

How can we build sustainable safety culture: Safety training vs safety education?

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Agenda:

Why safety matters?

What is a safety culture?

How to build a safety culture?

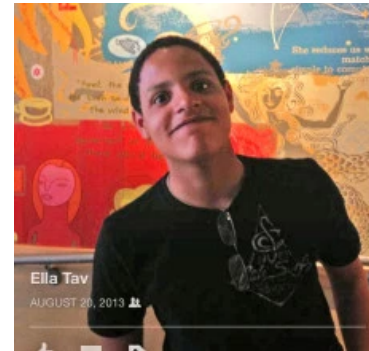
Is education and training same?

Researchers' opinion.

Why Safety Matters?



Sheri Sangji Case, UCLA 2009



Alonzo Yanes, Manhattan 2014



**5 Students, Teacher Injured in School
Science Lab Fire, Fairfax, Virginia, 2015**



University of Hawaii lab explosion 2016

What is a Safety Culture?

Safety culture is defined as the enduring value and prioritization of worker and public safety by each member of each group and in every level of an organization


Von Thaden and Gibbons (2008)

Safety culture ... forms the environment within which individual safety attitudes develop and persist and safety behaviors are promoted

Mearns, et al (2003)

It's not a policy, program or procedure.



A decorative graphic on the left side of the slide. It features a thick, dark brown vertical bar. To its right is a red arrow pointing right. Below the arrow are several thin, curved lines in shades of green and brown, resembling grass or reeds.

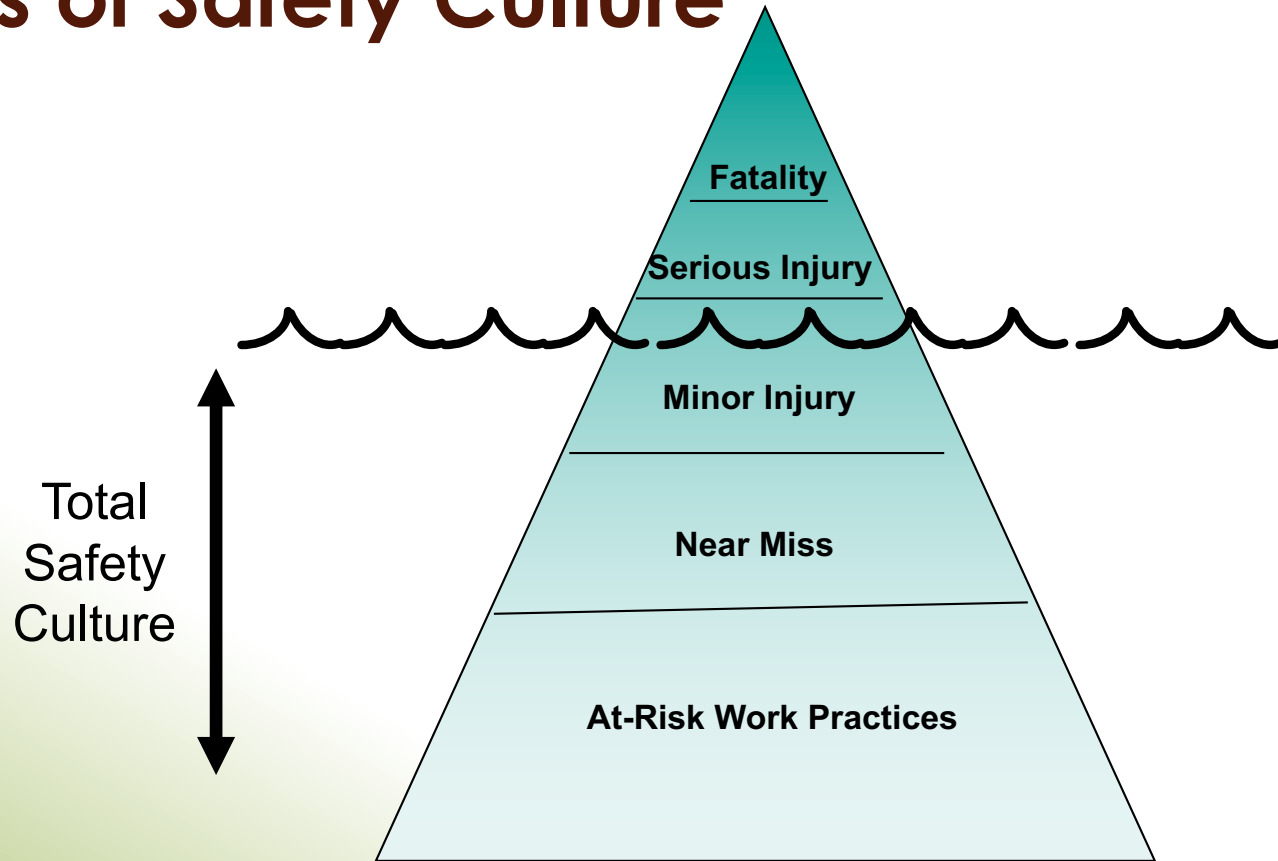
Safety culture is sustainable when safety is a part of daily activity management; infused in every action, every interaction, every decision and every behavior.

