After more than 10-years of e-Learning, what have we learned?

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Outline

- Where we've been…
- Where we are at…
- What have we learned…
- Where might we go….

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Where We've Been….

Web Pages…

Sinking of the Fitzgerald - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://cimss.ssec.wisc.edu/wxwise/fitz.html

Most Visited

The sinking of the SS Edmund Fitzgerald - November 10, 1975

The SS Edmund Fitzgerald sank in Lake Superior 20 years ago. Gordon Lightfoot's song "The Wreck of the *Edmund Fitzgerald*" (1976, Moose Music, Ltd.) is a tribute to this ship wreck and the men who lost their lives. Some of the lyrics of the song are given below along with descriptions of related events.

"..The lake it is said never gives up her dead

when the skies of November turn gloomy

With a load of iron ore 26,000 tons more

than the Edmund Fitzgerald weighed empty...."

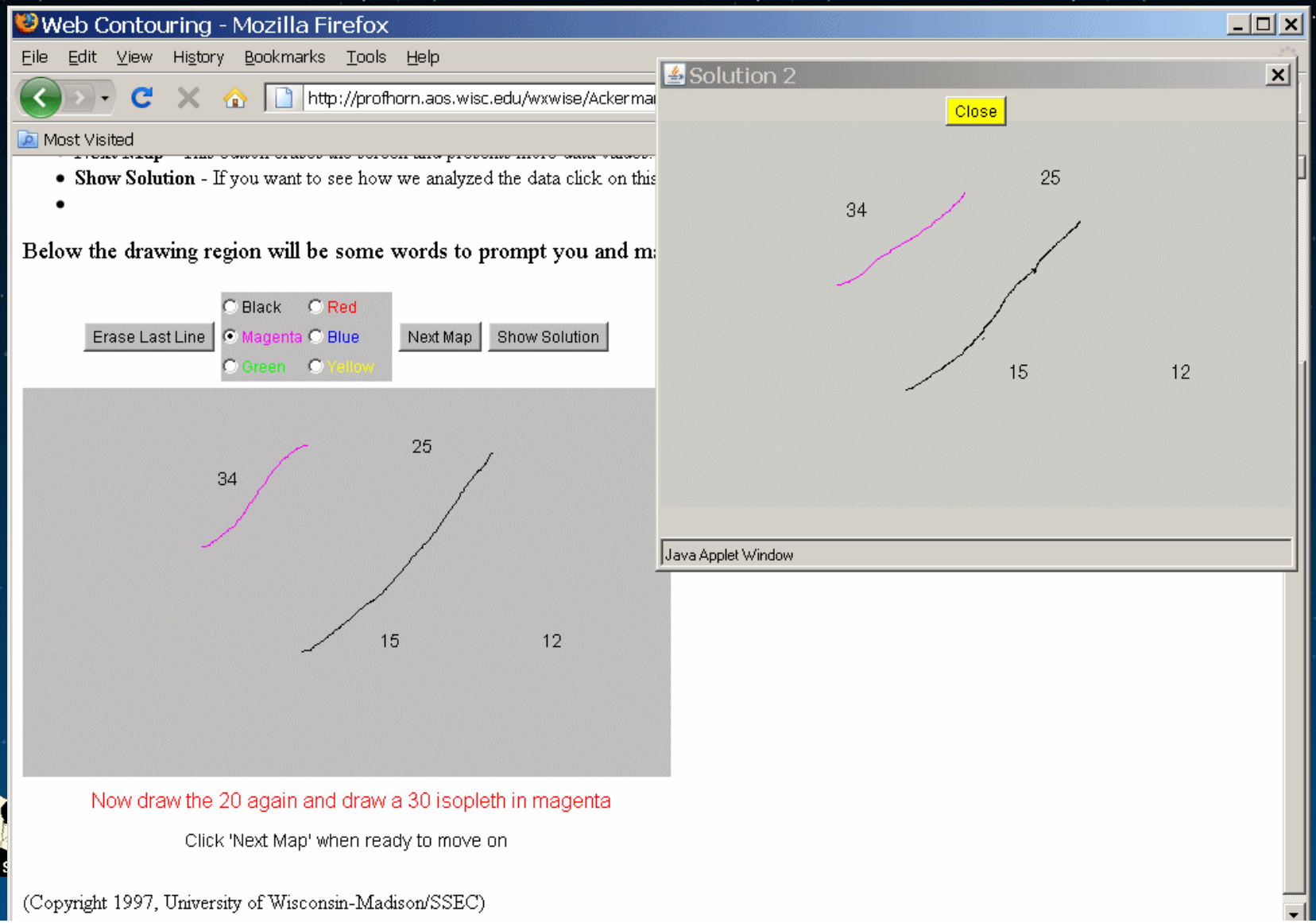
They can stay around for a long time!!

