



Critical Thinking and Critical Reflection

陳祖裕

討論大綱

- ❑ Critical Thinking
- ❑ Critical Reflection
- ❑ Critical Reflection 怎樣學得到/做得到
- ❑ 結語

前言

Critical reflection是教育過程中的重要程序

- 什麼是critical reflection？
- Critical是什麼意思？
- Reflection是什麼？

Reflection and Critical Reflection

Reflection是一種critical thinking

- ❑ Critical thinking是什麼？
- ❑ Thinking是思考，critical是什麼意思？
- ❑ Critical Thinking的Critical與Critical Reflection的Critical是同樣的意思嗎？
- ❑ 在近半世紀以來，已有先進在各個學術機構成立鑽研critical thinking的專責部門，例如...



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Goldsmiths
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Centre for Philosophy
and Critical Thought

The Centre for Philosophy and Critical Thought (CPCT) is a new centre for philosophical enquiry at Goldsmiths.

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Critical Thought



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Centre for Critical Thinking, Teaching & Learning

 **CIRT**
CENTER FOR INNOVATION
IN RESEARCH AND TEACHING



WE ARE CRITICAL THINKERS

*Our Mission: To empower people to become rational thinkers
and self-directed learners able to take action.*



Critical Thinking Development: A Stage Theory

With Implications for Instruction

Linda Elder with Richard Paul

The stages we will lay out are as follows:

Stage One: The Unreflective Thinker

Stage Two: The Challenged Thinker

Stage Three: The Beginning Thinker

Stage Four: The Practicing Thinker

Stage Five: The Advanced Thinker

Stage Six: The Accomplished Thinker

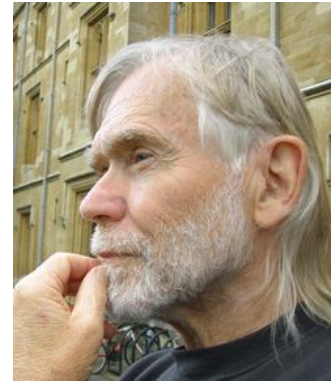
舊稱 Master Thinker

Critical Thinking Development : A Stage Theory

Linda Elder and Richard Paul



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Foundation for Critical
Thinking and
Executive Director of
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Thinking**



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for Excellence in Critical
Thinking

<http://www.criticalthinking.org/articles/ct-development-a-stage-theory.cfm>

Stages

- ❑ Stage 1: The Unreflective Thinker (不知自省)
- ❑ Stage 2: The Challenged Thinker (備受考驗的)
- ❑ Stage 3: The Beginning Thinker (剛開始的)
- ❑ Stage 4: The Practicing Thinker (實踐的)
- ❑ Stage 5: The Advanced Thinker (進階的)
- ❑ Stage 6: The Master Thinker (大師級)

Stage 1 The Unreflective Thinker

- ❑ 缺乏能力來明確地評估及改善自己的思考
- ❑ 不知道高品質的思考需要定時練習、評估及主動改善
- ❑ 大多不知道評估思考的合宜標準：清楚、準確、精密、關聯、邏輯等

Stage 1 The Unreflective Thinker

- ❑ 可以具備一些思考的技巧，但卻不自知
- ❑ 因缺乏對思考的自我監控而無法終如一地使用這些技巧
- ❑ 這種人可以高中甚至大學畢業
- ❑ 唯一能做：告知改變的必要，並促成其改變

Stage 2 The Challenged Thinker

- 開始知道思考在人生中佔有決定性的角色
- 有些了解高品質的思考需要慎重的省思
- 開始知道思考涉及：觀念、假設、推論、意涵和觀點等
- 具備一些自省能力
- 具備很有限的思考技巧

Stage 2 The Challenged Thinker

- 須引導他們討論思考
- 設計一些需要思考的教學活動
- 明訂思考的模式，如透過問題進行**thinking aloud**
- 要他們檢視優良及劣質的思考，並論及其不同之處
- 介紹思考的元素及評估思考的標準
- 介紹謙卑的觀念，要認清自己的無知

Stage 3 The Beginning Thinker

- ❑ 在生活中的許多層面能主動地思考
- ❑ 思考的改進：缺乏系統性計畫，效果不彰
- ❑ 能肯定別人對其思考能力的批評
- ❑ 能開始監測自身的思考
- ❑ 開始知道自己及他人的自我中心的思考
(egocentric thinking)

