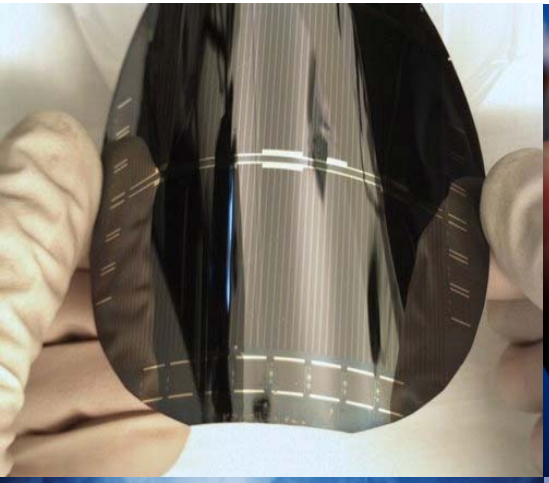
U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy



NTER

The National Training & Education Resource

www.nterlearning.org

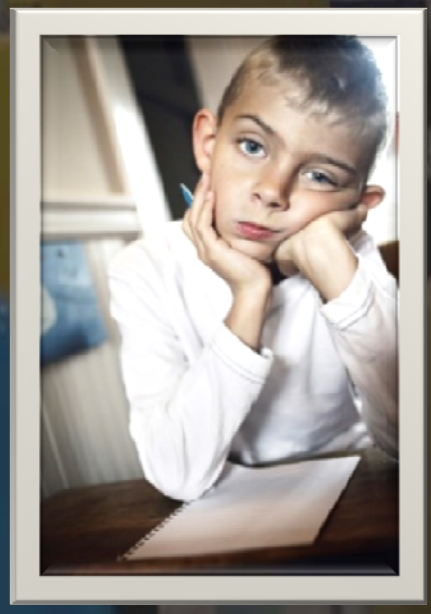
- Dr. Michelle Fox
- Alex Cohen

Agenda

- Identifying the problems in online learning
- NTER overview
- Innovative Features of NTER
  - Open Source
  - Distributed search
  - Interactive and immersive training
  - 3D in browser assessments
  - Authoring: empowering all to create and learn
  - Social reviews
- NTER Demo
- How to get involved
- Future Development
  - Expert reviews
  - E-Commerce
  - Enhanced recommender system
- Q&A

Opportunities in Education & Training

- We don't do anything like we did 20 years ago, but we educate our students the same way we did a century ago
- Lecture format seen as irrelevant for today's learners who are plugged in everywhere



