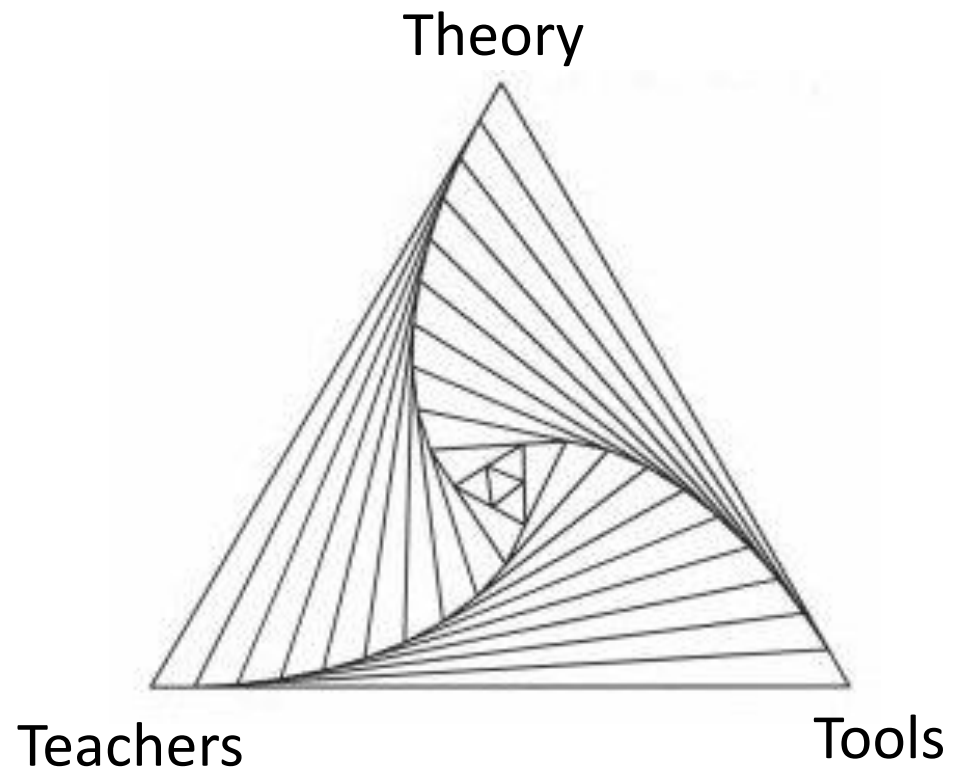
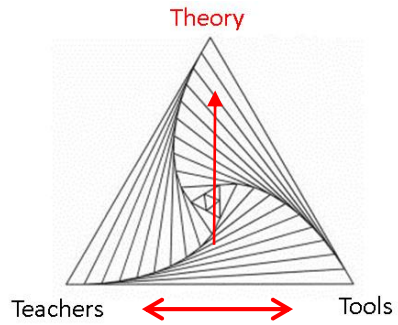


Significant themes in the study of learning ...and their echoes in learning technology

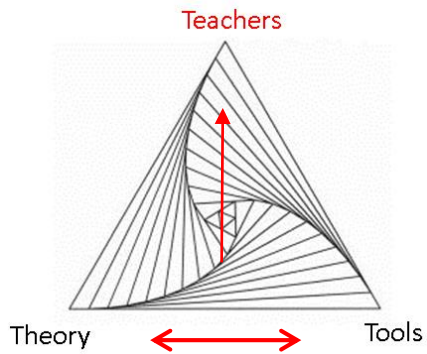
charles.crook@nottingham.ac.uk

Learning Sciences Research Institute
University of Nottingham

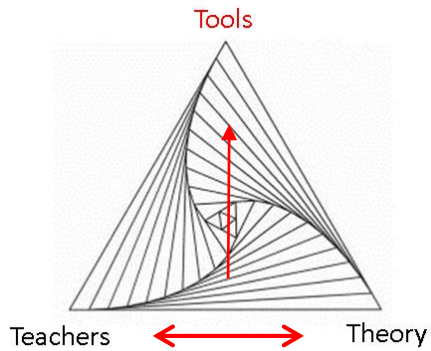




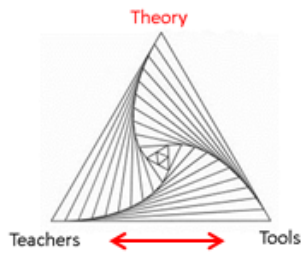
Learning Sciences



The CPD academy



Design studio



3 Issues

1. Don't Balkanise theory
2. Has technology shaped new practices?
3. "Goodbye teacher"?

JOURNAL OF APPLIED BEHAVIOR ANALYSIS

1968, 1, 79-89

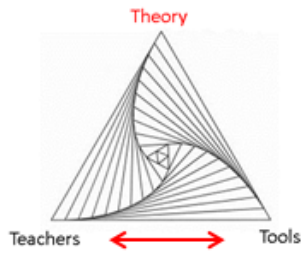
NUMBER 1 (SPRING, 1968)

