How education works

MADLaT, April 2014

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TEKRI
Athabasca University

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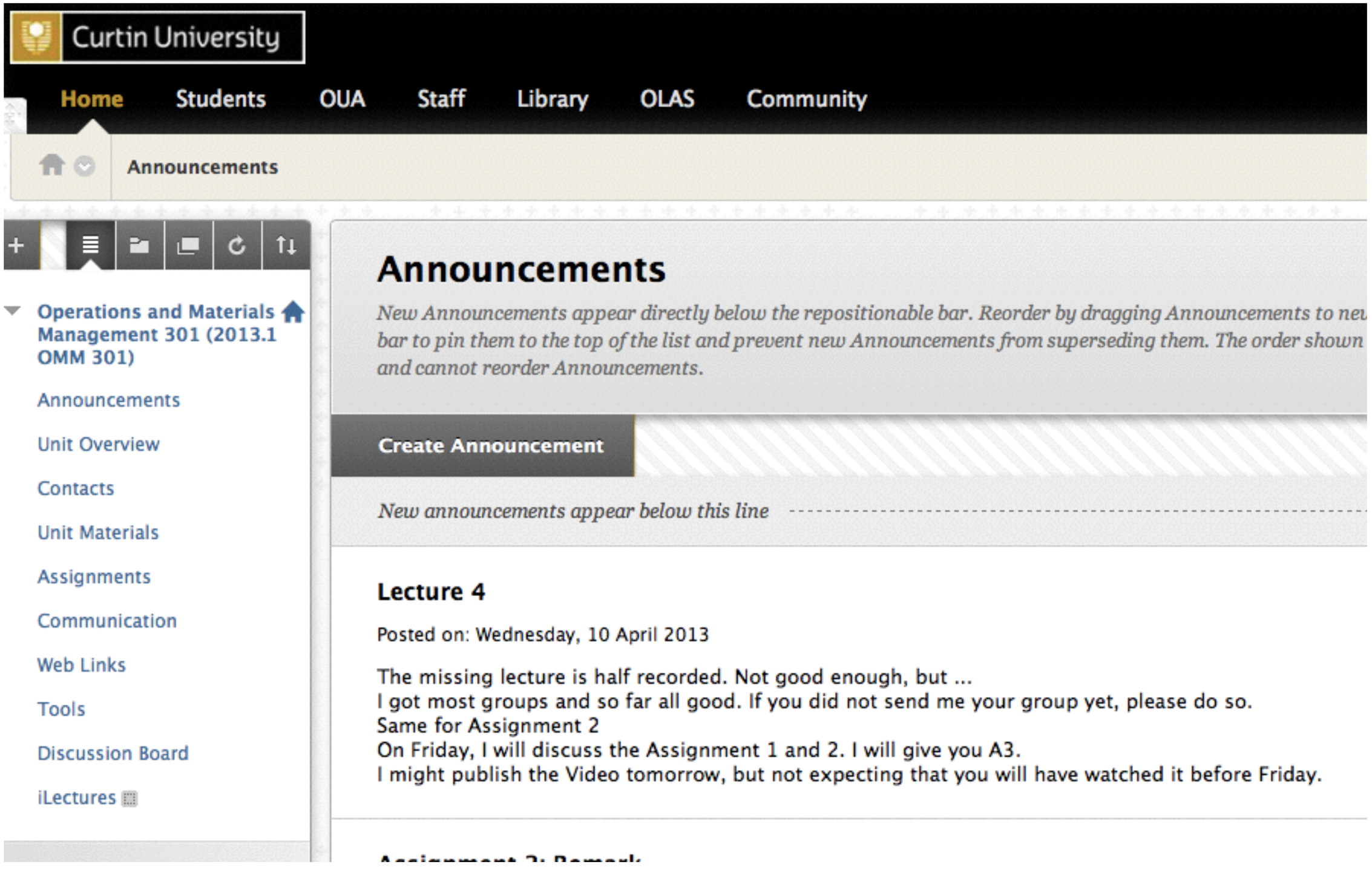
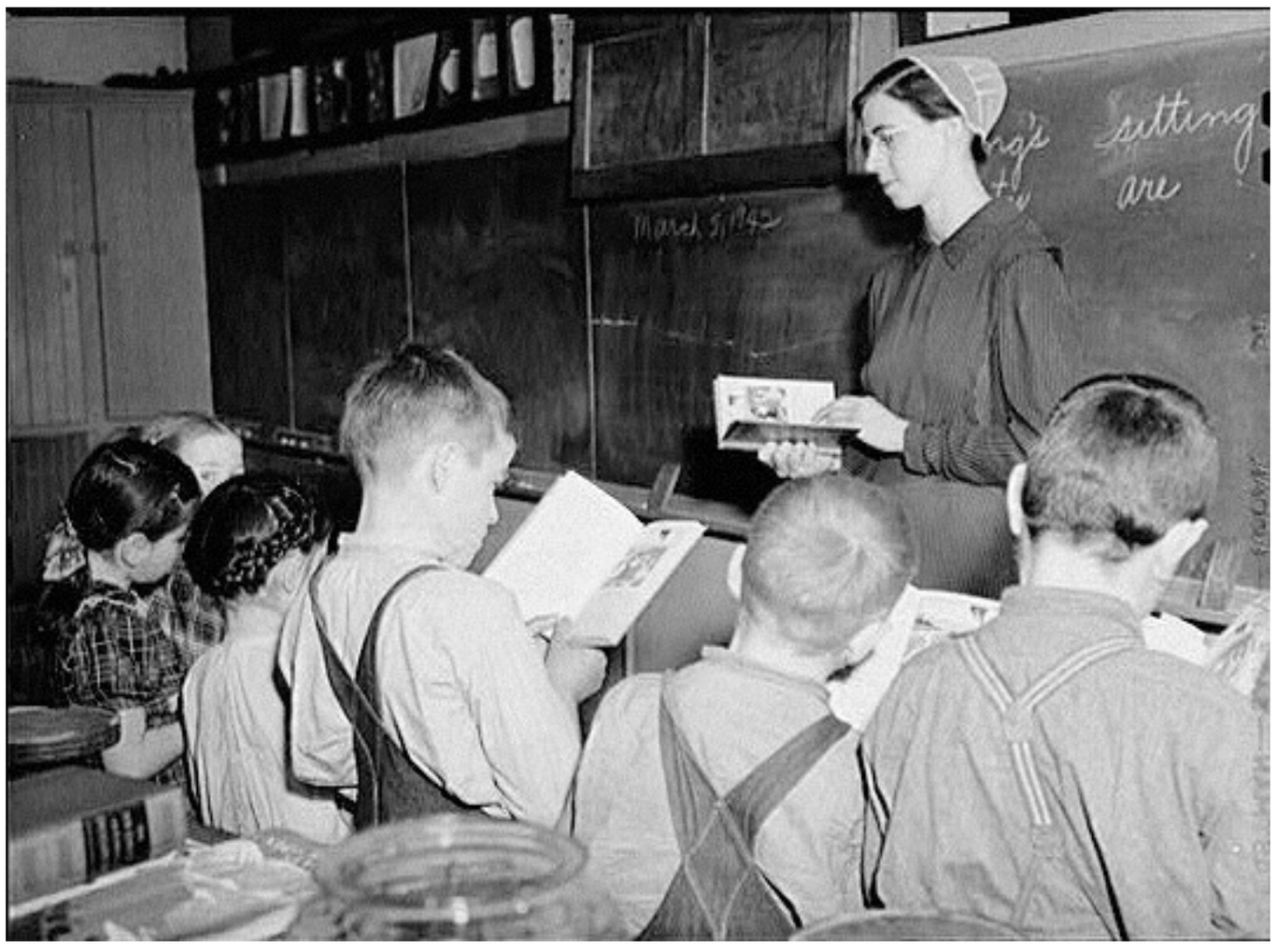
Is there a learning technology in this picture?