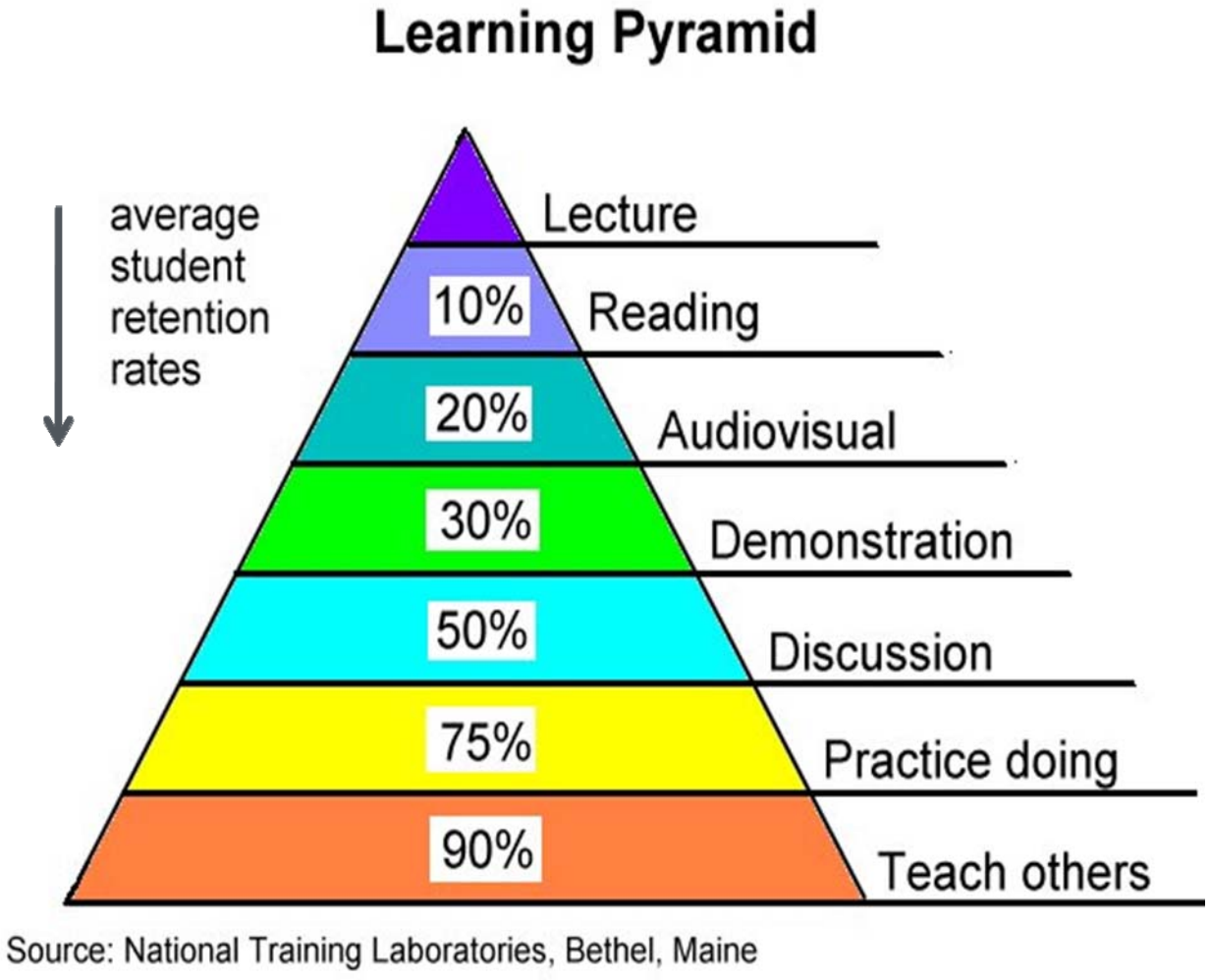
Why Change is Needed

Just putting the same material online does not solve the problem!

Technology: to Train and Educate Better

- New Learning Tools make possible:
  - Highly interactive environments
  - Inquiry-based learning
  - Bridge theory to practice (explore, operate equipment without the consequences of failure)
  - Varied and contrasting examples
  - Demonstration
  - Access to expertise
  - Feedback
  - Continuous assessment
  - Collaborative environments
  - Endlessly patient medium

Why we care



Source: National Training Laboratories, Bethel, Maine

NTER Vision

Support the growth of a capable and flexible workforce by providing quality education and training easily and efficiently through the advances of information technology and recommendations of learning science.

Key Features:

- Open Source
- Distributed search
- Interactive and immersive training
- 3D in browser assessments
- Authoring: empowering all to create and learn
- Social reviews

Open Source

- **What is Open Source?**
  - The underlying code behind the software is publically available to all
  - Analogous to a “recipe”

- **Advantages of Open Source**
  - “Recipe” allows for modification and improvements
  - Enhanced Reliability and Quality
  - Open Source Communities Find and Fix Bugs More Quickly
  - The open source model builds open standards and achieves a high degree of interoperability
  - Endorsed by NSA

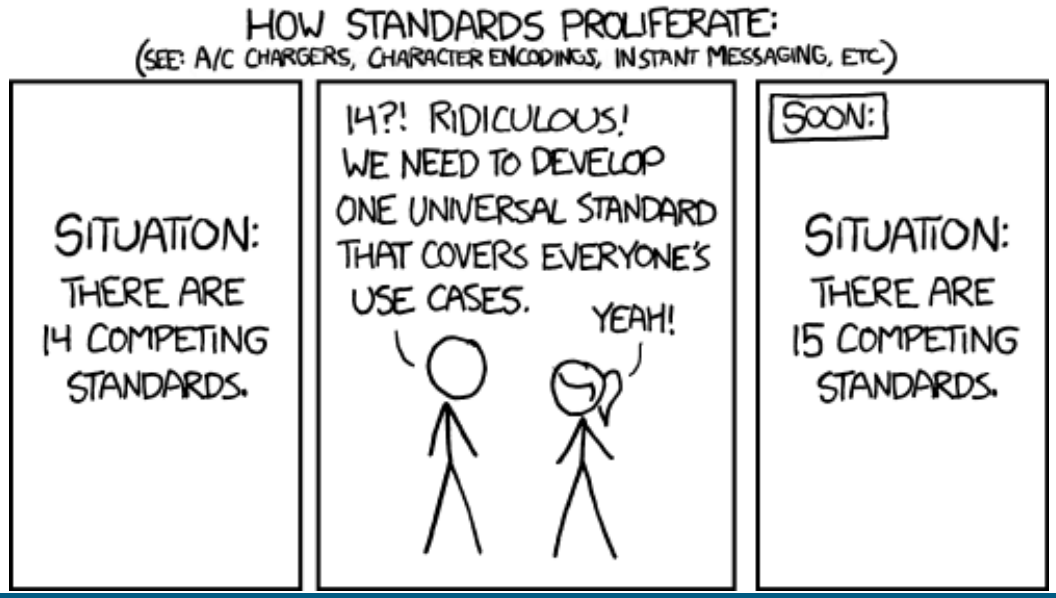
NTER by the Numbers

Subsystem	Function	Lines of Code	Main Sponsor
Ilias	Course Management (LMS)	1,300,000	DOD/NATO
Liferay	Enterprise portal (for displaying and configuring other services)	2,150,000	Cisco
MySQL	Database Management System	1,280,340	Oracle
Jasper	Reporting Engine	228,856	Jasper
Apache	Web Server Software	248,980	Apache
Apache-httpd	More Web Server Software	438,785	Apache
Solr	Full text search & navigation	854,662	Apache
Nutch	Web-search software	82,181	Apache
Hadoop	Support data-intensive distributed applications in the cloud	1,343,735	Yahoo! / Apache
WebGL (deprecated O3D)	Enables browser-based interactive content	34,369	Google
Total		**7,961,908**	