On November 10, 1975 the *SS Edmund Fitzgerald* sank in Lake Superior. All 29 crew members died. At the time, it was the worst shipping disaster on the Great Lakes in 11 years. Other shipping disasters on the Great Lakes, in which weather played a role include:

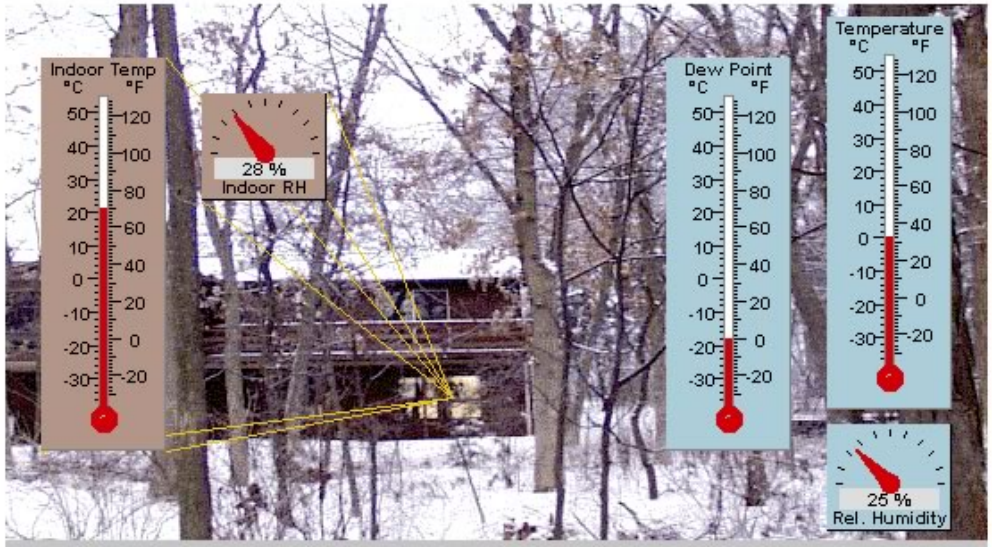
- Nov. 11, 1913: eighteen ships were lost killing 254 people.
- Nov. 11-13, 1940: 57 men died when three freighters sank in Lake Michigan.
- Nov. 18 1958: 33 men died on Lake Michigan with the sinking of the Carl D. Bradley.
- Nov. 29, 1966: Daniel J. Morrell sank in Lake Huron killing the 28 crew members.

"The ship was the pride of the American side

Interactive web pages – contouring..



Assessment of Learning Gains



Furnace

OFF

Thermostat

70 °F

Door is Shut

Door is Open

Activities

Hang out

HELPFUL DEFINITIONS

DEW POINT is the temperature to which the air must be cooled to become saturated with moisture (without changing air pressure). For example, when the dew point temperature is reached, moisture forms on the outside of an ice-cold glass and dew forms on a cool morning on grass, car windshields, and spider webs. The closer the dew point is to the air temperature, the closer the air is to saturation.

RELATIVE HUMIDITY describes how close the air is to saturation *relative to the current air temperature*. The relative humidity is low when the air temperature and dew point are far apart. Conversely, relative humidity is 100% when the dew point ***matches*** the air temperature *(i.e. both are 50 degrees).*

THIS PAGE WILL AUTOMATICALLY PROCEED TO THE NEXT SCREEN IN THREE MINUTES. PLEASE USE THIS TIME TO COMPLETE THE TASKS BELOW.

TASKS:

1. Set the blue (outside) temperature to 30 degrees F and the dew point temperature to 0 degrees F.

2. Leaving the dew point constant, change only the blue outdoor thermometer and observe how the relative humidity changes.

3. Holding the outdoor air temperature constant change only the dew point and observe the relative humidity.

4. As you adjust the readings on the blue instruments, note that the brown (indoor) environment is slow to change. To simulate your home, use the menus at the bottom of the graphic to set the indoor thermostat, to select an indoor activity and open or close the door.

After you are feel that you understand the relationships described here, click here to review the concepts

What we learn on applets?

Immediate Recall

- **TOTAL understanding** $F = 4.380$, $p < .038$
- **RH-temp relationship** $F = 49.160$, $p < .001$
- **RH as moisture indicator** $F = 7.898$, $p < .005$

Delayed Recall

- **TOTAL understanding** $F = 3.562$, $p < .06$
- **RH as moisture indicator** $F = 5.062$, $p < .025$

Interactive Applets improve short term and long term learning.

