


Canadian Nuclear Safety Commission / Commission canadienne de sûreté nucléaire

## The Balance Between Visual and Textual Training Material: How Much is a Picture Really Worth?




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## Introduction

- **What this paper covers:**
  - The CSSP and the IAEA.
  - Just what is a “picture”?
  - What are the costs and benefits?
  - Making stepwise improvements.
  - Delivery platforms for instructional material.
  - Five real-world examples.
  - Summary and concluding remarks.

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## The CSSP and the IAEA

- **The CSSP provides support to the IAEA for many activities, including:**
  - Equipment Development
  - Training
  - Cost Free Experts
  - SGs Concept Development
  - Information Technology

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## Canadian Safeguards Support Program

EQUIPMENT DEVELOPMENT AND SUPPORT	INFORMATION TECHNOLOGY	HUMAN RESOURCES
<ul style="list-style-type: none"> <li>• VIFM</li> <li>• CVD</li> <li>• IRUS-Seals</li> <li>• DCVD</li> <li>• VIFM Stand-alone</li> <li>• VIP</li> </ul>	<ul style="list-style-type: none"> <li>• Satellite Imagery</li> <li>• Polaris WCS</li> <li>• GIS</li> <li>• Remote Monitoring</li> <li>• Vulnerability Assessment</li> <li>• Support</li> </ul>	<ul style="list-style-type: none"> <li>• Cost-Free Experts (CFE)</li> <li>• Infrastructure Support</li> <li>• Safeguards Implementation</li> <li>• Technology Transfer</li> </ul>
<h3>TRAINING</h3> <ul style="list-style-type: none"> <li>• Courses</li> <li>• Field Training (CVO)</li> <li>• Computer-based Training</li> </ul>		
<h3>SYSTEMS STUDIES</h3> <ul style="list-style-type: none"> <li>• Physical Models</li> <li>• Transfer of Used Fuel</li> <li>• Integrated Safeguards</li> <li>• Geological Repository</li> </ul>		

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## Just What is a “Picture”?

More Realistic ↑	•Photos •Paintings	•Videos
	•Maps •Schematics •Isometric drawings •Cartoons	•Animations
	More Dynamic →	

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## Costs versus Benefits

- **Controlling costs:**
  - In-house versus contracted resources
- **Benefits**
  - Language independence
  - Photos/videos for realism
  - Diagrams/animations to show hidden aspects
  - Web-based = on-demand/frequent updates
  - Visualizations reveal hidden relationships

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## Stepwise improvements

- Control costs and scope

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## Delivery Platforms for Instructional Material

- See table of pros and cons in paper ...

Platform	Pros	Cons
Printed manuals	<ul style="list-style-type: none"> <li>easy to use</li> <li>can include any kind of static imagery</li> <li>relatively inexpensive to produce</li> <li>no additional hardware needed for delivery</li> <li>easy for users to navigate</li> </ul>	<ul style="list-style-type: none"> <li>can be bulky</li> <li>needs good use of space</li> <li>no dynamic imagery</li> <li>not interactive</li> </ul>
Interactive help procedures	<ul style="list-style-type: none"> <li>more readable than text in a classroom situation</li> <li>interactive can answer questions not accurately covered by the manual or at least provide the location in an electronic manual</li> <li>interactive can gauge student comprehension and adjust the presentation accordingly</li> </ul>	<ul style="list-style-type: none"> <li>can incur significant travel costs if manuals and students are not co-located</li> <li>scheduling can be problematic</li> <li>qualified instructors may be in high demand</li> </ul>
Video presence	<ul style="list-style-type: none"> <li>more an interactive help device</li> <li>makes qualified instructors available in many many places</li> <li>(Video presence is an extension of video conferencing that allows a live instructor to interact with several remote students)</li> </ul>	<ul style="list-style-type: none"> <li>high cost of equipment purchase or rental needs to offset the travel costs</li> <li>does not solve scheduling problems</li> </ul>
Video on DVD	<ul style="list-style-type: none"> <li>very high quality and reliable presentation</li> </ul>	<ul style="list-style-type: none"> <li>no interactivity, manual can</li> </ul>

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## Example 1: CANDU Spent Fuel Monitor (animation shows hidden details)

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## Example 2: Digital Čerenkov Viewing Device (interactive video triggered by keywords)

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## Example 3: Livelink Navigation Procedure (test a prototype on your audience)

2. Left-click on the small icon (🔍) that immediately follows the folder name

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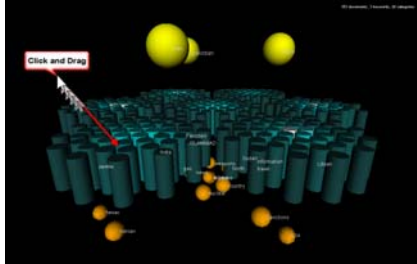
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## Example 4: QMS Web-Delivery (make fast updates & use scarce resources)


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### Example 5: Visualizing Searches (interaction speeds up analytical work)

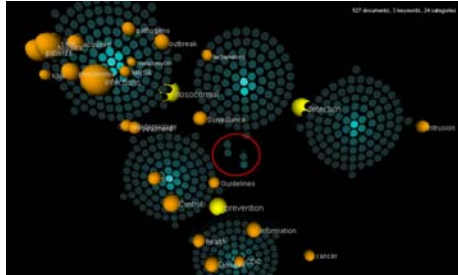


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### Example 5 continued: A Rotated View (easier to see items of interest)



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### Summary and concluding remarks

- We showed several examples
  - You need to pick an appropriate mix
- Understand your audience
  - Test a prototype on them
- Don't provide excessive detail
  - Keep it simple (KISS)
- Use high quality images
- Use stepwise improvements

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### Any Questions?



- More details at <http://saturn.eton.ca/>

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