

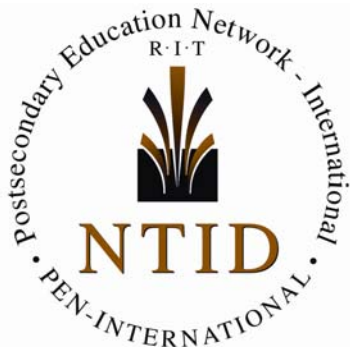
Strategies for Using Instructional Technology to Support Classroom Education

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A workshop presented at the College of St. Benilde,
De La Salle University, Manila, Philippines

Technology in the Classroom

Topics for Today

- Why Use Technology in the Classroom?
- Pedagogy, Technology & Instructional Design
- Best Practices for Technology in the Classroom
- Technology Used in NTID Classrooms

Why Use Technology in the Classroom?

- Improve Access by Deaf Students
- Examples
 - Materials Specially Designed for Deaf Students
 - Captioning
 - Notetaking
 - Listening Technology

Why Use Technology in the Classroom?

- Address an Existing Deficiency or Problem
- Examples
 - Organization
 - Visual
 - Time
 - Communication



From: "Enhancing the Craft of Teaching with Technology: The Instructional Design Factor" PowerPoint Presentation,
Accessed from the Internet January 25, 2006,

by Les Howles, Academic Technology Solutions, DoIT, University of Wisconsin-Madison
<http://academictech.doit.wisc.edu/ORFI/pts/support%20files/teaching.ppt>

Why Use Technology in the Classroom?

■ Alternative Medium

- Transfer Activities to Another Medium

■ Examples

- Show Video
- Access the Web
- Share Examples
- Facilitate Collaboration



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Why Use Technology in the Classroom?

- Improve Effectiveness & Efficiency
 - Better Able to Follow Instructional Design
- Examples
 - Better Implement Best Practices
 - Increased Structure
 - Improve Content Presentation
 - Alternative Presentation of Content



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Why Use Technology in the Classroom?

- Only When There is a Reason
 - Educational Solution Before Technology Solution
- Examples
 - Educational Problem
 - Impact on Classroom Management
 - Improve Content Presentation
 - Alternative Presentation of Content

Pedagogy, Technology & Instructional Design

■ Pedagogy

- **1:** the principles and methods of instruction [syn: teaching method,]
- **2:** the profession of a teacher

Pedagogy, Technology & Instructional Design

■ Technology

- **1** : the science of the application of knowledge to practical purposes
- **2** : Electronic or digital products and systems considered as a group

Pedagogy, Technology & Instructional Design

■ Instructional Design

- Instructional Design is the systematic development of instructional specifications using learning and instructional theory to ensure the quality of instruction.
- It is the entire process of analysis of learning needs and goals and the development of a delivery system to meet those needs.
- It includes development of instructional materials and activities; and tryout and evaluation of all instruction and learner activities

From: "Instructional Strategies for Online Courses" Web page by Accessed from the Internet January 25, 2006, Illinois Online Network, University of Illinois.

<http://www.ion.uillinois.edu/resources/tutorials/pedagogy/instructionalstrategies.asp#LECTURE>

Pedagogy & Classroom Presentation

- Classroom Presentation Generally Means a Lecture
- Lectures: an Efficient Way for an Expert to Share Knowledge
- Most Effective When Linked to Other Activities

[Structuring a Lecture]

- Consider Audience
- Goals and Learning Outcomes
- Logical Progression for Material
- Structure to Help Students....
 - Take Notes
 - Retain Important Information
- Strong Opening and Closing
- Interaction



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Pedagogy, Technology & Instructional Design

- Instructional Design (ID)
 - *Recall Definition?*
 - *...learning theory...goals....delivery system....development of materials....tryout & evaluation....revision*
- ID Can Be Employed to Improve Pedagogy for Classroom Presentations

Pedagogy, Technology & Instructional Design

- Instructional Design*
 - Analysis/Objectives
 - Instructional Strategy/Materials
 - Formative/Summative Evaluation
- *Educational Technology and Teaching*
 - <http://www.rit.edu/~pen2>
 - <http://mycourses.rit.edu>

Pedagogy, Technology & Instructional Design

- Events of Instruction and Processes of Learning*
 - Get Attention/Share Objectives
 - Present Material/Guide Learning
 - Performance/Feedback
 - Assess Performance/Retention & Transfer