Leveraged code valued at $800M -- $1B

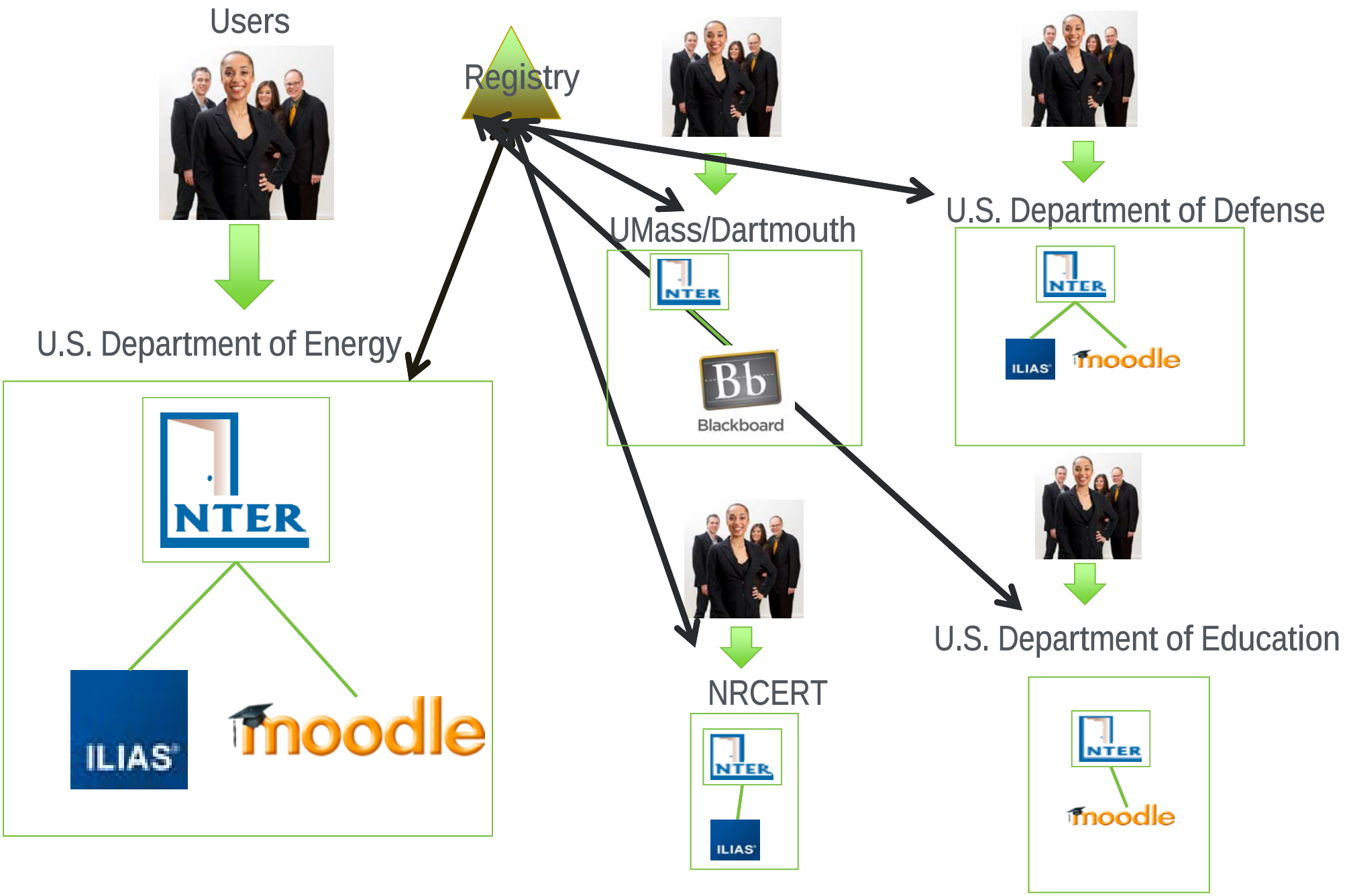
NTER Products and Services

- ***Basic and Advanced Authoring Tools*** make it easy, and inexpensive, for organizations to build, and deliver state-of the art learning experiences and continuously improve them
- ***An eLearning Repository with Advanced Search capability*** – gives access to thousands of courses that can be used as is, edited or used as individual searchable content objects to jumpstart course development
- ***A Learning Management System*** for collaborative development, delivery of online & eLearning content