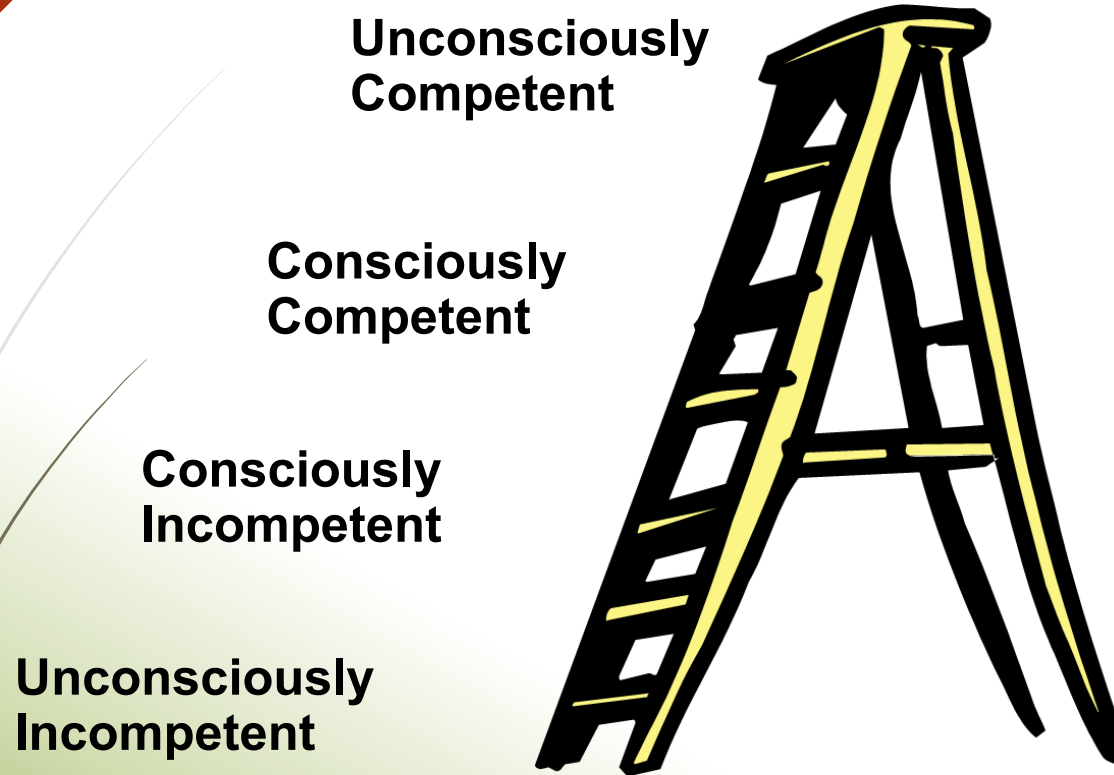
For most academic labs safety is seen as a compliance issue