Yaros, Ackerman and Dunwoody

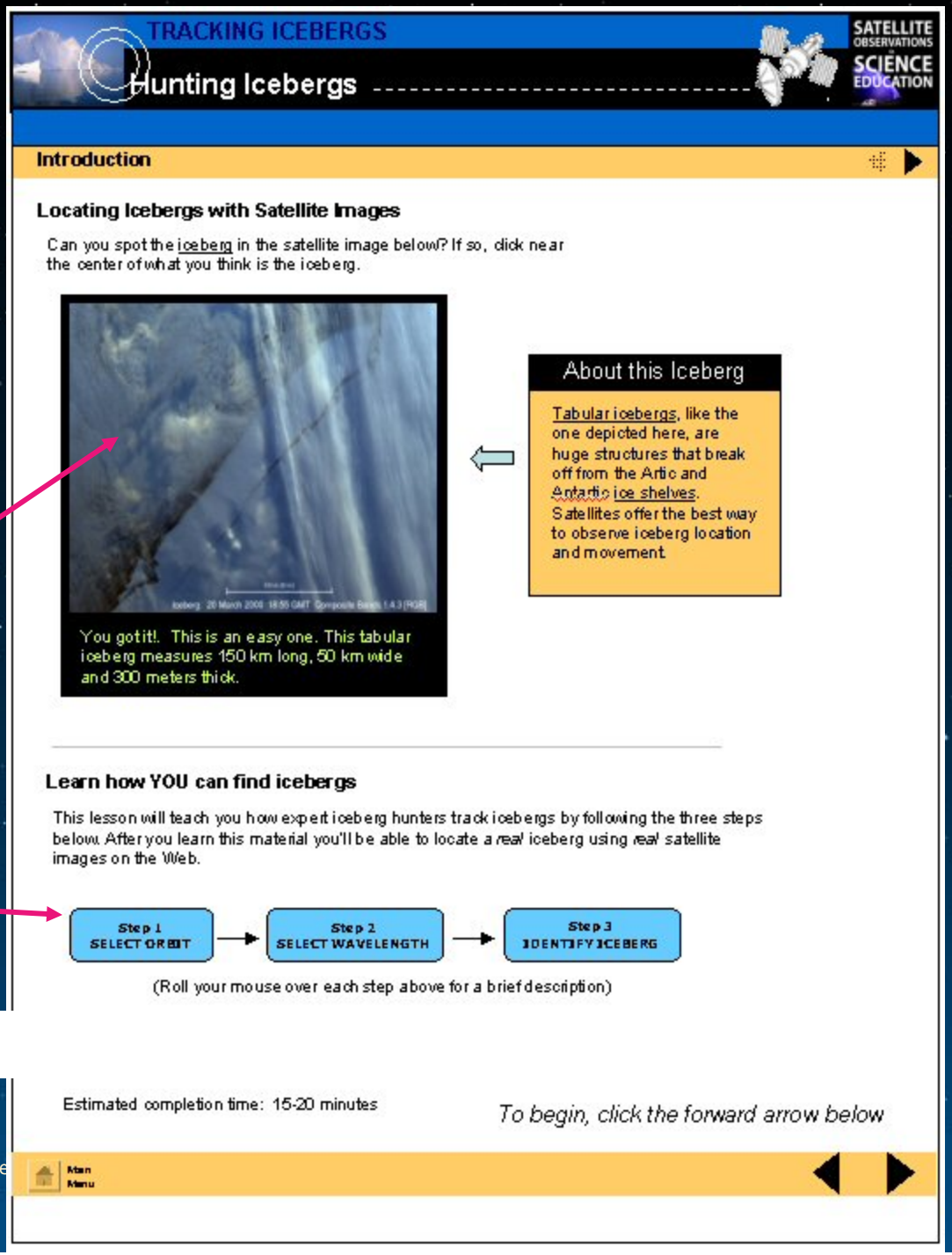
	MEASURE	CONDITION	MEAN	SD
Immediate Recall	RH-Temp. Relationship	No Applet	.37	.49
		With Applet	**.79**	.41
	RH indicators	No Applet	.28	.45
		With Applet	**.46**	.50
	Indoor/Outdoor	No Applet	.37	.49
		With Applet	**.39**	.49
	TOTAL: Exam 1	No Applet	2.96	1.32
		With Applet	**3.33**	1.24
Delayed Recall	RH-Temp. Relationship	No Applet	.82	.38
		With Applet	**.85**	.35
	RH indicators	No Applet	.50	.50
		With Applet	**.65**	.48
	Indoor/Outdoor	No Applet	.36	.48
		With Applet	**.41**	.49
	TOTAL: Exam 2	No Applet	1.67	.94
		With Applet	**1.90**	.90

Where are We at…

Reusable Content Objects

Final page after several rounds of student feedback:

