

Developing Online Experiential Learning through Educational Design Research



Indiana University – November 2, 2015

The University of Georgia











Educational design research has enormous potential to increase the impact of our scholarship.





The only defensible rationale for
Educational Research is

IMPACT

on real world problems!



“The status of research deemed educational would have to be judged, first in terms of its disciplined quality and secondly in terms of its impact. Poor discipline is no discipline. **And excellent research without impact is not educational.**”

Charles Desforges
(2000)

We need a socially responsible research agenda focused on problems that matter.





 **UN Millennium Development Goals**

keep the promise
Millennium Development Goals

2015

Goal 1: Eradicate extreme poverty and hunger
 Goal 2: Achieve universal primary education
 Goal 3: Promote gender equality & empower women
 Goal 4: Reduce child mortality
 Goal 5: Improve maternal health
 Goal 6: Combat HIV/AIDS, malaria and other diseases
 Goal 7: Ensure environmental sustainability
 Goal 8: Develop a Global Partnership for Development





 **UN Millennium Development Goals**

keep the promise
Millennium Development Goals



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Cold Chain for Vaccines







“Pharmaceutical Cold Chain Management on Wheels”



PARTICIPANTS



MENTORS and the CREW





**THE END IS NOTHING
THE ROAD IS ALL**

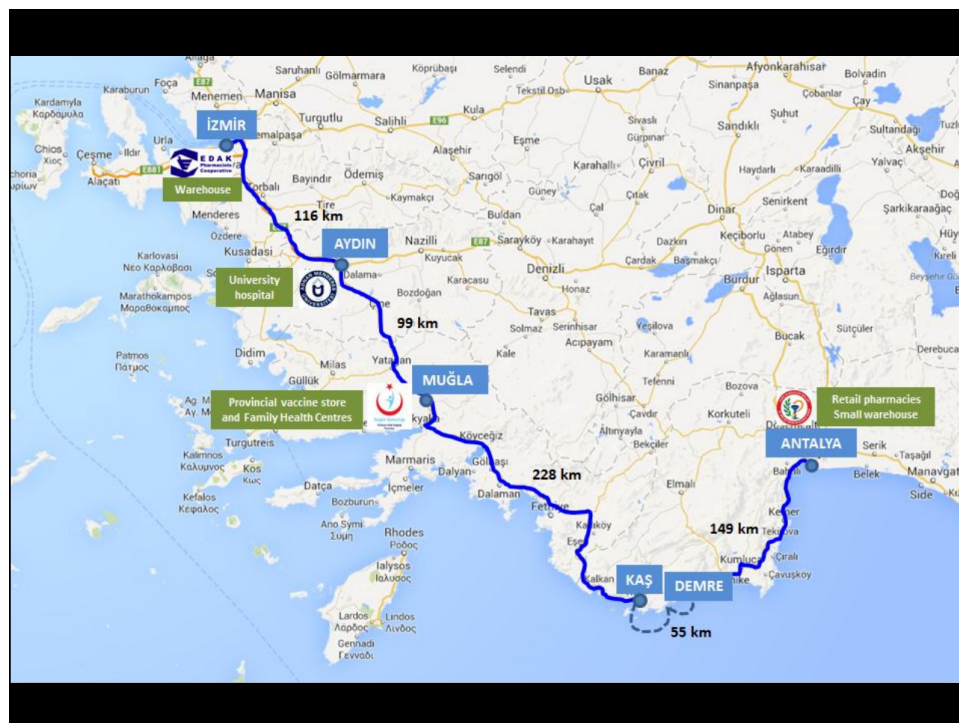
"The end is nothing, the road is all"