Pedagogy, Technology & Instructional Design

- **What do you want students to do?**
- Not how they will spend their time or what you will cover in class;
 - *What evidence do you want to see that proves students have met the learning outcome you specified?*

Pedagogy, Technology & Instructional Design

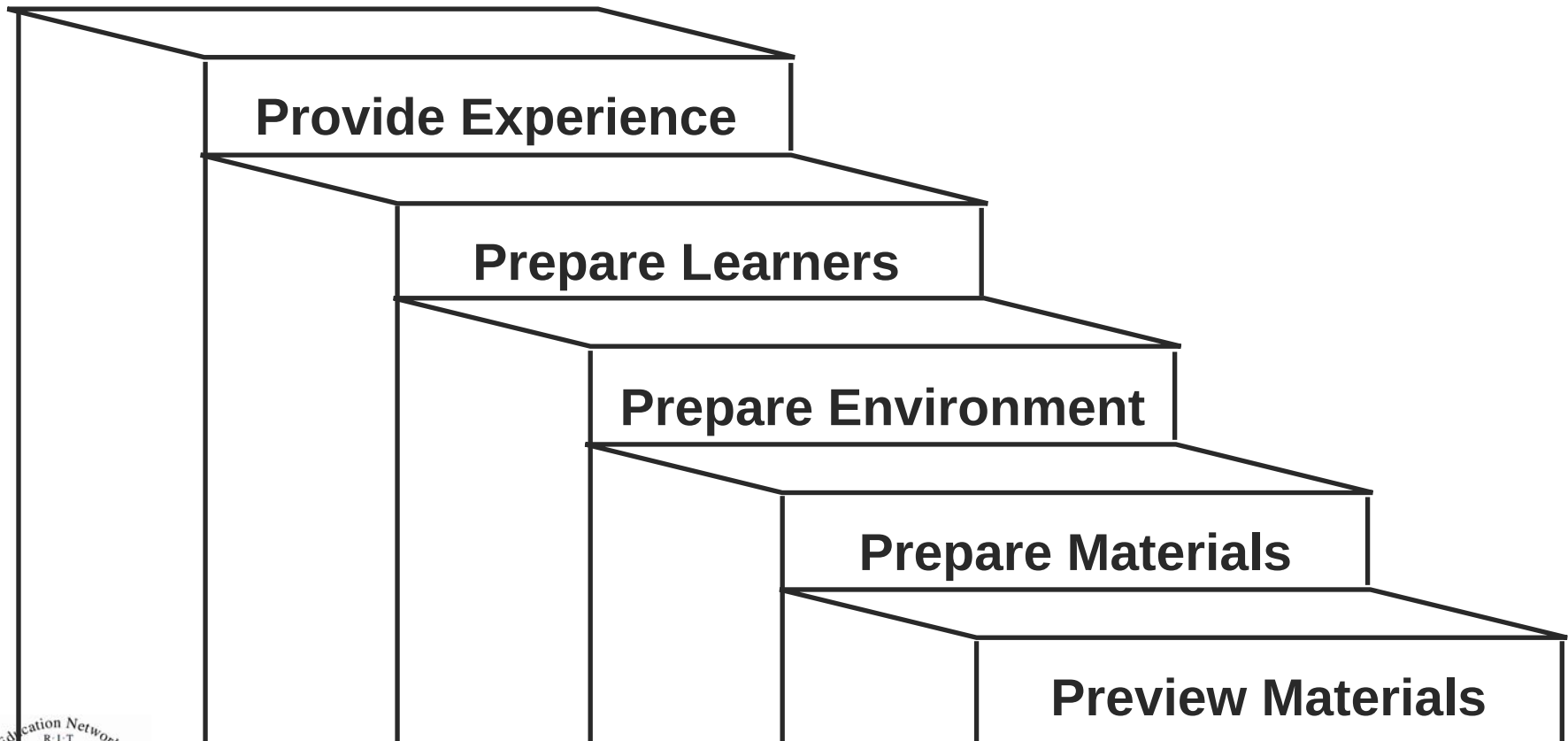
- Integrating Technology & Your Teaching
- What is the Most Appropriate Technology?
 - What is Available!!!
- Design Presentation Based on Good Instructional Design and Processes

Presentation Format Selection Process

- Choose a Method of Instruction
- Choose a Media Format
- Obtain Materials
 - Obtain Available Materials
or
 - Modify Available Materials
or
 - Design New Materials



Utilization of Materials in Lecture Format

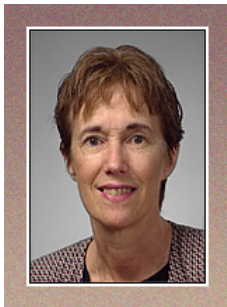


Best Practices for Technology in Classroom ...

