

Multiple Intelligences and Multimedia Workshop

Dr. David Thornburg
Thornburg Center for Professional Development
PO Box 7168
San Carlos, CA 94070
United States of America

(415) 508-0314 (Voice)
(415) 508-0315 (Fax)
DThornburg@aol.com

Warmup Exercise

- Create a metaphor for teaching.
- Create a metaphor for learning.
- Create a metaphor for knowledge.

What do you want to know about today?

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Multiple Intelligence Inventory

Linguistic Intelligence

- Like to write, read and listen
- Spin tall tales or tell jokes and stories
- Have a good memory for names, places, dates, or trivia
- Enjoy reading books and writing stories
- Spell words accurately and easily

- Have well developed vocabulary and use language fluently
- Like doing crossword puzzles or playing word games

Logical-Mathematical Intelligence

- Explore patterns, categories and relationships
- Compute arithmetic problems quickly
- Enjoy mathematics and using computers
- Able to group and order data and then analyze, interpret and make predictions
- Reason things out logically to solve problems
- Play chess, checkers, or strategy games and win
- Devise experiments to test out things not easily understood
- Enjoy logic puzzles

Intrapersonal Intelligence

- Have a deep awareness of inner feelings, strengths and weaknesses
- Display a sense of independence or strong self-will and is self-directed
- React with strong opinions when controversial topics are being discussed
- Prefer own private inner world
- Like to be alone to pursue some personal interest, hobby, or project
- Have a deep sense of self-confidence
- March to the beat of a different drummer in style of dress, behavior, or general attitude
- Self-motivated to do well on independent study projects
- Intuitive ability

Spatial Intelligence

- Think in images and pictures
- Like to draw, paint, sculpt and participate in art activities
- Report clear visual images when thinking about something
- Easily read maps, charts, and diagrams
- Draw accurate representations of people or things
- Like to see movies, slides, or photographs
- Enjoy doing jigsaw puzzles or mazes

Musical Intelligence

- Sensitive to a variety of sounds in the environment
- Play a musical instrument or enjoy music
- Remember melodies of songs
- Tell when a musical note is off-key
- Prefer to have music on when studying or working
- Collect recordings
- Enjoy singing
- Keep time to music

Bodily-Kinesthetic Intelligence

- Learns best by moving around, touching, or acting things out
- Process knowledge through bodily sensations
- Move, twitch, tap, or fidget while sitting
- Engage in physical activities or sports
- Perform fine and gross motor skills effectively
- Like to touch or be touched when talking with people
- Skilled at handicrafts – woodworking, sewing, sculpting, etc.
- Enjoy using manipulatives and other hands-on learning

Interpersonal Intelligence

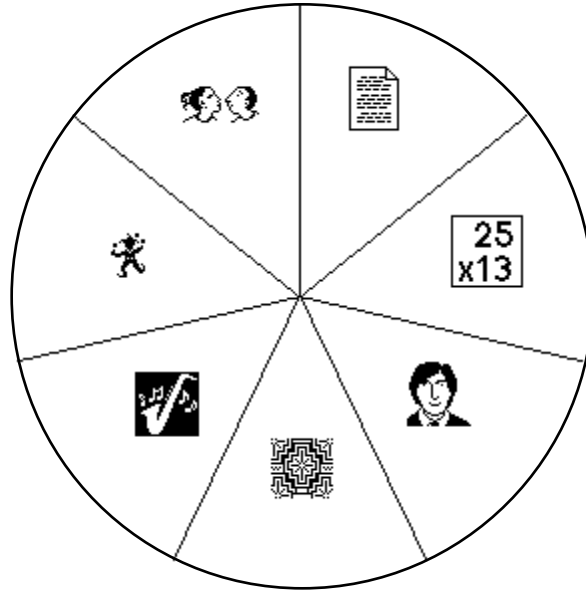
- Enjoy being around people
- Have many friends
- Socialize a lot at school, work, or home
- Organize, communicate and sometimes manipulate
- Learn best by relating and cooperating
- Enjoy group activities
- Serve as “mediator” when disputes arise
- Have empathy for the feelings of others
- Can “read” social situations accurately

Multiple Intelligence Inventory

	least like me	most like me
Linguistic		
Logical-Mathematical		
Intrapersonal (self)		
Spatial		
Musical		
Bodily-Kinesthetic		
Interpersonal (others)		

Multimedia and multiple intelligences

- Work with a partner and decide which technologies you would include in each sector. Do individual technologies fit in just one area or do they overlap?