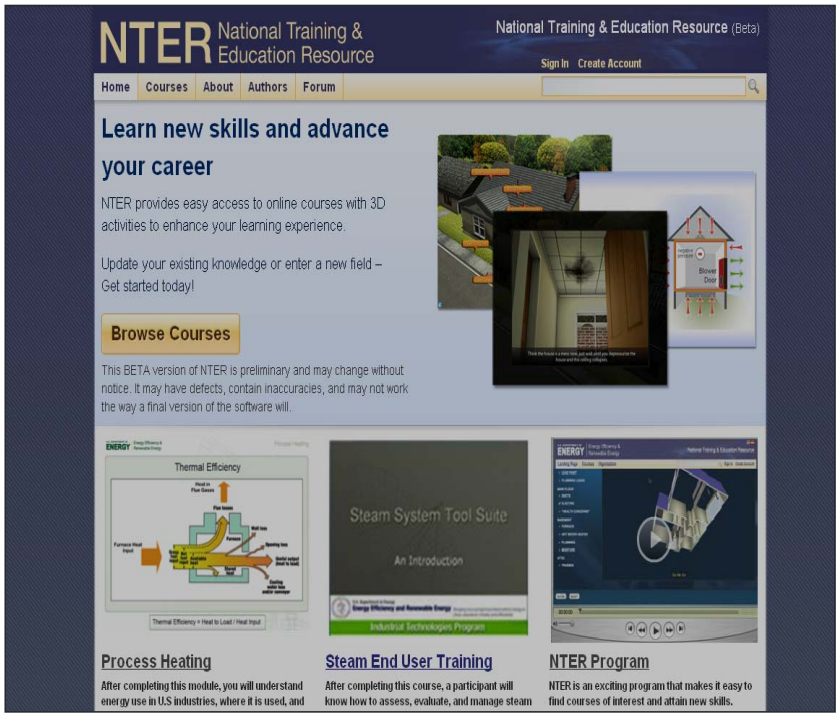


From XKCD.com

What does NTER do?