Pharmaceutical Cold Chain Management on Wheels

İzmir-Aydın-Muğla-Antalya, 9-14 June 2014

 World Health Organization

 GLO/VQ
Global Learning Opportunities for Vaccine Quality



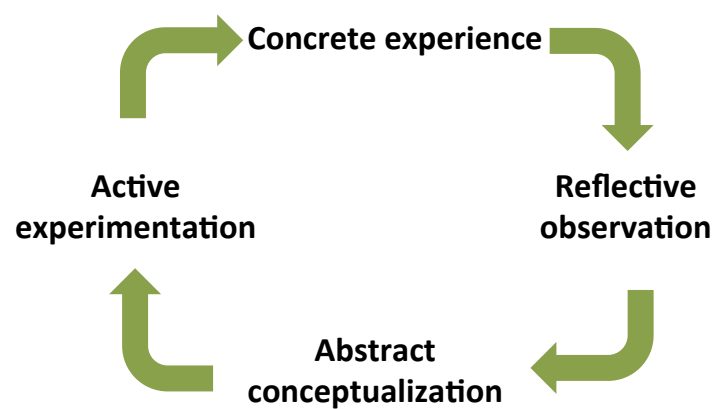






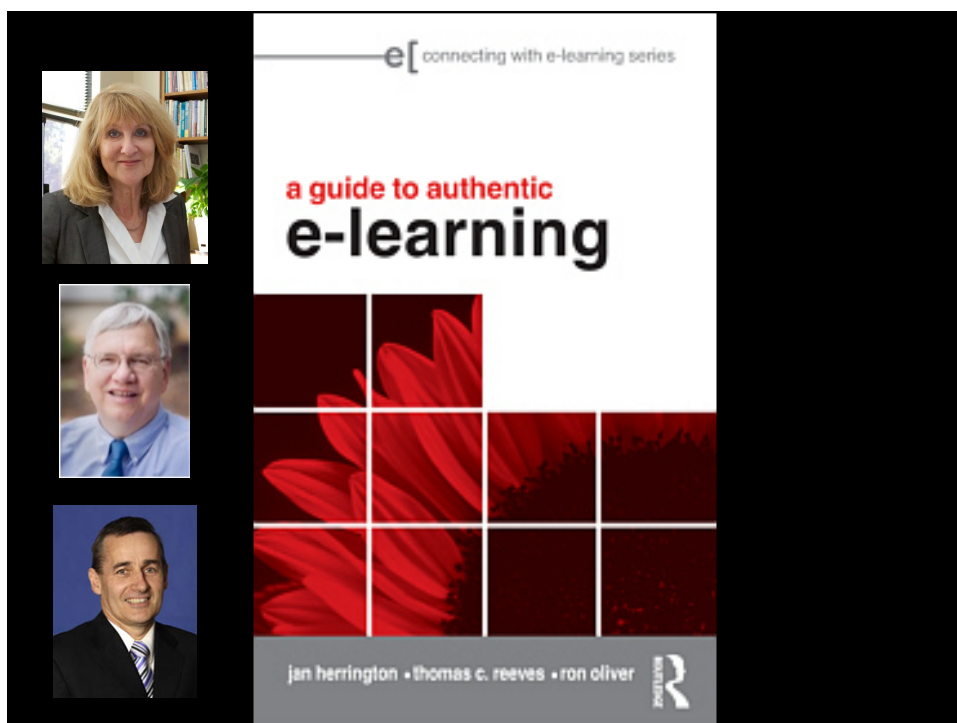


Model of Instruction: Experiential and social learning theories



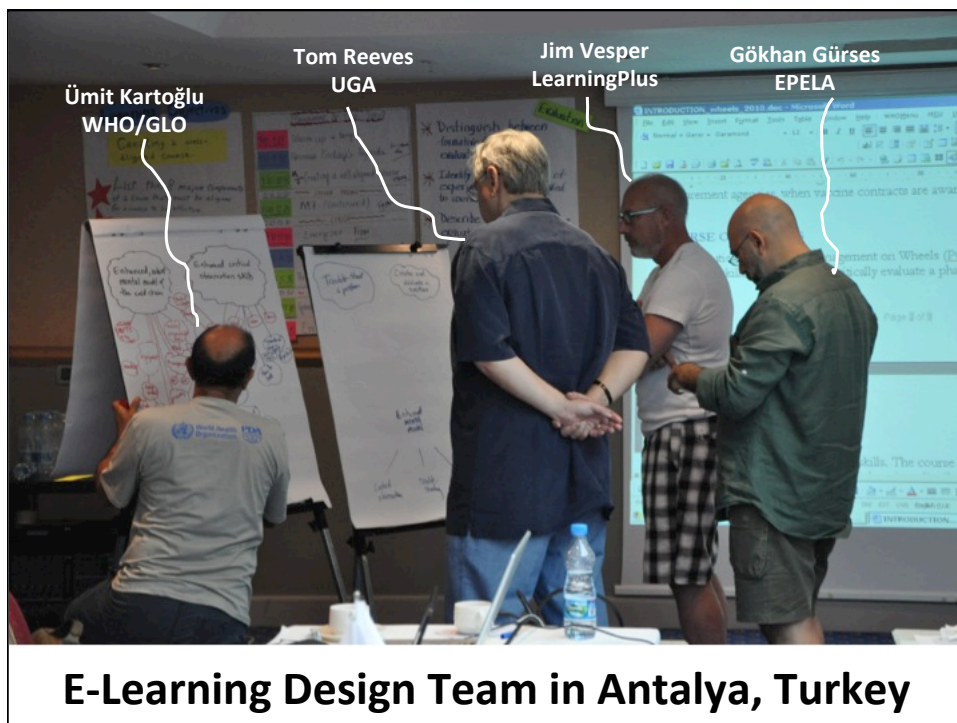
From Kolb, D. A. (1984). *Experiential Learning*. Englewood Cliffs, NJ: Prentice Hall.

