

How Learning Technologies Work

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Is there a technology in this picture?

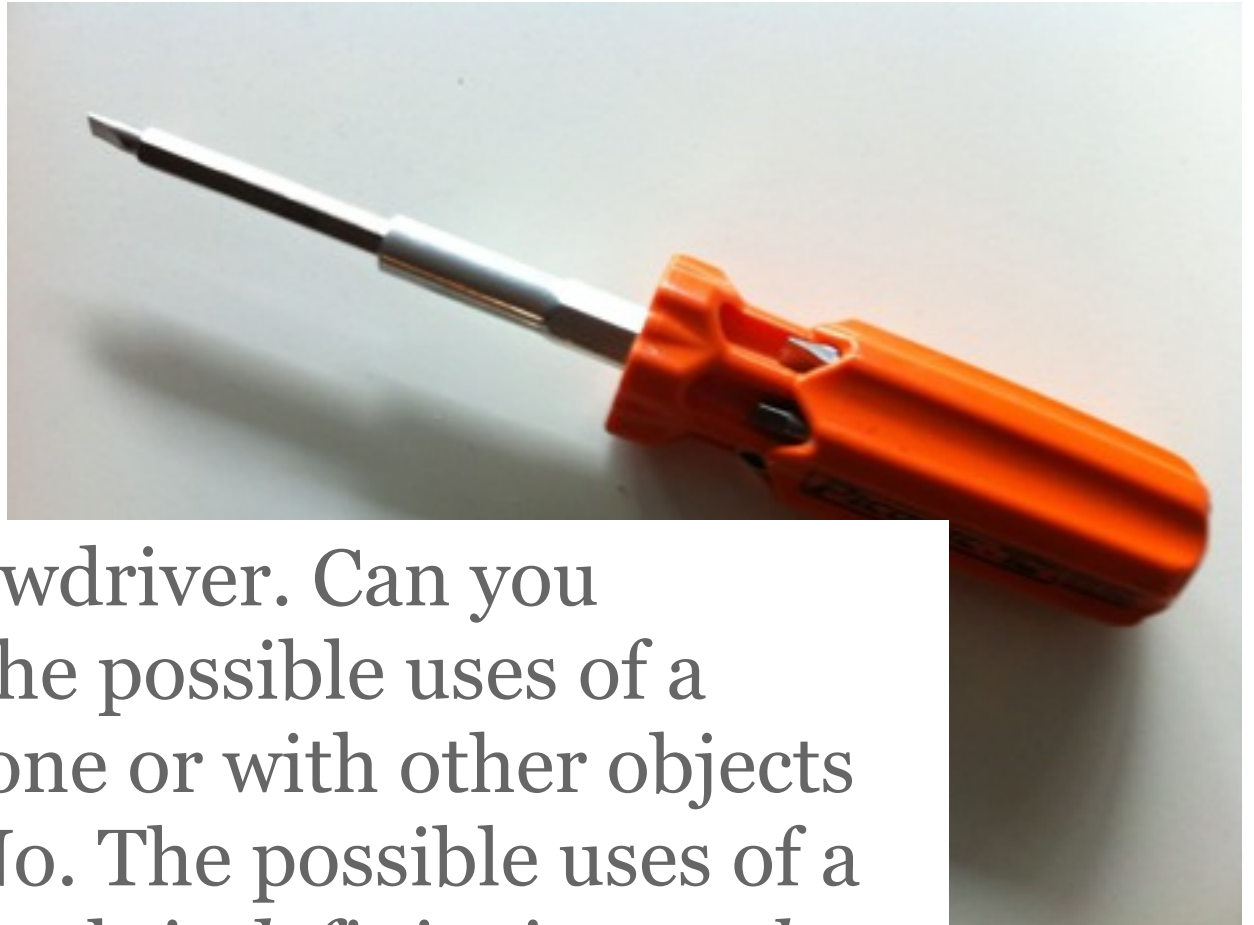


Is there a *learning* technology in this picture?



Is there a learning technology in
this picture?