*"GOOD-BYE, TEACHER . . ."*¹

FRED S. KELLER

ARIZONA STATE UNIVERSITY²

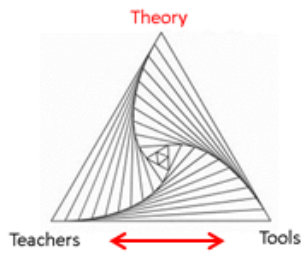
When I was a boy, and school "let out" for living reinforcement theorist who ever learned



- **Theory:**
- **Tools:**
- **Teachers:**

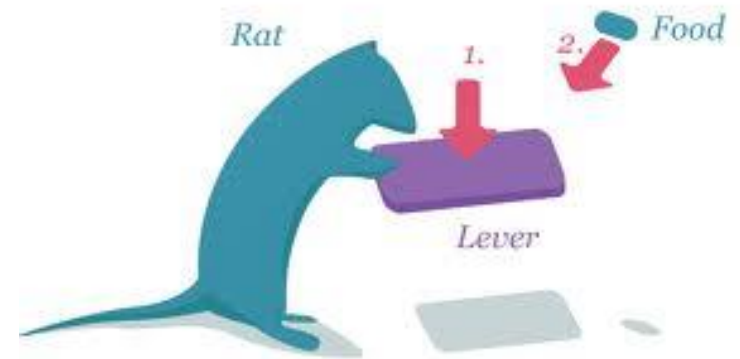
5 Grand Frameworks

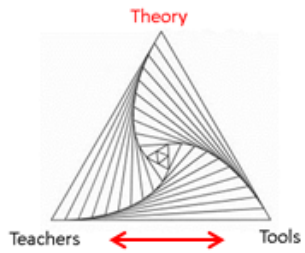
1. Behaviourism
2. Constructivism
3. Cognitive science
4. Socio-cultural theory
5. Connectionism



Behaviourism

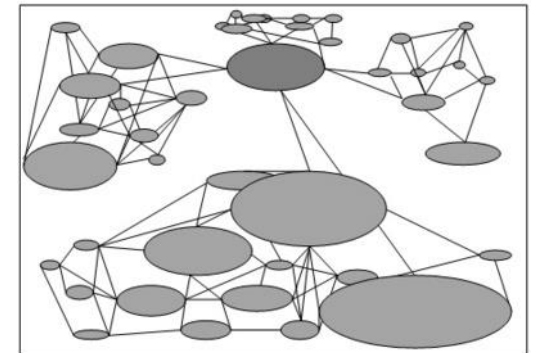
- **Theory:** Association (S:R and R>S). *Consequences*
- **Tools:** The teaching machine: managing *contingency*
- **Teachers:** The 'natural selection' of behaviour

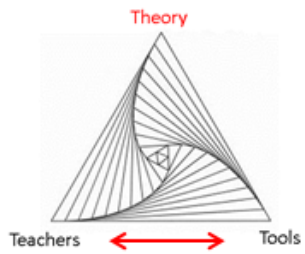




Constructivism

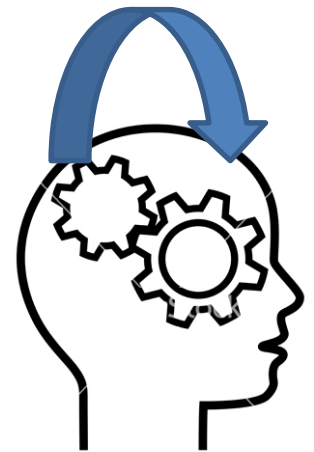
- **Theory:** Knowing="constructing". Knowledge as schema
- **Tools:** Devices that can be 'taught' (Mindstorms)
- **Teachers:** The orchestration of construction

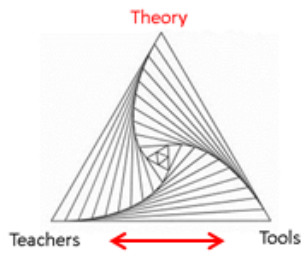




Cognitive science

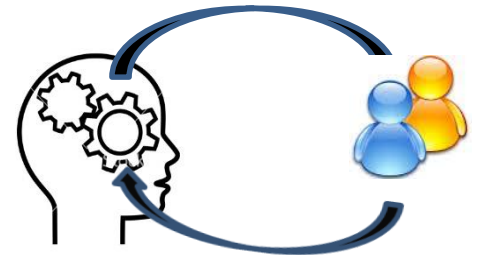
- **Theory:** Representations, schema, AI, meta-processing
- **Tools:** 'Making thinking visible', ePortfolio
- **Teachers:** Prompting and promoting the metacognitive