- Simple
- Image
- Description of steps



See Poster JP 4.1 Jasmine…

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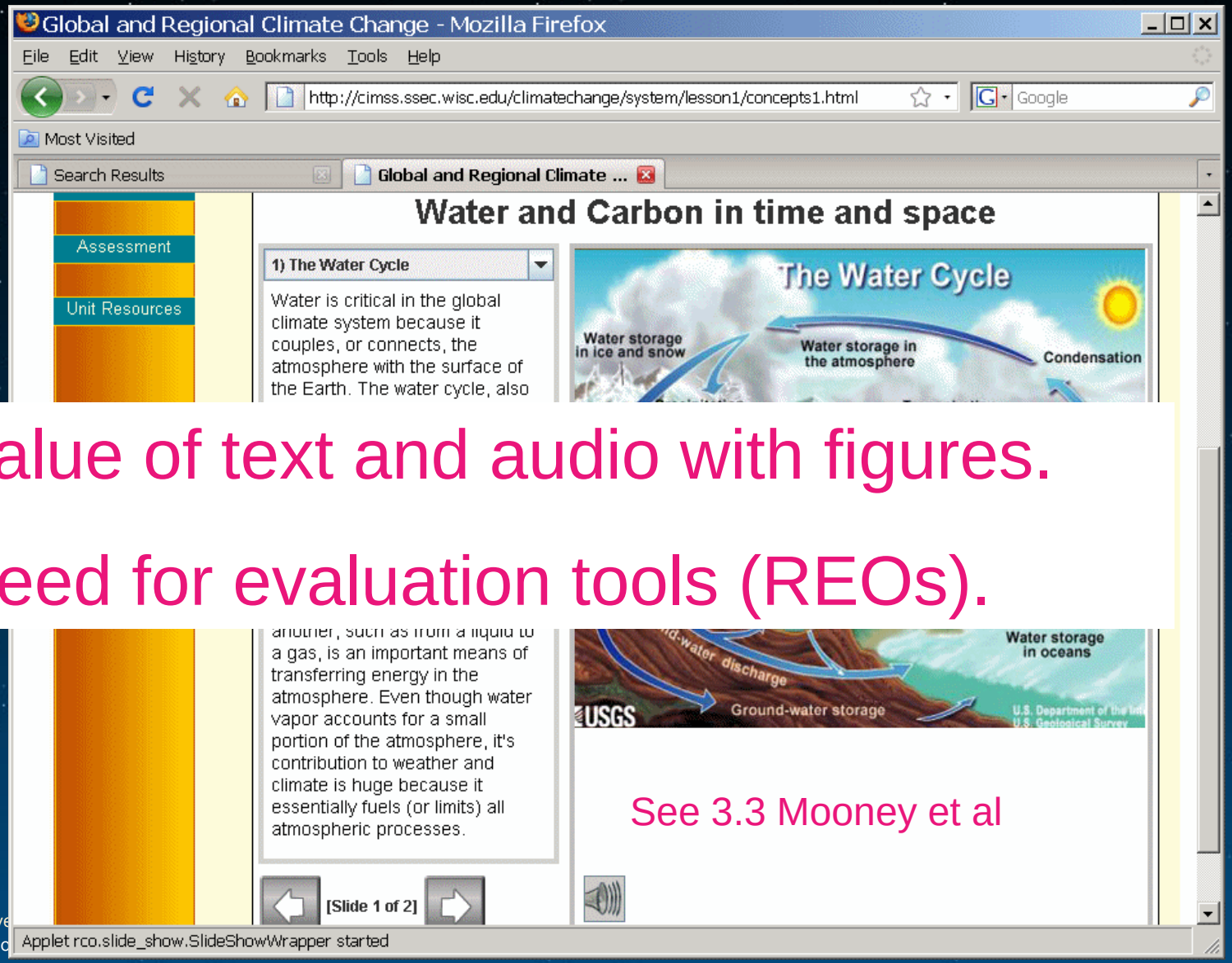
RCO being incorporated into courses



The value of text and audio with figures.

The need for evaluation tools (REOs).