NTER Branding Examples

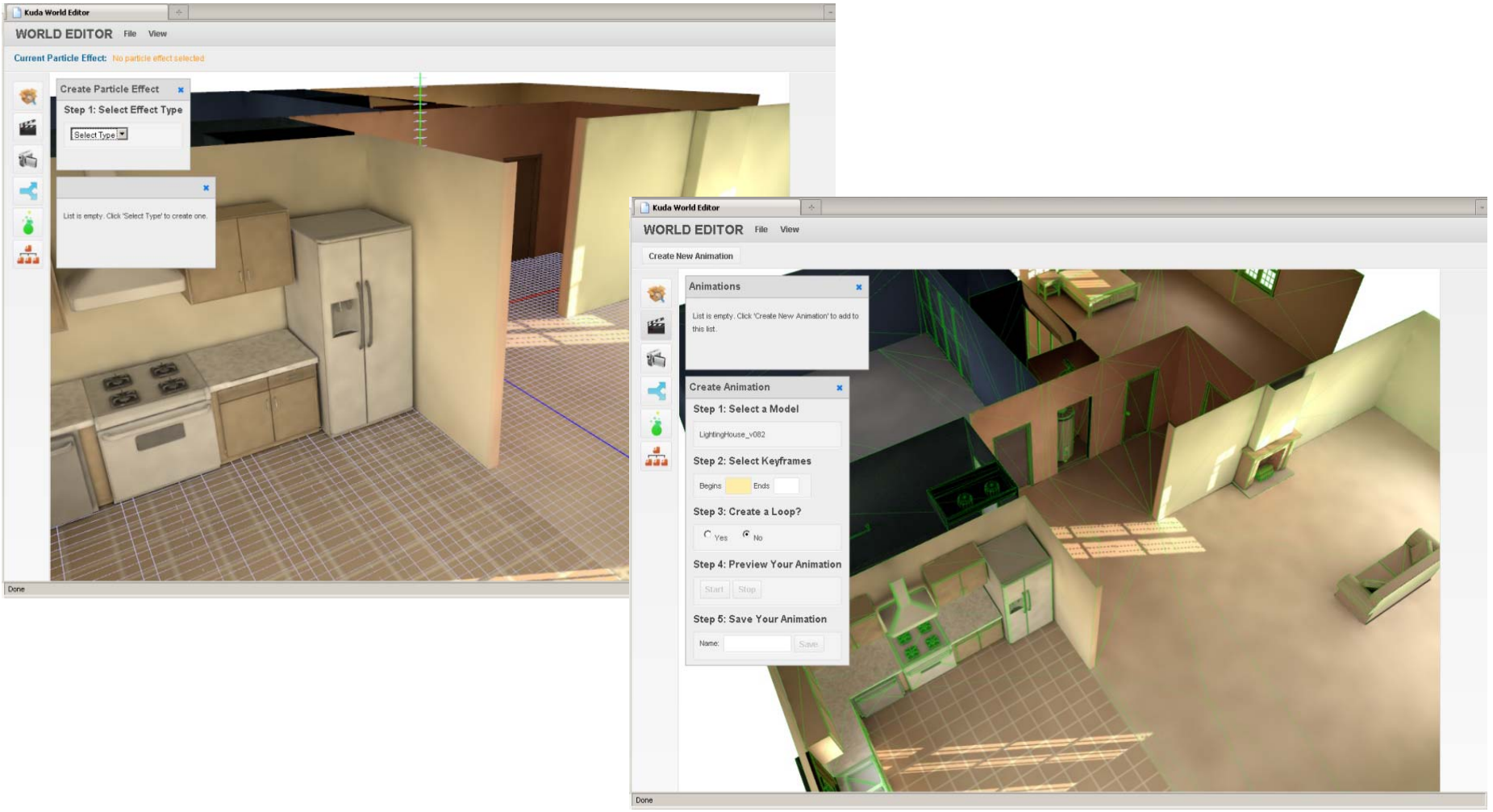


DOE NTER Node

Virtual Career Network Node

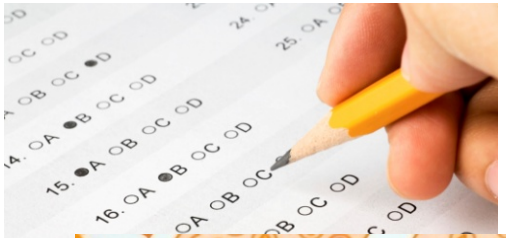
Authoring tool for 3D content creation

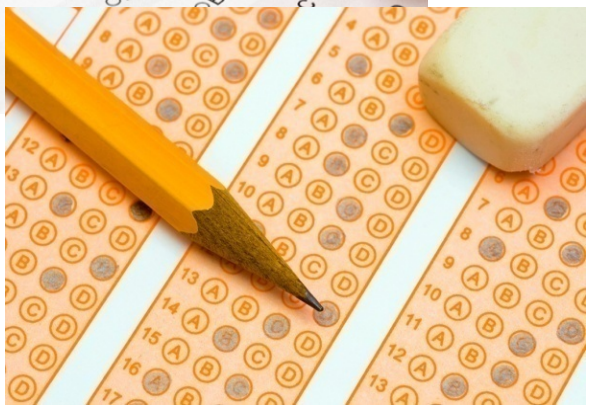
- Build 3D simulations without programming
- Runs in browser; no heavy downloads



Performance-based testing

Trading this….