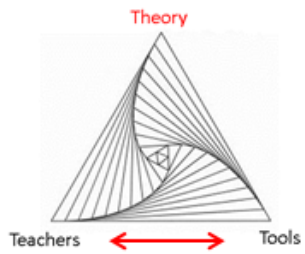




Socio-cultural theory

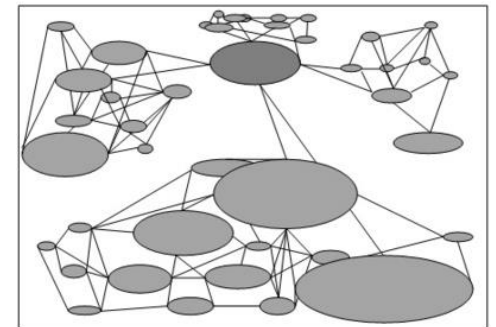
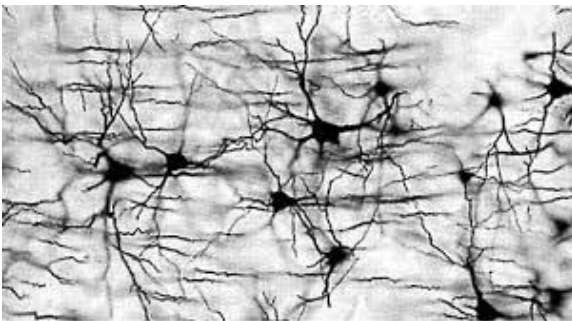
- **Theory:** The social imperative
- **Tools:** *Resourcing* collaborative learning (CSCL)
- **Teachers:** Intersubjectivity and 'scaffolding'

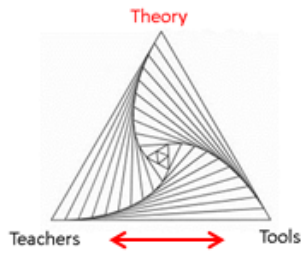




Connectionism

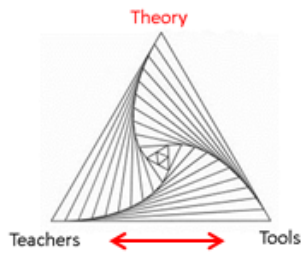
- **Theory:** “Good at Frisbee, bad at logic”
- **Tools:** New AI: analytics and intelligent tutoring
- **Teachers:** ?





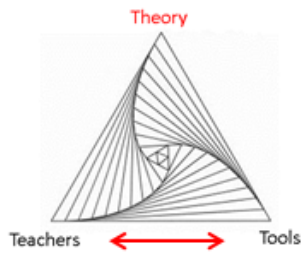
1. Don't Balkanise theory

1. Behaviourism
2. Constructivism
3. Cognitive science
4. Socio-cultural theory
5. Connectionism



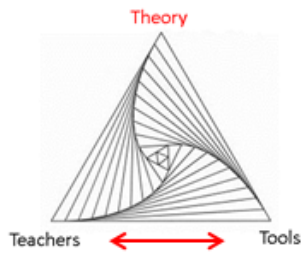
1. Don't Balkanise theory

1. *Contingency* (of feedback) matters!
2. Constructivism
3. Cognitive science
4. Socio-cultural theory
5. Connectionism



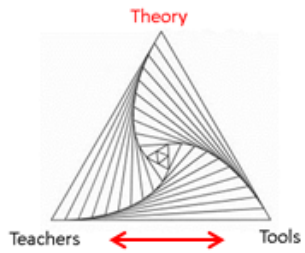
1. Don't Balkanise theory

1. *Contingency* (of feedback) matters!
2. **Less is more!**
3. Cognitive science
4. Socio-cultural theory
5. Connectionism



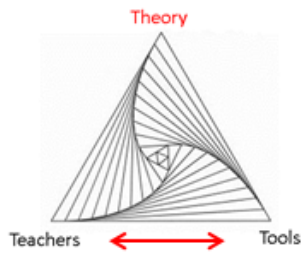
1. Don't Balkanise theory

1. *Contingency* (of feedback) matters
2. Less is more!
3. **Build representational richness!**
4. Socio-cultural theory
5. Connectionism



1. Don't Balkanise theory

1. *Contingency* (of feedback) matters
2. Less is more!
3. Build representational richness!
4. **Outsource your thinking!**
5. Connectionism

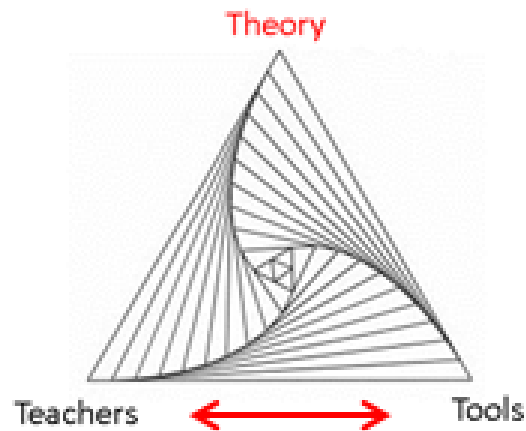


1. Don't Balkanise theory

1. *Contingency* (of feedback) matters
2. Less is more!
3. Build representational richness!
4. Outsource your thinking!
5. Serial operations for a parallel machine (brain)!

charles.crook@nottingham.ac.uk

Learning Sciences Research Institute
University of Nottingham



Learning Sciences