Consider a screwdriver. Can you enumerate all the possible uses of a screwdriver, alone or with other objects or processes? No. The possible uses of a screwdriver is both *indefinite in number and can't be ordered*. This means that *no algorithmic procedure* can list all the uses of such a screwdriver alone or with other objects or processes.

Stuart Kauffman

<http://www.npr.org/blogs/13.7/2012/03/12/148462664/information-theory-does-not-apply-to-the-evolution-of-the-biosphere>

What is a technology?

tech·nol·o·gy/tek'näləjē/

Nonsense

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:

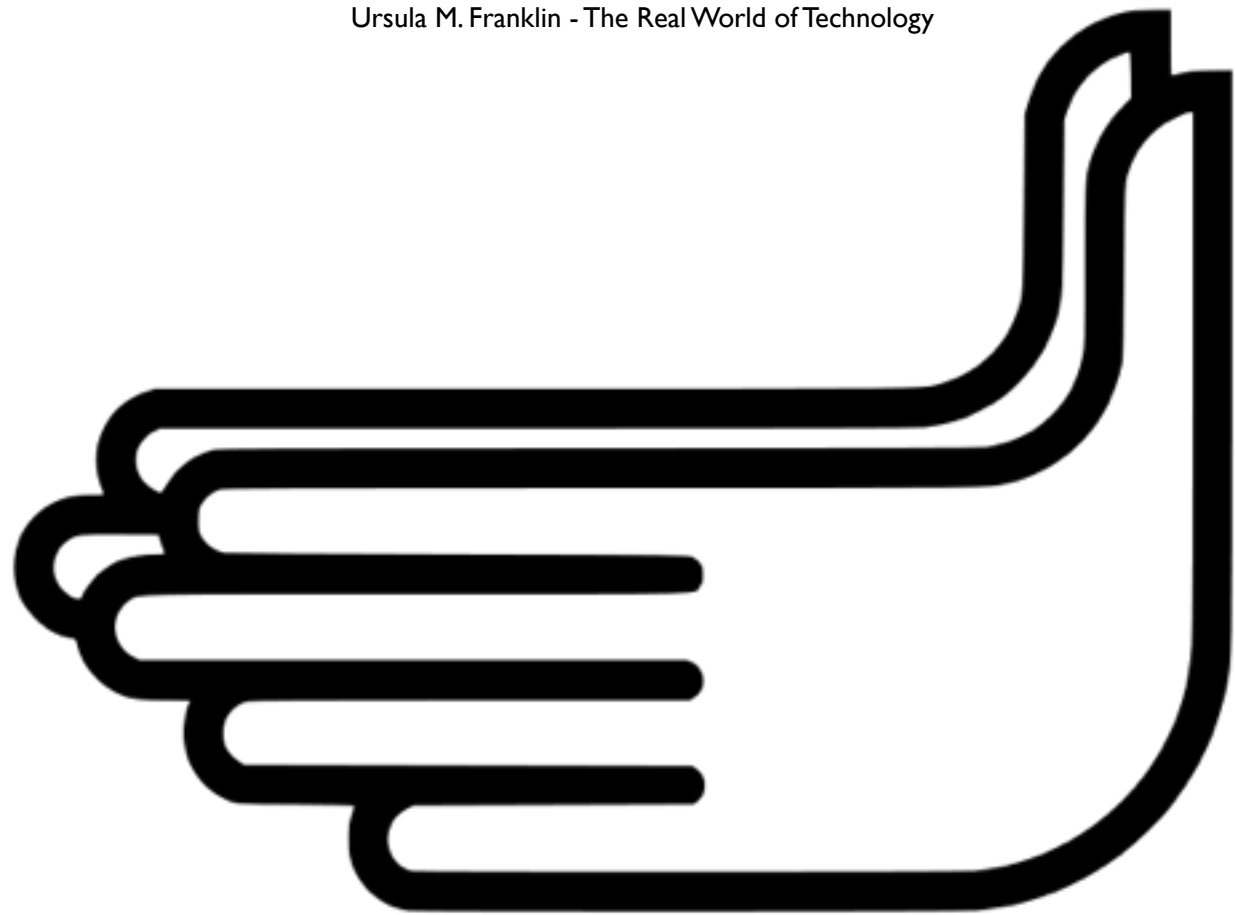
technics - engineering - technique

“A combination of artefacts and what you do with them” (Bill Nye)