CHALLENGE:
Converting an
Experiential
Learning
Course
into an
e-Learning
Environment



Authentic learning design principles

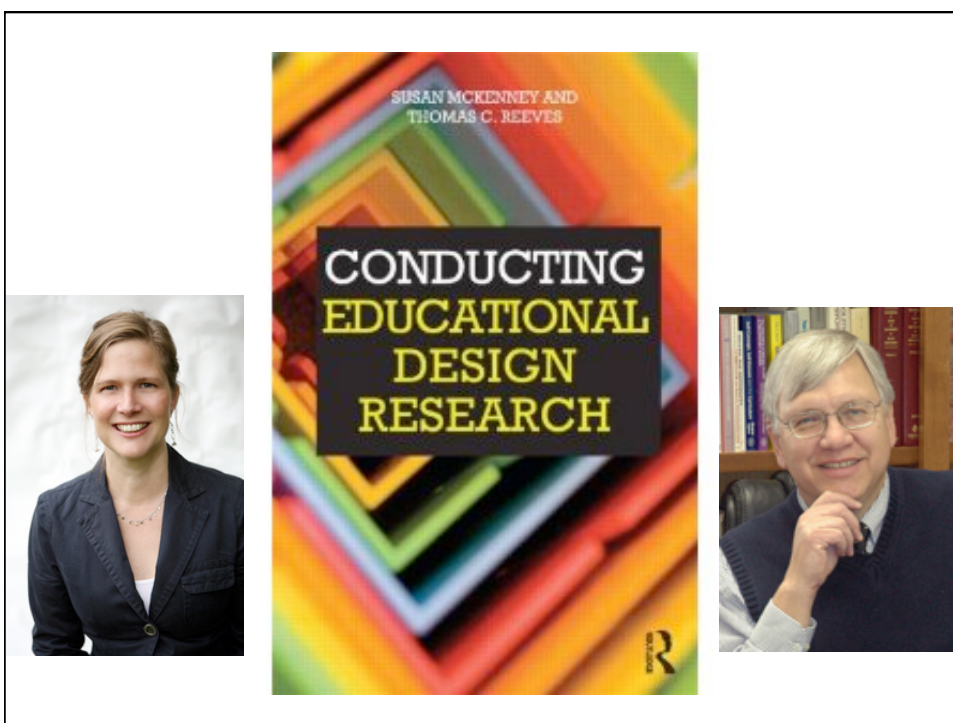
- Provide **authentic contexts** that reflect the way the knowledge will be used in real life
- Provide **authentic tasks**
- Provide access to **expert performances** and the modeling of processes
- Provide **multiple roles and perspectives**
- Support **collaborative construction of knowledge**
- Promote **reflection** to enable abstractions to be formed
- Promote **articulation** to enable tacit knowledge to be made explicit
- Provide **coaching and scaffolding** by the mentor at critical times
- Provide for **authentic assessment** of learning seamlessly integrated within the tasks.