Is there a learning technology in this picture?



Is there a learning technology in this picture?

Is there a learning technology in this picture?

Is there a learning technology in this picture?

is this a learning technology?

What is *a* technology?

tech·nol·o·gy/tekˈnäləjē/

Noun:

1. The application of scientific knowledge for practical purposes, esp. in industry: "computer technology"; "recycling technologies".
2. Machinery and equipment developed from such scientific knowledge.

Synonyms:
technics - engineering - technique

"Anything invented after you were born" (Kay)

"Everything that doesn't work yet" (Hillis)

"Ways that people get complicated things done" (Bessant & Francis)

"A combination of artefacts and what you do with them" (Nye)

"Tools with a context" (Papert)

"Not a thing but a verb" (Kelly)

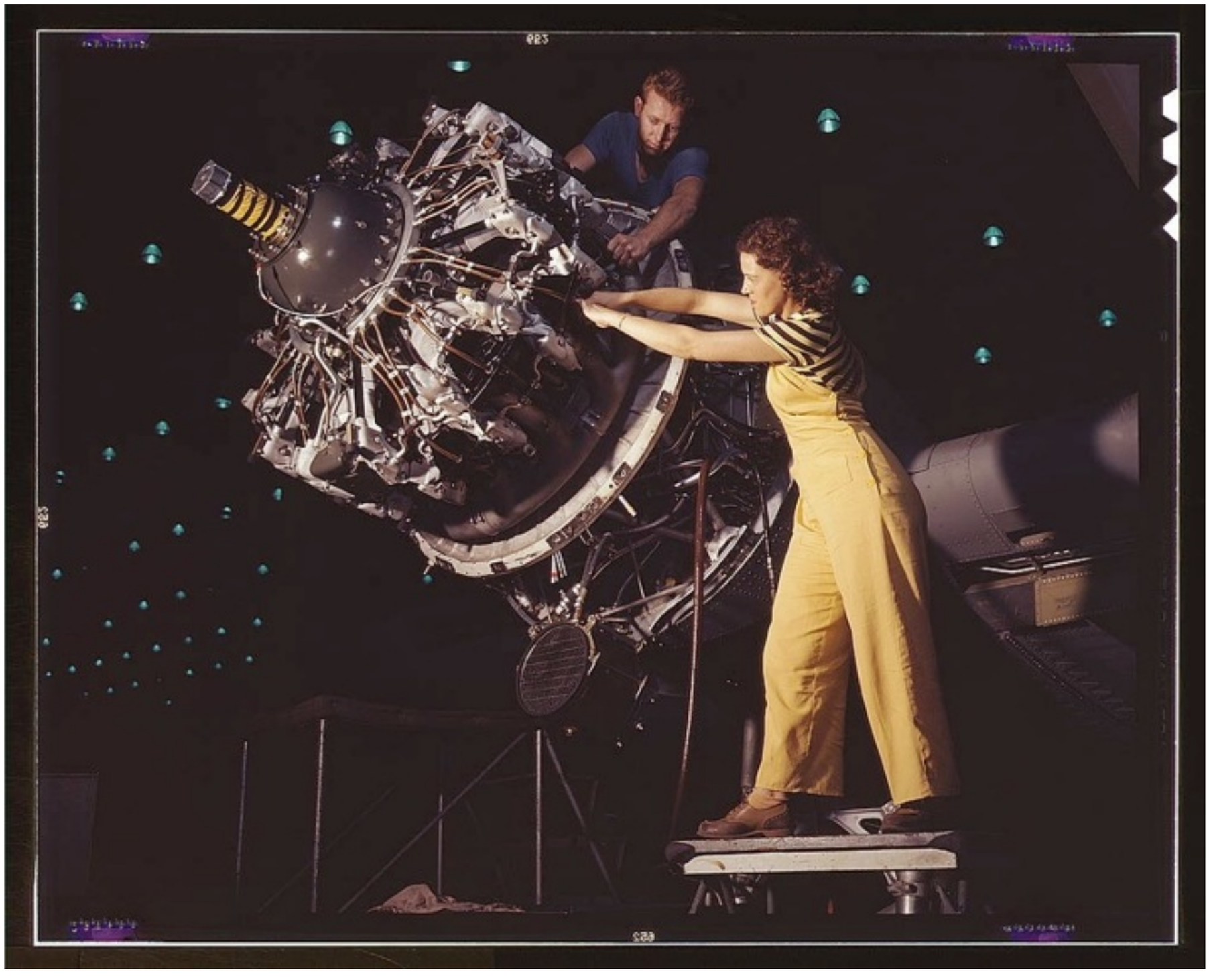
"The way things are done around here" (Franklin)

technology

"the orchestration of phenomena for some use"

