simtronics

NAPTA

3 Learning Technologies Oil & Gas Millennials Want

Iram Shaikh & Bruce Manthey
Simtronics Corporation

Theme and Outcomes

Theme

To attract Millennials to the Oil & Gas sector their needs must be met

Their wants are different

Looking at PowerPoints does not work

They like to collaborate, want mobility and enjoy competition

We must rethink the way we train and use technology

Three best practices are presented

Outcomes

Provide ways to better engage with the Millennial Learner

1. 3D virtual environments & OTS;
2. Competitive scoring; and,
3. iOS/Android applications.

Facts, Figures and a Little Fiction!

ABOUT MILLENNIALS

Martha Stewart says Millennials Lazy, Lack Initiative

Youngsters are too lazy to get ahead

Generation Snowflake

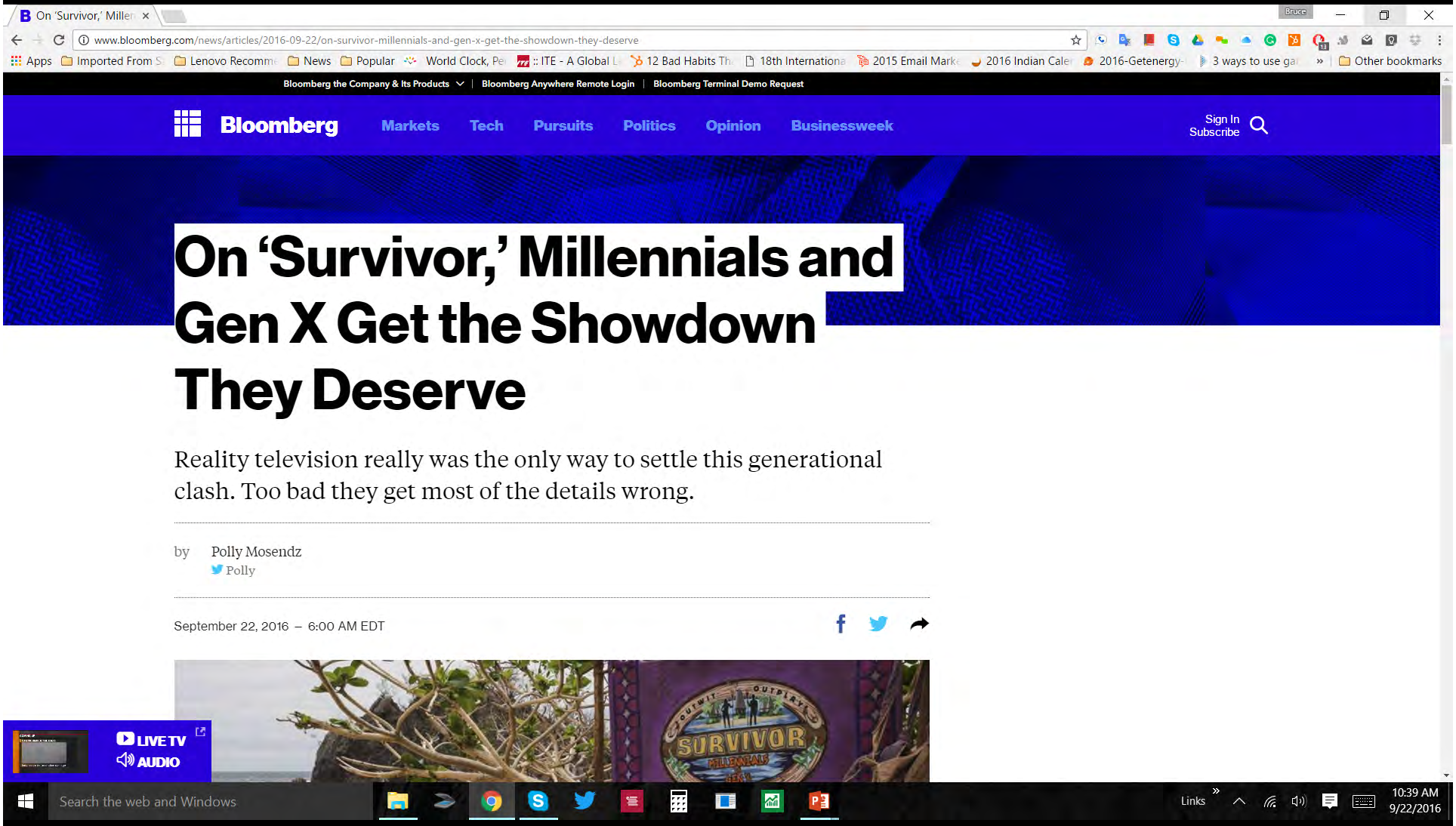
Living with parents… "mollycoddled"

Every business is trying to target millennials

I understand plight of younger people... economic circumstances very grim

"But, you have to work for it. You have to strive for it. You have to go after it."

Hamill, Jasper. "Generation Job-shy." *The Sun Online. 13 July 2016.* http://bit.ly/2b6xSd7. Retrieved 15 July 2016.


On 'Survivor,' Millen
www.bloomberg.com/news/articles/2016-09-22/on-survivor-millennials-and-gen-x-get-the-showdown-they-deserve
Bloomberg the Company & its Products | Bloomberg Anywhere Remote Login | Bloomberg Terminal Demo Request
Bloomberg
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Tech
Pursuits
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Opinion
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On 'Survivor,' Millennials and Gen X Get the Showdown They Deserve
Reality television really was the only way to settle this generational clash. Too bad they get most of the details wrong.
by Polly Mosendz
Polly
September 22, 2016 – 6:00 AM EDT
LIVE TV
AUDIO
Search the web and Windows
Links
10:39 AM
9/22/2016


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ON FIRE!
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ABCs (almost) of Millennial Generation

Active learners

Benefits from technology

Collaborative, confident, constant stimulation

Digital natives

Expert multitaskers

First person learners

Goal achievers

Hard workers / high maintenance

Inclusive, independent, individualistic, informed, innovative, investigative, involved

Just wants a personally fulfilling life

Knowledgeable

Learn quickly, like informality, live a mobile collaborative and immediate lifestyle

Mobile, motivated, meaning

Needs: constant feedback, group activities, supervision

Open about emotions and intelligence

Practical, pragmatic, pressured, protected

Respectful, results oriented, responsible, rapidly assimilates information

Seeks praise, approval & support; self-assured; sensitive to others; structured; socially minded

Team-oriented, technically savvy

Values: institutional learning, intelligence

Works to live – doesn't live to work

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Millennial Learning Style

Generation comprised of active learners

Multi-tasking ability; propensity for innovation; curiosity, discovery, and exploration as contributing factors

Shorter attention spans and low boredom tolerance

Hypertext mindset

Leads to frequent activity changes, reducing applicability of lecture-style training