Stage 3 The Beginning Thinker

- 教導及協助他們了解要成為好的思考者便必須經常演練好的思考
- 經常鼓勵他們好好地思考
- 幫助他們明白怎樣培養出思考的好習慣

Stage 4 The Practicing Thinker

- 知道要做個好的思考者必須養成哪些習慣
- 在頗多領域上能主動分析自己的思考
- 對較深層思考的洞察力：仍然有限
- 開始認知執行系統性思考的需求

Stage 4 The Practicing Thinker

- 教導他們了解：推理可採用某些已有的架構
- 思考必然由問題引導.....

問題 ⇒ 假設 ⇒ 資訊 ⇒ 判讀 ⇒ 推論 ⇒ 答案

Stage 4 The Practicing Thinker

- 學生應養成習慣：每當思考某些事物時要專注其目的、問題、資訊、推論、假設、觀念、觀點及意涵
- 應鼓勵他們經常進行自我為中心及社會為中心的思考
- 教導他們明白，只從自我觀點來看世界便無法了解別人的觀點

Stage 5 The Advanced Thinker

- 已建立良好思考習慣
- 不但能分析生活中所有重要領域的思考，也對較深層思考的問題具有明顯的洞察力
- 能對生命的重要領域作充分的思考，但仍未能對所有這些領域作一致的高層次思考
- 能主動在思考「觀念、假設、推論、意涵及觀點等」時進行系統性的監測

Stage 5 The Advanced Thinker

- 引領他們來討論：
 - 理智的毅力
 - 理智的廉正
 - 理智的同理心
 - 理智的勇氣和公平心態
- 以加強他們認知思考中的自我中心主義及社會中心主義，使思考更加成長

Stage 6 The Master Thinker

- 不但能系統性地進行思考，且會持續監控、修訂及重新思考持續改進思考的策略
- 深入內化思考的基本技巧，致令**critical thinking**是意識清楚且高度具有直覺性的

Critical Thinking 誤譯之弊

- 有人誤譯為「批判性思考」
- 誤導：
 - 批評/批判 = 思考/思考最高境界
 - 忽略批判之外的思考領域
 - 思辨、推理、歸納、抉擇、解讀、分析、預估…等能力養成不足

Critical Thinking

- Critical thinking 須具備三項特質：
 - 態度：審慎地思考議題和解決難題
 - 方法：熟悉如何理性探索與邏輯推理
 - 執行：有技巧地應用上述的方法

Edward Glaser (1941). *An Experiment in the Development of Critical Thinking*.

Critical Thinking

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此項無必要，應可刪除

Edward Glaser (1941). *An Experiment in the Development of Critical Thinking*.

Critical Thinking

- Critical thinking兼具方法和態度：
 - 方法：熟悉如何理性探索與邏輯推理
 - 態度：審慎地思考議題和解決難題

Edward Glaser (1941). *An Experiment in the Development of Critical Thinking*.

Critical Thinking

- 是一種有目的、自我規範的判斷
- 對下列各因素：
 - 證據
 - 概念
 - 方法學
 - 標準釐定
 - 背景資料進行解讀、分析、評核、預估和解釋
- 從而作出客觀的判斷.....

Facione PA (1990). *Critical Thinking: A Statement of Expert Consensus for Purposes of Educational Assessment and Instruction*, a report for the American Philosophical Association.

能作Critical Thinking的人

- ❑ 慣於發問和探索
- ❑ 對事物有全面的認知
- ❑ 仰賴理性的分析
- ❑ 持開放的態度
- ❑ 懂得靈活變通
- ❑ 作出公正的評價
- ❑ 坦然面對自己的主觀偏見
- ❑ 審慎的作出判斷
- ❑ 願意從新考慮已作出的判斷
- ❑ 對事物有清晰的瞭解
- ❑ 能有條理
- ❑ 有先後次序地處理複雜的事物
- ❑ 勤奮地做足夠的資料搜集
- ❑ 理性地選擇判別標準
- ❑ 聚焦於發問與探索
- ❑ 堅持追求在情況及環境許可下最精細、最準確的結論

Facione PA (1990). *Critical Thinking: A Statement of Expert Consensus for Purposes of Educational Assessment and Instruction*, a report for the American Philosophical Association.

