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

Relationship

- Real/actual/designed affordance
- Perceived affordance
- Gibson (1979)
- Norman (1999)

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

Contents

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

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

TPACK Model

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

Definition of usefulness

- utility
- social functionality
- usability

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://tlp.excellencegateway.org.uk/tlp/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

Curricular Spider Web

- 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?
What are the pedagogical affordances of PowerPoint?

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

### 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

Applications of the PST model

- Affordance analysis
- Design of technology-supported learning environments

Affordance analysis of ICT Tools

PST model: Design of an ICT-based learning environment
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).

Technology is a supporting tool, pedagogy and social are the key elements

Technology is the means, provide support for pedagogical and social design

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)

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://cogtools.weebly.com/analysis-of-affordances

2. https://www.edmodo.com (group code: zw3kds
3. https://www.khanacademy.org/ (choose a subject from Top Right)
4. https://prezi.com/explore/staff-picks/ (search for a relevant example)
5. https://www.edx.org/ (Courses ➔ Education-teacher training ➔ understanding Classroom Interaction)
4 AU