- *Technology Tips*

- Kathleen Eilers
crandall, Ph.D.

- www.rit.edu/~kecnpc/



- *Best Practices*

- Douglas
MacKenzie, Au.D.

- www.geneseo.edu/~mackenzi/



How to Prepare for Class

- More time when first using technology; less time once technology is in place.
- Allow lots of set up time.
- Go to room the day before class & practice.
- Keep notes of set up steps.
- Have alternative plans if technology fails.

[Technology Should Enhance..]

- Use technology when it serves a specific purpose.
- If technology gets in the way of teaching, don't use it!
- Technology does not make teaching better or even easier.

Communication Issues

- Establish a Communication Plan
- Equipment can Reduce Visibility
- Have a Plan to Regain Student Attention
- Keep Switching Between Computer Displays to Minimum

Logistical Concerns

- Scheduling a “Smart” Classroom
- Learning to Use and Troubleshoot Equipment
- Time for Equipment Set-up and Break-down
- Equipment Obstacle Course

Logistical Concerns

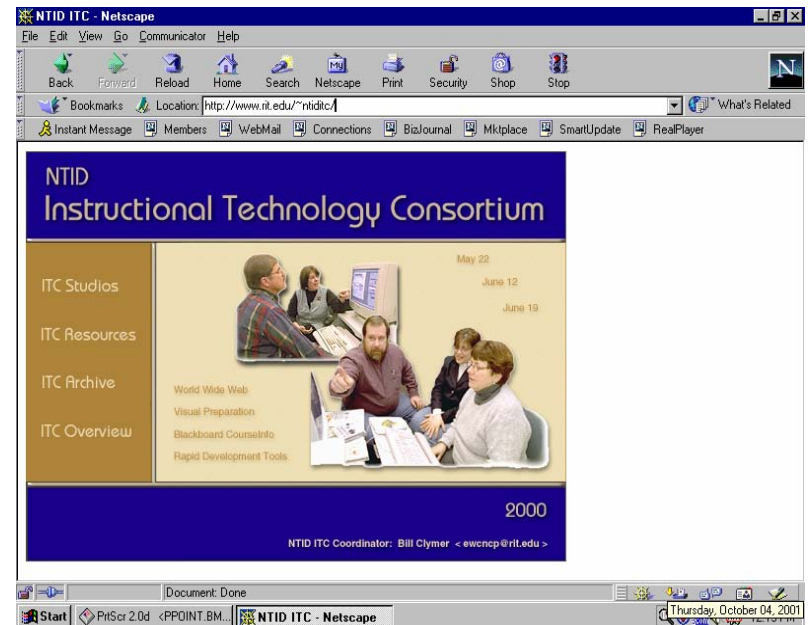
- Will Technical Help be Available?
- Need for a Back-up Plan
- Installing New Software
- Different Software Versions in Office vs. Classroom
- *“Okay...Who has Been Messing with the Equipment?”*

Classroom Management Issues

- Where do I Stand for Best Communication?
- What Lighting is Best for Communication?
- Lack of Writing (Whiteboard) Space
- Projecting More than One Source
- What Effect is Technology Having on Faculty Sign Skills?

Three Popular Classroom Technologies

- Visualizer
- PowerPoint
- Web



From: "Deaf Students and Technology: Best Teaching Practices" PowerPoint Presentation , November 9, 2001
by Sam Holcomb and Doug MacKenzie. NTID/RIT

Document Camera “Visualizer”



- Used to display...
 - Articles
 - Objects
 - Slides
 - Video

Document Camera “Visualizer”



- Advantages...
 - Great for showing objects (pagers, TTY display)
 - “Zoom” function for small print and fine detail

Document Camera “Visualizer”



- Limitations...
 - Poor resolution for text
 - Glare
 - Barrier to communication

[PowerPoint®]



- Strengths...
 - No overhead transparencies!
 - Visual
 - Outline format useful for preparing lectures
 - Insert video and hot links
 - Quick revisions

[PowerPoint®]