(W. Brian Arthur)

technologies are assemblies



learning-technologies
language
laboratories
learning-designs
pedagogies
universities
software
schedules
rules
rubrics
multiple-choice-tests
LMSs
mind-maps
plans
regulations
tables
schools
speakers
wheels
uniforms
windows
timetables
whiteboard
vacations
tiles
walls
steam-engines
slates
plugs
paint
money
methods
legislation
library-cards
lecture-theatres
magnets
nails
maps
paper
protractors
pens
set-squares
library-management-systems
lesson-plans
lessons
keys
iPhones
hinges
double-entry-bookkeeping
dividers
chalkboards
colleges
catalogues
classrooms
computers
cogs
concept-maps
desks
exams
curricula
flasks
firewalls
graphite
lathes
fences
laws
ink
lessons

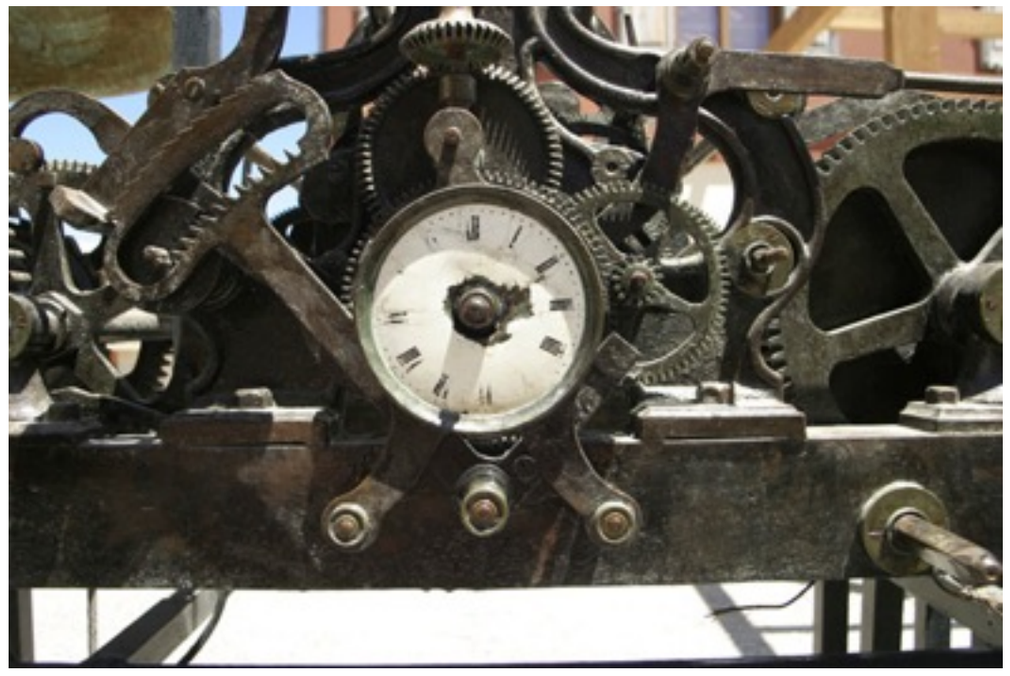
pedagogies are technologies

learning technologies

where pedagogy is part of the orchestrated assembly

Hard technologies

Orchestration of phenomena embedded in the technology



May need skill to use them *correctly*

Soft technologies

http://commons.wikimedia.org/wiki/File:François_Barraud_-_Palette_et_Pinceaux.jpg