Compliance
Health & Safety

Focus of Safety Culture



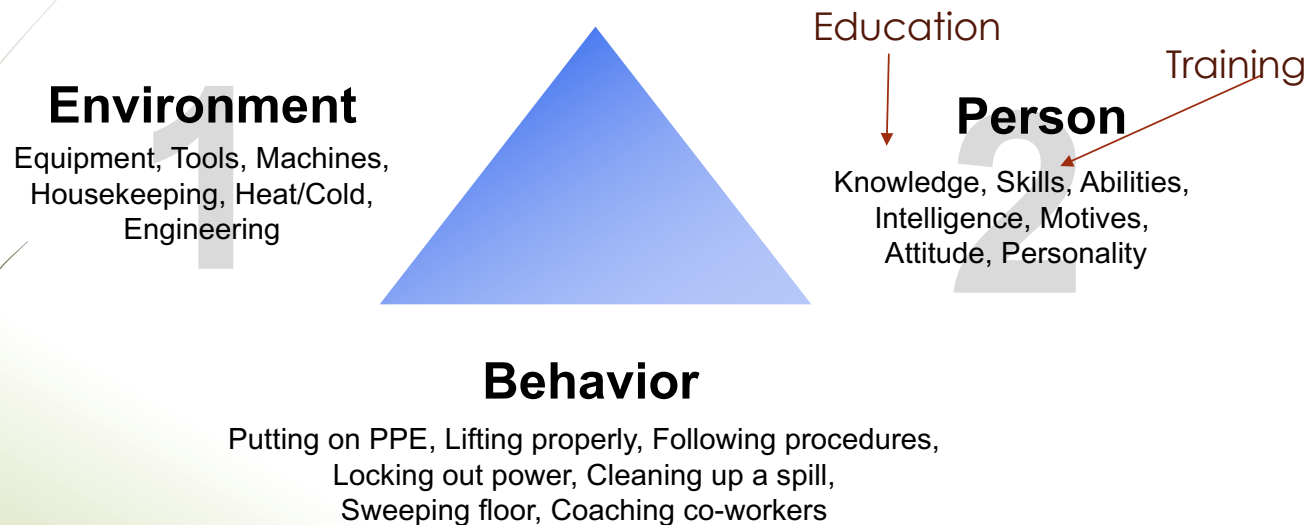




How to Create Safety Culture

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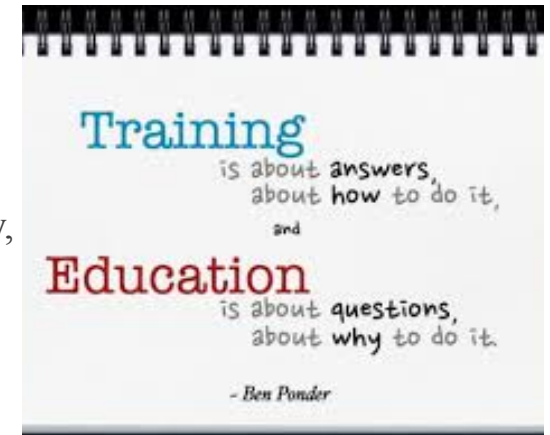
Component of Safety Culture



**Should we educate our future researcher
or should we train them?**

Education and Training

- **Training** implies the act of imparting a special skill or behavior to a person, which is commonly offered to employees of operational level.
Have short term goal
- **Education**: process of systematic learning something that develops a sense of judgment and reasoning. It is offered to all employees equally, irrespective of their grades or level in the corporate ladder.
Have long term goal
- The difference is in **teaching style** and the **purpose**





Laboratory Safety Trainings

Right-to-know

Chemical
Hygiene Plan

Toxic
Chemical
Safety

Compressed
Gas safety

Corrosive
Chemical
safety

Hazardous
waste
management

Biological
Safety

Radiation
Safety

Laser Safety

X-ray Safety

Bloodborne
pathogen

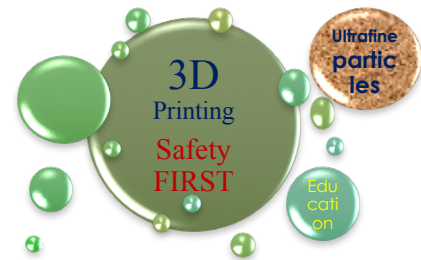
Proper PPE

Limitations of Training

- Trainings are helpful for the people with previous knowledge *whereas* Education build that previous knowledge
- Narrowly focused
- Instructor Variable?