Influence of technology

Increased need for structured, hands-on, interactive assignments

Less likely to internalize material presented in a lecture-only format

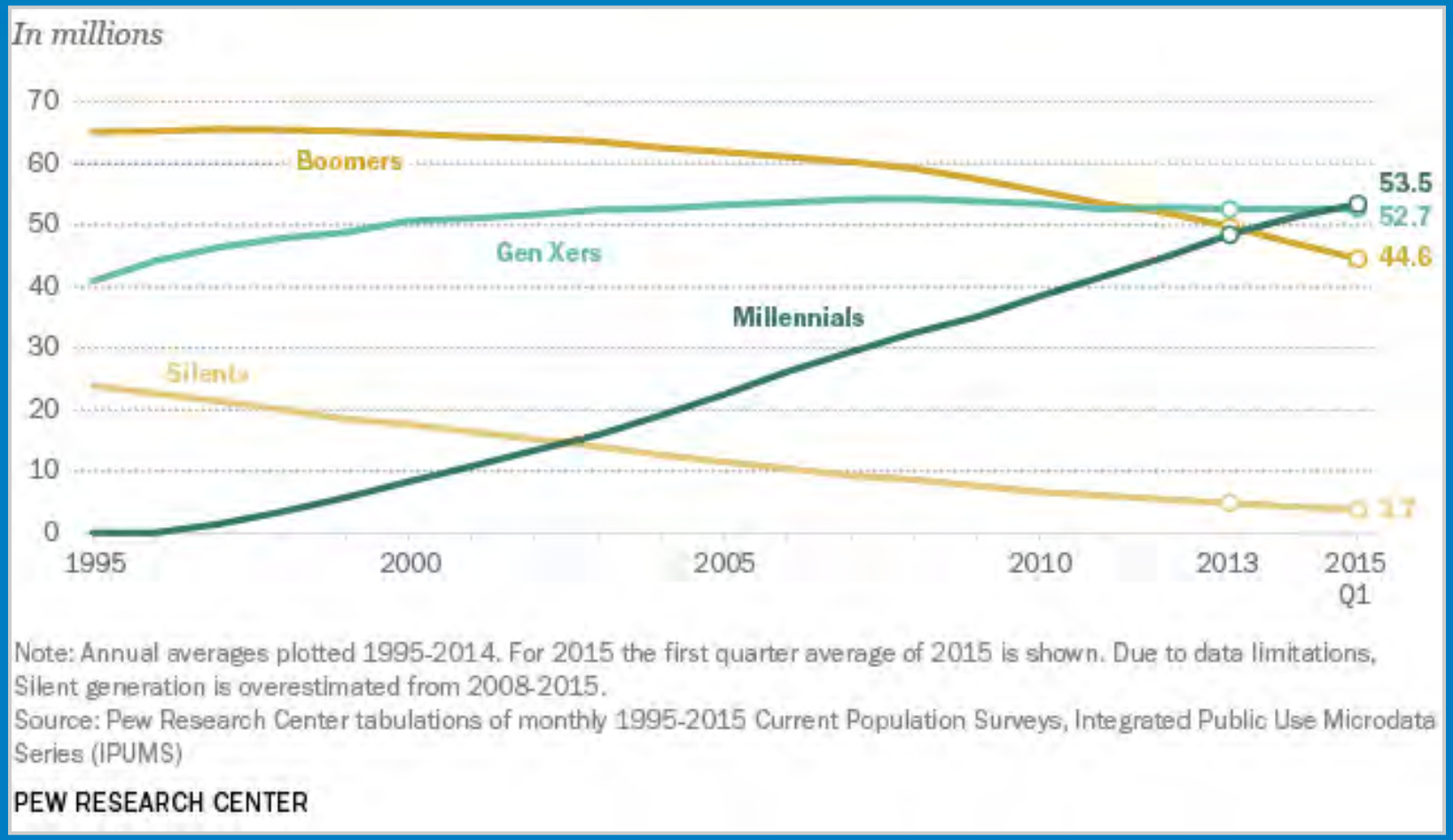
Role-playing as one alternative

Team-oriented, collaborative learning

Necessity of hands-on elements

Millennial Learning and Technology

U.S. Labor Force Dramatic Shift



Source: http://www.pewresearch.org/fact-tank/2015/05/11/millennials-surpass-gen-xers-as-the-largest-generation-in-u-s-labor-force/

The Millennial Learner: What to Provide

Baby Boomer

Inclusive decision-making

Group interactions and discussions

Chances to try new skills independently

Generation X

Fun activities

Relevance and understanding of what's in it for me

Discretion to complete tasks their own way

Millennial

Lots of activity-based group work

Individualized feedback and mentoring

Technology enabled learning and use of their own devices during class

Source: https://www.td.org/Publications/Newsletters/Links/2015/02/Generational-Differences-in-the-Classroom

The Millennial Learner: Generational Relationships

Baby Boomer

Early 50's – 70

Parents of Millennials

Taught kids their opinions were important

Generation X

Mid 30's – Early 50's

50% of Boomer Gen

Had to fight to have a voice

Thinks Millennials are flighty, flakey, and unwilling to "pay their dues"

Millennial

16 – Early 30's

Children of Boomers and "Internet"

"Want information when I want it!"

Smartphones and tablets

Meaning > money

Source: http://www.forbes.com/sites/robasghar/2014/01/13/what-millennials-want-in-the-workplace-and-why-you-should-start-giving-it-to-them/#97343bf2fdfb

The Millennial Learner – One More Observation

Generic traits and preferences associated with Millennials

- Shorter attention span
- Prefer interactive, experiential and collaborative learning
- Very comfortable with technology
- Multitask
- Driven by instant gratification
- Like informal and stimulating environments
- Prefer casual and friendly relationships with teachers
- Often well-rounded
- More competitive than we give them credit
- More likely to comply with authority than their parents' generation
- Well prepared
- Best-educated generation

Sources: https://www.insidehighered.com/blogs/university-venus/millennial-learners; http://www.forbes.com/sites/valleyvoices/2016/04/25/millennials-and-their-destruction-of-civilization/#5707e37a3b19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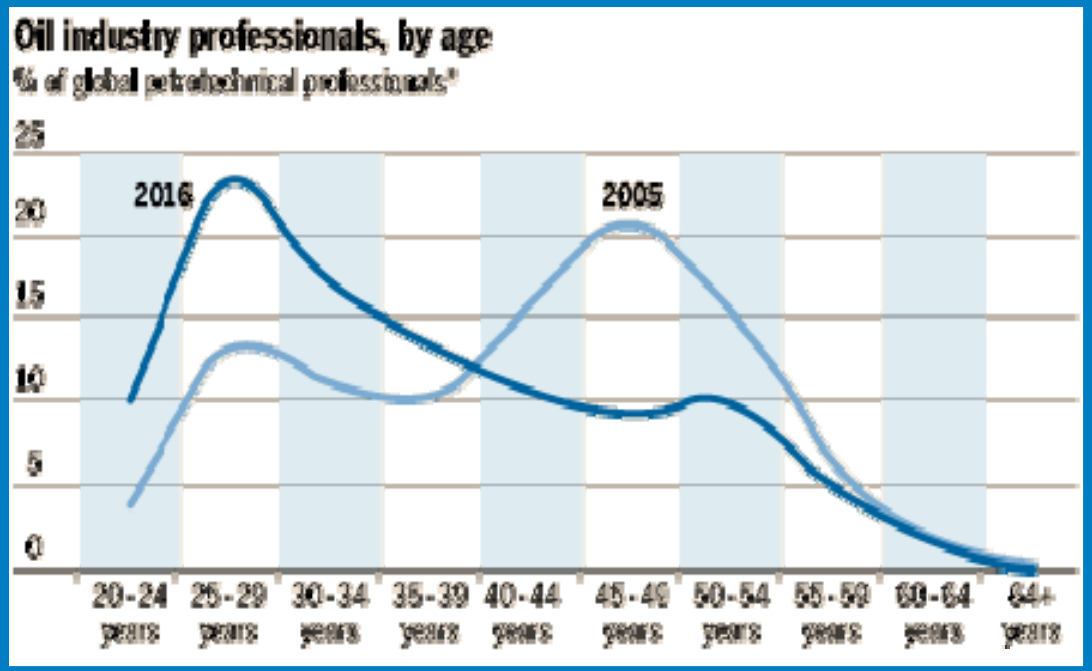
Prices ↓ Training $ ↓ Retirements ↑ People ↓ Layoffs ↑

