

Developing Safety Culture Education at a PUI Campus

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Wisdom to make a difference.

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My Campus Safety History

- I worked in environmental chemistry labs at **Cornell** and **UVM** for 5 years, then started the lab safety program at **UVM** in 1985
- In 2011, I went back to **Cornell** to work lab ventilation and then as Chemical Hygiene Officer for 3 years
- In 2014, I moved to **Keene State College** to be the Chemical Hygiene Officer and now am the Environmental Safety Manager
- At UVM, we worked with BC and UMass Boston on the Lab-XL project, which led to RCRA's Subpart K



Lessons Learned from Lab-XL

- Each institution is unique
- Connecting to the mission is necessary to motivate organizational change
- Flexibility goes a long way in laboratory settings

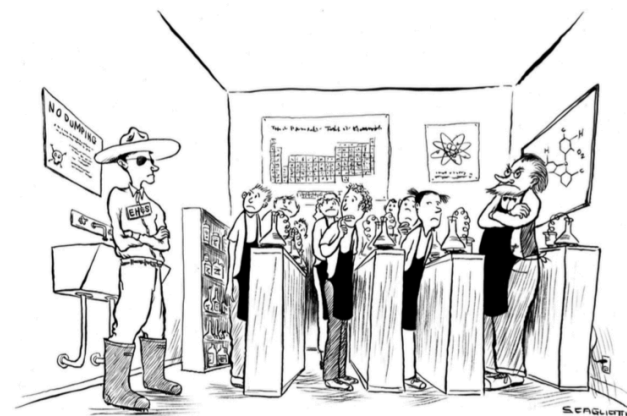
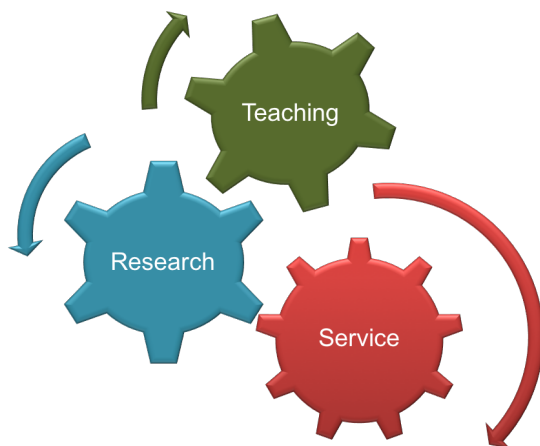


Fig. 1. Traditional regulatory approach to chemical waste disposal tend to be seen as more confrontational than partnership-oriented.

Whence this Presentation?

- **NH INBRE**

- INBRE is a NIH program managed by Dartmouth to support research at small campuses in NH
- Keene State is the largest participant in terms of students conducting funded research (30+)
- Funded research includes chemistry, biology, psychology and exercise science
- Last March, KSC stopped receiving checks from INBRE because our students hadn't completed the Dartmouth on-line lab safety training.
- Does the Dartmouth lab safety training make sense for KSC student?