能作Critical Thinking的人

重點

- 慣於發問和探索
- 對事物有全面的認知
- 仰賴理性的分析
- 持開放的態度
- 懂得靈活變通
- 作出公正的評價
- 對事物有清晰的理解
- 能有條理
- 有先後次序地處理複雜的事物
- 勤奮地做足夠的資料搜集

本slide沒有先後次序地處理複雜的事物

- 審慎的作出判斷
- 願意從新考慮已作出的判斷
- 堅持追求在情況及環境許可下最精細、最準確的結論

Facione PA (1990). *Critical Thinking: A Statement of Expert Consensus for Purposes of Educational Assessment and Instruction*, a report for the American Philosophical Association.

能作Critical Thinking的人 (重新整理)

- 發現問題：聚焦於發問與探索、慣於發問和探索
- 蒐集資訊：勤奮、全面、有條理
- 分析資訊：開放的態度、清晰的瞭解、理性的分析、公正的評價、審慎的判斷、理性地選擇判別標準、下最精細、最準確的結論
- 作出行動：有條理（有先後次序地處理複雜的事物）、靈活變通
- 檢討改進：願意從新考慮已作出的判斷、坦然面對自己的主觀偏見

Facione PA (1990). *Critical Thinking: A Statement of Expert Consensus for Purposes of Educational Assessment and Instruction*, a report for the American Philosophical Association.
Chan CY (2011): modified.

Critical Thinking

- ❑ The careful, deliberate determination of whether we should accept, reject, or suspend judgment about a claim and the degree of confidence with which we accept or reject it
- ❑ 對一項主張，經由謹慎思維後，決定 ⇒ 接受、拒絕或懸而不決
- ❑ 確知自己的接受或拒絕能有多少把握

Critical Thinking

- ❑ Skilled, active, interpretation and evaluation of observations, communications, information, and argumentation
- ❑ 針對觀察、溝通、資訊及辯論作技巧性及主動的解讀及評估



技能

態度

Critical Thinking

- ❑ Critical thinking 並非以批判為主，而是以客觀的理性分析為重心
- ❑ Critical 是源自古希臘的字根 krinein，即分開或分辨，絲毫也沒有負面批判或批評的意思
- ❑ 語文學者的建議：
 - ❑ 辨識性思考、明審性思考（古德明）
 - ❑ 慎思明辨（龍應台）
 - ❑ 明辨性思考（葉劉淑儀）

Core Critical Thinking

- ❑ 判讀 (interpretation)
- ❑ 分析 (analysis)
- ❑ 評估 (evaluation)
- ❑ 推理 (inference)
- ❑ 解說 (explanation)
- ❑ 自調 (self-regulation)
- ❑ 反思 (reflection)
- ❑ 批判 (critique/criticism)

Facione PA (2013). *Critical Thinking: What It Is and Why It Counts?*
Chan's Modification (2015)

Critical Thinking的態度如何訓練？

- 耳濡目染：營造人人思考的環境
- 養成習慣：設計經常思考的課程

曾子曰：吾日三省吾身

- 為人謀而不忠乎？
- 為朋友交而不信乎？
- 傳不習乎？

第四省：思考而不明辨乎？

從網頁資料顯示critical thinking應從小就訓練.....

How to Learn Critical Thinking

[Edit Article](#)

1. 觀察 ⇒ 下結論
2. 比較 & 對比
3. 分析
4. 合作行為
5. 故事結尾留白
6. 蘇格拉底法
7. 辯論分析：
 - a. 訂出討論議題
 - b. 找出不同論點
 - c. 檢定資料信度
 - d. 釐清選項異同
 - e. 解說防錯之道