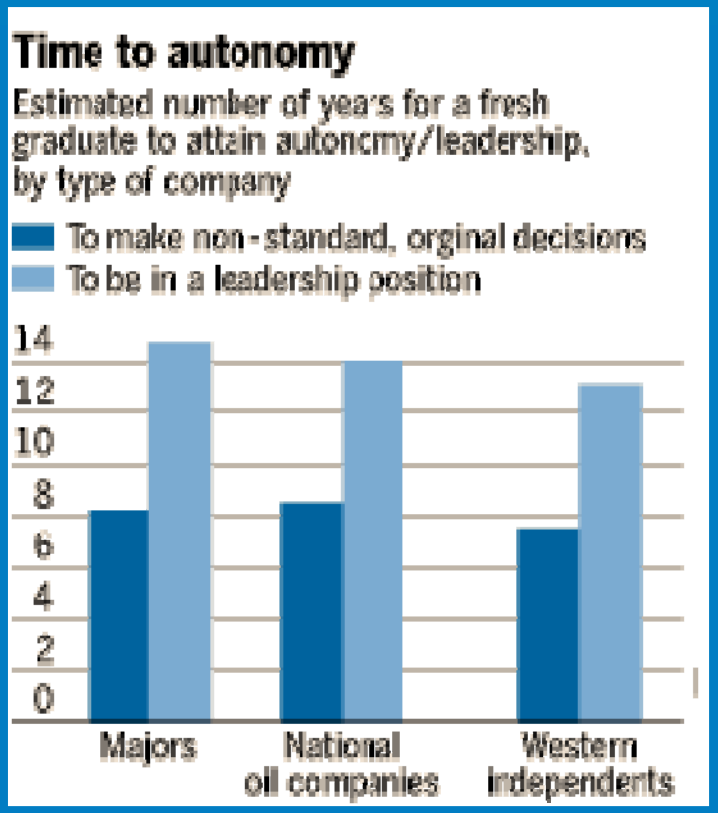
ENERGY/OIL & GAS SECTOR TODAY

As Predicted in 2011: "Great Crew Change" is Here

Boomers & Millennials



Time & Talent



Sources: Schlumberger Business Consulting; Thomson Reuters Datastream.

“The Perfect Storm”

Photo Source: ISS036-E-017952 (11 July 2013) Typhoon Soulik, ENE Taiwan.

"The Perfect Storm"

Low oil prices drive workforce reductions resulting in fewer job opportunities

Millennials steer clear of Oil & Gas because of fewer job opportunities; thinking High Tech

Polytechnics' enrollments are down; corporate training programs are cut back

Increased Baby Boomer retirements reduce number of mentors

The two most important people in a plant at 0300 are the Board and Field Operators; but, it takes eight-years to become autonomous

Global energy demand is increasing; so are O&G projects

High demand for PTPs* world-wide; supply is low

Young people access and interact with information on smartphones and tablets; but, we give them PPTs and custom simulators

**Petro-technical Professional*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Outcomes

Provide ways to better engage with the Millennial Learner

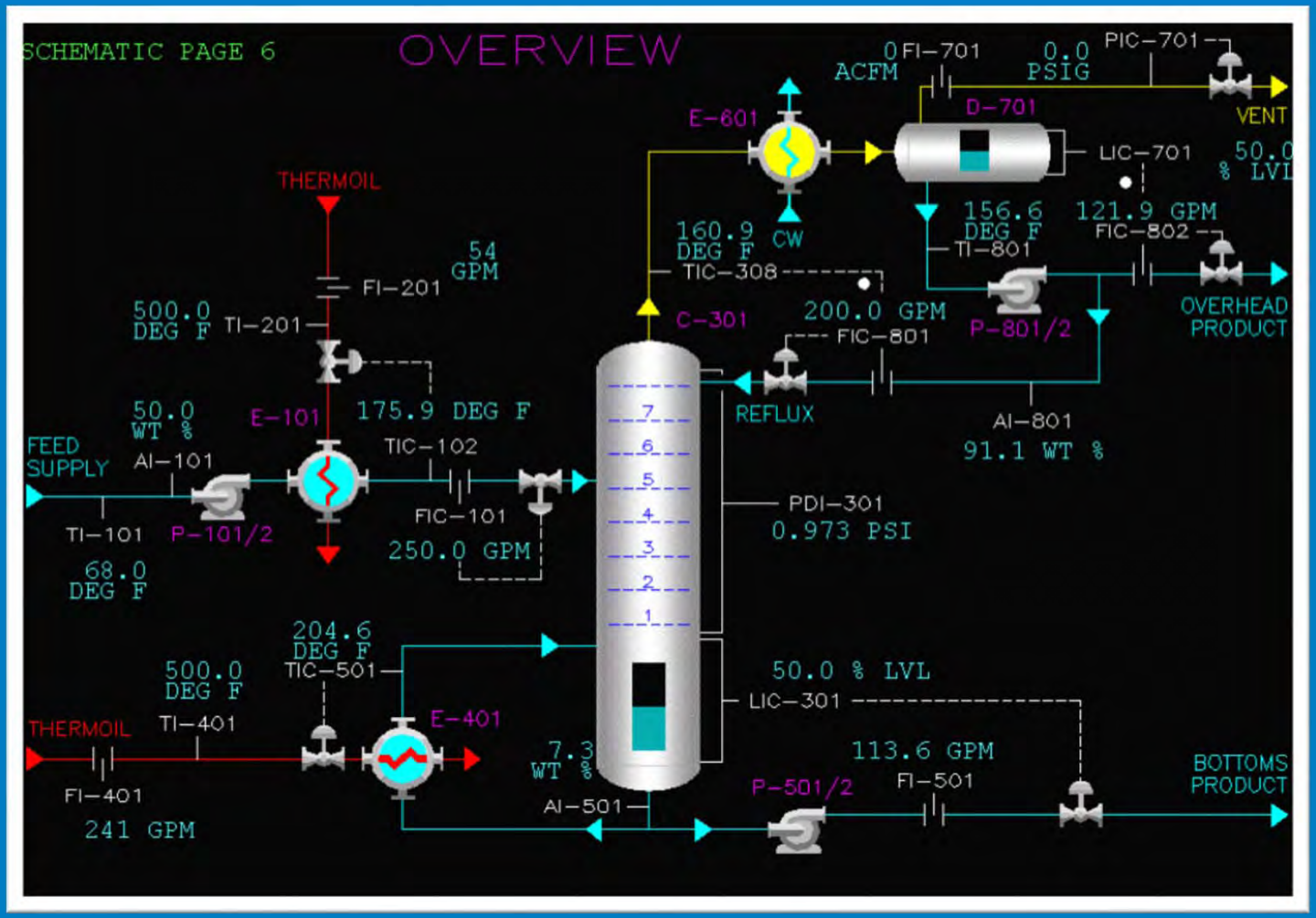
1. 3D virtual environments & OTS;
2. Competitive scoring; and,
3. iOS/Android applications.

