



Session 3
Affordance (Part 1)

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Review: Types of Cognitive Tools

(Jonassen, 1996)

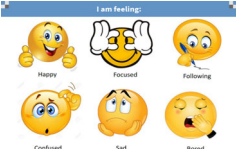
- **Semantic Organization Tools**
 - Databases; and
 - Semantic networking (concept mapping) tools
- **Dynamic Modeling Tools**
 - Spreadsheets (good for answering "what if"), a sample:
<http://mycpf.cpf.gov.sg>
 - Expert Systems
 - Systems Modeling Tools
<http://ccl.northwestern.edu/netlogo/models/run.cgi?TrafficGrid.697.573>
- **Information Interpretation Tools**
 - Visualization Tools
- **Knowledge Construction Tools**
 - Hypermedia
 - Knowledge Forum
 - *How can Photoshop or Video editor be used as cognitive tools?*
 - Conversation Tools

Review: Characteristics of Cognitive Tools

- Cognitive tools are (Jonassen, 2000):
 - Cognitive amplification and reorganization tools
 - exceed the limitations of the human mind by doing things more accurately and at a higher speed, and extend the use of other tools.
 - Generalizable tools
 - Can be used in many settings, not specific to any purpose
 - Critical thinking devices
 - Enable learners to think for themselves
 - Intellectual partners
 - Each is responsible for what they can perform best
 - a concept
 - a way of thinking about using ICT and other technology

Review

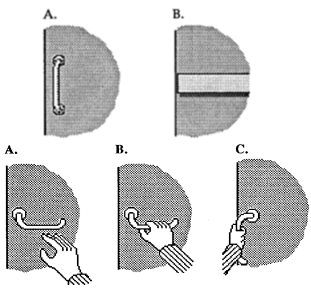
- Technology & Learning
 - Learning ABOUT technology
 - Learning FROM technology
 - Learning WITH technology
- Cognitive tools vs. Productivity tools
 - Separated by NATURE or USE of the tool



Contents

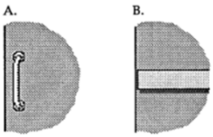
- The definitions of affordance
- How to understand affordance
- How to analyze affordances of ICT tools for teaching and learning

Door handle



Affordance: definitions

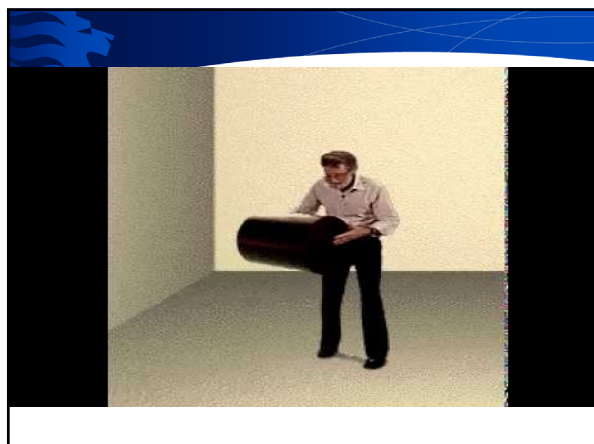
- Affordances are what an object can afford
- Affordances are opportunities for action
- Affordances are the interactive relationships between an object and a user



Different Opinions

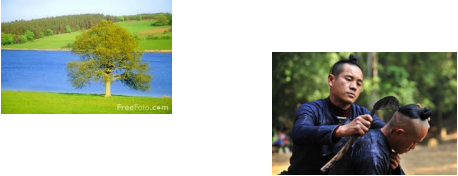
- Affordances are actual properties. They are independent of perception. They exist whether the perceiver cares about them or not (**real** affordances, Gibson, 1979)
- Affordances are **perceived** properties. They are relationships exist between the object and the organism that are acting on the object (Norman, 1999).
- Properties → interactive relationships

https://www.youtube.com/watch?v=NK1Zb_5VxuM



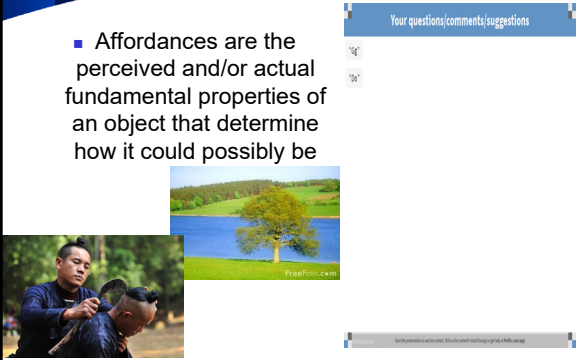
Affordances: definitions

- Affordances are the perceived and/or actual fundamental properties of a thing that determine how the thing could possibly be used



Affordances: definitions


- Affordances are the perceived and/or actual fundamental properties of an object that determine how it could possibly be



Relationship

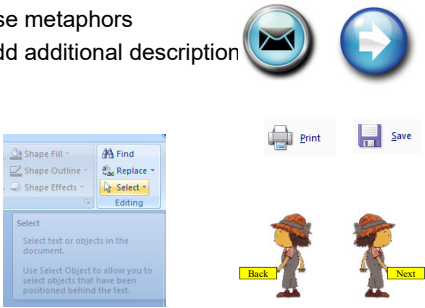
Perceptual Information	yes	False Affordance	Perceptible Affordance
	no	Correct Rejection	Hidden Affordance
		no	yes
		Affordance	

Examples?