Critical Thinking 有哪些技能？

- ❑ 提出問題
- ❑ 搜尋資料
- ❑ 判讀資料
- ❑ 分析推理
- ❑ 解決問題
- ❑ 反思自省

Critical Thinking: Theory, Techniques, and Assessment

10+ Critical Thinking Ideas

1. Critiques, Reviews, Reflexive Papers, Rebuttals, Rejoinders, Replies
2. K-W-L, Pros and Cons, Pluses/Minuses/Interesting (PMI)
3. Voting or Ranking Methods, Nominal Group Process
4. Pruning the Tree (20 q's): Working Backward, Means-Ends Analysis
5. Minute Papers, Reflection Logs, Think Sheets, Guided Questioning
6. Graphic Organizers, Flowcharts, Concept Maps, Venn Diagrams, Decision-Making Trees
7. Mock Trials, Who Done Its, Detective Games, Murder Mysteries
8. Debates, Examine Both Sides of Argument, Force Field Analysis
9. Case-Based Reasoning
10. Summing
11. Other techniques : Classification Schemes, Taxonomies
12. Categorize and Organize, Identifying Main Points, Key Priorities, Compare and Contrast Matrices, Goal Concretization, Alternatives, Possibilities, Choices, Find Patterns/Relationships, Other Points of View, Cost-Benefit Analysis, Rank Ideas

10+ Critical Thinking Ideas

1. Critiques, Reviews, Reflexive Papers, Rebuttals, Rejoinders, Replies
批判、評論、反思論文、辯駁、答辯狀、回覆

10+ Critical Thinking Ideas

2. K-W-L, Pros and Cons, Pluses/Minuses/Interesting (PMI)

K-W-L = know – want to know – learn

K-W-L chart

K	W	L

Pros and Cons = 優點和缺點的列出和比較

Pluses/Minuses/Interesting

1. What are the positive things about this ____? (1 min.)
2. What are the negative (minus) things about this ____? (1 min.)
3. What was interesting about this ____? (1 min.)

10+ Critical Thinking Ideas

3. Voting or Ranking Methods, Nominal Group Process

投票或排序方法

群體提案評估法（Nominal Group Process，NGP）：

1. Problem identification
2. Solution generation
3. Decision making

10+ Critical Thinking Ideas

4. Pruning the Tree (20 q's): Working Backward, Means-Ends Analysis

Pruning the Tree：提出20個問題來收窄範圍找到結論，如修剪樹木

Working Backward：逆向工作

Means-Ends Analysis：手段目的分析

20 Questions of Pruning

1. What is the plant to be pruned?
2. What is the natural habit of growth of the plant to be pruned?
3. Where is the plant growing?
4. What is the purpose for pruning the plant?
5. What does the client want?
6. What is the present health of the plant?
7. Will the plant be healthier when pruning is completed?
8. Is it the proper time to prune?
9. When does it flower?
10. Is the proper pruning equipment available?
11. Is the pruning equipment sharp?
12. Is the pruning equipment sanitary?
13. What obstacles are in the area?
14. What is pruned out first, second, and third?
15. How are the large branches removed?
16. Where are the branches removed?
17. What will the plant look like when it is finished?
18. What will the client see when the pruning is completed?
19. Will the plant “heal” its wounds?
20. Will the pruning have to be done again and how soon?

20 Questions of Pruning

1. 要修剪的植物是什麼？
2. 要修剪的植物生長的本質如何？
3. 植物在哪裡生長？
4. 修剪植物的目的是什麼？
5. 客戶想要什麼？
6. 這種植物目前的健康狀況如何？
7. 修剪完成後，植物會更健康嗎？
8. 是修剪的合適時間嗎？
9. 什麼時候開花？
10. 是否有合適的修剪設備？
11. 修剪設備是否鋒利？
12. 修剪設備是否衛生？
13. 該地區有哪些障礙？
14. 什麼要首先、其次和最後修剪？
15. 如何移除大型分支？
16. 分支在哪裡移除？
17. 植物完成後會是什麼樣子？
18. 修剪完成後，客戶會看到什麼？
19. 植物的傷口會「自愈」嗎？
20. 修剪是否需要再次進行，多久？

Means-Ends Analysis

手段目的分析

To perform means-ends analysis,

- Until the goal is reached or no more procedures are available,
 - Describe the current state, the goal state, and the difference between the two.
 - Use the difference between the current state and goal state, possibly with the description of the current state or goal state, to select a promising procedure.
 - Use the promising procedure and update the current state.
- If the goal is reached, announce success; otherwise, announce failure.

