THE NEUROSCIENCE OF REFLECTION
connecting Schön to Dweck

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WORKSHOP Plan

• Exploring Schön’s Reflective Practice in action
• Considering Kolb
• Reflecting on Rolfe
• Going with Gibbs
• Synthesising with Argyris and Schön
• Digesting Dweck
• Quizzing ourselves
• Bringing it all together
SCHÖN’s Reflective Practice

Problem: componentising/reframing, gradual discovery, intervention design, asking:

• Can I solve the problem I have set?
• Do I like what I get when I solve this problem?
• Have I made the situation coherent?
• Have I made it congruent with my fundamental values and theories?
• Have I kept inquiry moving?
Reflection is…

• A mental process
• Contemplation
• Thoughts = reflections
• Interpretation
• Honest
• Active
• Future-focused
Reflection

- Critical component of learning
- Intentional
- Challenging attitudes, beliefs and assumptions
- Increased productivity
- Self-efficacy
KOLB’s Learning Cycle

Apprehension

Observation

Prehension

Comprehension

Transformation

Experimentation

(Kolb, 1984 & Kreber, 2001)
ROLFE’s Model of Reflective Practice

What?

Now What?

So What?

(Rolfe, Freshwater & Jasper, 2001)
ARGYRIS & SCHÖN’s Reflective Theory Model

- Reflection in action
  - Thinking ahead
  - Analysing
  - Experiencing
  - Critically responding
- Reflection on action
  - Thinking through subsequent to situation
  - Discussing
  - Reflective journal

KOLB & Critical Thinking

Active testing

Abstraction

Concrete experience

Reflective observation

(Kolb, 1984)
GIBBS’s Reflective Model

- Event Description
- Feelings/Thoughts
- Evaluation
- Analysis
- Conclusion/Synthesis
- Action Plan
SHARING: Connection Experiences

• Working in pairs, two minutes each
• Report back:
  What appeals to you thus far?

(Kolb, 1984)
Group A & B given 10 non-verbal IQ Test questions
Group A: Praised for ability
“Wow, that’s a really good score! You must be really smart at this”.
Group B: Praised for effort
“Wow, that’s a really good score! You must have tried really hard”.

Immediately after praise, group behaviours began diverging

(Dweck, 2006) 12
BRAIN’s Response to Errors

Fixed Mindset

Growth Mindset

(Dweck, 2006; Moser, Schroder, Heeter, Moran & Lee, 2011; Luft, Nolte & Bhattacharya, 2013, p. 2033)
“The growth mindset is based on the belief that your basic qualities are things you can cultivate through your efforts” (Dweck, 2006, p. 7)

- Process
- Brain is muscle
- Neural pathways build & strengthen
- Praise effort, not ability
- Power of “yet”
DWECK's Mindset Summary

**Fixed Mindset**

- Leads to a desire to look smart, so tends to:
  - Avoid challenges
  - Give up easily
  - See effort as fruitless or worse
  - Ignore useful negative feedback
  - Feel threatened by the success of others

As a result, they may plateau early and achieve less than their full potential.

**Growth Mindset**

- Leads to a desire to learn, so tends to:
  - Embrace challenges
  - Persist in the face of setbacks
  - See effort as the path to mastery
  - Learn from criticism
  - Find lessons and inspiration in the success of others

As a result, they reach ever-higher levels of achievement (Educatorial, n.d.)
QUIZ: Your Mindset

Go to http://mindsetonline.com/testyourmindset/step1.php
Complete the quiz & chat with your neighbour
Try using the Gibbs model to explore what you found

(Dweck, 2013; Gibbs, 1988)
BRINGING it all together

• Overcoming reflective practice barriers: ideas?
WE thank you!

Your experiences, please!
• What works for you
• What doesn’t
• Other ideas
• Concerns
• Limiters, delimiters

Your suggestions

...questions?
• Dudson, Mike (2014). Mindset. NZ: Bay of Plenty Polytechnic [Leadership Course Materials]

• Luft, Caroline Di Bernardi; Nolte, Guido & Bhattacharya, Joydeep (2013). High-Learners Present Larger Mid-Frontal Theta Power and Connectivity in Response to Incorrect Performance Feedback. The Journal of Neuroscience, Volume 33, issue 5 (pp. 2029-2038)


• Vancouver Community College (26 February 2013). *Reflective Writing - A Very Brief Guide*. Retrieved 10 February 2014 from [http://www.youtube.com/watch?v=X1xkFgHAWD0](http://www.youtube.com/watch?v=X1xkFgHAWD0)