“The way things are done around here” (Ursula Franklin)

Praying is a technology - and uses several technologies

Ursula M. Franklin - The Real World of Technology





technology

“the orchestration of phenomena for some use”

(W. Brian Arthur)

pedagogies are
technologies

(but pedagogy is not technology

a pedagogy is **a** technology)

assemblies



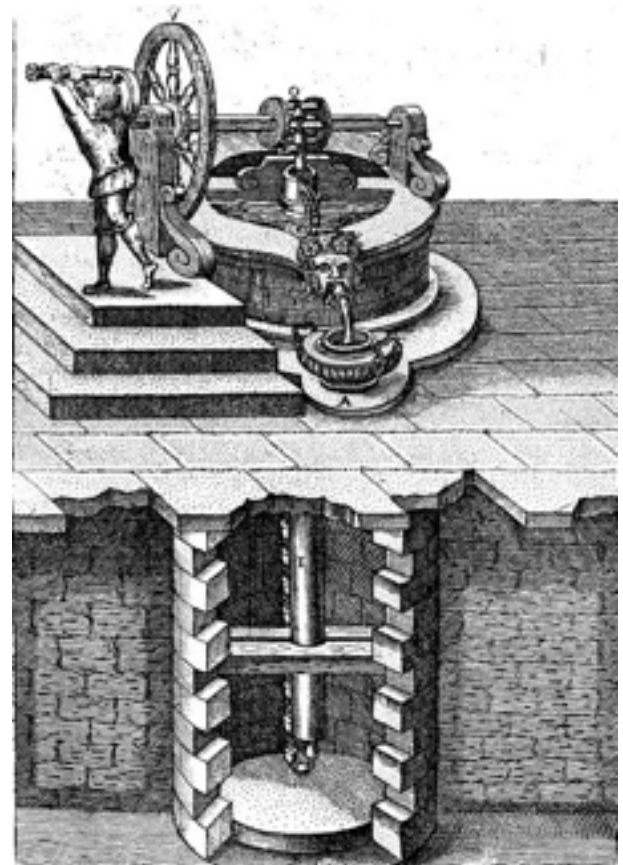
learning technologies

where pedagogy is
part of the
orchestrated
assembly



Hard technologies

Orchestration
of
phenomena
embedded in
the
technology



<http://commons.wikimedia.org/wiki/File:Pump5.jpg>

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*

cyborg

“creatures
simultaneously
animal and
machine, who
populate worlds
ambiguously
natural and
crafted”



(Donna Haraway, A Cyborg Manifesto)

cyborg technologies

we are a *part* of all soft
technologies



and some
technologies
are made *of*
us

hard is easy
soft is hard



**Whose
orchestration?**

points of view



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

hard technologies (for students)

The screenshot displays a student portal interface. At the top, the 'studentcentral' logo is visible, along with navigation links for Home, Community, and Online Library. A search bar is present in the top right. Below the navigation, a welcome message reads 'Welcome, Jon'. The left sidebar contains two main sections: 'Tools' with links like Calendar, User Directory, and Student email; and 'Life Support' with links like Careers & Part-time Jobs, Childcare, and Counselling. The main content area is divided into several sections: 'My Study Areas' with a list of courses; 'My Announcements' showing no new announcements; 'My Teaching' with a list of courses; and 'My Announcements' with a 'Sport Brighton' announcement. The central focus is the course page for 'COMP 602_F07: Computer Science 602: Enterprise Information Management' at Athabasca University. The page includes a 'Weekly outline' with a 'Welcome to COMP 602' message and a list of topics (TME 1-3). A 'People' section lists 'Participants'. A 'Course Menu' shows 'COMP 602_F07' with options for 'Control Panel', 'Turn editing on', 'Gradebook', and 'Weeks 1-7'. A banner for 'INTRODUCTION TO Artificial Intelligence' in partnership with Stanford Engineering is displayed, featuring a robot head image. Below the banner, 'The instructors' section introduces Sebastian Thrun and Peter Norvig. A 'Class has started!' message with a 'Sign in' button is present. The bottom right shows a video player for 'Unit 0w, 1 Introduction'.