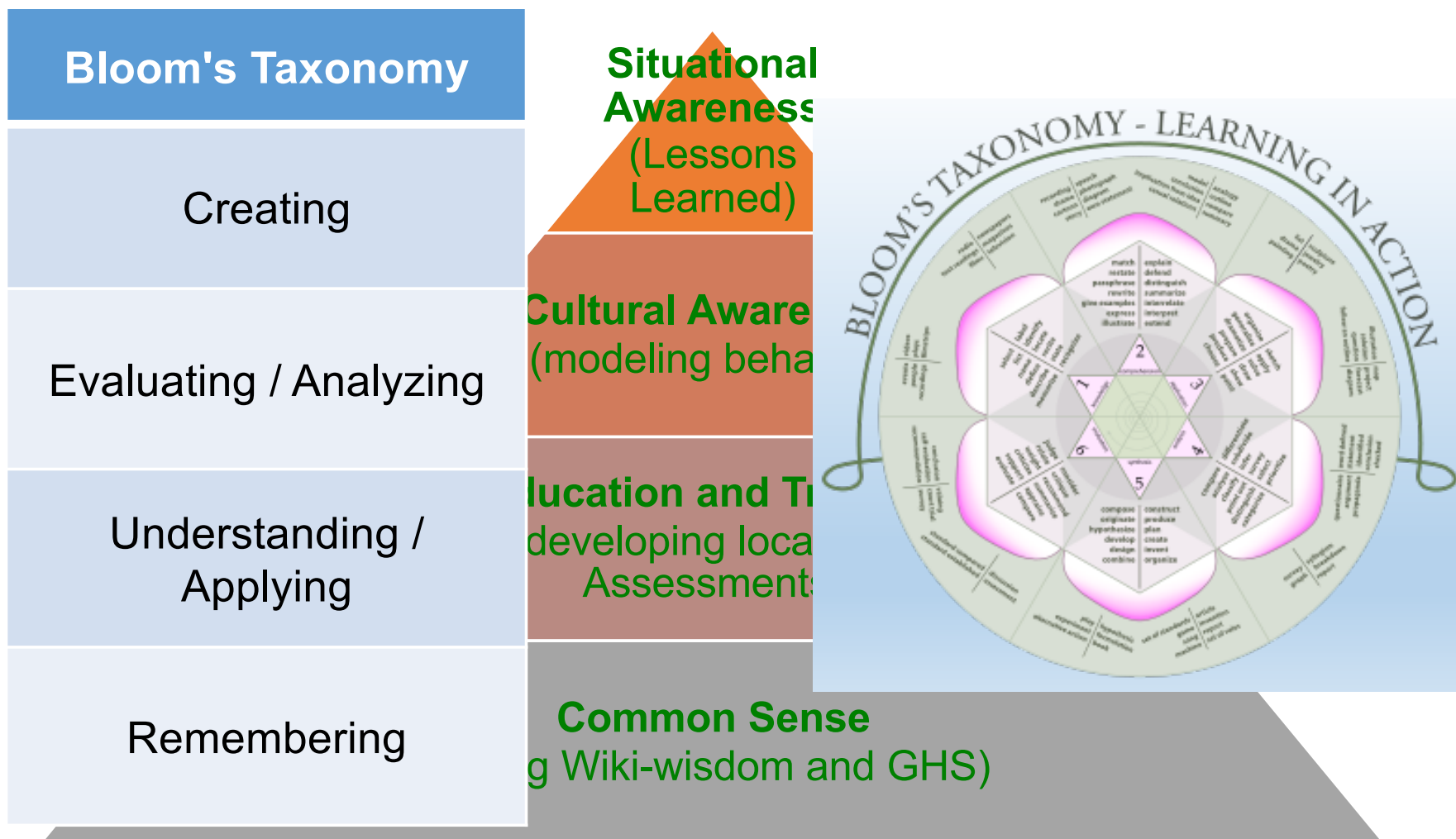
The Cultural Side of Training

1. Safety is everyone's responsibility. It operates at an institutional level *(service)*
2. Good science is safe science *(research)*
3. Safety training and education are essential elements of research and education *(teaching)*
4. *An improved culture of safety is necessary (continuous improvement)*
5. *Diverse methods and flexible approaches are necessary (institutionally-driven)*



The Good News: Lab Safety aligns with the Educational Process

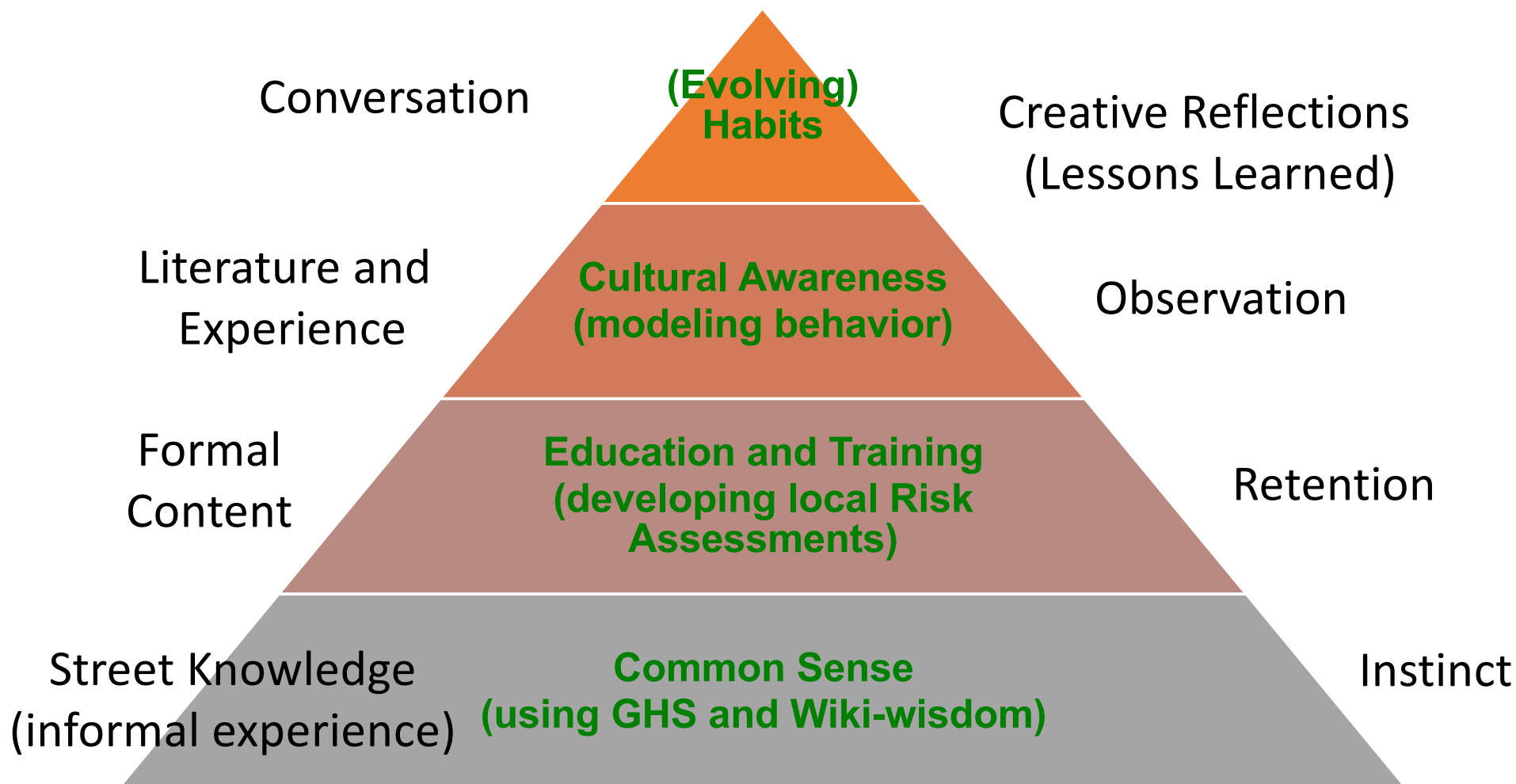
Safe Lab Practices involve 4 elements:



The Safe Lab Education Process

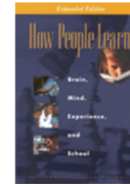
Learning Source

Learning Techniques



A Creative Opportunity: Lessons Learned and Safety Moments

- To enhance safety **awareness** of lab workers
- To help **lateral thinking** to develop “what if” scenarios
- To provide stories that add interest to **safety training** efforts
- To help lab workers **prioritize** their safety concerns.



How People Learn: Brain, Mind, Experience, and School: Expanded Edition

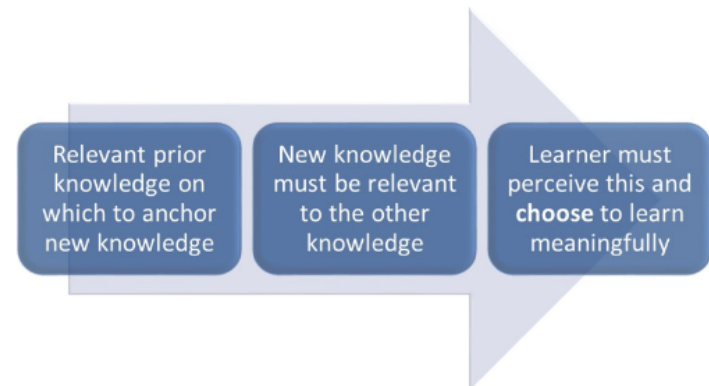
Committee on Developments in the Science of Learning with additional material from the Committee on Learning Research and Educational Practice, National Research Council

ISBN: 0-309-50145-8, 385 pages, 7 x 10, (2000)

This PDF is available from the National Academies Press at: <http://www.nap.edu/catalog/9853.html>

Experts organize knowledge and approach problems differently from novices

Meaningful learning



Novak, J. D. *A Theory of Education*; Cornell University: Ithaca, 1977.

A Community Safety Culture Example: Electrical Safety



- Hazard Awareness training pays off
- Communicate to protect others
- The 911 Call can help walk you through the emergency



This May Shock You Puget Sound Electric
<https://www.youtube.com/watch?v=fLVzvMTgGDY>

When it comes to safety, Nobody is perfect

This Might Shock You: Downed Power Line



The Ongoing Challenge: “Street Safety Culture”



Cool under cabin pressure.

PREPARATION

Pass It On:

'Any good story has to have a villain': Sully crash investigators unhappy over their 'unfair' portrayal in Tom Hanks movie

- Sully the movie is inspired by Captain Chesley 'Sully' Sullenberger's so-called Miracle on the Hudson water landing in January 2009
- The maneuver, after the aircraft struck a flock of geese knocking out its engines saved the lives of all 155 passengers and crew
- Film shows that as Sully, played by Tom Hanks, was praised as a national hero, the investigation threatened to destroy his reputation and career
- U.S. National Transportation Safety Board dispute their portrayal
- The real-life investigators say they actually praised Sully's actions and went out of their way not to appear critical
- The NTSB report concluded that the pilot 'provided the highest probability that the accident would be survivable'
- Sully, directed by Clint Eastwood and starring Hanks, Aaron Eckhart and Anna Gunn is in movie theaters tomorrow

References

- *Life outside of RCRA: The Lab-XL experience*, Ralph Stuart, Francis Churchill, Zehra Schneider Graham, Gail Hall, Thomas Balf, **Journal of Chemical Health & Safety**, **September/October 2008**
- *To Hive or to Hold? Producing Professional Authority through Scut Work*, Ruthanne Huising, **Administrative Science Quarterly 2015**, **Vol. 60(2)263–299**
- *How People Learn: Brain, Mind, Experience, and School*, **National Academy of Sciences**