On the nature and design of learning technologies

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Is there a learning technology in this picture?

Is there a learning technology in *this* picture?

What is *a* technology?

tech·nol·o·gy/tekˈnäləjē/

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

Synonyms:
technics - engineering - technique

"Anything invented after you were born" (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"

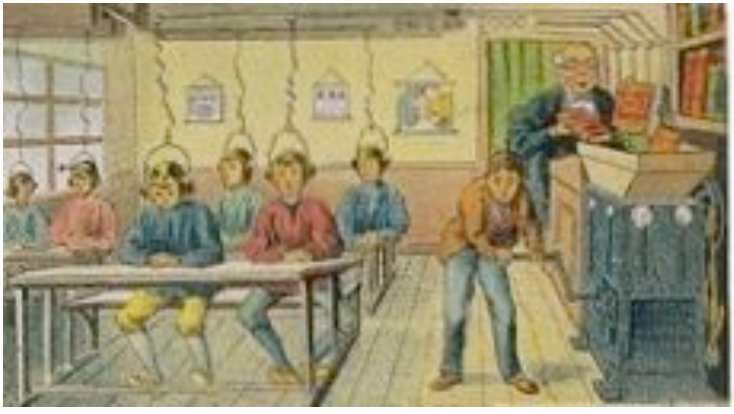
(W. Brian Arthur)

learning-technologies
language
learning-designs
pedagogies
universities
software
schedules
timetables
chalkboards
calendars
desks
exams
graphite
laboratories
lecture-theatres
maps
LMSS
multiple-choice-tests
rules
rubrics
mind-maps
plans
schools
speakers
whiteboards
wires
catalogues
cables
clocks
computers
colleges

pedagogies are technologies

technologies are assemblies

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*

precision

replicability

accuracy

speed

ease of use

hard is easy

soft is hard

resilience

flexibility

diversity

creativity

control

cyborg technologies

we are a *part* of all soft technologies

and some technologies are made *of* us

pedagogies are
soft technologies

we shape our dwellings and
afterwards our dwellings
shape our lives

structure and behaviour

hard learning technologies

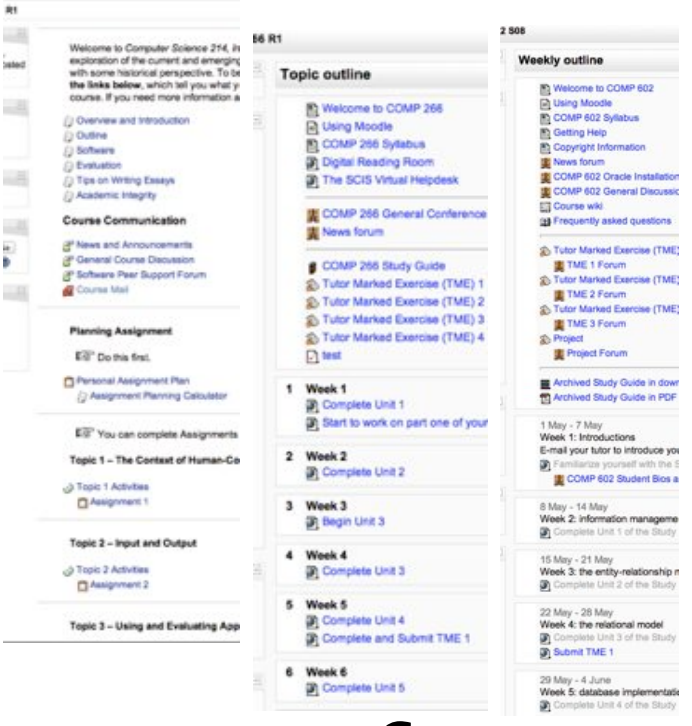
soft learning technologies

points of view

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

contrasting soft and hard technologies

diverse



uniform

difficult

easy

brittle

flexible

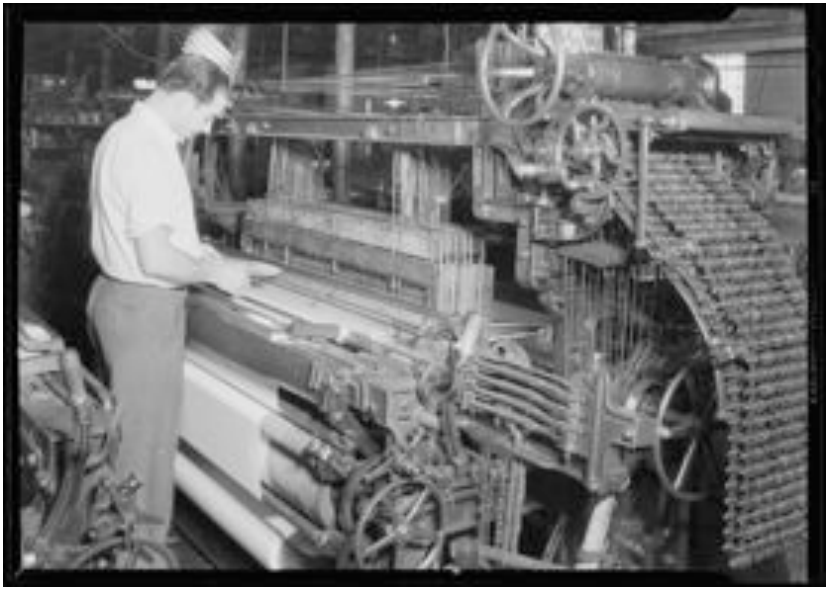
complicated

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.

balance
http://www.flickr.com/photos/photonquantique/2596581870/sizes/l/in/photostream

thank you

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