic, and cost-effective than media learning. Technological media should be called for only when necessary.

A similar approach to this process is known as Learning Task Analysis (Braden, 1988). He maintains that a person who designs learning activities needs to undergo a concept mapping by: (a) Examining the learners' cognitive and physical makeup, (b) juxtaposing the findings onto the learning events, and (c) implementing content-specific learning tasks. This is a crucial procedure in facilitating visual learning where visual-verbal translation is to take place through meta-cognition.

Development of Technology-Based Curriculum

There exists a consensus among theorists and practitioners that the current mediated instruction is in need of modification to accommodate growing student populations with multifaceted multiethnic backgrounds. The main focus of the technology-based education should be an ideal matching between the learners, instructional materials, and tools that deliver the most efficient learning.

A plethora of research studies (Kulik, Kulik, & Cohen, 1980) support such need by emphasizing the importance of Instructional Design and Development. Clark (1983) reiterated the fact that a presentation medium is nothing but a delivery vehicle of selected information. It is up to the user (instructor/presenter) how to utilize them. Equipment will not make any student learn better unless it is carefully chosen based on various factors that make up the learning environment.

Heinich, Molenda, and Russell (1992) made an in-depth analysis of the systematic approach where they enumerated necessary steps to be followed to deliver an effective mediated instruction. Designing and developing mediated instruction requires a team effort of experts from the instructional design, visual communication, teaching community, and creative arts. The person in charge of the entire project development must have a clear vision of what will work.

Conclusion

On the contrary to many who believe that technological tools would solve virtually all ailments of today's educational systems, insurmountable problems have been created by not knowing how to emulate the tools with specific learners. A key to the success in multi-mediated instruction is a clear understanding of each component. The equipment is only as good as the individual who knows how to utilize it to its full potential. Otherwise, the only reflection of multi-mediated learning would be just the multiplicity of number of equipment utilized.

The process of selecting the most effective media involves a careful analysis of: (a) Learners' prior experiences, (b) teacher competency in instructional technology, (c) techniques in content organization, and (d) teaching strategies. In addition, an instructor or presenter needs to make a periodic examination of (a) availability of equipment in working order, (b) trained personnel who can provide technical support for a complex presentation, and (c) environmental layout to insure sensible seating arrangements, proper equipment placement, and adequate supply of outlets and ventilation.

Figure 4. Development of Mediated Instruction

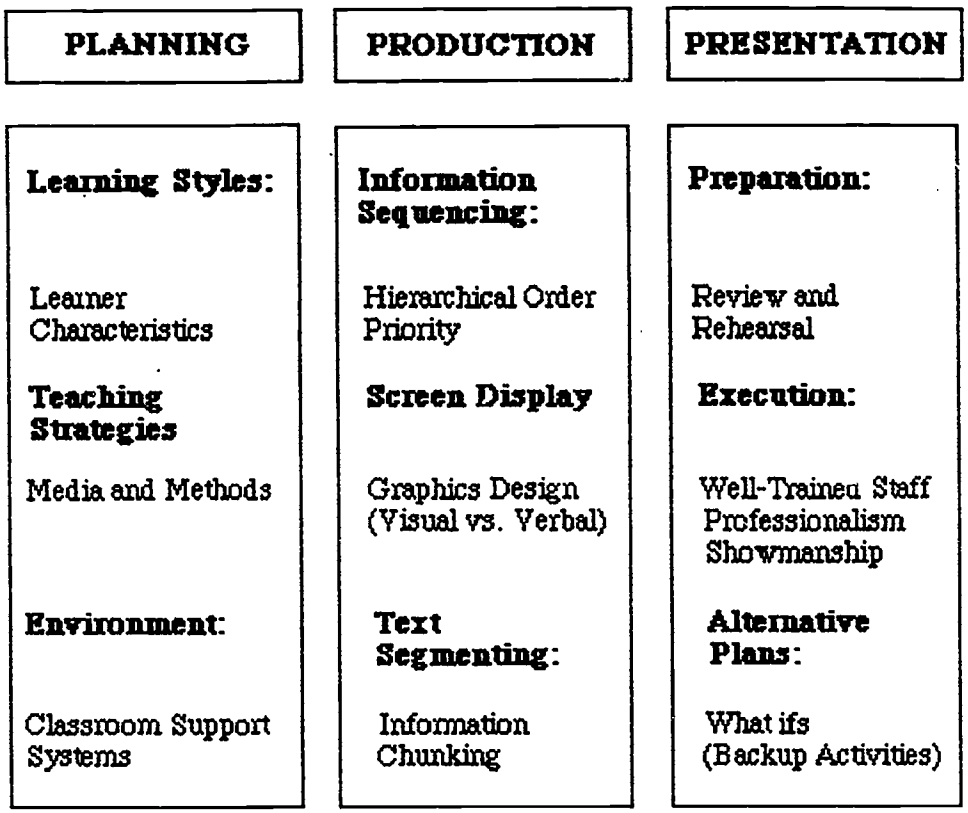


Figure 4 is organized as a review of what has been discussed, and to give an overview of the entire process in the development of technology-based learning. The process consists of the three main steps: Planning, Production, and Presentation. An important phase, Evaluation (Formative and Summative) may be added to this illustration. The purpose of this step is to examine areas to be improved or eliminated (partially or entirely) in future presentations.

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