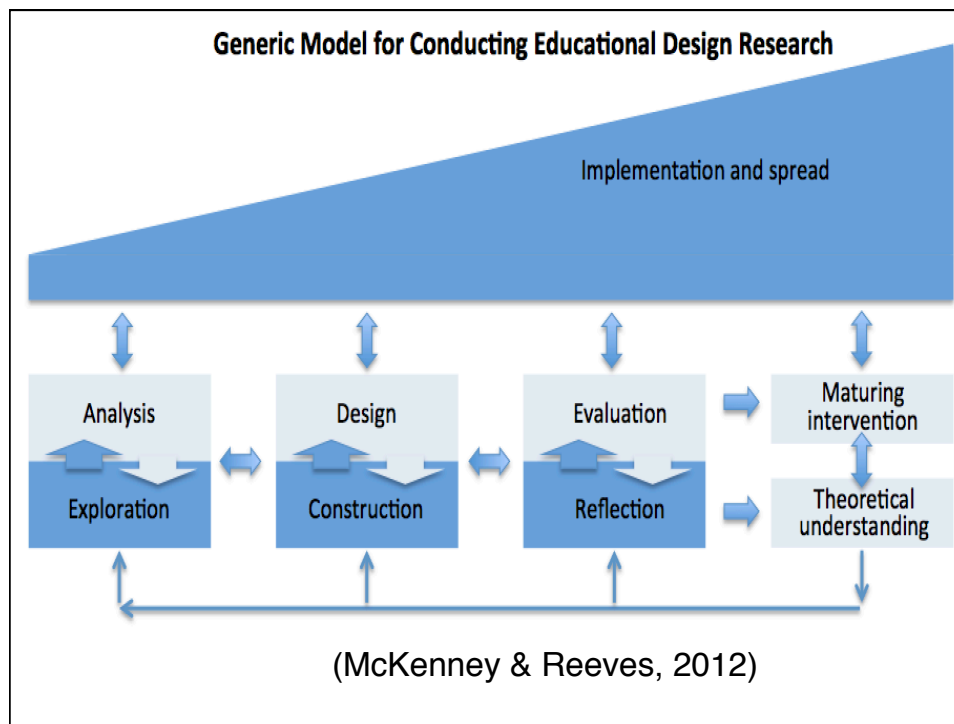


Educational Design Research



Jim Vesper, Jan Herrington, Tom Reeves





Educational Design Research

- Working closely with practitioners, identify a serious problem and then define a pedagogical outcome that will address the problem.
- Develop a prototype learning environment informed by theory and guided by creativity and effort.
- Emphasize content and pedagogy rather than technology alone.
- Give special attention to supporting human interactions.
- Test, refine, and retest learning environment until outcome is reached.
- Refine theory simultaneously.



EPELA extensio et progressio / authentic e-learning **e-Pharmaceutical cold chain management course** World Health Organisation

PERSONAL E-LEARNING

How to use **Programme** **Google.doc** **Discussion** **Video library** **Document library** **Who is who?** **e-mail** **Disclaimer**

HOME

FARMALOGISTIC

- Step 1: Objectives
- Step 2: Facility tour
- Step 3: 360° photographs
- Step 4: Task: Site an IT
- Step 5: Task: Inspecting GCP
- Step 6: Task: Temp. excursions
- Step 7: Task: Quality agreement
- Step 8: Task: Risk treatment
- Step 9: Diary

BURSA VACCINE STORE

- Step 1: Objectives
- Step 2: Facility tour
- Step 3: 360° photographs
- Step 4: Task: Contingency plan
- Step 5: Task: VVM
- Step 6: Task: Cool water packs
- Step 7: Diary

HACETTEPE HOSPITALS

- Step 1: Objectives
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ULUTAS PHARMACY

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- Step 5: Task: Power cut
- Step 6: Diary

HEALTH CENTRE

- Step 1: Objectives
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- Step 5: Task: VVM
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AUTHENTIC TASK

