


For Online Participants

- Must keep camera on and mic off (unless you talk) all the time
- Test the connection: audio, video
- Participate as in the classroom (ask, answer questions, chat with peers, do activities)
- Join group activities when needed
- Indicate your engagement




Sessions 5
Affordance (Part 2)

Dr. Wang Qiyun

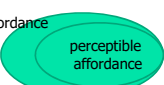


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Relationship

- Real/actual/designed affordance
- Perceived affordance

■ Gibson (1979)



■ Norman (1999)



Perceptual Information	yes	False Affordance	Perceptible Affordance
	no	Correct Rejection	Hidden Affordance
		no	yes
		Affordance (Real affordance)	

Contents

- Some relevant models
- PST Model
 - Pedagogical
 - Social
 - Technical
 - Relationship
- Applications of the PST model
 - Affordance analysis
 - Design

Online Learning Environments

Wilson & Lowry (2000)

1. Provide access to rich sources of information
2. Encourage meaningful interaction with content
3. Bring people together to challenge, support, or respond to each other

Interaction

- Moore (1989): Three types of interaction
 1. Learner-content
 2. Learner-instructor
 3. Learner-learner
- Hillman, Willis, & Gunawardena (1994)
 - + Learner- interface

Constructivism

- Cognitive constructivism
 - Learner-content

- Social constructivism
 - Learner-learner
 - Learner-instructor

Col Model

(Garrison, Anderson & Archer, 2000)

TPACK Model

(Mishra & Koehler, 2006)

- Is your phone useful for you? Why (not)?

Definition of usefulness

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    graph LR
      usefulness --> utility
      usefulness --> usability
      utility --> educational_functionality[educational functionality]
      utility --> social_functionality[social functionality]
    