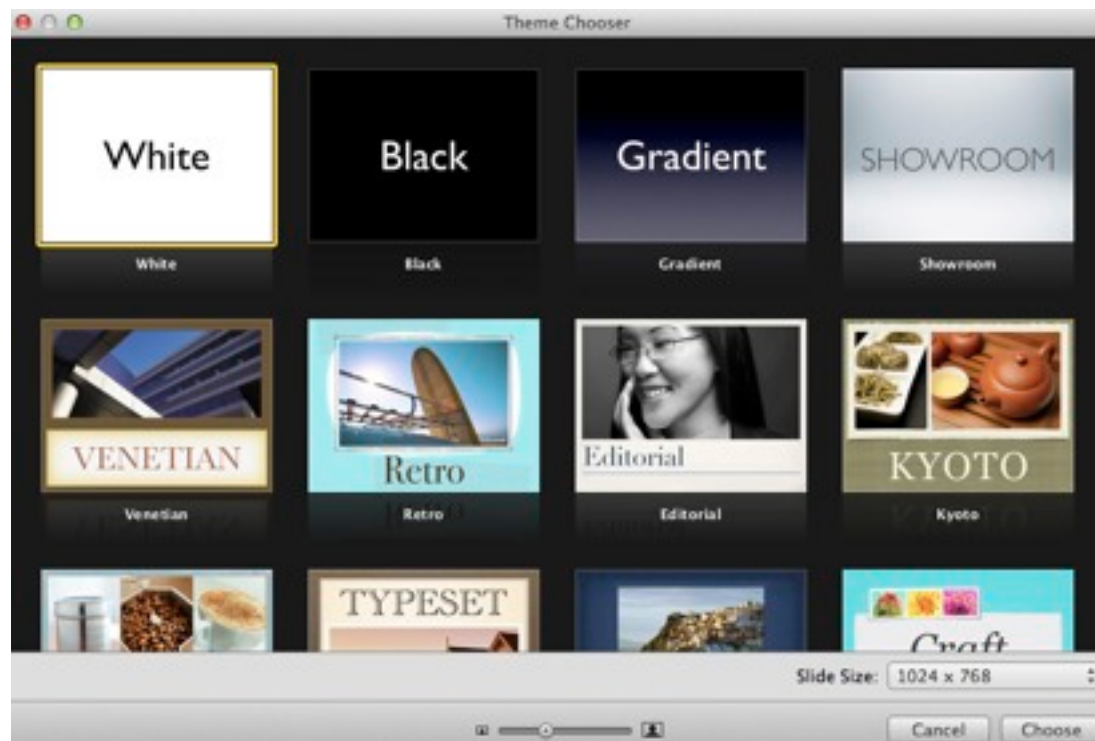
structure and behaviour

- we shape our dwellings then our dwellings shape our lives (Churchill)
- large and slow influence more than small and fast



defaults

make things easy



but can make us stupid

pedagogies are
soft technologies

How to make technologies



Soft

Hard

- Adapt
- **Aggregate**
- Recommend
- Extend
- Automate
- **Replace**
- Filter
- Limit

How (not?) to make technologies



<http://www.flickr.com/photos/nationaalarchief/2948560477/sizes/o/>

soft learning technologies



Tag Cloud

news, help, social
computing, education,
groups, facebook, learning, widget,
comp 650, law, social media, group,
comp607, privacy, moodle, social
ftware, comp 607, e-
learning, comments, dashboard,
arning, comp650, social
work, learning technology, ethics,
ding, copyright, plugin,
ology

Soft is
hard



but very
flexible

three bears



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



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

thank you

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These slides:

<https://landing.athabascau.ca/file/view/168446/cider-presentation-2012>