- Task review



Extensio et Progressio


e-Pharmaceutical Cold Chain Management Course

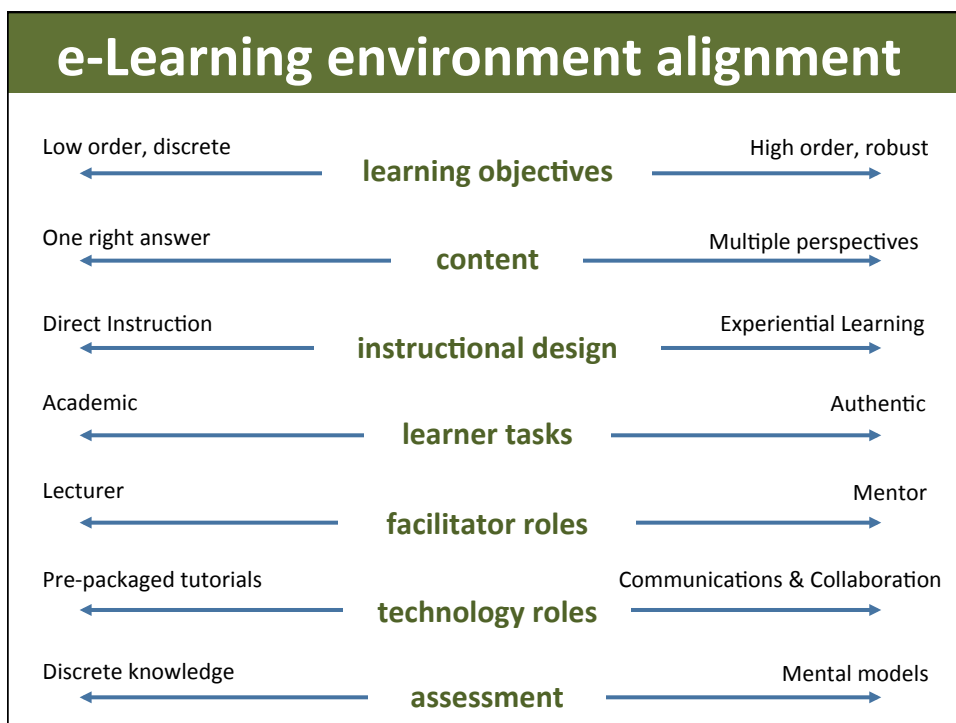
http://www.epela.net/epela_web/index.php



Dr. Ümit Kartoglu

World Health Organization





Low order, discrete

High order, robust

learning objectives

Objectives

	Cognitive process dimensions					
Knowledge dimensions	Remembering	Understanding	Applying	Analyzing	Evaluating	Creating
Factual knowledge				1	2	2
Conceptual knowledge	1	1			2	2
Procedural knowledge			1	1	3	2
Metacognitive knowledge				1	2	3

One right answer nature of content Multiple perspectives

FARMALOZISTIK/ WHOLESALER → **BURSA VACCINE STORE** → **HACETTEPE HOSPITALS** → **ULUTAS PHARMACY** → **ZEYTINBASI HEALTH CENTRE** → **AUTHENTIC TASK**

Course Syllabus

FARMALOZISTIK

- Step 1: Objectives
- Step 2: Facility tour
- Step 3: 360° photographs
- Step 4: Task: Who am I?
- Step 5: Task: Inspecting GDP
- Step 6: Task: Temp. excursion
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ALBANTA CASE

How to use | Programme | Google.doc | Discussion | Video library | Document library | Who is who? | e-mail | Disclaimer

Direct instruction ← **model of instruction** → Experiential learning

FARMALJOISTIK – TASK (individual)
Analyzing a temperature excursion

Although 2 days are allocated to complete this assignment, the actual amount of time required is estimated at around 1 hour.

You are the **Logistics Manager** at the Farmaljoistik. Your responsibilities in general encompass organization of the storage and distribution of goods. Essentially you ensure that the right products are delivered to the right location on time and at a good cost. More specifically, your main responsibilities can be summarized as follows:

- monitoring the quality, quantity, cost and efficiency of the movement and storage of goods;
- coordinating and controlling the order cycle and associated information systems;
- analyzing data to monitor performance and plan improvements and demand;
- allocating and managing staff resources according to changing needs;
- leasing and negotiating with customers and suppliers;
- developing business by gaining new contracts, analyzing logistical problems and producing new solutions.

Farmaljoistik sent off 750 packs of Insulin in 25 L Avatherm model containers to Star Pharma Store in Izmir on 1 February 2011. The shipment was in 15 containers, each containing 50 packs of Insulin, all packed correctly following the standard operating procedure (SOP) for packaging. Each container had one Trix8 LogTag data recorder. The containers were dispatched at 17:29 pm. The shipment arrived at its delivery point on 2 February at 10:59am. The Logtag datalogger showed an alarm in container #4. As per the SOP, products from this container were put on hold at Star Pharma Store pending the analysis of the temperature monitoring data.