Active orchestration of phenomena by people

Skill needed to use them *well*

points of view

Image by Jules Feiffer, from The Phantom Tollbooth, by Norton Juster

ease of use

speed

accuracy

replicability

precision

easy

hard

hard is

soft is

control

creativity

diversity

flexibility

resilience

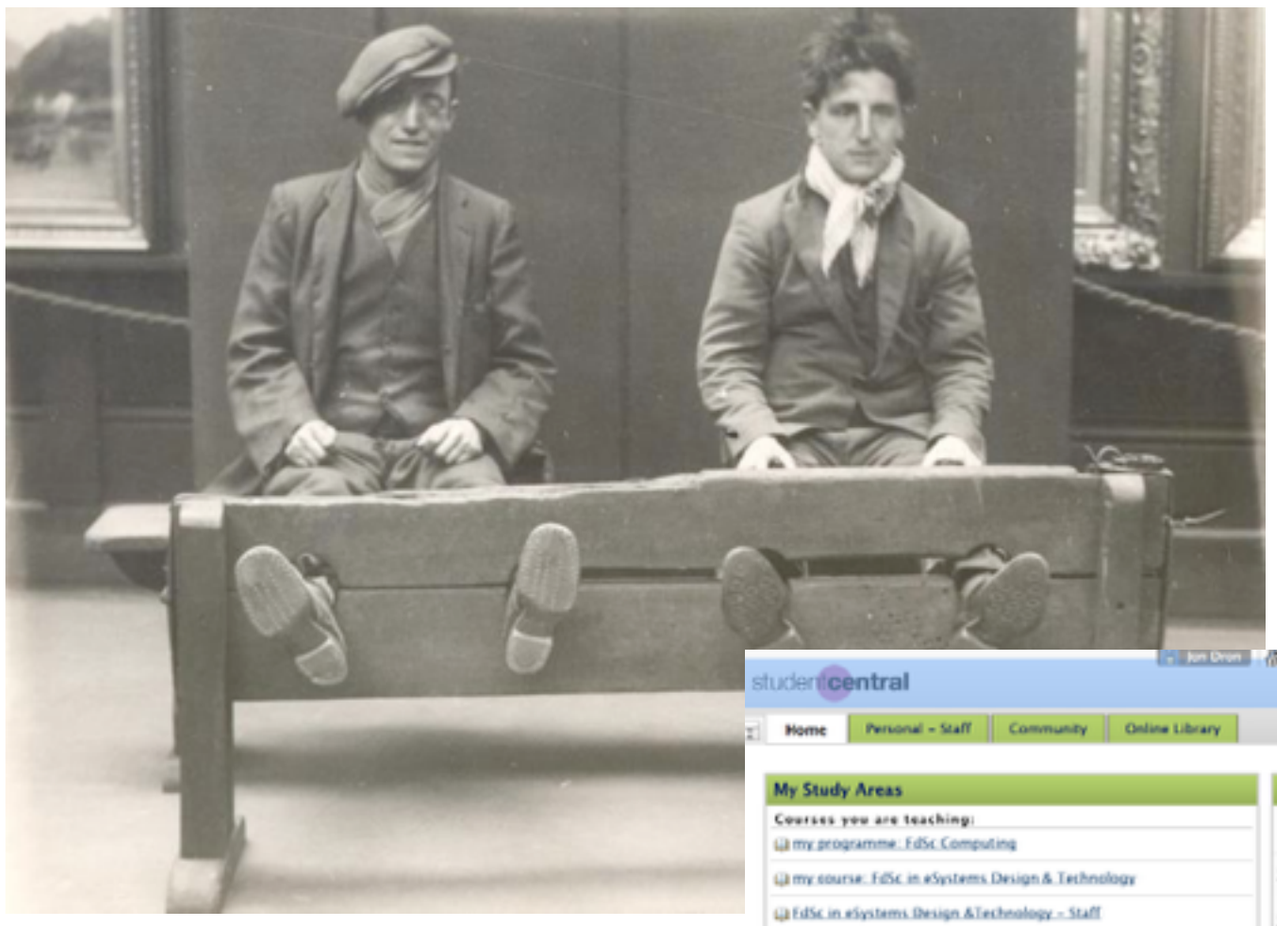
cyborg technologies

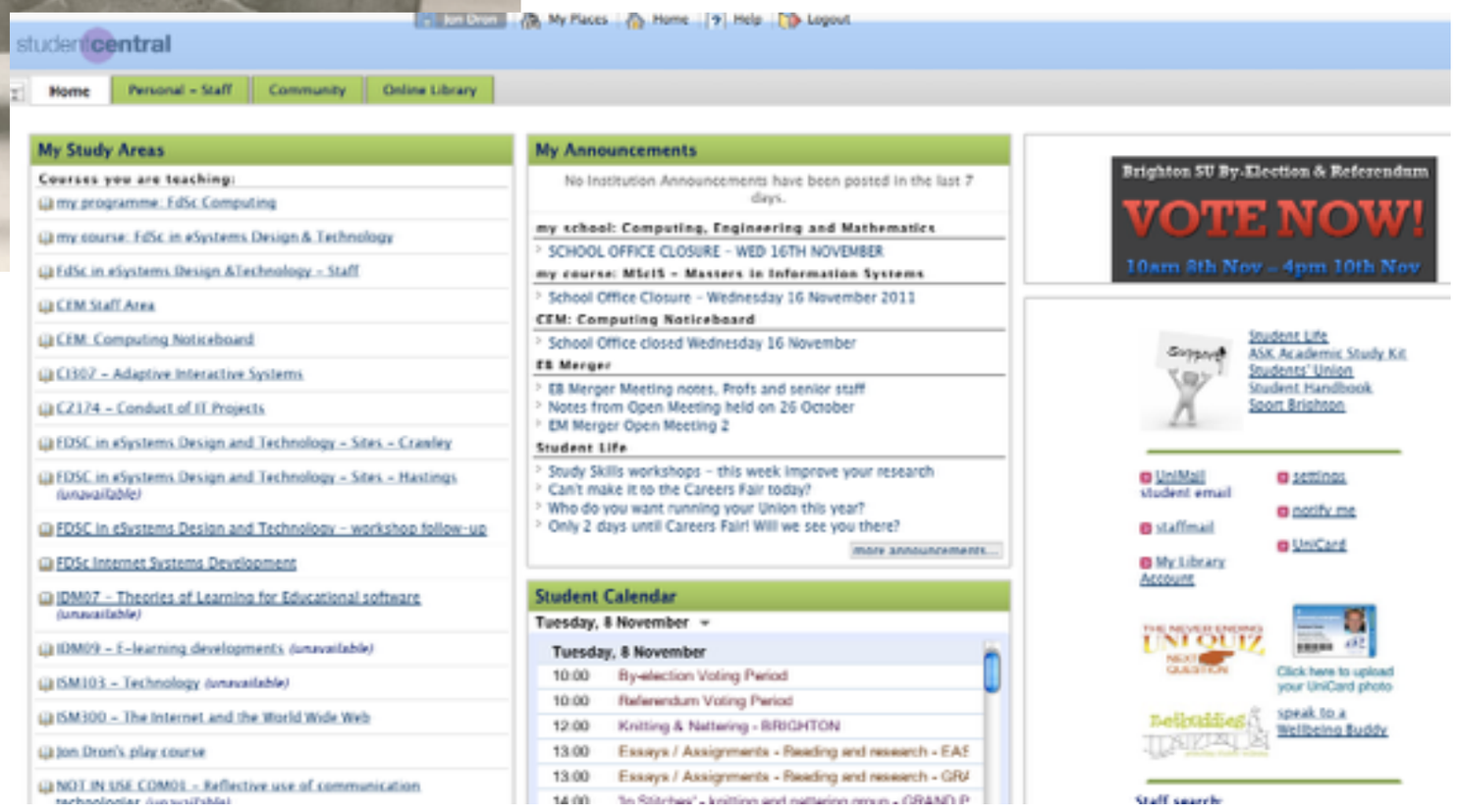
we are a *part* of all soft technologies