What Oil & Gas Millennials Want from You

3 LEARNING ENVIRONMENT BEST PRACTICES

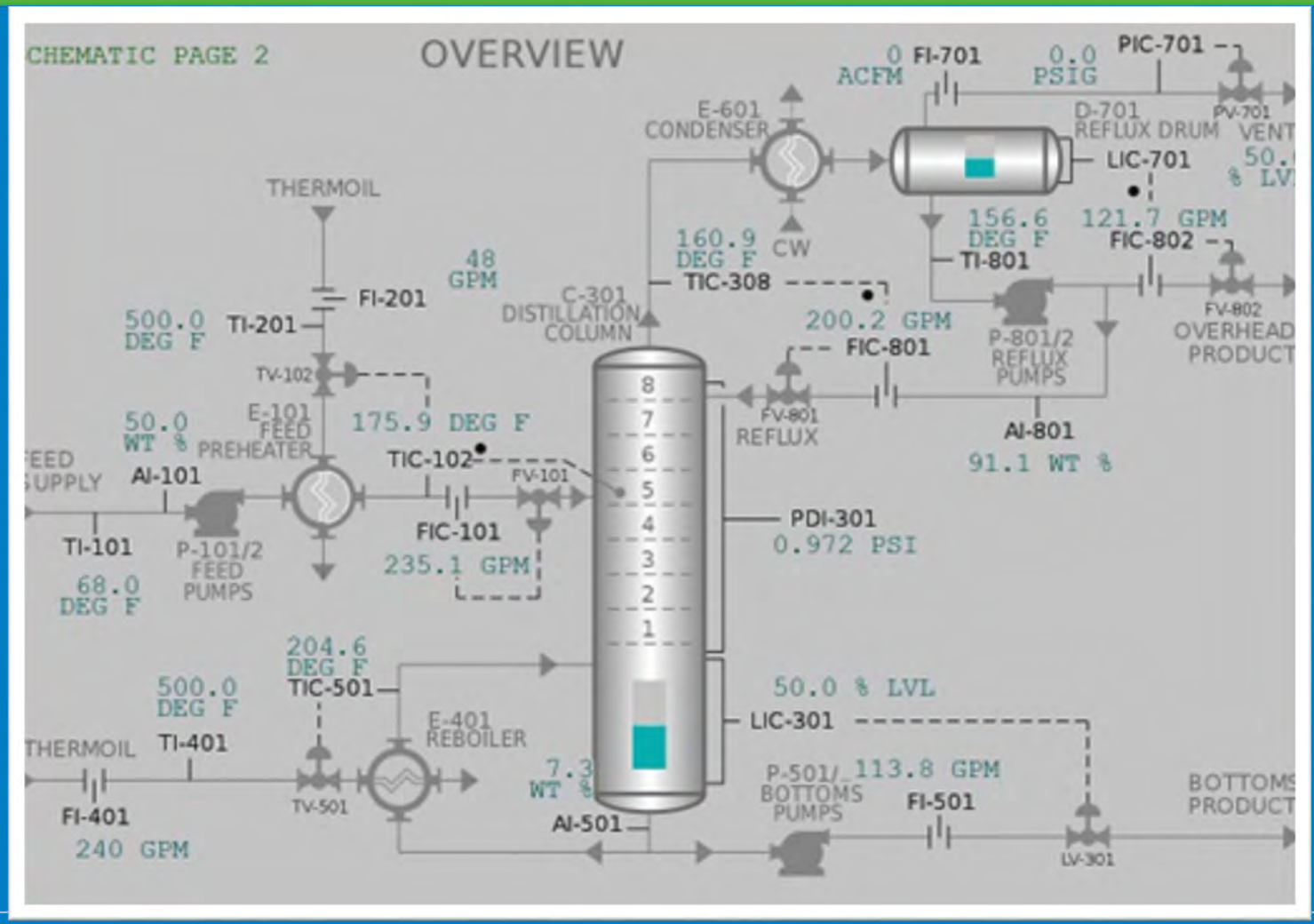
Operator Training Simulator: DCS Human Machine Interface

Been there, done that… part II



Operator Training Simulator: DCS Human Machine Interface

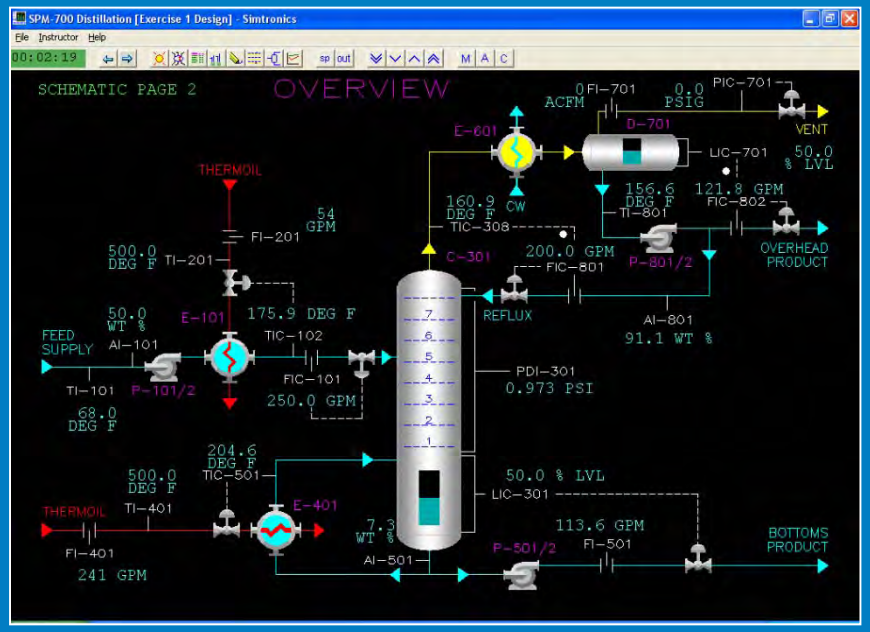
Been there, done that…



Let the Gaming Begin!