```

The PST model

- Pedagogical
- Social
- Technical
- + Context

Pedagogical affordances

- Pedagogy: The art or science of teaching; Strategies of instruction, or styles of instruction
- Pedagogy encompasses:
 - what is taught/learned - the **content**
 - how it is taught or learned - **approaches** to teaching and learning
 - why it is taught or learned - the underpinning **values, philosophy or theory.**

<http://tip.excellencegateway.org.uk/tip/pedagogy/introducingthe1/introducingthe1/index.html>

- What pedagogical affordances should we look at?

Learning theories

- Behaviorist
 - E.g., drill & practice tools, e-assessment
- Cognitivist
 - E.g., concept mapping tool, multimedia
- Social constructivist
 - E.g., discussion forum, social media

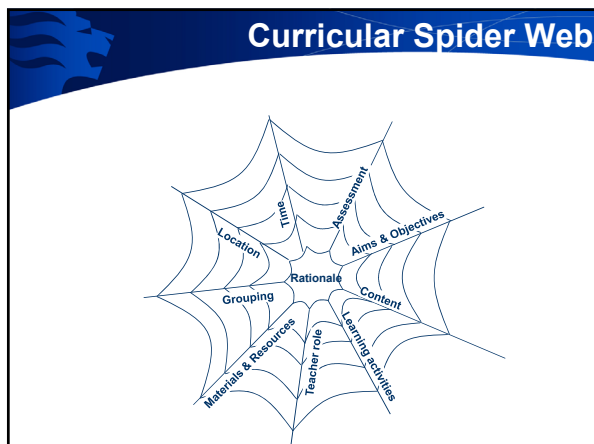
Pedagogical affordances

Gagne's nine events of instruction (1965) in "Conditions of learning"

- (1) gaining attention (reception)
- (2) informing learners of the objective (expectancy)
- (3) stimulating recall of prior learning (retrieval)
- (4) presenting the stimulus (selective perception)
- (5) providing learning guidance (semantic encoding)
- (6) eliciting performance (responding)
- (7) providing feedback (reinforcement)
- (8) assessing performance (retrieval)
- (9) enhancing retention and transfer (generalization).

Learning Approaches

- Problem-based learning
- Project-based learning
- Case-based learning
- Inquiry-based learning
- Collaborative learning



Pedagogical affordances

- Learning objectives?
- Teacher-centered or student-centered ?
- Individual learning or collaborative learning ?
- Self reflection or online discussion ?
- Problem-based or content-based learning ?
- Fixed learning or flexible learning ?
- Open system or closed system?
- Process or product oriented ?
- Motivate students?

Discussion

- What are the pedagogical affordances of PowerPoint?

What are the pedagogical affordances of PowerPoint?

Respond at [PollEv.com/qiyunwang619](https://pollEv.com/qiyunwang619)

Text QIYUNWANG619 to +65 8241 0042 once to join, then text your message

Social affordances

- Properties of a tool that act as social-contextual facilitators relevant to the learner's social interaction
- What should we look at?

Social affordances

- Establishing rules/norms
- Providing a safe and comfortable setting
- Interactivity (content, peer, teacher)
- Supporting synchronous and asynchronous (chat, discussion forum) communications
- Using various forms (text, audio, or video) to communicate




What are the social affordances of Google slides?

Top

Technical affordances

- Mainly refer to usability
- What does usability mean?
 - Easy to learn
 - Easy to use
 - Easy to access



Technical affordances

- Human-computer interface
 - Easy to use and access
 - Customization (Templates, colors...)
- Power
 - Storage: local or cloud; size
 - Speed: limited or fast enough
 - Support multimedia presentation
- Technical support

Context

- Cultural/school context may restrict the PST affordances
 - Didactic teaching/self-directed learning
 - Individualized/group collaborative
 - Allow to use mobile devices
 - Internet access
 - School support

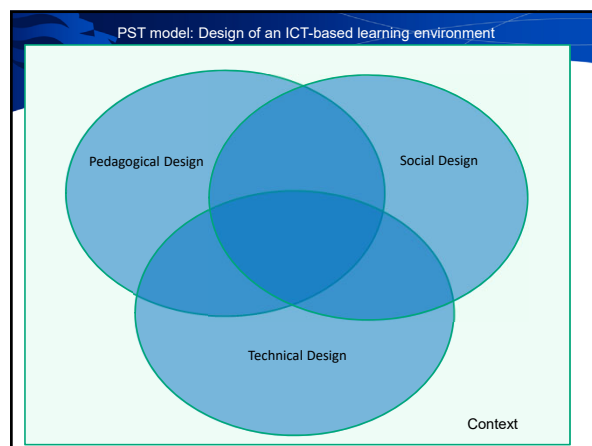
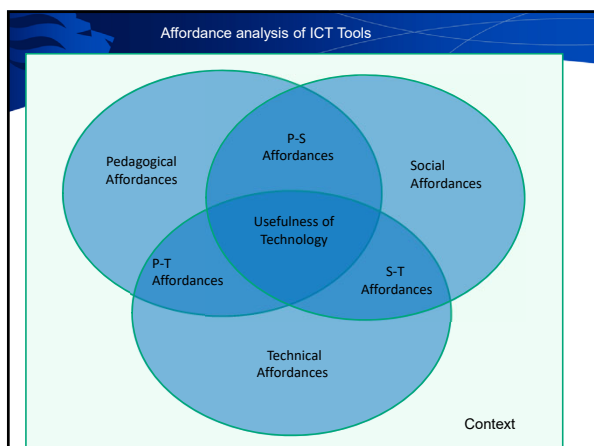
Affordances

Zoom Meeting Plans for Your Business

Basic Personal Meeting Free	Pro Great for Small Teams \$14.99/mo/host	Business Small & Med Businesses \$19.99/mo/host	Enterprise Large Enterprise-Ready \$19.99/mo/host
SIGN UP, IT'S FREE	Buy Now	Buy Now	Contact Sales
Host up to 100 participants Unlimited 1 to 1 meetings 40 mins limit on group meetings Unlimited number of meetings Online support	All Basic features + Includes 100 participants Need more participants? Meeting duration limit is 24 hrs User management Admin feature controls Reporting Custom Personal Meeting ID Assign scheduler 1GB of MP4 or M4A cloud recording	All Pro features + Includes 100 participants Need more participants? Dedicated phone support Admin dashboard Vanity URL Option for on-premise deployment Managed domains Single sign-on Company branding	All Business features + Up to 1,000 participants Unlimited Cloud Storage Dedicated Customer Success Manager Executive Business Reviews Bundle discounts on Webinars and Zoom Rooms