The head pharmacist from Star Pharma Store called you to report on the alarm. He said that all the 15 LogTag

Task 6 Temp. Excursion

Navigation Bar: How to use, Programme, Google.doc, Discussion, Video library, Document library, Who is who?, e-mail, Disclaimer

Course Structure (Right Sidebar):

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- ALBANIA CASE**

Abstract ← **learner tasks** → Authentic

Collaborative construction of knowledge

Google Drive

My Drive > e-PCCM > 01 FARMALJOISTIK > 01 Inspecting GDP

TITLE	OWNER
Andrey-Patrick-Hafidha Shared	me
Ignacio-Carmen Shared	me
Jacqui-David-Edwin Shared	me
Lisa-Roland-Diana Shared	me
Sudath-Hemant Shared	me

Folder Structure (Left Sidebar):

- My Drive
 - e-PCCM
 - 01 FARMALJOISTIK
 - 01 Inspecting GDP
 - 02 Temperature excursion
 - 03 Quality agreement
 - 04 Risk assessment
 - 02 BURSA
 - 03 HACETTEPE
 - 04 ULUTAS
 - 05 ZEYINBAGI
 - 06 ALBANIA CASE

Trainer instructor roles Mentor/facilitator

Access to expert performances

Everything you always wanted to know about pharmaceutical cold chain management*

andrew online

kevin online

umit online

jim online

LIVE CHAT
Talk to mentors

*but were afraid to ask

Service Provider

End User

Pre-packaged Tutorials focus of technology Authentic Simulations

e-Pharmaceutical Cold Chain Management Course 9:45:55 PM TUE (GMT) umitkaratoglu@out

GE Authentic Zeytinbagi Shake test

from EPELA PLUS

02:20

LIKE LATER SHARE

For this Part 1, your task is to:
Comment on the shake test video whether all steps were followed correctly by the nurse. Do the results indicate

Task 4 Shake test video

Task 4 Shake test

PDF

How to use

Programme

Google.doc

Discussion

Video library

Document library

Who is who?

e-mail

Disclaimer

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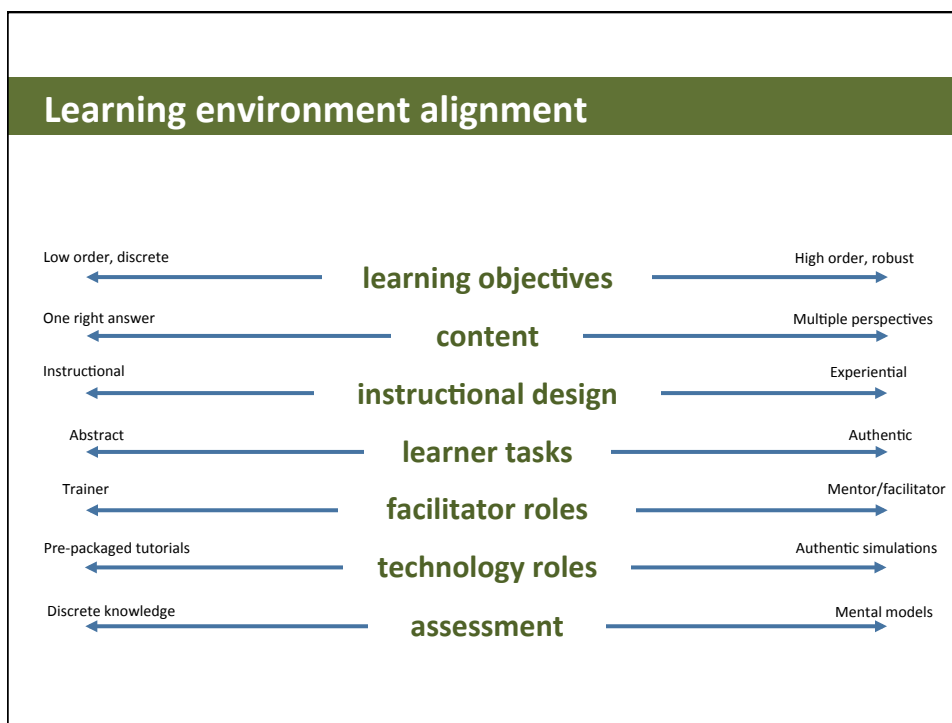
ALBANIA CASE

Specific skills
focus of assessment
Mental models



Real World Assessment

For a given a client, conduct a critical analysis of the cold chain management system and make recommendations to improve the performance of the system in line with good distribution practices (GDP) and good storage practices (GSP).