Virtual Environments and OTS

Operator Training Simulator

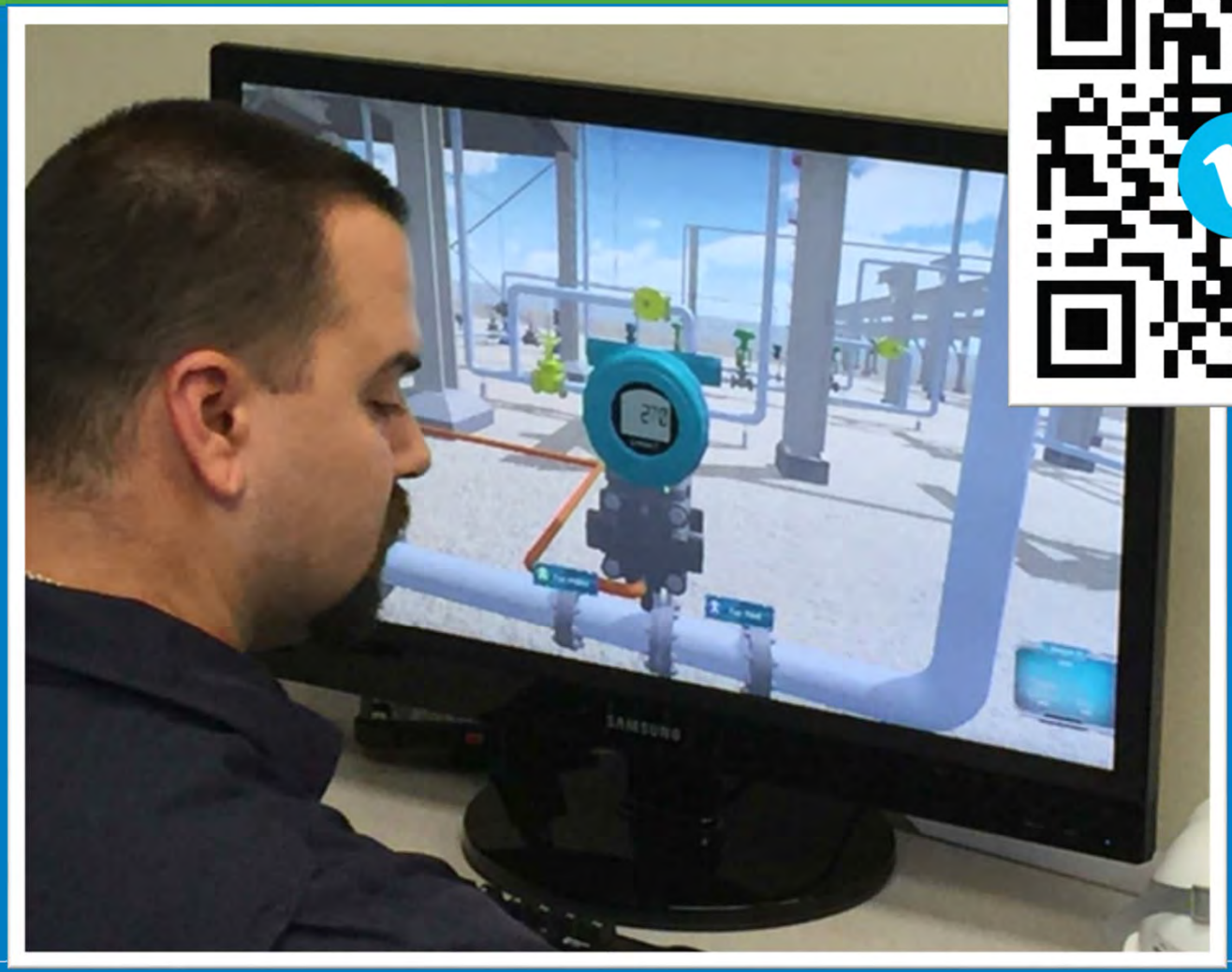


3D Virtual Field Operator

Board operators and field technician/operators work together in a virtual environment

Startup | Shutdown | Troubleshooting Abnormal Situations

Virtual Environments



Millennials Like Competition

ptse PROCESS TROUBLESHOOTING SKILLS in ENERGY

HOME ABOUT NEWS JOIN PTSE CONTACT US

Competition

NSF Grant

PTSE Summary

Learning Materials

Top eight college teams from across U.S. compete in 2016 National Troubleshooting Competition

The top eight teams from college process technology programs competed in the 3rd National Troubleshooting Competition April 22nd-23rd at Lone Star College in Kingwood, TX.

A team from South Central Louisiana Technical College took top honors during the competition, which involved the three-student teams troubleshooting computer simulator-based scenarios. Two Alaska teams, Kenai Peninsula College - Anchorage and Kenai Peninsula College - Kenai River, came in 2nd and 3rd, respectively.

Other competitors included teams from:

- Bellingham Technical College (Washington)
- ITI Technical College (Louisiana)
- Los Medanos College (California)
- Mississippi Gulf Coast Community College
- University of Alaska Community & Technical College

This material is based upon work supported by the National Science Foundation under Grant No. 1457711. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.

Industry, education team develops energy-related troubleshooting skills

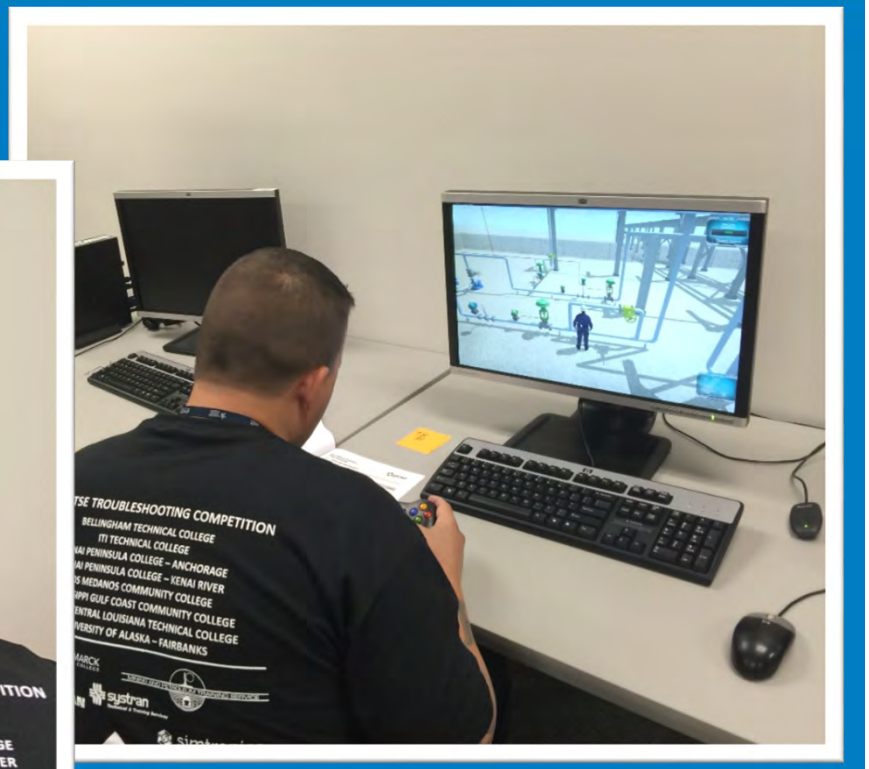
Process Technology education and related industry representatives have teamed to form the Process Troubleshooting Skills in Energy (PTSE) organization and are developing a series of equipment and process-specific troubleshooting scenarios, along with basic troubleshooting methodologies and tools, through a NSF grant "Developing Students' Troubleshooting Skills in Energy Programs."