Multimedia Tools:

- Computers
- VCR, Video camera, Video still camera
- Audio tape recorder, CD player
- Video disk, CD-ROM, CD-I
- Toasters
- Video projectors
- MIDI synthesizers, Sequencer, Sampler

Create a PMI list on multimedia technology in education

The following are the pluses of multimedia:

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The following are the minuses of multimedia:

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The following are the interesting aspects of multimedia:

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CAF: Consider all the factors that are entailed in using multimedia effectively in your classroom , school, or district.

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Short Glossary of Multimedia Terms

- Analog Monitor:** A display that uses an analog signal and displays an infinite number of shades of the primary colors or grayscale. Voltage varies continuously.
- ANSI (American National Standards Institute):** The organization responsible for most standards used for U.S. audiovisual and computer equipment.
- Anti-aliasing:** An image-processing technique that reduces the appearance of aliasing on a graphics display. It makes the edges appear smoother and less sharp.
- Aspect Ratio:** In computer graphics, the ratio of the horizontal to vertical dimensions of a frame or image. The ability to maintain or control this ratio is important in the transfer and reproduction of an image for displays or for printed material.
- Audio mixing:** Creating a custom audio track from several different sources using a sound mixing device.
- Authorware:** Development software programs that provide tools used to create interactive multimedia presentations, specifying elements – such as video and audio – that need to be included.
- Bandwidth:** The maximum frequency range of a signal, measured in hertz.
- Beta:** A 1/2" videotape format incompatible with the VHS format.
- Bit:** A single binary digit with a value of 0 or 1.
- Bit Map Display:** A display format in which the intensity or color of each point (pixel) on the screen corresponds to the value of a bit of computer memory.
- BNC:** A connector for coaxial cable (coax) that twists into place. BNC connectors are used for analog video signals in most semi-professional and professional video equipment.
- Byte:** A measure of computer data consisting of 8 bits of information. A single byte can have one of 256 possible values.
- CAV (Constant Angular Velocity):** In laser videodisk recordings, a format in which each frame takes exactly one track, allowing frame accurate freezing of the image.
- CCD (Charge-coupled Device):** A technology used in the light sensitive receptors found in most camcorders.
- CD+G (Compact Disk Plus Graphics):** A compact disk recording format that supports video as well as audio information. This format will find its niche in the entertainment market first.
- CD-I (Compact Disk Interactive):** A specification for an interactive product in which still images, computer graphics, audio and computer data are stored on one disk. This technology is starting to show up in the consumer entertainment market and it has great potential for education.
- CD-ROM (Compact Disk Read Only Memory):** A format standard for placing any kind of digital data on a compact disk. Typically, over 640 million bytes of data can be stored on a single CD-ROM.
- CD-ROM XA (Compact Disk Read Only Memory Extended Architecture):** Basically, a CD-I format with computer data, video and audio that has been designed for use as a computer peripheral.
- Cel:** A single drawing or frame in an animation.
- Cel Animation:** An animation technique in which the animated portions consist of a sequence of separate images that are shown in sequence.
- CGA (Color Graphics Adapter):** The first (and poorest) color video interface standard established for the IBM PC and compatibles.
- Chromakey:** A method for inserting video images into other video backgrounds. The inserted image is videotaped against a colored background and the equipment replaces the colored background with the second video (background) image.
- CLV (Constant Linear Velocity):** In laser videodisk recordings, a format in which the disk rotates at varying speeds so the speed along each track is constant. This allows longer recording times (extended play), but does not allow freeze frame capabilities on most players.
- Coax (Coaxial) Cable:** A shielded cable used for video and low-level audio signals.
- Colorization:** Adding color to a black and white image, or changing colors in a color image.

Composite Video: A video output format in which the three color signals (red, green, blue) are combined with the timing (sync) signal into one composite signal that can be sent over one cable or broadcast through the airwaves. This is the format used when a VCR or some computers are connected to a video monitor.

Contrast Ratio: The ratio of brightness between the white and black areas of an image.

Convert Utility: A program that allows the user to change one file format to another for use on different devices. The availability of these programs allows, for example, Macintosh and MS-DOS computer users to exchange text and picture files.

Crawl: The movement of credits or other graphic material across a video screen.

Cross Fade: An effect in which one sound or picture fades out while the next one fades in over it. Also called a cross dissolve.