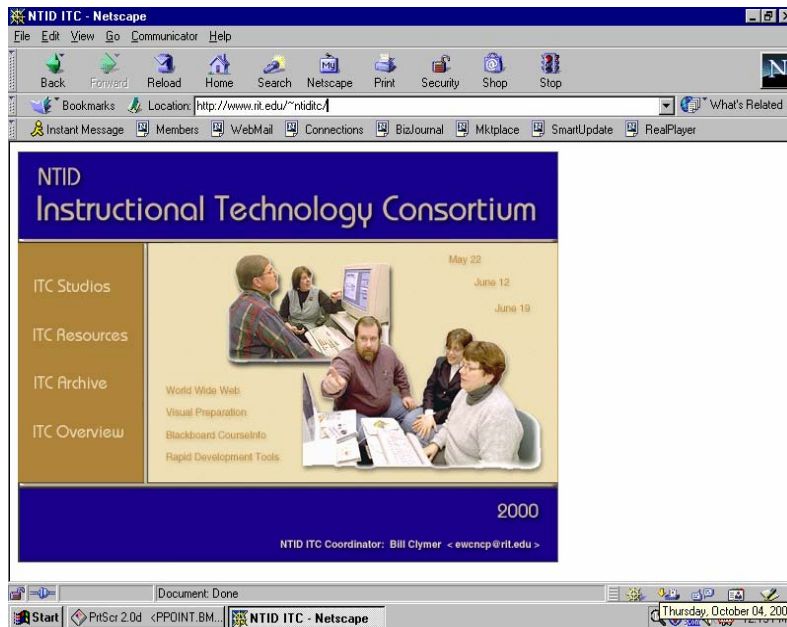
- Strengths...
 - Easy to post on the web
 - Handouts
 - High-tech look
 - Keeps students focused on topic
 - Can send as an e-mail attachment

[PowerPoint®]



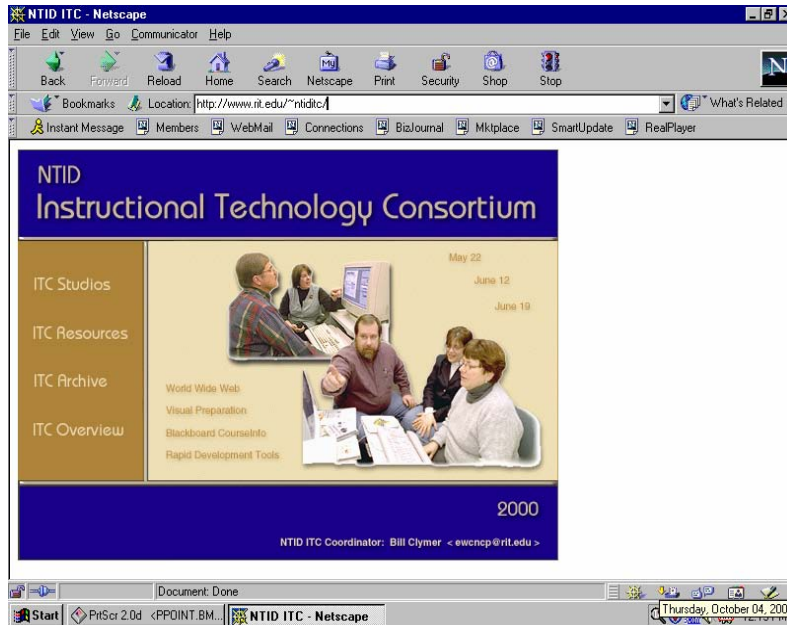
- Weaknesses...
 - Overused!
 - Too much text
 - Selecting good color schemes
 - Typography issues
 - Overuse of animation
 - Not flexible
 - Requires more preparation time

[Web]



- Strengths...
- Visual
- Current
- Interesting
- Interactive
- Good for organization of course materials