Competitive Performance Scoring

Millennials Like Competition and…

Interactive, Experiential, Collaborative Learning

Interactive, Experiential, Collaborative Learning

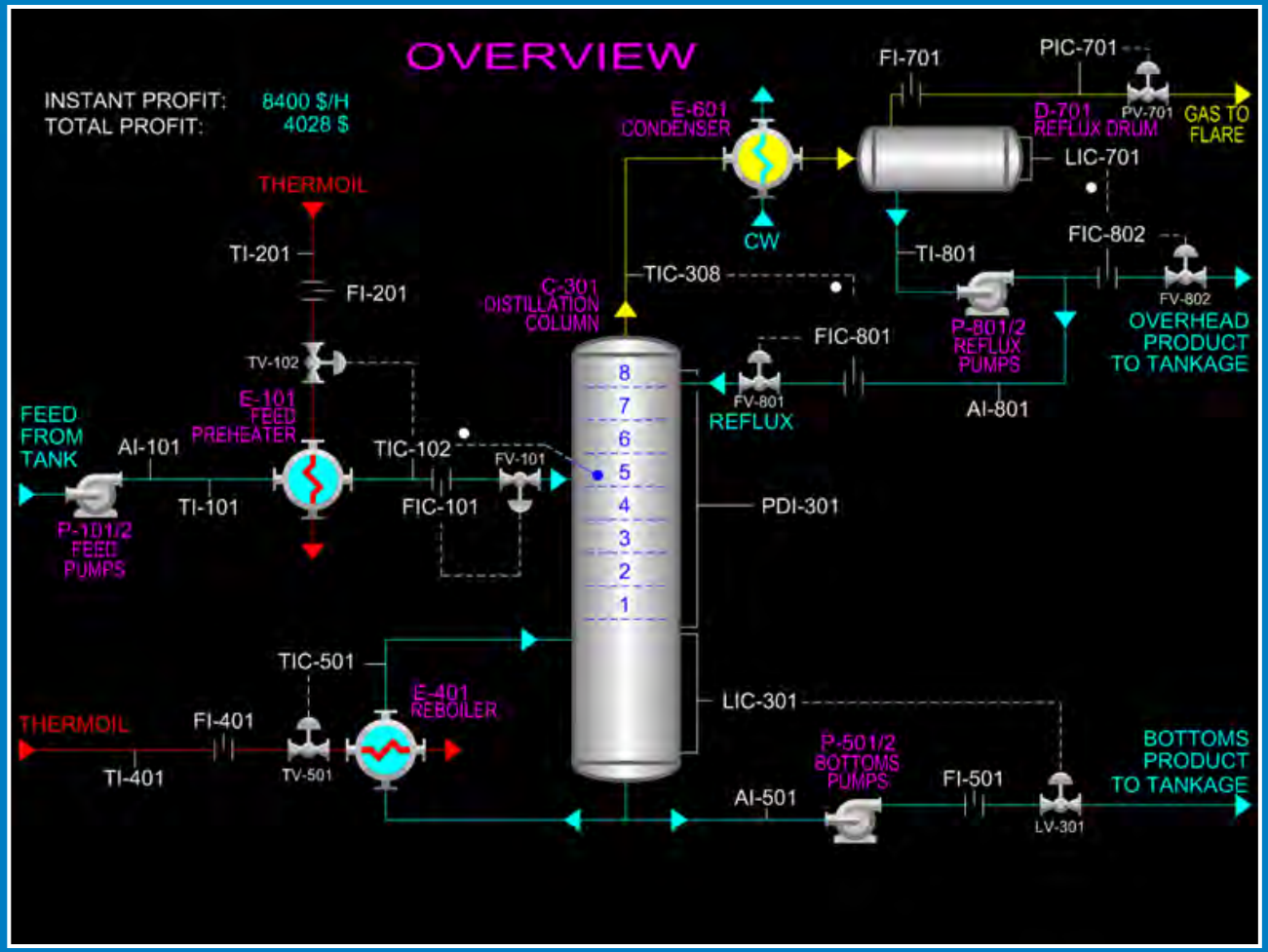


3 Person Teams

Process Simulation Gamification

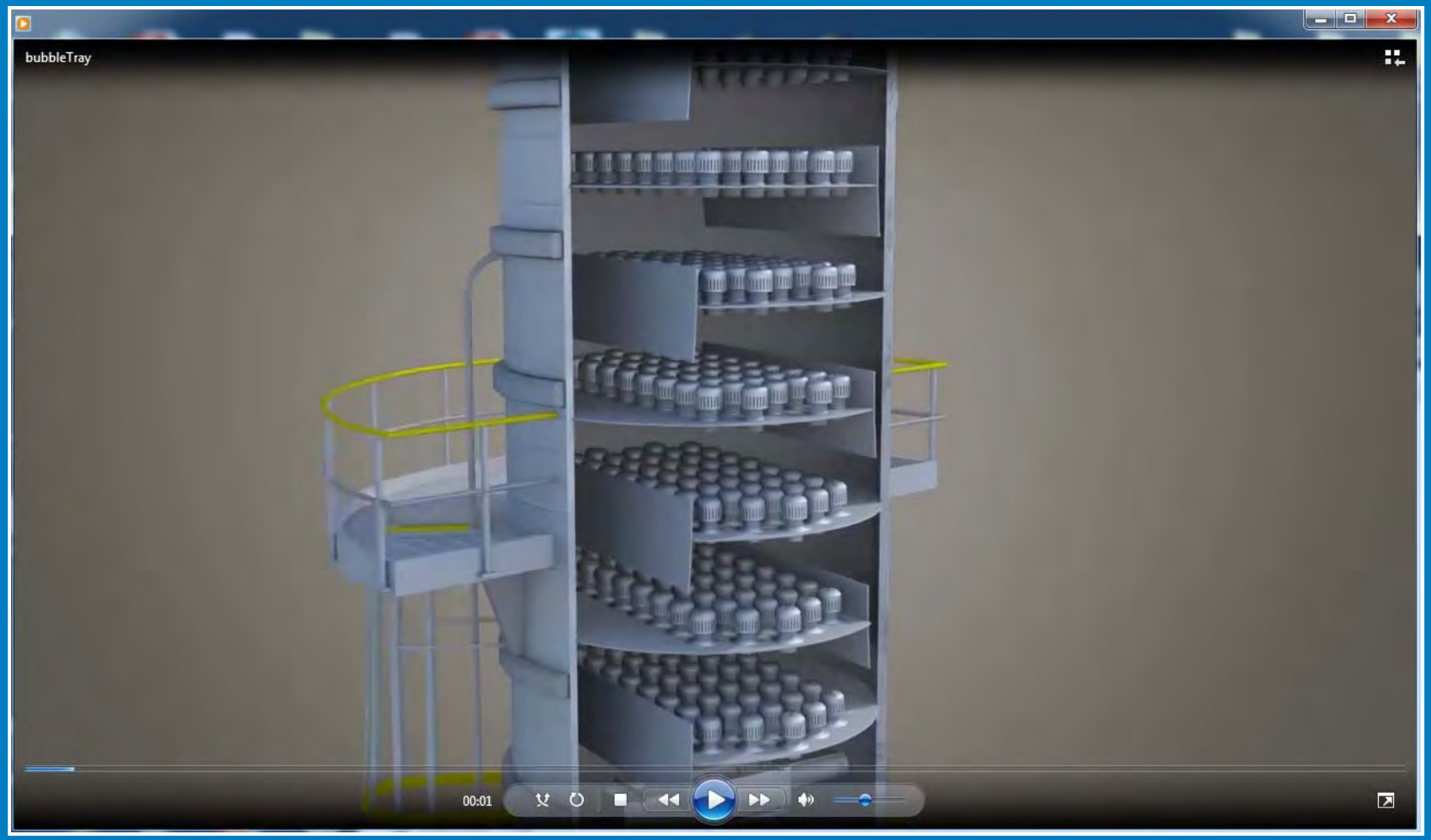
THE “GAMES” OF SAFETY AND P&L

Distillation Column P&L Overview



Micro-Learning via Workbooks on Millennial's Devices of Choice

"MICRO-MOBILE LEARNING"