See 3.3 Mooney et al

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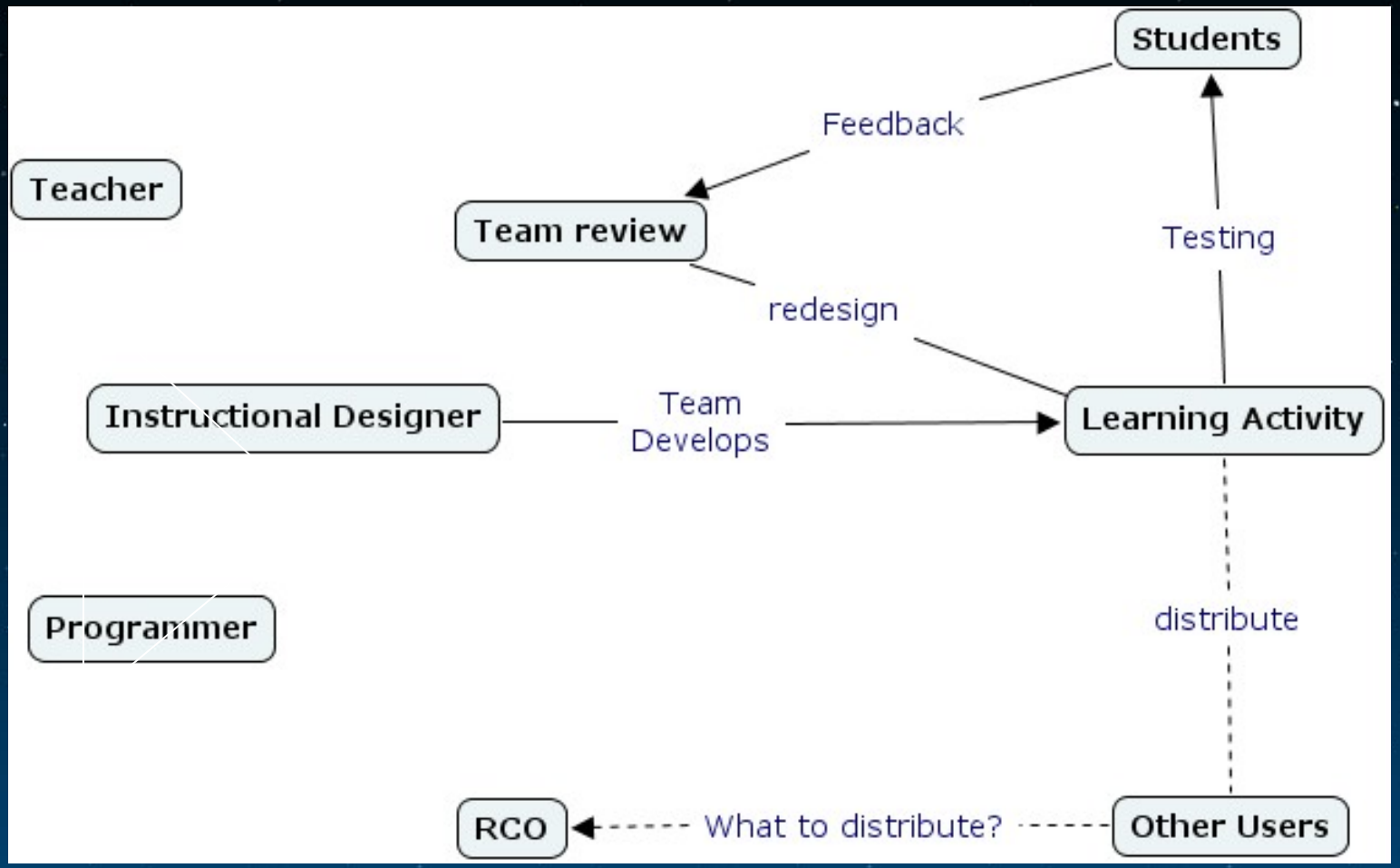
Team Development Process



What have We Learned…

1) Work in a Team
2) Start with learning goals
3) Develop pedagogical strategy
4) Motivate & engage the learner
5) Use the web appropriately as a content medium
6) Provide information framework and structure
7) Use an interactive design process throughout
8) Provide scaffolding in the learning tasks
9) Write Clearly and Concisely
10) Use the web appropriately as a technical delivery

Where Might We Go…

Not technology for technology sake….

Evaluation

Synthesis

Analysis

Application

Comprehension

Knowledge

Bloom's Taxonomy: Cognitive domain.