Means-Ends Analysis

手段目的分析

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就是耍Stupid

10+ Critical Thinking Ideas

5. Minute Papers, Reflection Logs, Think Sheets, Guided Questioning

Minute Papers 精要心得

Reflection Logs 反思日誌

Think Sheets 思考單

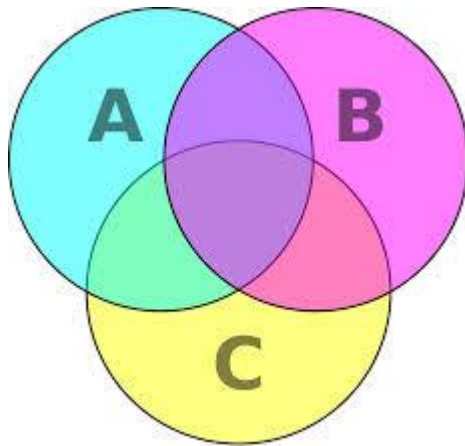
Guided Questioning 引導式提問（蘇格拉底教學法）

10+ Critical Thinking Ideas

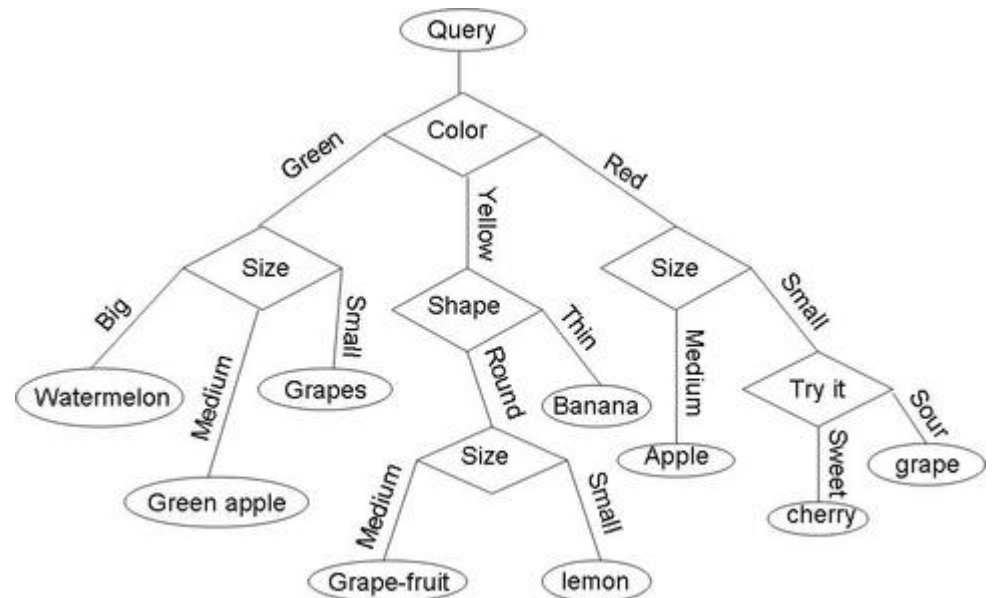
6. Graphic Organizers, Flowcharts, Concept Maps, Venn Diagrams, Decision-Making Trees

圖形組織、流程圖、概念圖

文氏圖



決策樹



10+ Critical Thinking Ideas

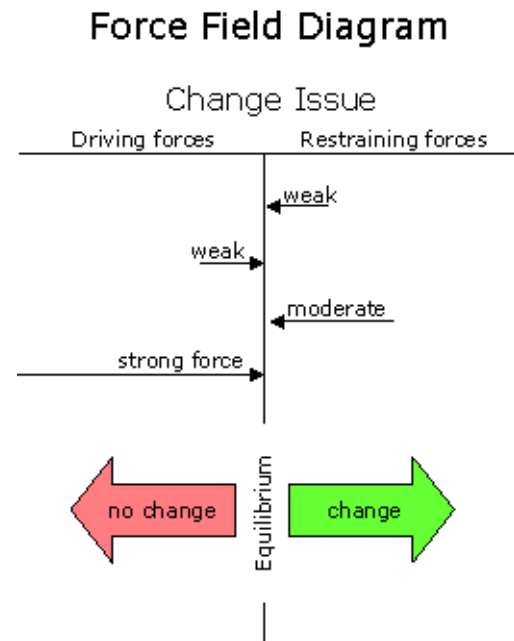
7. Mock Trials, Who Done Its, Detective Games, Murder Mysteries
模擬審判、誰做的、偵探遊戲、神秘謀殺