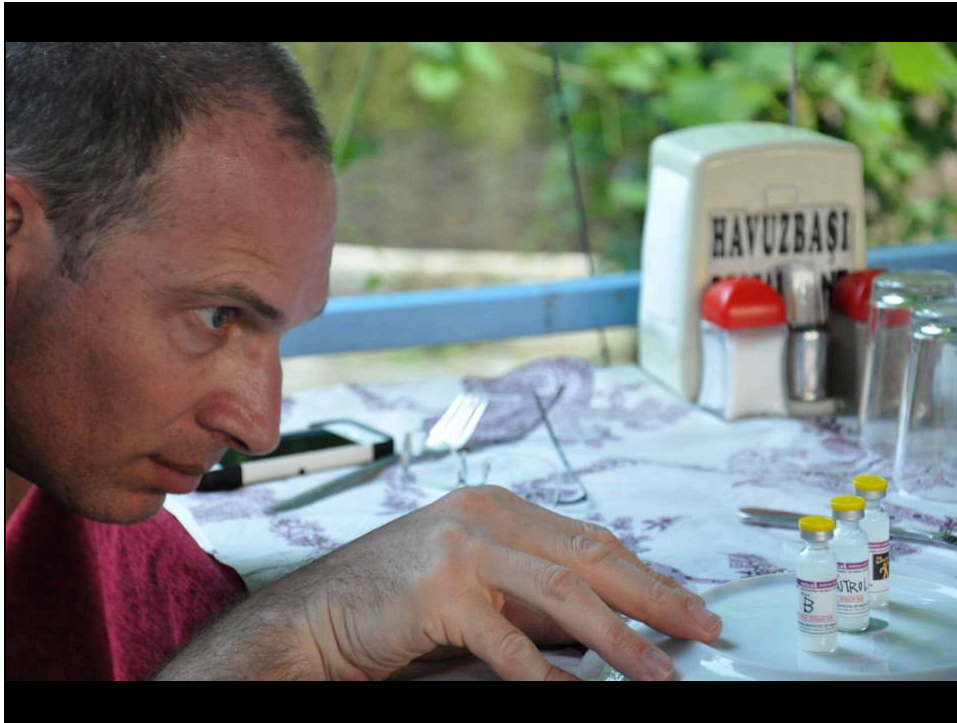


Bus course has an emotional ending – with real tears – yet to be achieved in the e-learning course.



Design Principle 1: Rather than perfectly duplicate, replicate where possible and innovate where necessary.

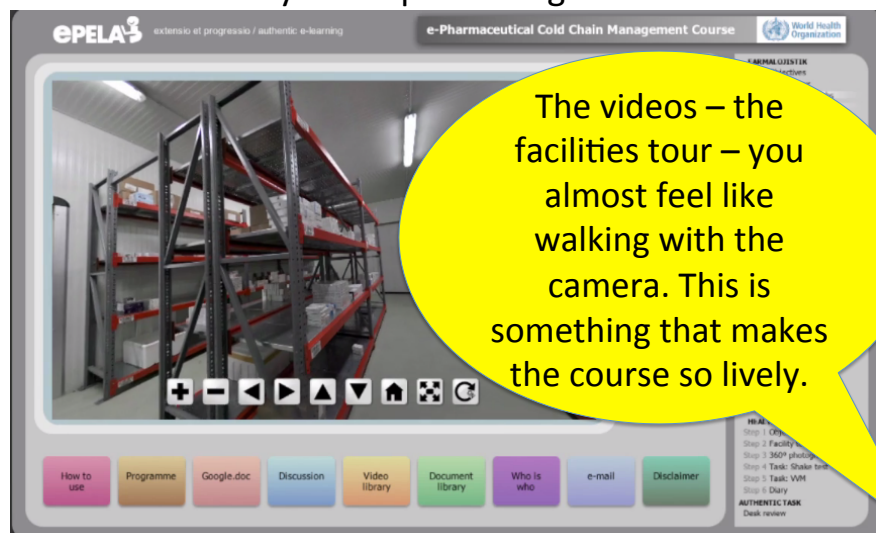




Design Principle 2: The collaboration that is essential to instantiating authentic tasks-based learning strategies online is a new experience for most learners and must be carefully nurtured.



Design Principle 3: The fidelity of the simulated experiential learning environment does not have to be high as long as it enables learners to suspend disbelief and feel that what they are experiencing is real.







Thank You!



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