CRT (Cathode Ray Tube): Type of display screen used to display text and graphics on most desktop computer systems and video monitors.

DAT (Digital Audio Tape): An audio recording format that produces CD-quality sound on special cassette tapes.

Definition: The sharpness or resolution of a picture.

Desktop Presentations: The use of computer-based multimedia tools to create presentations. The term can be used for everything from the design and printing of overhead transparencies to the production of interactive multimedia presentations involving a wide range of presentation equipment.

Digital Audio: A format for audio recording in which the sound is recorded as a string of numbers that are used for the noise-free reconstruction of the sound.

Digital Monitor: A display that uses a digital signal and displays a more limited number of shades or gray levels than an analog monitor. Voltage varies in discrete steps.

Digitize: To capture an analog signal (video or sound) and convert it to digital form for storage and reconstruction in a computer, for example. The audio signals on CD's have been digitized. The CD player reconstructs the original audio using a DAC.

Digitizer: A device for converting analog signals to their digital counterparts. In computers, this term often refers to the capture of video signals.

Dithering: In computer graphics, a method for blurring the transition from one color to another.

Dot Pitch: A measure of the distance between dots on the monitor screen. The smaller the dot pitch, the denser the image appears.

Dropout: During playback, the instantaneous loss of a recorded signal due to imperfections in the tape.

Driver: A computer program used to control external devices or run other programs. CD-ROM drives, video disk player, and printers all require special driver programs to control them.

Dub: To copy a tape; also called "dupe."

DVI: A technology that allows a range of interactive products to deliver moving and still images, audio, dynamic graphics and computer data. A DVI disk is a CD-ROM with this special information on it. Compressed video footage can be expanded in real time (30 frames per second) on a personal computer.

Dynamic Range: The highest and lowest signal levels of a specific device.

EGA (Enhanced Graphics Adapter): A color video interface standard developed after CGA.

EIA (Electronic Industries Association): The association that determines recommended video and audio standards in the United States.

Emulation: To duplicate the behavior of a product or standard, as when an EGA adapter emulates CGA behavior.

Erase Head: A separate head on an audio or video recorder that erases a previously taped signal before it is rerecorded.

Fade: A gradual increase or decrease of a video or audio signal. In video it is the appearance or disappearance from black; in audio it means decreasing or increasing volume from zero.

Fader: A sliding volume control that is used to adjust signal level.

Feedback: The regeneration of a signal when its output is fed back to the input. Audio feedback can cause "squeals." Video feedback (pointing the camera at the monitor) can produce interesting visual effects.

Field: One-half of a video frame, each consisting of 262 1/2 lines, each field being scanned in 1/60th of a second. One field scans the even lines, and the second scans the odd ones. (See interlace.)

Field Frequency: The number of fields per second. The NTSC field frequency is 60 per second, PAL is 50 per second.

Flutter: Rapid change in frequency of a video or audio signal due to variations in tape or disk speed.

Frame: A complete video image containing two interlaced video fields; 525 horizontal lines written in 1/30 second.

Frame Animation: An animation technique in which video images are recorded on film one frame at a time. The process is quite time consuming, but produces most of the high quality video seen in commercial titles for television programs, etc.

Frame Grabber: A device for capturing and storing a video frame from an external video source for display in a computer. Sometimes frame grabbers only grab one field.

Front-screen Projection: An image projected on the audience side of a light-reflecting screen.

Full-motion Video: Video sequences that have enough images (30 frames per second) to impart smooth motion.

Genlock: A device that synchronizes one video source with another (e.g., computer graphics and video) for mixing and recording.

Gigabyte: One billion bytes. A CD-ROM holds 0.65 gigabytes of data.

Grab Utility: A RAM- or ROM-resident program that allows the user to capture a screen image from any program and save it on disk, or send it to a printer.

Graphic Equalizer: An audio device for adjusting sound quality by setting the gain at different frequency ranges. Graphic equalizers provide more options than simple treble and bass controls.

Grayscale: An even range of gray tones between black and white.

GUI (Graphical User Interface): An alternative to character-based computer interfaces such as MS-DOS. The Macintosh Finder and Microsoft Windows are two popular examples of GUI's.

HDTV (High-definition Television): Any of several proposed standards for higher resolution television approaching the quality of 35 mm slides.

Headroom: The difference between the optimal operating level of audio equipment and the "clipping" level at which distortion sets in. Consumer audio equipment typically has less headroom than professional equipment.