10+ Critical Thinking Ideas

8. Debates, Examine Both Sides of Argument, Force Field Analysis

辯論、檢視爭論的雙方
力場分析法：

1. 描述當前狀態。
2. 描述期望狀態。
3. 辨認如果不採取任何行動的後果。
4. 列出朝向期望狀態發展的所有驅動力。
5. 列出朝向期望狀態發展的所有制約力。
6. 對所有力量進行逐一討論與研究：它們是否真實有效？它們能否被改變？它們中的哪一些又是最為關鍵的？
7. 用1-10的數字對每一力量的強度進行判分，其中1代表力量最弱，10代表力量最強。
8. 在圖表上按比例標出力量箭頭，其中驅動力位於左側，制約力位於右側。
9. 通過力量分析，對變革的可能及其過程進行判斷。
10. 分析討論如果減弱制約力或加強驅動力，對變革又會產生怎樣的影響。
11. 需要注意的是，當改變某一驅動力或制約力的時候，有可能對其他力量產生關聯影響，甚至於產生新的力量。



10+ Critical Thinking Ideas

9. Case-Based Reasoning

案例式推理

一種類比推理方法，是透過改編那些解決舊問題的方法來嘗試解決新問題，也就是利用尋找相似案例的推理法，找到解決舊問題的方法來適用於解決新的問題。

首先先做一問題的描述（**Presentation**），再從Case-Base中找出最類似的Case（**Retrieval**），即使挑選出最類似的Case也不可能完全相同，故要依照Case的Solution再作調整（**Adaptation**），再將調整的結果與使用者或大環境來證實（**Validation/Test**），如果適當，則被證實的結果將會被增加到Case-Base中（**Feedback**）。

10+ Critical Thinking Ideas

10. Summing 總結

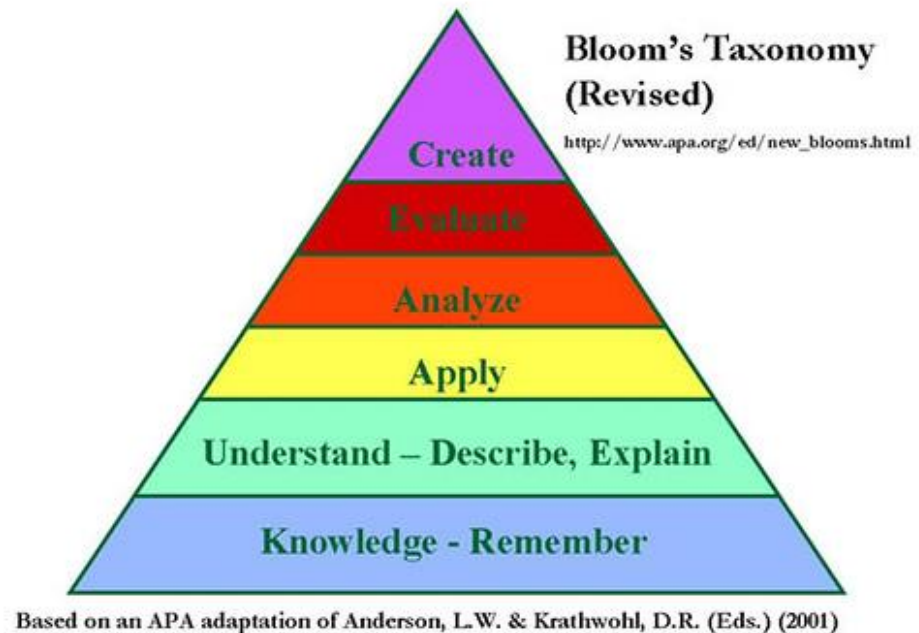
10+ Critical Thinking Ideas

11. Other techniques : Classification Schemes, Taxonomies

其它技術：

分類方案（ Classification Schemes ）：組織數據或信息，通常涉及具有相似特徵的物品種類的系統中。

分類法（ Taxonomies ）



10+ Critical Thinking Ideas

12. Categorize and Organize, Identifying Main Points, Key Priorities, Compare and Contrast Matrices, Goal Concretization, Alternatives, Possibilities, Choices, Find Patterns/Relationships, Other Points of View, Cost-Benefit Analysis, Rank Ideas

1. 分類和組織
2. 確定要點
3. 關鍵重點
4. 比較和對比矩陣
5. 目標具體化
6. 替代方案
7. 可能性
8. 選項
9. 查找模式/關係
10. 其他觀點
11. 成本效益分析
12. 等級觀念

