Create Your Own Lean Training

Presented by Susan Weum Six Sigma Black Belt Lean Certified Continuous Improvement Leader



#### **Background and Experience**

• Retired Senior Project Engineer and Continuous Improvement Leader from Smiths Medical.

smiths medical bringing technology to life

- Six Sigma Black Belt and Lean Practitioner.
- Chemical and Materials Engineer, Michigan State University.
- Six Sigma Green Belt Instructor since 2005.





## **Keys for Training Development**

- Start by Listing Tools & Concepts.
- Understand your Audience.
- Choose the delivery method.
  - Use examples and be flexible.
  - Ask students for examples. Engage at every opportunity.
- Give targeted Homework.
  - Homework *applies* the concepts and tools.
  - Student presentations are optimal.
    - Students will use a variety of tools on their project.



# Where do you start when developing training? Start with an overview...the **BIG** picture.

- List what you specifically want to teach.
  - Steps
  - Concepts
  - Tools

Let's look at an example from Six Sigma...



#### **DMAIC Process Overview**



# What did you notice about the previous slide?

- DMAIC Phases are clearly marked.
- Concepts are listed, linked to primary tools.

# What else?

- It's BUSY and complex. Guides both Training Development and provides a Reference for students.
- There are a LOT of tools listed. 39 of them!
  - This is a good point to <u>start</u> with the message "Not every tool applies to every Project or Problem!"



Fill in the tools and their intended usage.

• This is the "easy" part. You know your subject.

Decide <u>how</u> to deliver the information. This depends on several factors.

- Who is your audience?
- How training will be delivered.
  - In-person, Online, and what examples/exercises you'll use.



Develop for your general audience and be ready to adapt.

For Six Sigma and Lean Training, student background *matters*.

- Engineers, Manufacturing, Line Leaders, Finance, Documentation, Management...others?
- **All** need to know the tools and methods but focus may change. *Emphasize Judgement and Leadership regardless of job function.*



### An example from Six Sigma Green Belt Training

For Engineers and Technical functions, providing a detailed, step-bystep example for Design of Experiments (DOE) works well.

- In my normal ONLINE class, this approach is useful. The overview is 12 slides, and part of the normal presentation.
- A recent class was comprised of Manufacturing Personnel, Supervisors, a Safety Leader and CI Auditors.
- What now?

#### DOE Example

In the Day2\_3 Data Excel file, copy & paste data from the DOE Insulation tab into a new Minitab worksheet.

In Minitab, choose Stat>DOE>Factorial>Create Factorial Design

Minitab - Insulation DC	DE.mpx												
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#### An example from Six Sigma Green Belt Training

No one in the class was likely to use a DOE.

• Current material would include using Minitab for a half hour.

Be able to change your approach quickly based on your audience. What did I do?

- Presented the tool and its uses <u>without using Minitab</u>.
- Original slides remained and were presented as Reference
  Material to illustrate the concept.
- Spent the time working through an Optimization Matrix example from a student instead!

Reiterate that not all tools apply universally. Their judgement and leadership are essential.



Look at how the training will be delivered. Inperson, online, and HOW you will teach it.

Using the same example:

Design of Experiments (DOE) content can be:

- An Overview as part of Six Sigma Green Belt Training...
- A detailed example as part of Six Sigma Green Belt Training...
- A Full-Day class!

This applies to any complex tool...Value Stream Map, Overall Equipment Effectiveness, etc.



Decide how to best teach any tool, thinking through best methods and examples.

Design of Experiments is a complex tool that's part of a much larger methodology.

 For in-person training, develop a hands-on example that teaches the tool <u>in context</u> if possible.

For In-person Green Belt Training, we developed a Cookie Company Exercise that runs throughout the Training to apply many tools.



## The Cookie-baking exercise allowed us to demonstrate all phases of the DMAIC process.



# Making M&M Cookies Activity #1

- Decide on a team name
- You only need 4 6 cookies
- Your customers will arrive in ~45 minutes to pick-up and "rate" your cookies (decide if they will buy them or not)!
- Start making cookies!



For Online classes, demonstrate using the software, forms or tools you have in place.

- For the DOE example, we demonstrate the software tool with sample data.
  - The best example is one your students can relate to.
  - Consider requiring a Project for Training.
  - Give **HOMEWORK** between sessions, and have students present their work in the next session.

Tool selection is essential to mastering the methodology.



# Key Takeaways for Developing Training

- Start by Listing Tools & Concepts.
- Know your Audience and be ready to adapt.
- Choose your delivery method based on circumstances. Be flexible.
- Give Homework and make students accountable.
  - Homework applies concepts and tools.
  - Student presentations are superb training tools.
    - Students will use a variety of tools to discover which ones apply to their project.



# Thank you!