established

emerging

Learning Technologies

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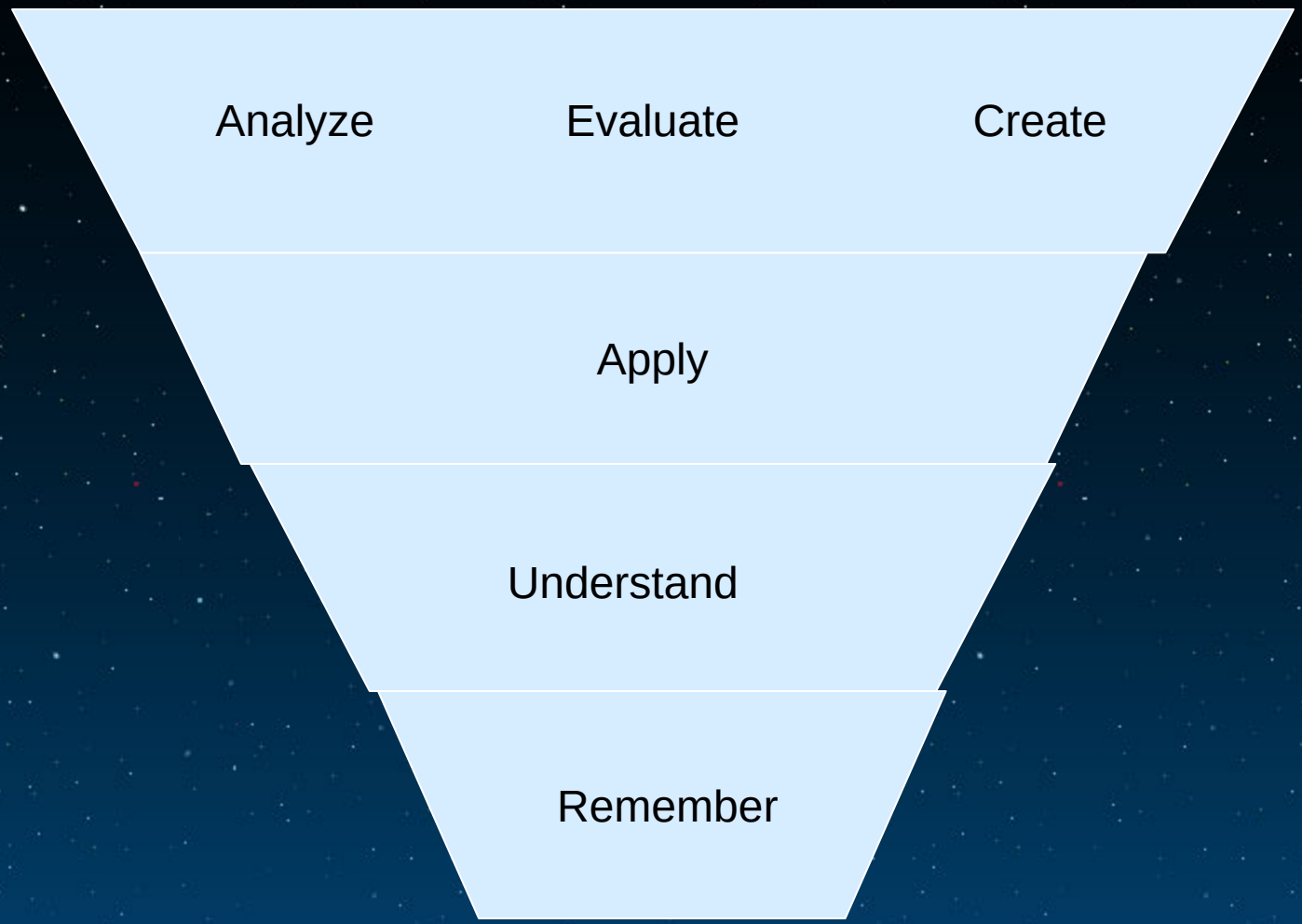
A Taxonomy for Learning, Teaching, and Assessing — A Revision of Bloom's Taxonomy of Educational Objectives; Lorin W. Anderson et al..

Bloom's Taxonomy: Cognitive domain.



established

emerging

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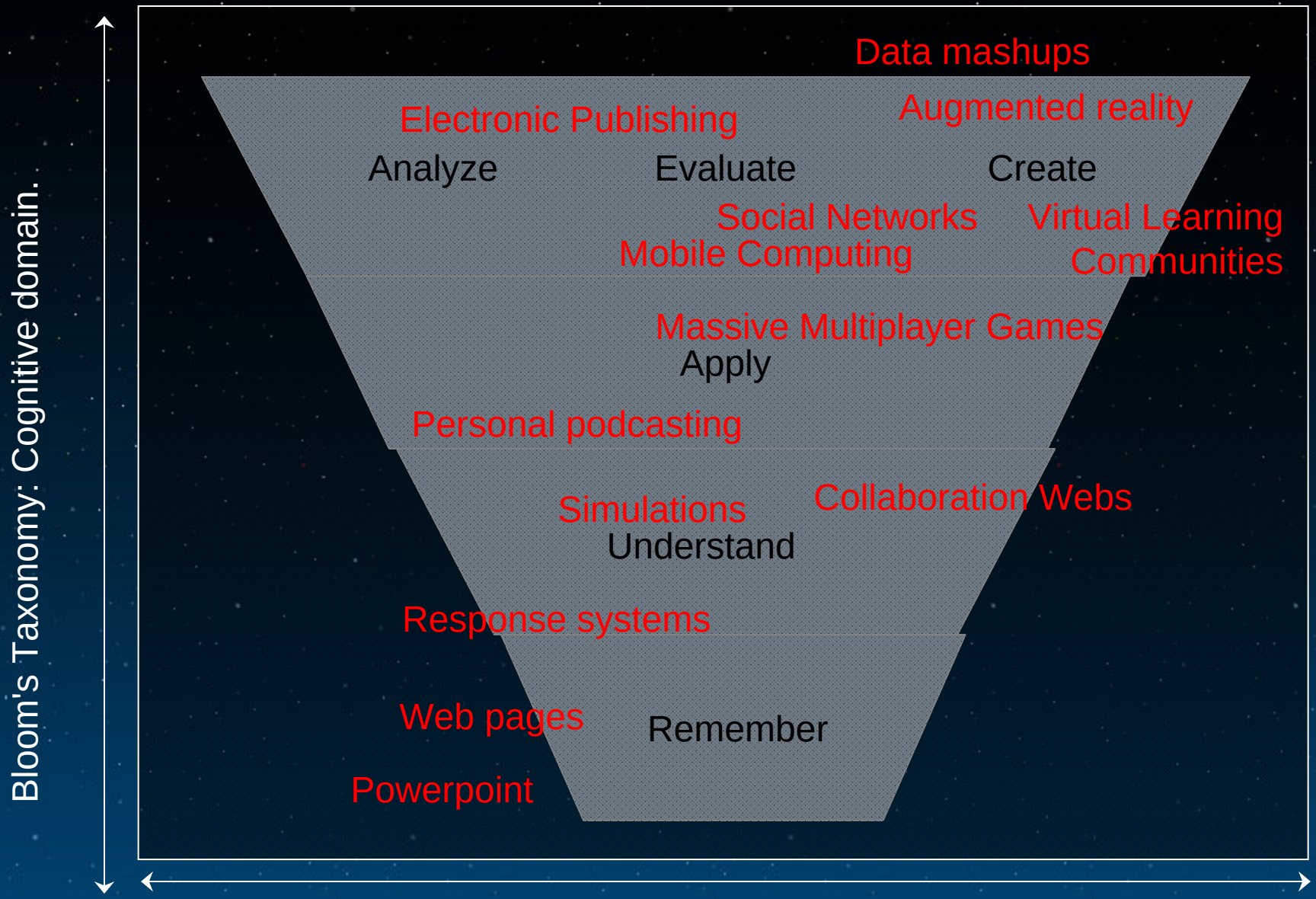