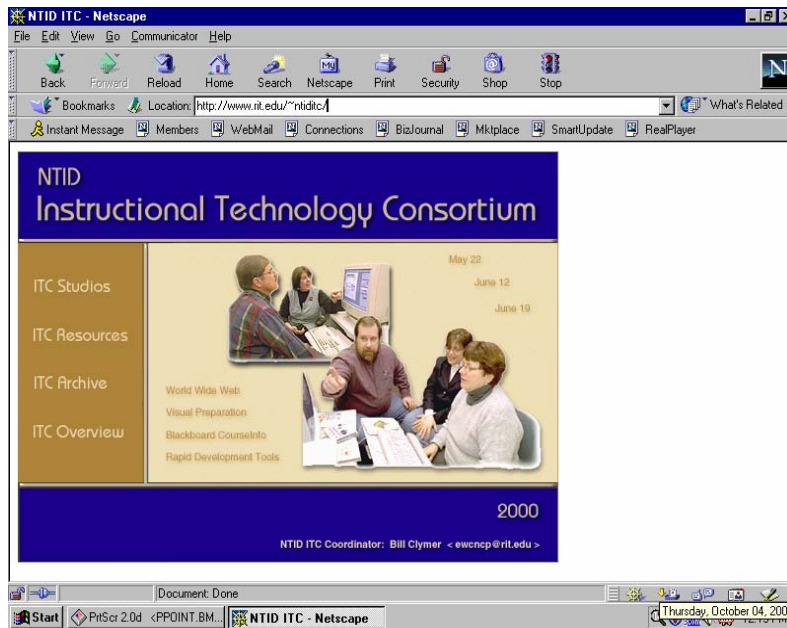
Web



■ Weaknesses...

- Problems with roaming IP addresses
- What's there today may look different or be gone tomorrow
- Can be visually distracting

Web



- Weaknesses...
 - Some students have difficulty evaluating web content:
 - Credibility
 - Bias
 - Fact vs. opinion
 - Parody sites

Students with Vision Problems

- Room Lighting
- Seating
- LCD Projector
- Individual Computer Workstations
- Color Choices (text and background)
- Glare from Projector and Visualizer

Technology Used in NTID Classrooms

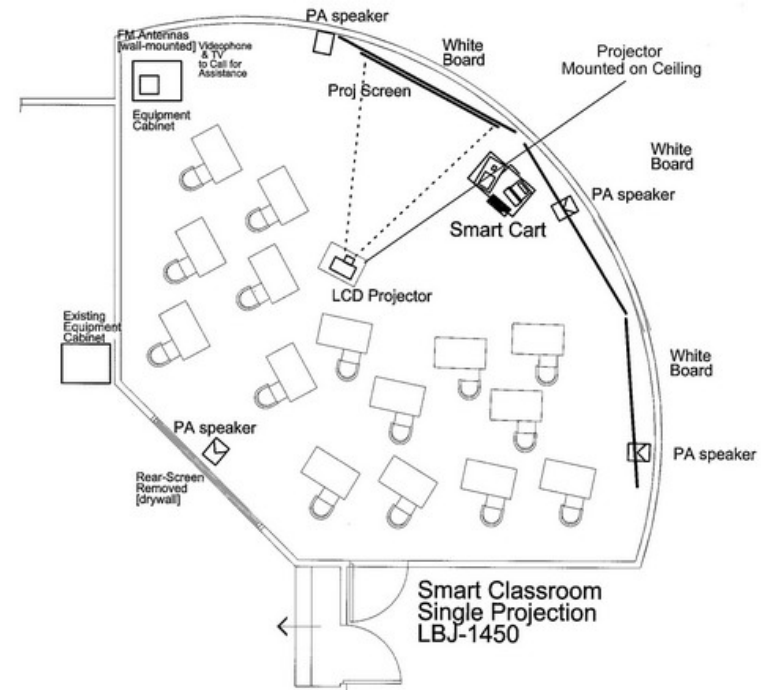
- Standard NTID Classroom Based on Years of Experience
- Incorporates Latest Technology
- Access Emphasis



Video Overview at:

http://www.ntid.rit.edu/co/TSS/NTID_Smart_Classroom.cfm

Typical Configuration



[Smart Cart with Smart Board]



Equipment Cabinet & Display for Low Vision Students



[Close-up of Smart Cart]



[Equipment Cabinet]



Features of an NTID Classroom

- Help System
- Control Room Lights
- Whiteboards
- Smart Board
- Resident Computer
- VHS/DVD
- Visualizer
- Connect Laptop
- Connect Video Phone
- FM System
- Freeze Image

Conclusion

- Use Technology When it Helps
- Consider Applying Instructional Design Systems to Your Teaching
- Follow the “Best Practices” Offered by Experienced Teachers of the Deaf
- Design Classrooms Based Upon Your Experience, Needs & Budget

[Web Resources]

- <http://www.pen.ntid.rit.edu/ewc/csb/tech/index.htm>

References

- “Technology Tips for the Classroom” by Kathleen Eilers crandall, June 1999 NTID/RIT.
- “Deaf Students and Technology: Best Teaching Practices” PowerPoint Presentation , November 9, 2001 by Sam Holcomb and Doug MacKenzie. NTID/RIT.