Horizontal Blanking Interval: The time from the end of one horizontal scan to the start of the next. Other information can be sent during this time period.

Horizontal Resolution: The number of pixels available horizontally across the screen.

Horizontal Scan Rate: The speed at which the electron beam scans across a CRT. It is usually measured in kilohertz and ranges between 15 KHz and 40 KHz.

Interlace: A method of scanning used in video transmission in which each frame is divided into two interlaced fields to reduce flicker.

Jitter: Instability of an image due to sync or tracking problems.

Laser Videodisk: A video playback system that uses optical disks. Individual scenes or frames on a disk can be accessed directly or through computer control.

LCD (Liquid Crystal Display): A popular technology used in flat panel display systems. Often used in portable computers, and also used for some video projectors.

LCD Panel: A video display designed to be set on a standard overhead projector for group viewing.

LD-ROM: A laser video disk (12" format) used to hold digital data.

Line Level: Refers to signals that are at or near the nominal operating level of an audio system.

Master: The original video or audio recording.

Mastering Deck: A stereo recorder used to record the final mixed version of a multitrack production.

Matte: Method for creating composite pictures by placing a multicolored image from one video source over a background from a second source; a form of keying.

Mic Level: Refers to signals that are at the low levels produced by microphones. Mic level signals can be amplified to become line level signals.

MIDI (Musical Instrument Digital Interface): A standard for communicating information between synthesizers, sequencers, percussion machines, computers, and other electronic musical equipment.

MIPS (Millions of Instructions Per Second): A measure of computer performance.

Mixdown: The process of combining the signals of several tracks to create a final mono or stereo version.

Monitor: A video display with composite or RGB video inputs. In audio, a personal amplifier and/or speaker system designed to emulate larger systems used in presentation or performance.

Monochrome: A display or printer producing only black and white images. Some monochrome monitors use other colors (e.g., green) instead of white.

Muti-image: A slide show that uses two or more slide projectors in a programmed presentation.

Multimedia: The integration of video, graphics and audio through the computer.

Multiscan Monitor: A video monitor that works at various scan frequencies allowing it to be used with different graphics adapters.

Multi-screen: Projecting images onto several image areas.

Multitrack: A recording method in which more than two tracks are used to record individual portions of an audio production.

Noise: In audio, it is electrical interference or unwanted sound. In video this interference appears as “snow.”

NTSC (National Television Standard Committee): An advisory group to the FCC that sets the standards for video hardware and broadcasting. The US standard is 525 lines per frame, interlaced, with 30 frames per second.

Optical Disk: A storage medium that records and reproduces digital information using a laser beam.

PAL (Phase Alternating Line): The video standard used in Western Europe, Latin America, Great Britain, South Africa, Australia; not compatible with NTSC.

Phone Plug/Socket: A two or three lead connector standard based on a 1/4” diameter plug element found in the microphone inputs and headphones of most consumer-grade audio equipment. This connector also exists in mini- and micro- sizes.

Phono Plug/Socket: A two-lead connector system for shielded cables sometimes called RCA connectors. This connector is used for both video and audio signals on most consumer products.

Pixel: The basic picture element of a computer screen or digital graphics device. The smallest dot a computer can generate.

Pixelization: Using image processing software to break up a continuous image into rectangular blocks to give it a digitized look.

Post-production: Any process that takes place after the shooting – editing, audio sweetening, or adding special effects and graphics.

Raster Graphics: A graphics system in which the computer image is treated as a collection of dots.

Real-time Animation: The ability to create and display animation at the final viewing speed.

Rear Screen Projection: Projection of an image onto a translucent screen material for viewing from the opposite side. The screen is between the projector and the viewer.

Resolution: The clarity or graininess of a video or computer image as measured by lines or pixels; the smallest resolvable detail in an image.

RGB (Red, Green, Blue): The primary colors of light which are mixed to provide any desired hue in a video image. RGB video keeps the intensity of each of these three colors on separate cables to produce higher quality images than available with composite video. RGB video output can be either analog or digital.

RGB Monitor: A type of color monitor with separate inputs for red, green and blue. It is especially well suited for high resolution color images.

Sample: A digitized version of a sound as processed by a sampler.

Sampler: An audio device that converts sound to digital information that can be manipulated by a computer. Many high quality music synthesizers use sampled sounds from acoustic instruments as the basis for their signals.

Scan Converter: A device that changes the scan rate of a video signal, and may also convert it from interlaced to non-interlaced mode. This allows computer graphics to be displayed on a standard video screen.