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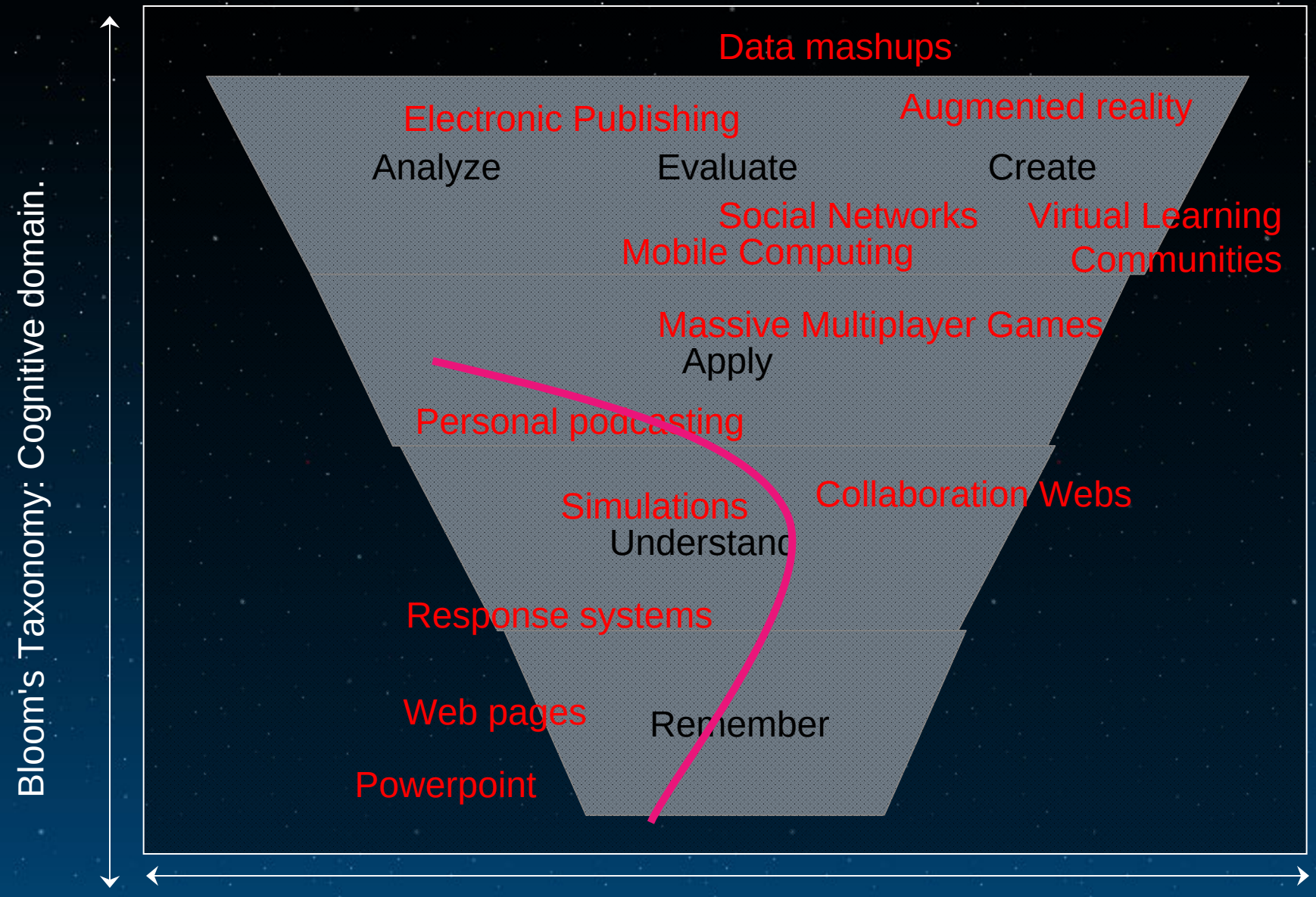