Making a tool more perceivable

- Use metaphors
- Add additional description



The image shows a software interface with a 'Select' menu containing options like 'Shape Fill', 'Shape Outline', 'Shape Effects', 'Find', 'Replace', and 'Select'. Below the menu are 'Print' and 'Save' buttons. At the bottom, two cartoon characters are shown with 'Back' and 'Next' labels, illustrating the use of metaphors and additional descriptions to make a tool more perceivable.

Making the affordance of a design more perceivable



The image shows a photograph of an airport gate lounge. A large sign above the entrance reads 'Gate Lounges A1, A2, A3, A4, A5, A6, A7, A8'. The sign is designed to be highly visible and clear, making the affordance of the design more perceivable.

Making the affordance of a design more perceivable



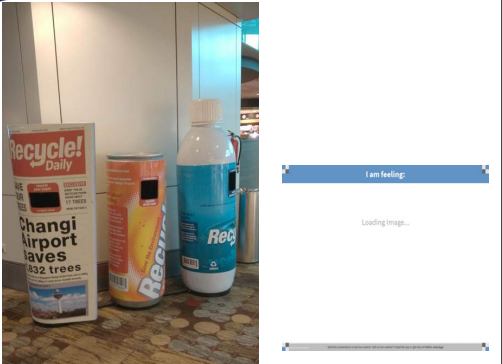
The image shows a photograph of a modern, curved, metallic turnstile or kiosk in a public space. The design is sleek and functional, making the affordance of the design more perceivable.








Making the affordance of a design more perceivable




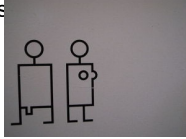

The image shows a recycling station with a newspaper titled 'recycle! Daily' and 'Changi Airport saves 832 trees', a water bottle, and a computer monitor. The monitor displays a blue header 'I am feeling:' and a 'Loading image...' message, illustrating a design where the affordance of the recycling station is not clearly communicated to the user.

Affordances of (ICT) tools

John & Sutherland (2005): “affordances, opportunities and the pedagogical implications of ICT”


- Affordances are about effectivity
- Affordances are about perceptions
- Affordances are cognitive constructs
- The same object, learning environment or tool can be used quite differently by different people or in different (cultural) contexts. 

Affordances of (ICT) tools

- An identical affordance may be presented by using different signs/symbols
-   

Affordances of (ICT) tools


- An identical affordance may be presented by using different signs/symbols.



The image shows a photograph of an airport terminal. A large, illuminated sign hangs from the ceiling, displaying the text 'Embarquement Boarding E51 to E76' with a downward-pointing arrow. The sign is designed to be easily visible and understood by passengers.

Some issues

- The actual affordances should be consistent with the perceived affordances
- The (physical) context may inform or restrict affordances
- The affordances of an object may be misused.



The image contains four small illustrations. From left to right: a red button with a metal prong, a yellow silhouette of a person using a hammer, a red power drill, and a white hand mixer. These illustrate different ways objects can be used or misused.

Group activity

Discuss in groups (F2F +Online):

1. What are the actual affordances of the tool?
2. How is the tool used in the example? What are the perceived affordances of the tool by the teacher/students?
3. What are the possible constraints of the tool?
4. How to effectively use the tool to support teaching and learning?

Hands-on

1. <http://t3hravr.blogspot.sg/> (The tool is blogspot)
2. <https://www.facebook.com/groups/404569715276/> (the tool is facebook group)
3. <https://educators.pbworks.com/w/page/21613965/Examples> (the tool is pbwiki, choose one example from the page)
4. <https://sites.google.com/site/doreencyberjournal/> (the tool is google site)
5. <https://trello.com/b/4LjNpV1/pre-calculus-learning-goals> (The tool is Trello)
6. Sharing

Reminder

- 4AU: Comments + reply
- Next session: Online

Next week: Online

- Affordances of an ICT tool
- Video recording
- by 10 Feb (Sun) 23:59 (SGT), Describe in a recorded video (10-15 mins for 3AU and 15-20 mins for 4AU) the PST affordances of an ICT tool and share how the tool has been used in your teaching practices (or suggest how the tool can be used for teaching and learning. Post the description to the 'Forum Jan 2018'. You may upload your video to Youtube and post the link to the forum.
- by 12 Feb (Tue) 23:59, give at least 2 comments to the tools shared by others. Please attempt to critique on those tools that received less than 2 comments.
- by 14 Feb (Thur) 23:59, respond to the comments receive
- Weebly: Online Sharing and Discussion: <http://coqtools.weebly.com/online-sharing-and-discussion>