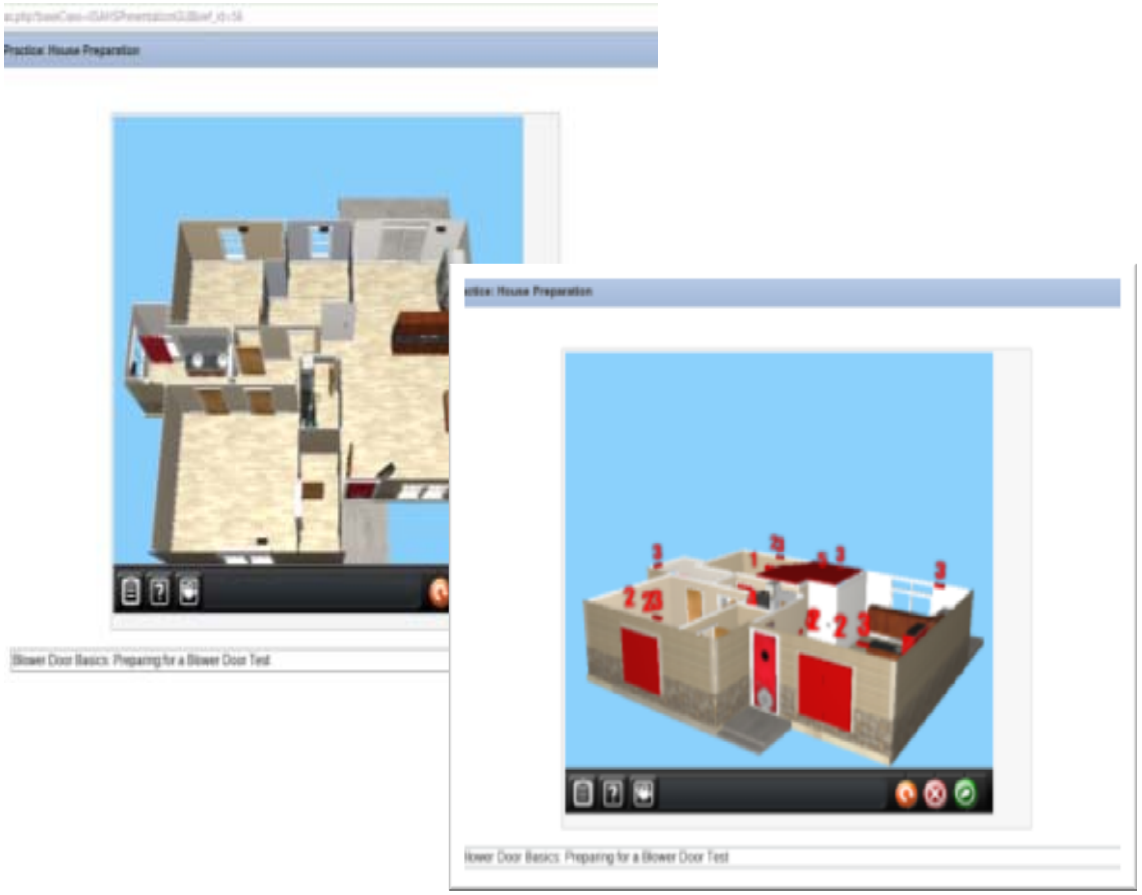


Leaky, recessed light fixtures can cause:

- Electrical problems
- Ice dams
- Furnace malfunction
- All of the above
- Poor light quality