and some technologies are made *of* us

we shape our dwellings and
afterwards our dwellings
shape our lives

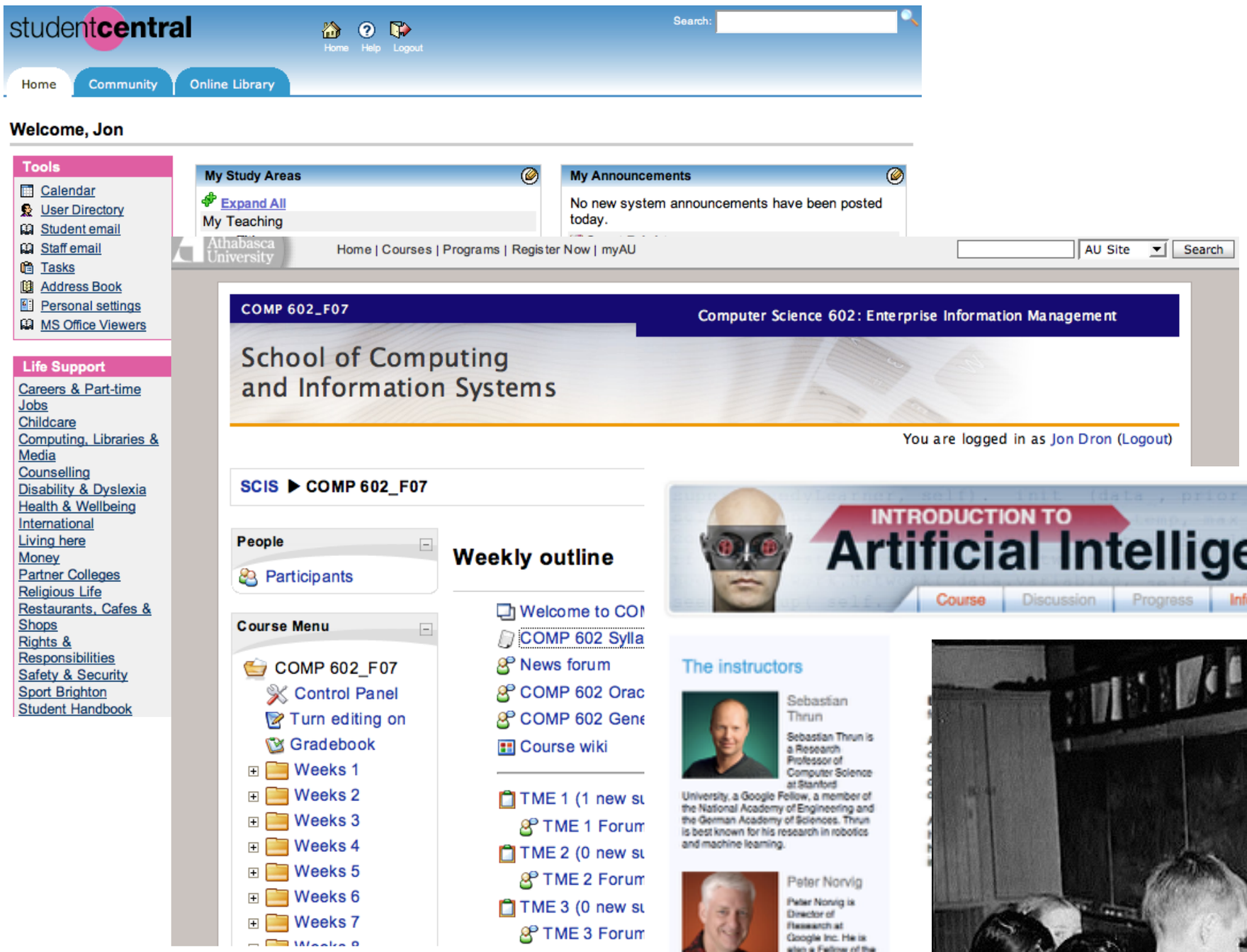
structure and behaviour

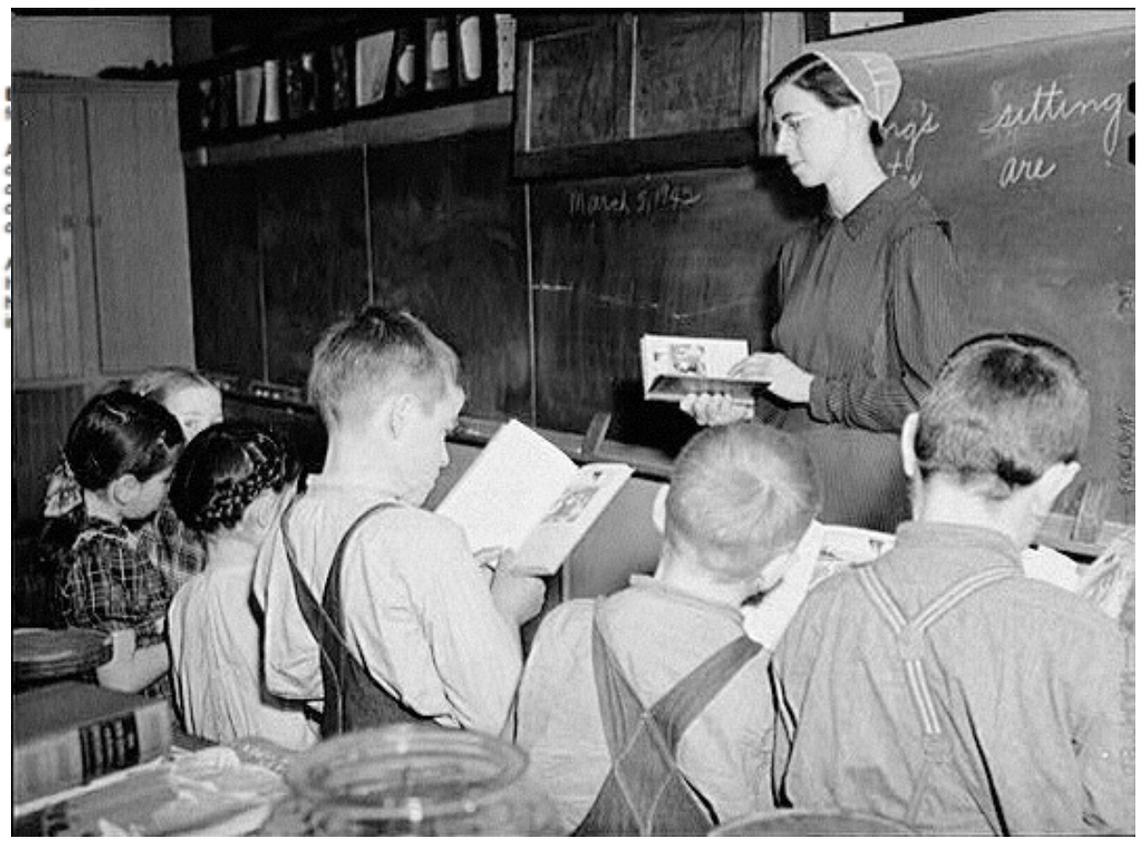




pedagogies are *soft* technologies