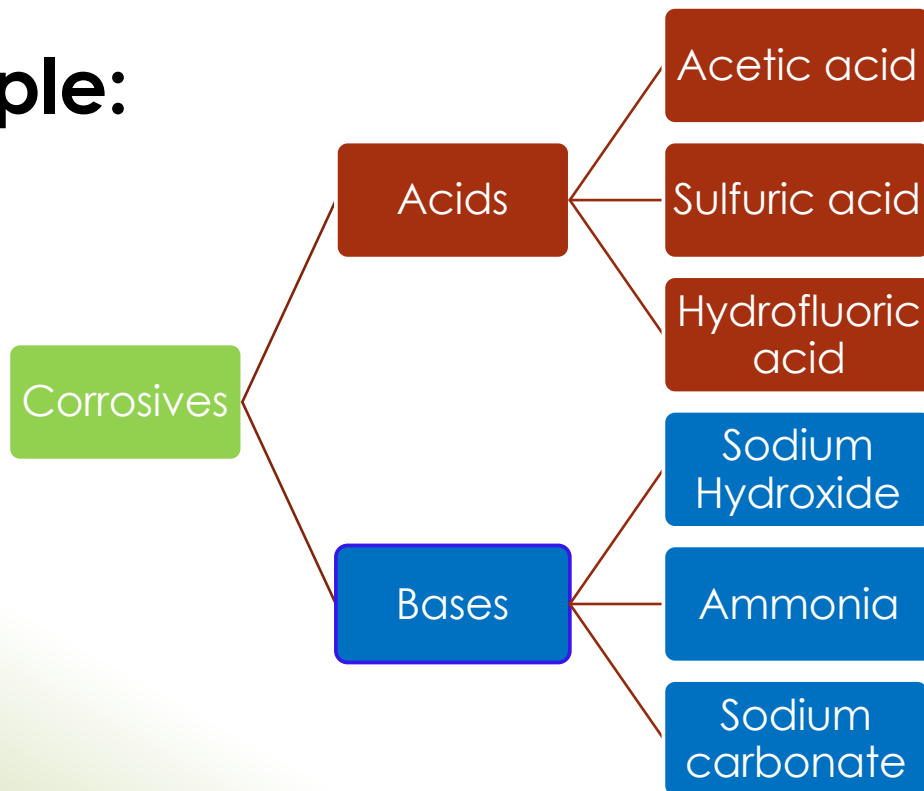
How to write Standard Operating Procedures

Understanding difference between procedures





Example:





Why Trainings have Limited Success?

- Trainings lacks reinforcement and accountability in most cases
- Failure to follow-up on core concepts or deliberate practice
- Organizational structure
- Fast track learning, too much content in short time, human have hard time learning that way

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Philosophy of Learning

- People learn best when they are ready to learn
- People learn more easily when what they are learning can be related to something they already know
- People learn best in step by step manner
- People learn by doing
- The more often people use what they are learning (reinforcement), the better and longer they will remember and understand it
- Success in learning tends to stimulate additional learning



Safety Education

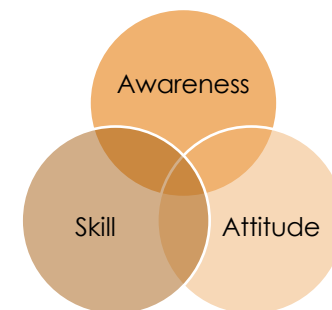
The primary purposes of **safety education** are:

Building a foundation of lab safety by teaching related concept and procedures

To teach students about the chemical, physical and health hazards they might encounter in the **laboratory**

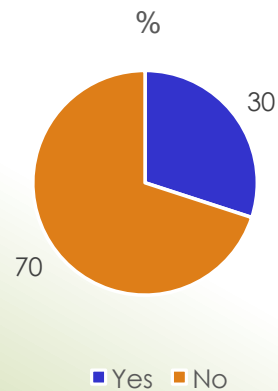
Risk assessment, and to protect students, staff, and property

Safety training is an essential part of lab safety education

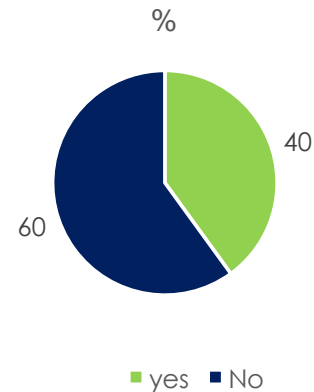


Researchers' Opinion

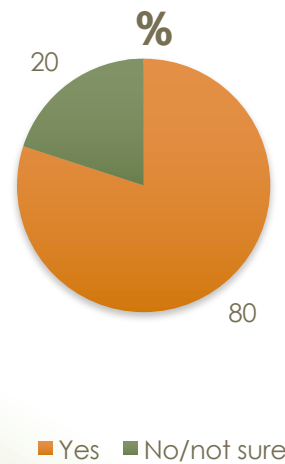
- Did you receive any formal education or training before starting lab research?




- Are you happy with the level of training you receive during lab research?



- Would you recommend safety education (lab safety credit course) supported with the hands on experience before starting lab research for students in your group?





“If you give a man a fish, you feed him for a day, and if you teach a man to fish, you feed him for life.”

Daniel Burrus added “don’t just teach him how to catch a fish. Educate him about the art and science of fishing.”



Safety Culture



A strategic combination of both education and training is needed to develop a safety culture!



SAFETY FIRST !



Discussion
Questions