bubbleTray
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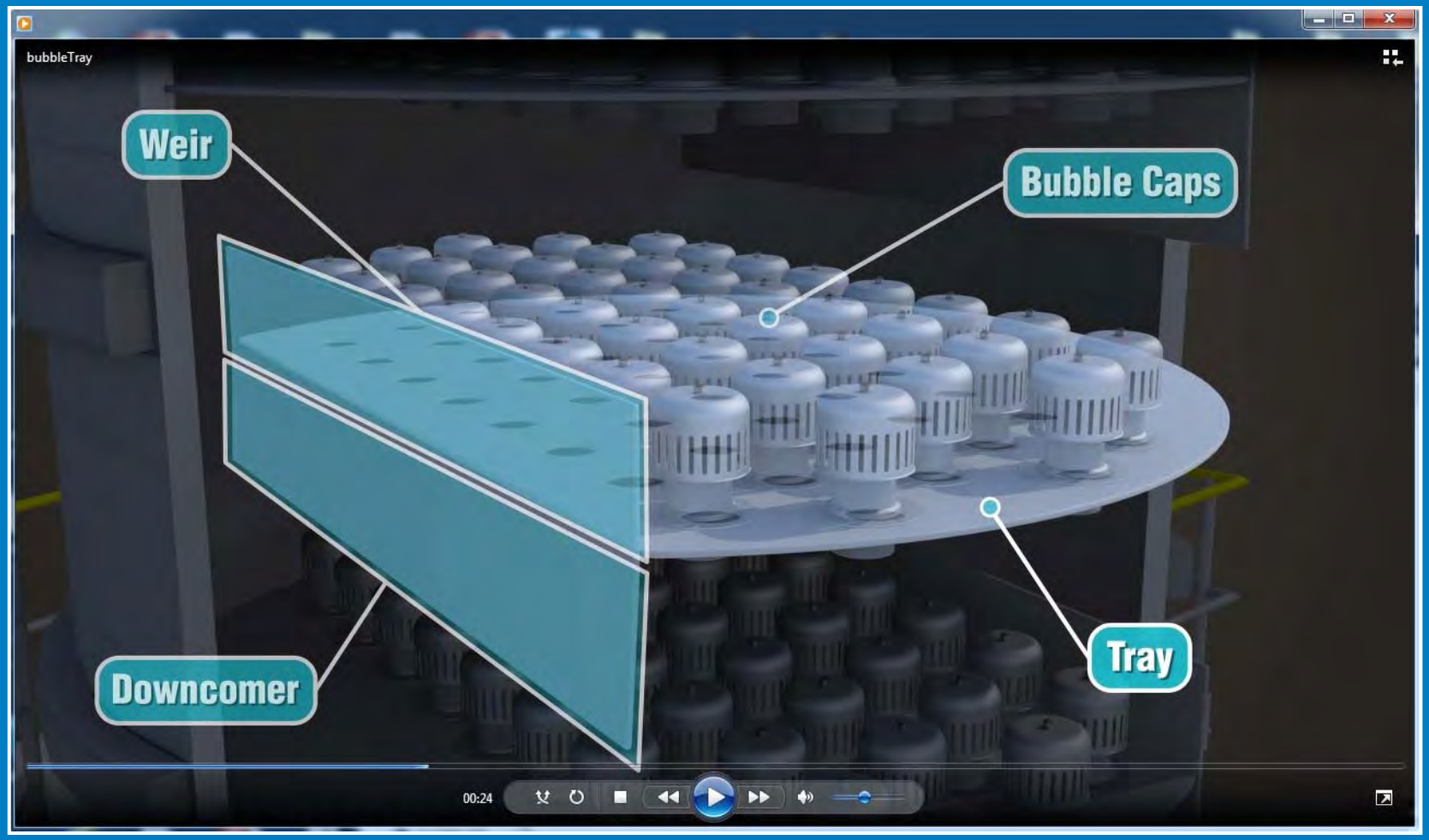
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Downcomer
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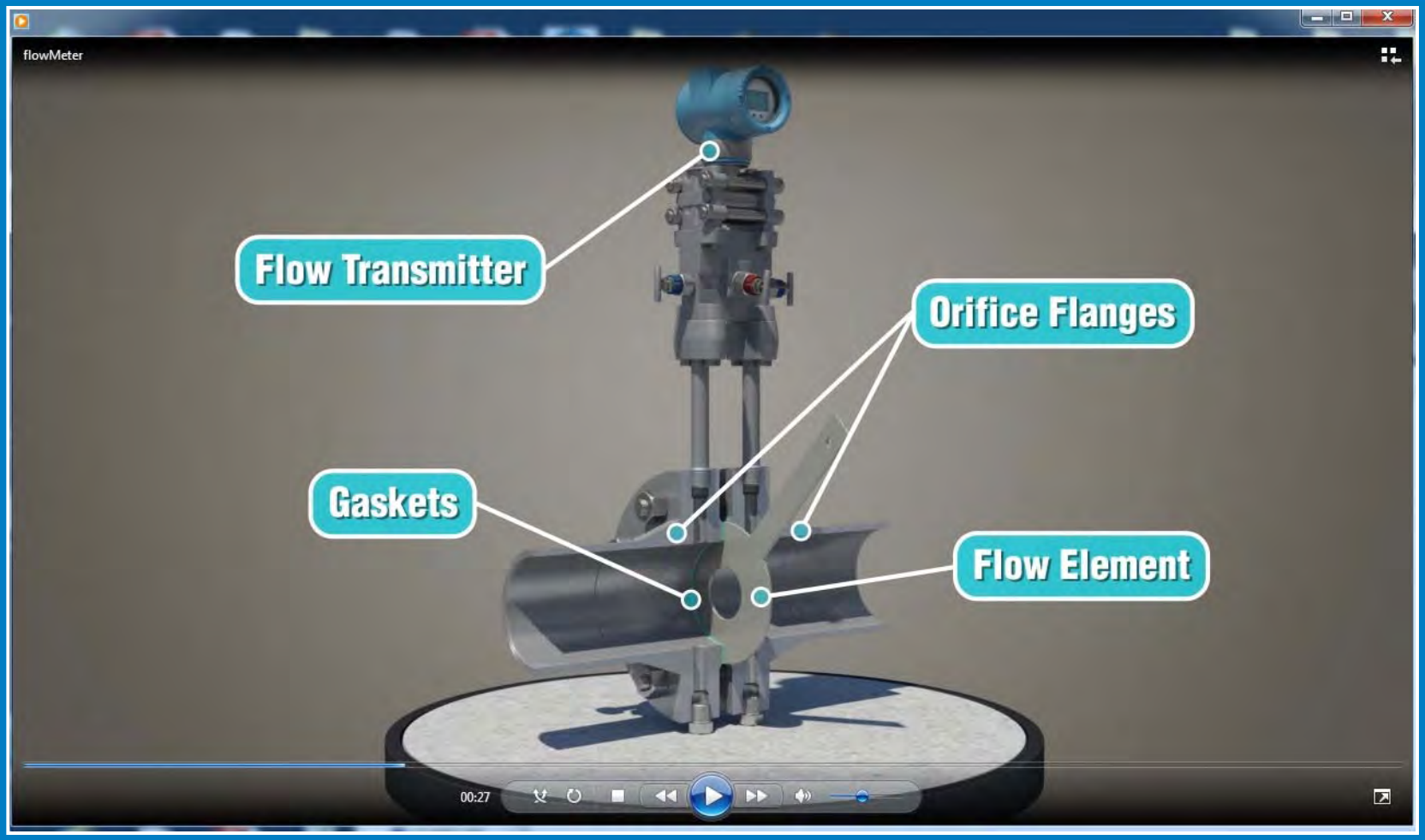
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Flow Transmitter
Orifice Flanges
Gaskets
Flow Element
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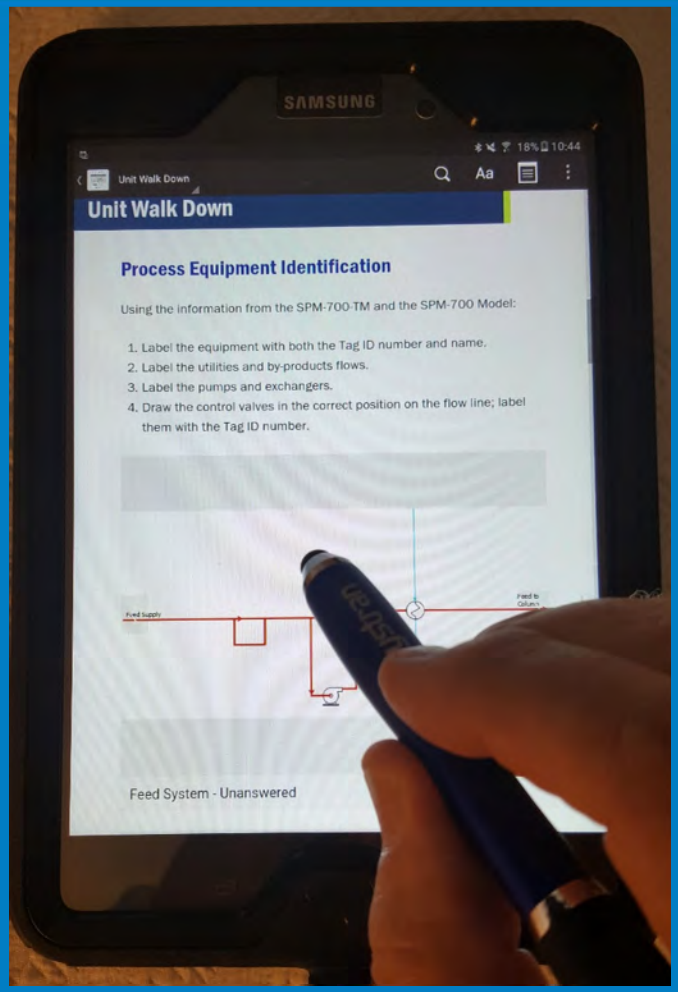
iOS & Android Workbook Applications