hard learning technologies





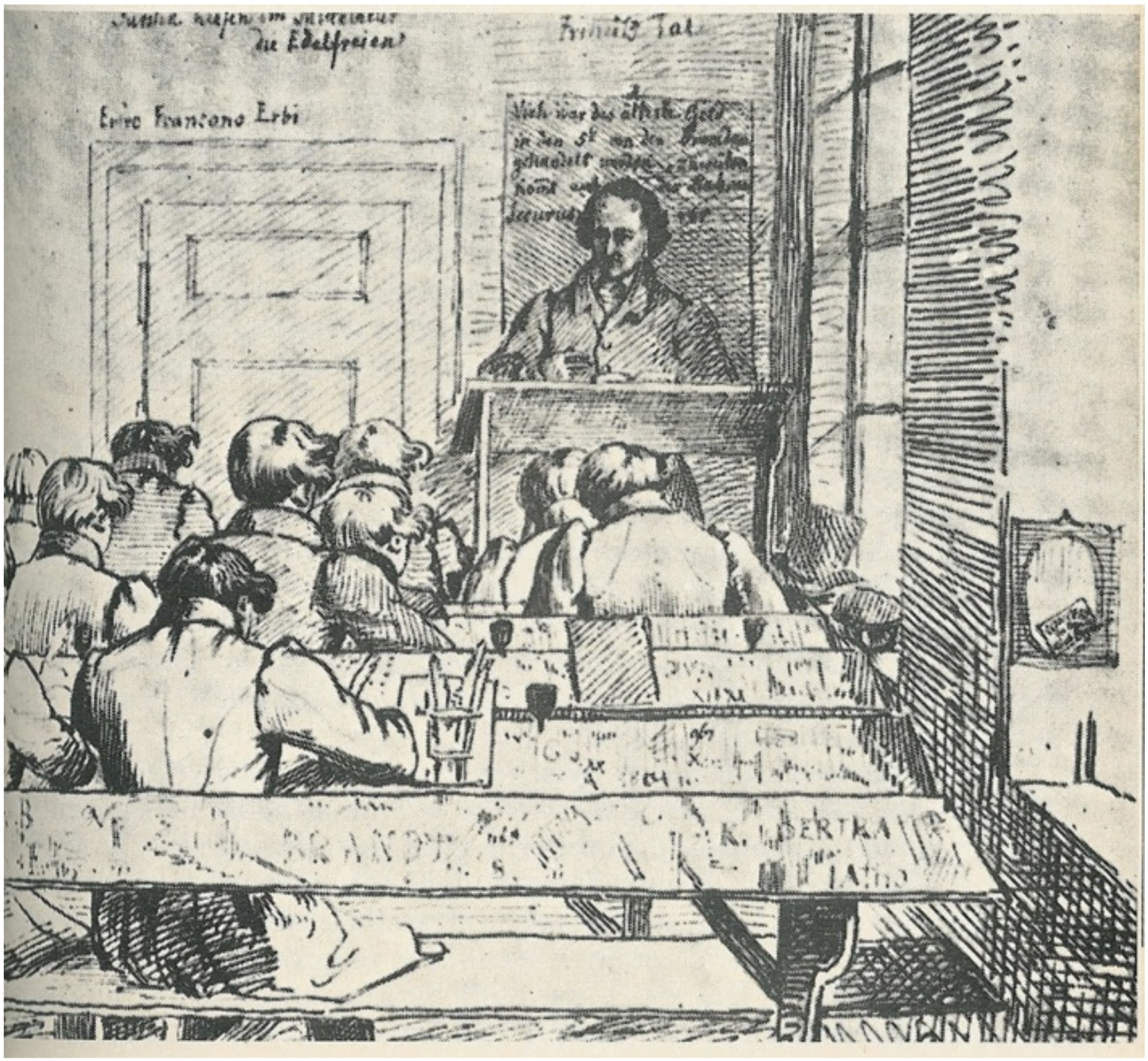
soft learning technologies

conversations

a dance

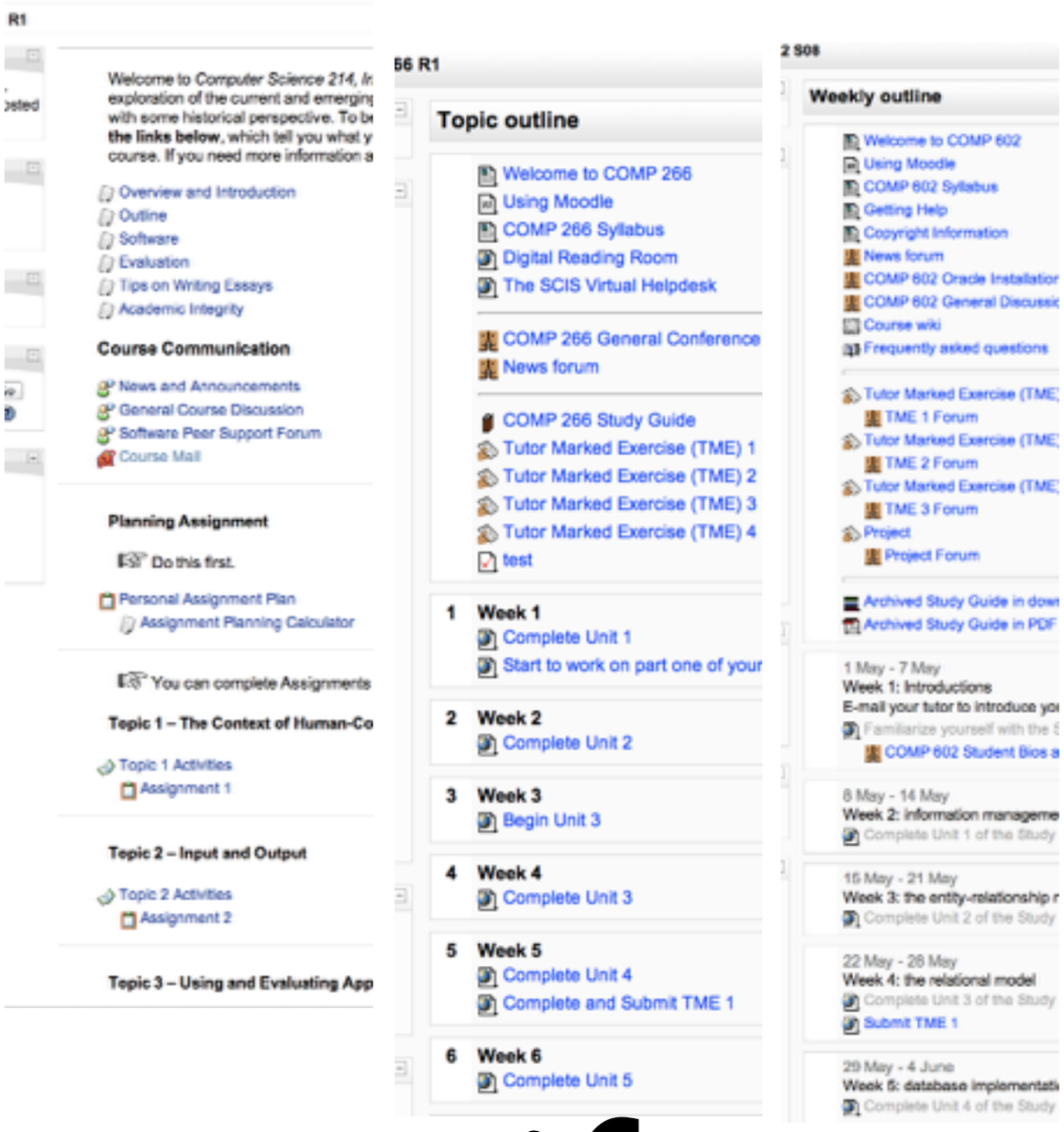
THE JACK KEATING DANCE STUDIO
A SELECT DANCE
IS EVERY WED. NIGHT
IN THIS HALL
16