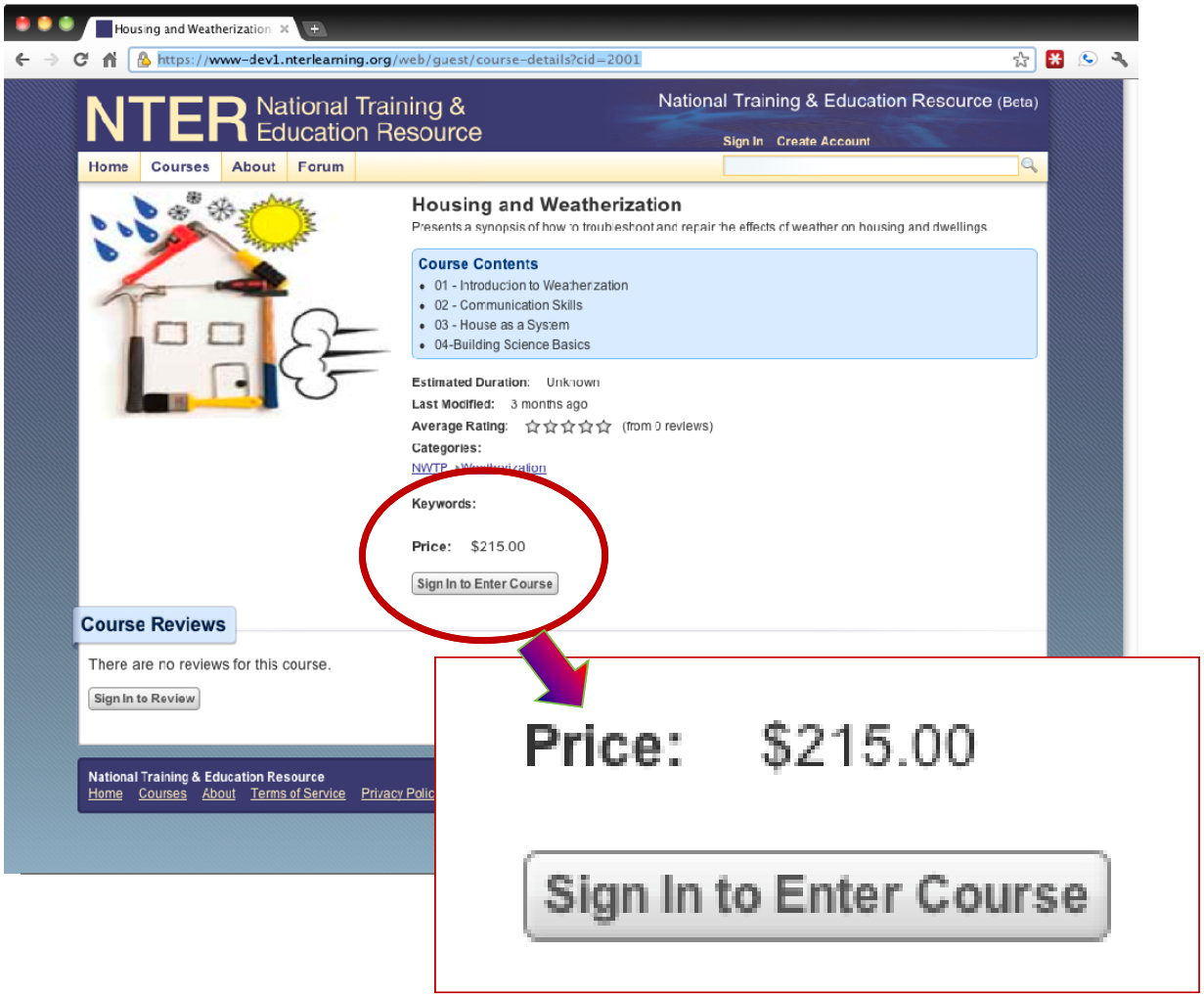
Submit Answers

For meaningful, performance-based assessment



Correctly configure the house for winter conditions

Commercialization



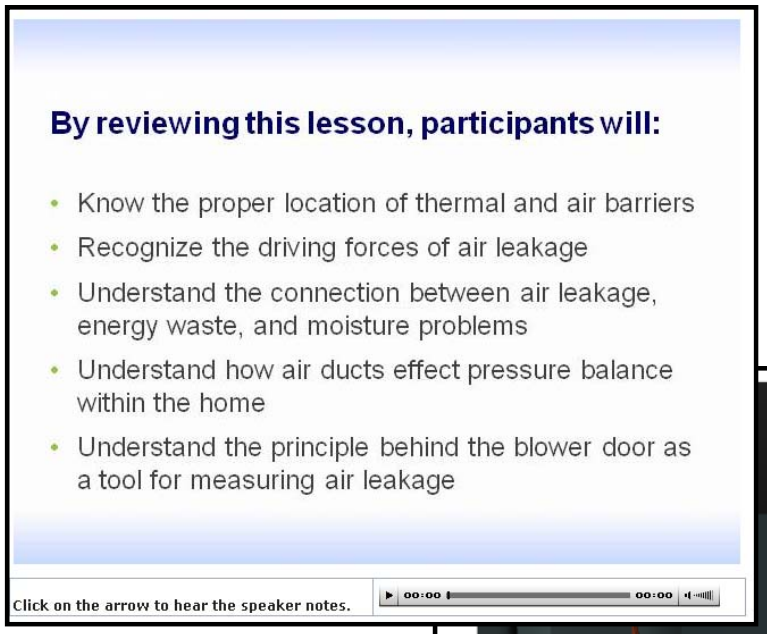
4 ways to build a market:

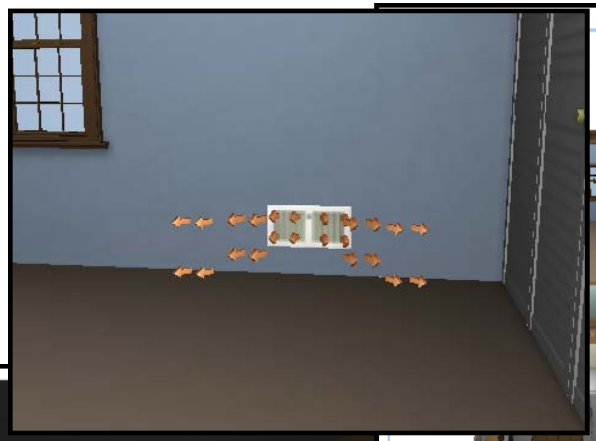
1. Courses
2. Instruction (blended)
3. Content
4. Degrees / certificates

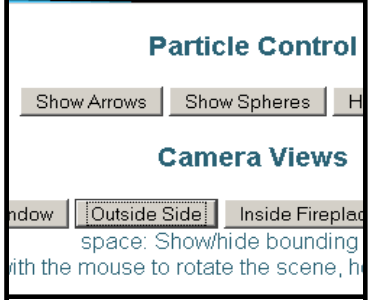
•Icons allow users to identify permissions

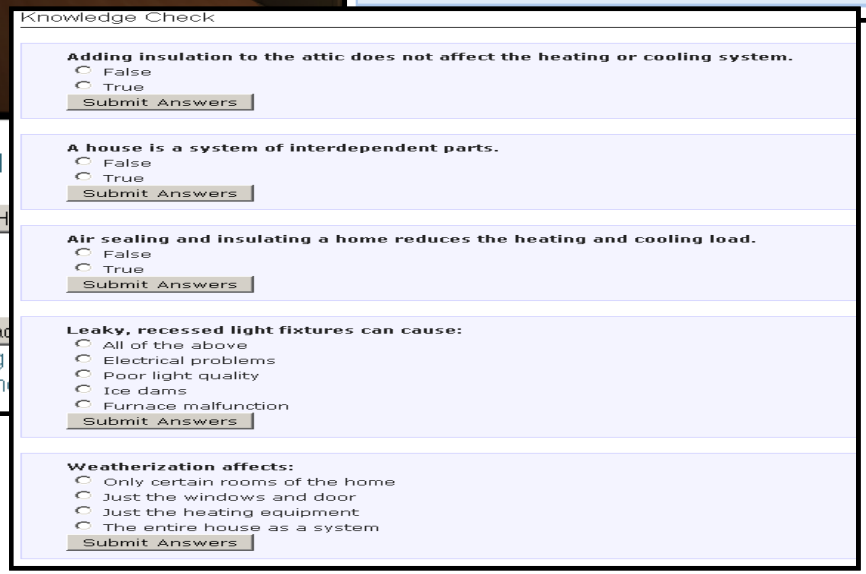
•Presents information about source

Supports Traditional & Advanced Training Materials









Sample Screen Shot of Available Courses

Courses - nterlearning.org

https://www.nterlearning.org/courses;jsessionid=DCE0F4BE22792B0F010C30226ECBFF3E

NTER National Training & Education Resource

National Training & Education Resource (Beta)