Scan Rate: The speed with which the electron beam scans the picture tube.

Screen Dump: To send a picture on the display screen to the printer.

Screen Printer: A printer that accepts video input and produces a monochrome or color picture directly.

Sequencer: Software for controlling MIDI musical devices.

Signal Processor: Any device used to change an audio signal. Common examples are equalizers, mixers, compressors and reverberation units.

Signal to Noise Ratio: A measurement of noise introduced in an audio component expressed as the difference in decibels between the desired signal and the unwanted noise.

Single Screen: A presentation in which all the images are superimposed on the same screen area.

Slide-show Option: A feature offered by some presentation software products that allows slides to be shown on the computer screen in a predetermined order.

SMPTE (Society of Motion Picture and Television Engineers): An organization that sets technical standards for film and video.

SMPTE Time Code: An eight-digit address code used to identify each videotape frame by hour, minute, second and frame number for precise editing.

Split Screen: A video effect that shows images from two different video sources, each on one half of the screen. Multiple split screens show images from several sources or different actions taking place in several windows in the screen area.

Stair-stepping: Refers to discontinuous nature of a line drawn at any angle other than horizontal or vertical. Also called "jaggies."

Still-frame Storage Unit: A digital device used to store individual video frames, any of which can be recalled for display.

Still Video: A camera that stores still images on magnetic disks rather than on film.

Storyboard: A visual outline of the narrative of a video production.

Superimposition: Laying titles or graphics over a video image.

S-VHS (Super VHS): Videotape format that provides for better resolution and less noise than standard VHS tapes.

Synchronization (Sync): The process of linking devices to play in an exact time relationship to one another.

Synthesizer (Synth): An electronic device for creating musical sounds and sound effects.

Talking Head: Slang for the typical head and shoulders shot of actors used on newscasts and talk shows. This is the worst possible format for instructional video.

TIFF (Tag Image File Format): The format used for transporting computerized versions of scanned images.

Track: The location or path of a recorded signal on a tape or disk.

Track Bouncing: A process by which multiple tracks are mixed and re-recorded onto another track for the purpose of freeing tracks for further recording.

U-Matic: Trade name for the 3/4" videotape format invented by Sony.

VCR (Video Cassette Recorder): A device for recording video on cassettes.

VDA (Video Distribution Amplifier): A device used to allow the connection of several monitors to one video source.

Vector Graphics: A display technology that builds images from the strokes of lines rather than from collections of individual pixels.

Vertical Blanking Interval: The time between fields from one vertical scan to the start of the next. Other information can be sent during this period.

Vertical Resolution: The number of pixels available vertically down the screen.

Vertical Scan Rate: The speed at which the electron beam scans down the entire screen of a monitor.

VGA (Video Graphics Array): High quality graphics standard for MS-DOS computers compatible with EGA; also supports analog monitors.

VHS (Video Home System): The most popular 1/2" consumer videotape format.

Videoconferencing: The ability for groups at distant locations to participate, through audio and video, in the same meeting at the same time.

Video Still Camera: A camera generally shaped like a 35 mm film camera that captures still images and saves them on magnetic disks in an analog video format. Consumer grade devices capture single fields, and professional grade cameras can capture fields and frames. This technology also allows for up to 10 seconds of audio to be captured along with each picture.

Virtual Reality: Highly realistic computer simulations that use 3-dimensional displays to create the impression of being inside a place.

Virtual Tracks: Parts played by a sequencer during final mixdown as if they were being played from a tape deck.

Wipe: A visual transition in which one image replaces another along a border that moves across the screen.

XLR: An audio connector that uses three pins. This connector is often used with cables designed to allow low level signals to be carried long distances without picking up noise. XLR connectors are often found on semi-professional and professional audio components.

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Celebration of Knowledge!

This form was designed in part by Andy LePage, 8001 N 13 St., Tampa, FL 33604

Self-Grading Using the Celebration of Knowledge

Use a grading scale of "A", "B", "C", (or another one if you prefer) in answering the following questions:

- 1. My understanding of the philosophy presented.
- 2. My willingness to reframe or change my teaching to reflect this philosophy.
- 3. My understanding of the content presented.
- 4. My participation in this class or workshop.
- 5. My overall grade for the workshop.

Please write a paragraph on how you arrived at this grade.

Finish any sentence you want to. In this class...

I learned
I relearned
I experienced
I wish
I applaud myself for
I find I need more
I'm excited about