Applications of the PST model

- Affordance analysis
- Design of technology-supported learning environments



Relationship

- Effective design of pedagogy or social interaction very much depends on the availability of **technological support**. Without sufficient support of technology, undoubtedly many pedagogical and social design activities such as 3D simulations or asynchronous online discussions will be hard to implement. However, the **primary factor** that influences the effectiveness of learning is not the availability of technology, but the **pedagogical design** and **social design** (Mandell, Sorge & Russell, 2002).

Relationship

- Technology is a supporting tool, pedagogy and social are the key elements
- Technology is the means, provide support for pedagogical and social design

The diagram shows two overlapping ovals labeled 'Pedagogical' and 'Social'. Below them is a rectangular box labeled 'Technical'. Two vertical arrows point upwards from the 'Technical' box to the 'Pedagogical' and 'Social' ovals, indicating that technical support underpins both pedagogical and social design.

E-learning design

The flowchart illustrates the process of matching tasks with technologies. It starts with 'a) Identify educational goal/s' (influenced by 'Experience of designers'). This leads to 'b) Postulate suitable tasks' (influenced by 'Appreciation of affordances to support tasks'). From here, the process branches into two parallel paths: 'c) Determine affordance requirements of the tasks' and 'c) Determine the affordances available (given)' (influenced by 'Considered resources'). Both paths converge at 'd) E-learning task design', which is also influenced by 'Synergistic consideration of available and required affordances'. A box labeled 'E-learning tools (input)' is shown as an input to the final design stage.

Figure 1. The affordance analysis e-learning design methodology: matching tasks with technologies to construct e-learning designs.

Bower, M. (2008). Affordance analysis: matching learning tasks with learning technologies

Practical considerations

- What pedagogical and social affordances do you really need?
- Does the tool or environment provide those required affordances?
- If the technical affordances are satisfying?
- “Designs based primarily on the features of a new technology are often technically aesthetic but functionally awkward”* (Gaver, 1991, P.79)

Group Activity

- Study the following examples of using web 2.0 tools, and discuss the P.S.T affordances of the tools based on the template. Share it on the <http://coqtools.weebly.com/analysis-of-affordances>

- <http://coqtools.weebly.com/>
- <https://www.edmodo.com> (group code: zw3k9s)
- <https://www.khanacademy.org/> (choose a subject from Top Right)
- <https://prezi.com/explore/staff-picks/> (search for a relevant example)
- <https://www.edx.org/> (Courses→ Education-teacher training→ understanding Classroom Interaction)

Microsoft Word Document

Use of PST model

British Journal of Educational Technology
doi:10.1111/bjet.12558 Vol 00 No 00 2017 00-00

Pedagogical, social and technical designs of a blended synchronous learning environment

Qiyun Wang and Ch...

Design specifications of the learning environment are the detailed design specifications of the learning environment are pedagogical, social and technological aspects.

The Affordances of Weblogs and Discussion Forums for Learning: A Comparative Analysis

Qiyun Wang
Huay Li Wu

The diagram shows three overlapping circles labeled 'Pedagogical', 'Social', and 'Technical'. Arrows indicate interactions between these components. The text discusses how these components are integrated in a blended synchronous learning environment.



Reminder

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