Sign In Create Account

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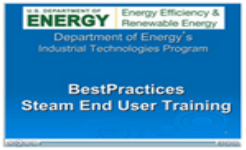
All Courses

All Featured New Popular

No Fear Act
nwtp.nterlearning.org

Home Energy Scoring Tool - Qualified Assessor Training
weatherization-nwtp.nterlearning.org



Steam End User Training
nwtp.nterlearning.org

Information Systems Security Awareness Training
nwtp.nterlearning.org

Building Science Animations
nwtp.nterlearning.org

House as a System Learning Exercise in 3D - Demo
nwtp.nterlearning.org

Hazards and Response - Demo
nwtp.nterlearning.org

Appropriations Law
nwtp.nterlearning.org

Drivers Overview Training
nwtp.nterlearning.org

UMass Dartmouth Energy Auditing
weatherization-nwtp.nterlearning.org

3D assets for re-use - Blower Door Basics
weatherization-nwtp.nterlearning.org

Blower Door Basics - Beta
weatherization-nwtp.nterlearning.org

NTER Authoring Training
nwtp.nterlearning.org

Attic Air Sealing Beta Version Desktop
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Steam Tool Suite Training
nwtp.nterlearning.org

Mechanical Insulation Education & Awareness - Alpha
weatherization-

Weatherization Courses by Pulaski Technical College
weatherization-nwtp.nterlearning.org

Building Science Basics
weatherization-nwtp.nterlearning.org

Recent NTER Accomplishments…

•White House Announcements:

- Announced at the White House by Deputy Secretary Daniel B. Poneman, April 27, 2011
- Included in Presidential Announcement on Advanced Manufacturing Initiative, June 24, 2011
- Announced by Vice President Biden and Secretary Solis as included in the Round Two TAA Grants, February 24. 2012
- Included in Presidential Announcement to make Broadband Construction Faster and Cheaper, June 14, 2012

•Other NTER Recognition:

- Included in the DOE Strategic Plan, May 2011
- Endorsed by the Manufacturing Institute to train 500,000 manufacturing workers by 2016, June 24, 2011

•NTER Awards:

- The Leadership Award for Service to the Citizen by The Association for Federal Information Resources Management (AFFIRM) on June 9, 2011
- The Innovation Gold Medal in Division I was awarded at the Fall Chief Learning Officer Symposium on October 14, 2011
- Institute Honor Award presented by the National Institute of Building Sciences (NIBS) for "an exceptional contribution to the nation and the building community" on December 7, 2011
- Secretarial Achievement Award presented to Michelle Fox and Alex Cohen by Secretary Chu on March 23, 2012 for improving the professional development of our federal workforce
- Fierce Government Award on December 2012

National Institute of BUILDING SCIENCES

Benefits

Through NTER, you gain:

- A modern, open source, free, award-winning, fully functional LCMS that can facilitate sharing of open educational resources
- Shared expertise through open source community
- Access to massive repository of high quality online educational materials
- Potential for additional revenue stream through NTER
- Improved options for selling online courses and reaching larger audiences
- Easy authoring for enhanced online immersive courses

Early Adopters/Partners

- DOE's Energy Technology Programs (Solar, Vehicles, Advanced Manufacturing,/Industrial Technologies, Federal Energy Management Programs)
- Other DOE Offices: Health, Safety and Security, Office of Electricity.
- National Labs: LBL, NREL, PNNL, INL
- Advanced Manufacturing Initiative: National Association of Manufacturer's Manufacturing Institute; Ford's Partnership for Advanced Studies; MAGMA (representing the big 3 automakers); Macomb Community College
- The Center for Energy Workforce Development: Troops to Energy Jobs
- A significant number of the winning applicants in the Department of Labor's Trade Adjustment Act ($2 BN solicitation--$1BN awarded)
- Department of Defense
- 6 Weatherization Centers
- Under consideration by 4 other cabinet level agencies and an emergency response training center

Options for getting started

- **Consume:** Sign up for an account and take a course. It's free.
- **Adopt:**
  - Conduct a 90 day pilot (rapid deployment option available)
  - Create a course
- **Integrate:** Leverage NTER or parts of NTER for your own mission objectives; integrate your legacy materials for wider reach.
- **Governance:** Help us direct the future of NTER along with the private sector.

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Thank You

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