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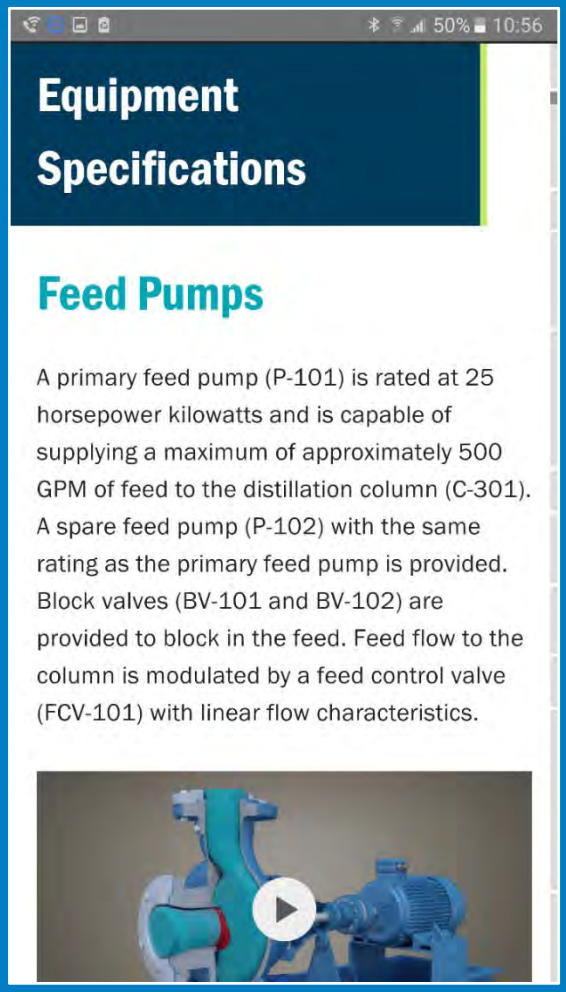

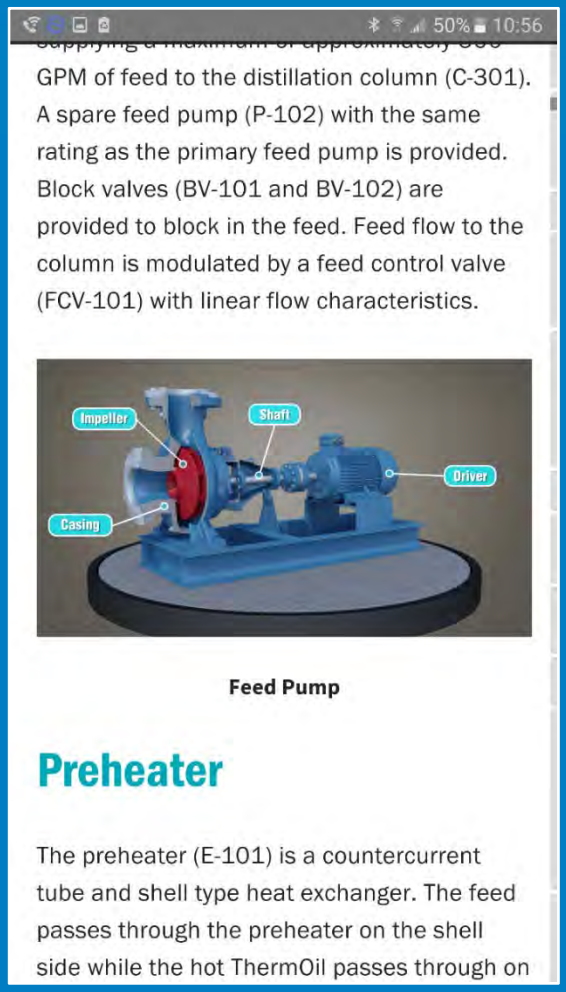

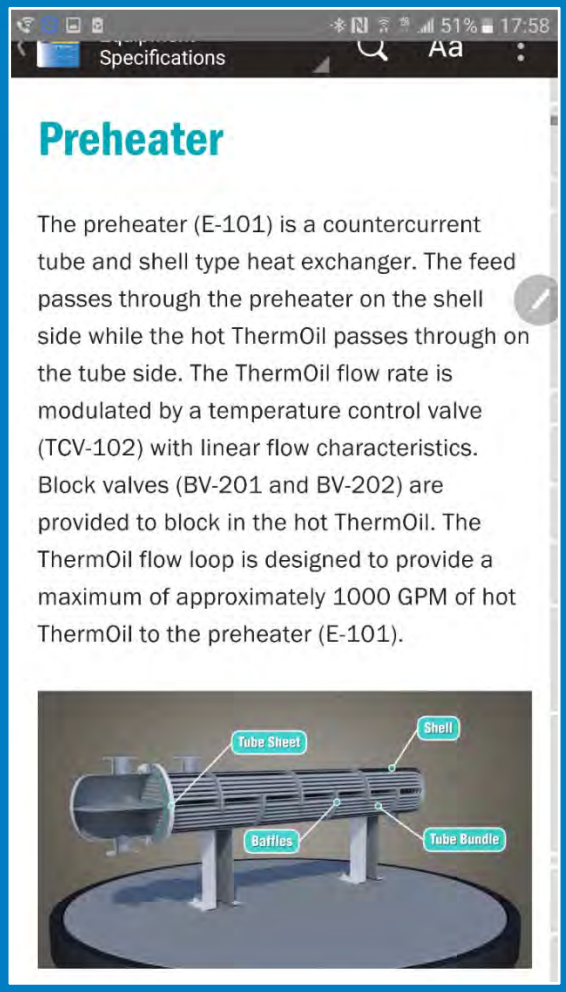

3D Virtual Environments & OTS

iOS / Android Apps

Performance Scoring

Thank you!