distributed



contrasting soft and hard technologies

diverse



uniform

difficult

easy

brittle

flexible

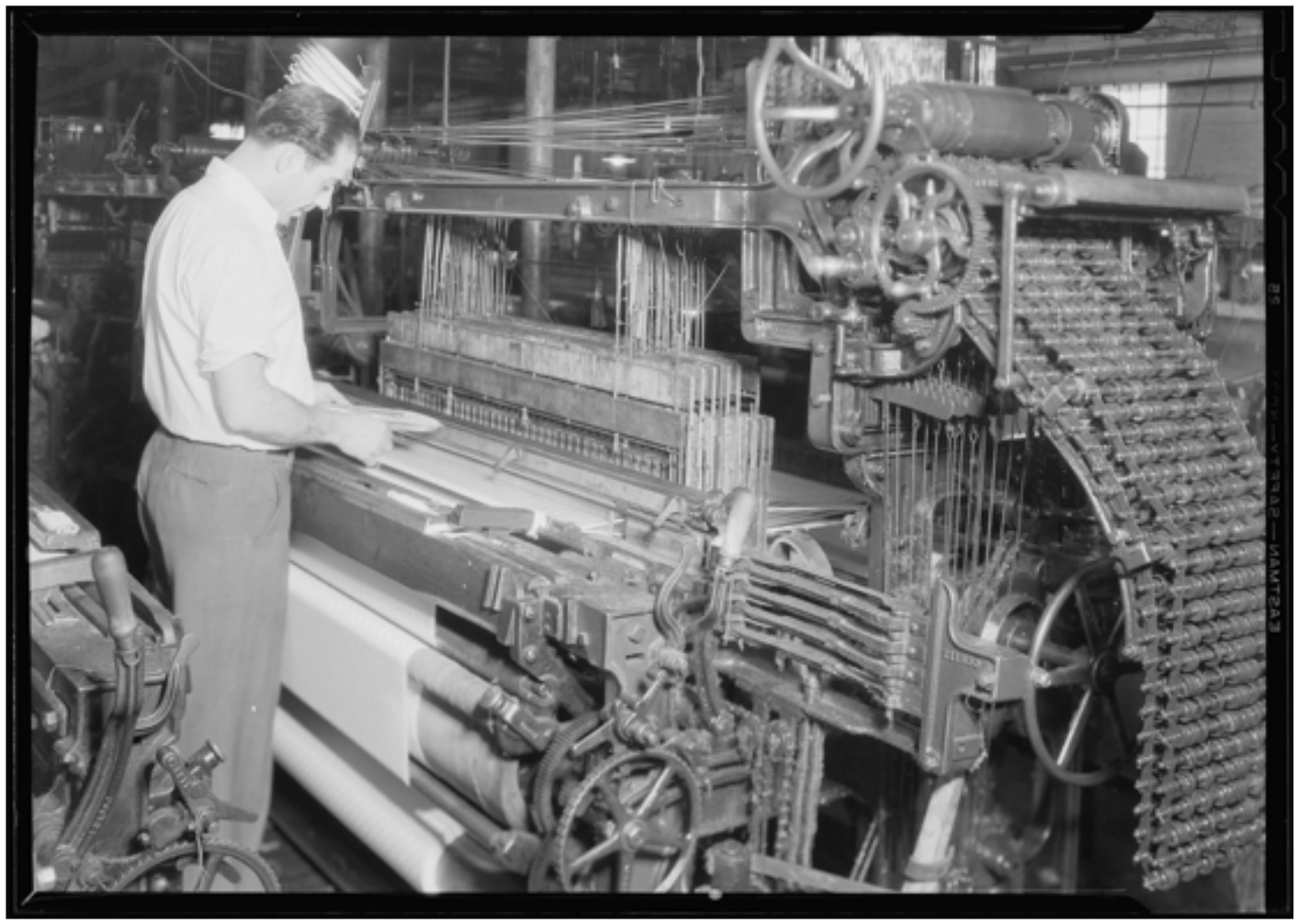
complicated

complex

aggregation

replacement

replication



novelty

precision

interpretation

efficiency

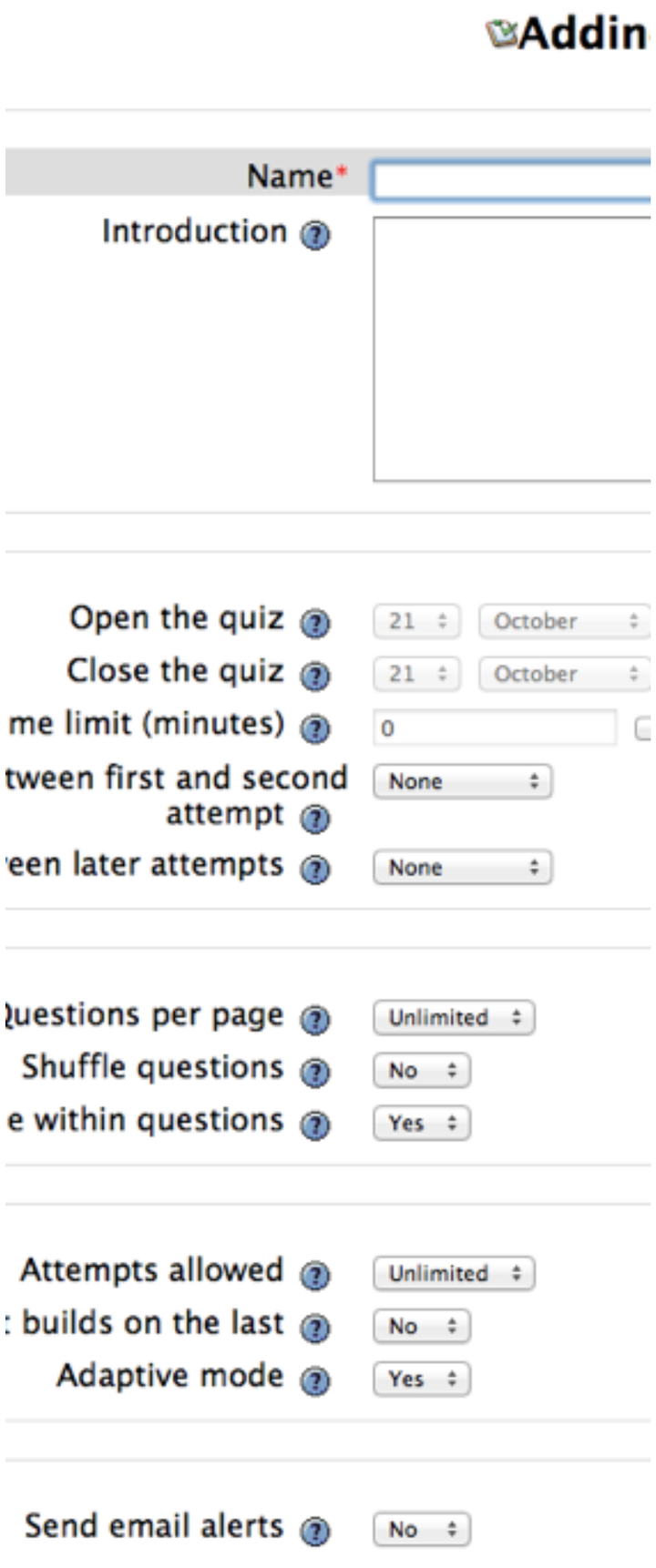
control

softening

- modification
- aggregation
- extension
- communication

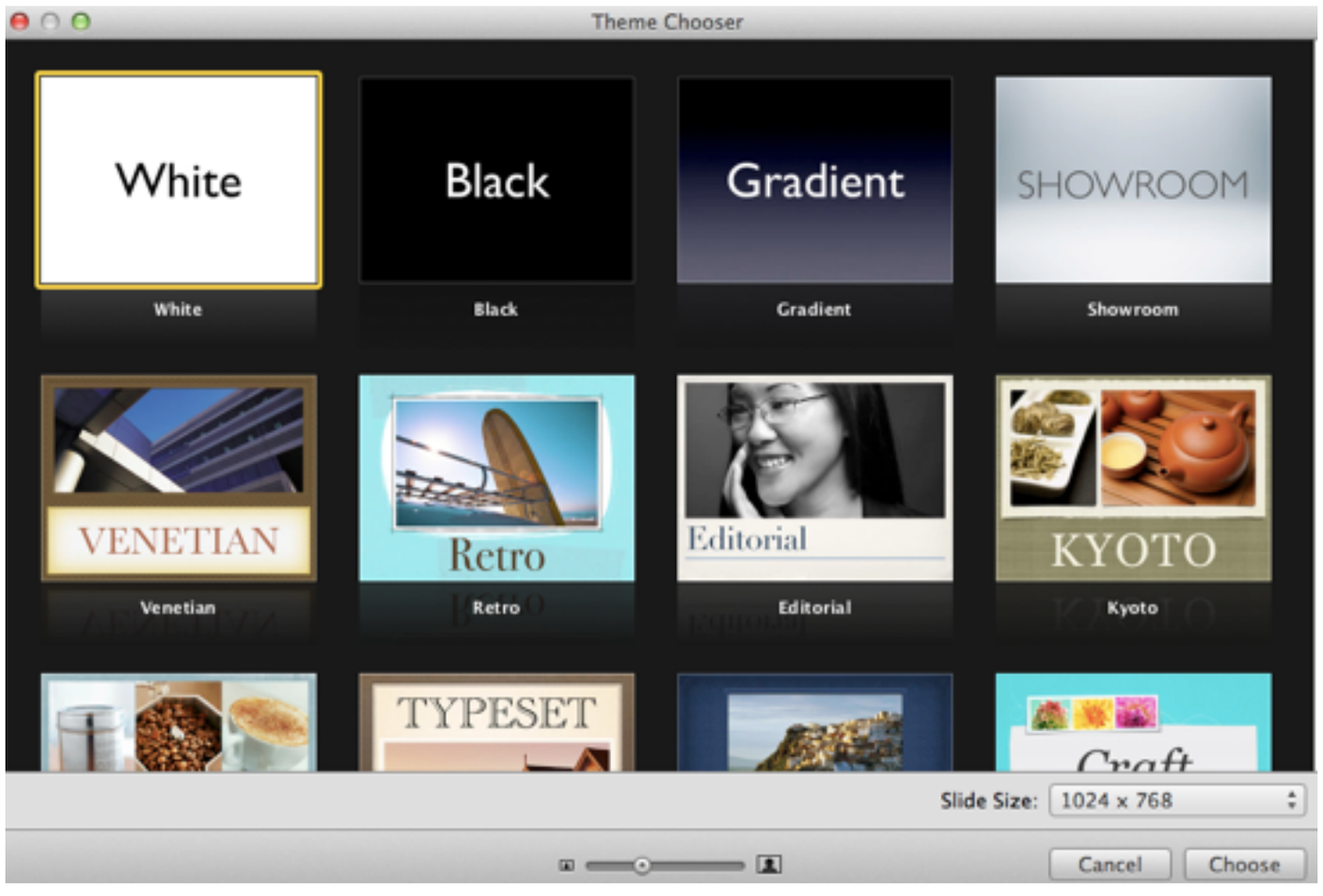
hardening

- replacement
- automation
- limiting
- filtering



defaults harden

they make things easy



but can make us stupid

assemblies soften

they can make broken hard things work

but sometimes it is better to fix the hard thing

three bears

Steel, Flora Annie. *English Fairy Tales*. Arthur Rackham, illustrator. New York: Macmillan Company, 1918.

the elephant
in the room
http://www.flickr.com/photos/photonquantique/2596581870/sizes/l/in/photostream/

No significant difference

http://4.bp.blogspot.com/_sGYULzoQCgA/SA6HEWNCB5I/AAAAAAAABeA/FTkqbqDd9do/s1600-h/1964-worlds-fair-schoolmarm.jpg

nsd NO SIGNIFICANT DIFFERENCE

http://www.nosignificantdifference.org/

http://commons.wikimedia.org/wiki/File:AHW_Prof_Moritz_Vogel_Matthaeikirche_Leipzig_um_1920.jpg

It ain’t what you do…

thank you

Landing: *https://landing.athabascau.ca/profile/jond*

Home page: *http://jondron.athabascau.ca*

Aggregation page: *http://jondron.org*

email: *jond@athabascau.ca*

Twitter: *@jondron*