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Overcoming Barriers to Effective Simulator Training

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Why do people buy simulators?

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- "Hands on" practice.
- Learning/ reinforcing process concepts.
- Troubleshooting methodology/practice.
- Re-creating plant incidents.
- Practice Start Up/ Shut Down.
- Testing/ demonstration of competency.
- Refresher training.
- Demonstration tool.
- Other?

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Not usually.

So what are the barriers?

Time

- Simulators, like any other training tool require lesson plans and exercises- **time** is needed for development.

- Trainee time is also very limited, making it difficult to manage resources.

Resources

- Unlimited budgets do not exist- in every learning environment we have limitations on logistics as well as support (limits on overtime, small training staffs, etc.)

- Instructors are asked to more with less.

Operator Pushback

- It is very common for incumbent operators to reject the validity of generic simulation. (even custom simulators suffer this fate from time to time)

- The typical response is "It's not my unit, why do I need to learn this one as well."

Instructor Skills

- Simulators offer a tremendous range of learning opportunities. With that range comes a need to understand the tool and where/how to implement it effectively.

- Often times, instructors have a wealth of technical knowledge but have difficulty in putting together a training program due to time and other limitations.

- Turnover is another factor - heavy use of adjuncts and special assignments in industry take people in and out of their roles.

Instructor Skills

- Successful OTS Trainers have:
  - Sound process knowledge of the units they are training on
  - Familiarity with the OTS features
  - Ability to manipulate basic files
  - Ability and creativity to program learning scenarios
  - Ability to run through scenarios several times to know what happened and when
  - Good observer of trainee behavior

Lack of Structure/ Not required

- Making any training activity mandatory can be challenging - simulator training is no exception.
- Simulator becomes a "game" and loses legitimacy.
- If simulator activities are not tied back to work related learning objectives, trainees will dismiss them as not relevant.

Lack of Management or Operations Support

- In many instances, operations management sees a simulator as non-essential or worse.

- Training departments have little influence if operations and unit supervisors do not support using the simulator.

Strategies to overcome barriers

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- Focus on fundamentals.
- Use technology.
- Create easily duplicated templates.
- Focus on support from unit supervisors.
- Treat the simulator like a real unit.
- Use your vendor.
- Use the simulator more!

Focus on the Fundamentals

- Simulators can have different interfaces, but the physics and chemistry never changes.
- Focus on 2-4 key operating parameters.
- Introduce the simulator in a group setting.
- Use "what ifs" as a pre test.
- Barriers reduction: Operator Pushback

Use Technology

- Simulators are powerful demonstration tools and are particularly effective with Millennials.

- There are lots of inexpensive/ free screen recording applications available.

- Instructors can pre-record the demonstration of process concepts and have them available virtually anywhere. (SmartPhone, iPad, etc)

- Barrier reduction: Time, Resources, Training/Turnover

Create Easily Duplicated Templates

- There are several common formats for very effective simulator exercises.
  - What if's, Observe and describe, troubleshooting
- Creating a template with standard formats (including learning objectives) makes it much easier to use the simulator effectively.
- Many of these exercises do not require extensive software training.
- Barrier reduction: Time, Resources, Instructor Skills, Lack of Structure.

Focus on support from Unit Supervisors

- Prior to any full scale roll out of a simulator, it is imperative to gain the support of the Unit Supervisors.

- Time should be spent upfront to show how the simulator will benefit them and the operations.

- Barrier reduction: Lack of management/ operations support.

Treat the simulator like a real unit

- Your simulator is designed to emulate a real process unit.

- Training is about more than knowledge-changing and encouraging correct behavior is key.

- Would you jump on your real FCCU and "play around" before learning its operating parameters?

- Barrier reduction: Operator pushback, lack of structure.

Use your vendor

- Your vendor is an invaluable resource to help overcome all of the barriers mentioned.
- Most vendors have been in the industry for many years and can offer best/worst practices seen over the years.
- Many vendors can help with resources/tools needed to succeed.
- Barrier reduction: Lack of resources, lack of instructor training.

Use your simulator more!

- The biggest mistake most people make is not using their simulator to its full potential.
- Being safe, easy to deploy and so close to "reality" there is little training that can not be enhanced with simulation.
  - Basic flow diagrams, equipment identification, etc.
- When simulators are "part of what you do" it greatly reduces most of the major barriers.
- Barrier reduction: Operator pushback, Instructor training, lack of structure, lack of support.

Questions/ Comments

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