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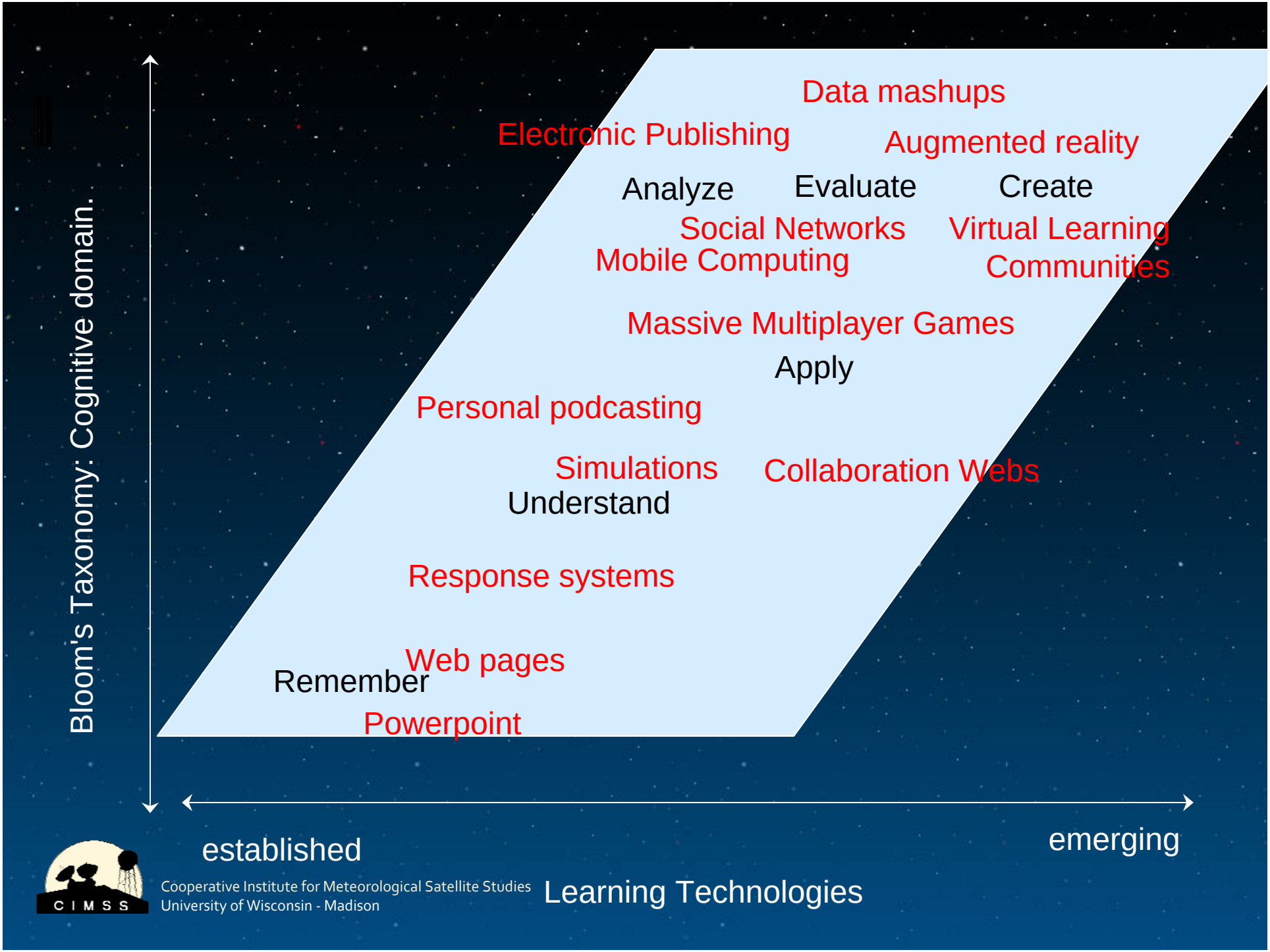

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Summary

- We've got a long way to go yet…
- Several easy to use e-Learning tools for basic knowledge
- Emerging technologies are addressing higher order learning
- Collaborative teamwork critical for incorporating emerging technologies and high learning
- Expect mistakes
- Assess, assess, assess, assess,… and….

Thanks…

Tom, Tommy, Margaret, Tim, Chris, Kathy, CIMSS, Engage…

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