25 Critical Thinking Techniques

1. Visual Thinking Activities
2. Writing Activities
3. Idea Listing Activities
4. Group Interaction Activities
5. Teaching/Process-Product Oriented Activities

25個辨思技巧

分為五類

1. 視覺思考活動
2. 寫作活動
3. 意念列表活動
4. 群組互動活動
5. 教學/程序-產物活動

視覺思考活動

1. 圖形組織工具：序列鏈、因果關係、主要觀點、異同比較、故事圖、圖解
2. 想法/概念/文字排序：以不同含義、主題和模式類別
3. 分類方案、分層、縮影、進階組織、比較與對照
4. 語義特徵分析
5. 助記符：故事、鏈接、首字母縮寫詞、離合詞、光怪陸離、助記詞

寫作活動

6. 總結：批評、摘要、審查、索引卡、文摘、大綱、概要
7. 指導或聚焦學習/期刊日誌
8. 思考單張或卡、反思問題、程序/實質性輔導工具
9. 目標具體化：例如提供的故事結局、道德、寓言、笑話、故事或解謎
10. 其他寫作思考的活動：例如會議、同儕評審、修訂

意念列表活動

11. 力場分析，正-負-有趣（PMI）
12. 其他觀點（OPV）（如果___成為___的總裁）
13. K-W-L（你怎麼知道？有什麼想知道的？你學到了什麼？）
14. 另類、可能性和選擇（APC）
15. 考慮到所有的因素和後果、審視正反雙方的論點

群組互動活動

16. 將了解的內容分組：知識文字化、了解、判讀、應用Bloom氏分類法、三層次提問/指引、預覽問題、引導式閱讀、問題-答案關係（Question-Answer Relationships, QAR）、引導閱讀-思考活動（Directed Reading-Thinking Activities, DR-TA）
17. 辯論、試驗、焦點對話、結構式爭論
18. 確定主要點：預覽、準備、預測、預期綱要
19. 成本效益分析
20. 修剪樹20問、手段-目的分析、正向工作、逆向工作

教學/程序-產物活動

21. 蘇格拉底/詢問
22. 大聲思考/自述程序
23. 案例導向思維/學習、規則-例子、例子-規則、
案例與詮釋
24. 合作學習：交互提問、交互教學、拼圖、團隊
合作劇本
25. 錨式教學、分享事件/意涵、知識建構共同體

討論大綱

- 前言 – Critical Thinking
- Critical Reflection是什麼
- Critical Reflection怎樣學得到/做得到
- 結語

什麼是Reflection？

□ Reflection—物理學名詞：反射、反映、鏡子

什麼是Reflection？

- Reflection：反射、反映、鏡子
- Reflectivity：反射品質
- Reflectance：反射比率

什麼是Reflection？

- Reflection：反射、反映、鏡子
- 引申到行為：人對於自己要像照鏡子般察看有沒有問題
- 也就是主動地、有企圖地、有深度地檢視自己的經歷（尤指自己在經歷中的言行）來從中學習

什麼是Reflection？

- 有人以為：反省 = reflection
- 有人認為：反省 \neq reflection，「反思」和「反省」不是同義詞

反思 = reflection

反省 = self-reflection

Reflection不是只有反省

Reflection必須包含反省

什麼是Reflection？

- Reflection（鏡子）不單反映自己，也反映別人和環境⇒「反省」+「思考其他的人和事」
- Reflection：檢視自己的經驗中有關自身、周圍，甚至是聽聞及歷史事件，然後從中學習

什麼是Reflection？

- 針對自己的經驗加以「明辨思維、反復審視、再三考量」，以期從經驗中可以獲得更廣更深的學習成效

Reflection本身就是一種
Critical Thinking

Critical Reflection = 批判性反思？

- Jürgen Habermas（德國社會學家，1978）：
Critical reflective knowing既不是行為也不是技術，不是真理的建立，也不受限於某一領域。它**批判**所有其他形式的知識，且超越了將事物再度呈現。
- Alan Bleakley（美國教育學家，1999）：學生應對學習的反思、教學或反思能力作更全面的**批判**。

*此處的「批判」是強調不要對已知的事就此滿足，必須抱持好學的精神作進一步的思考。

Critical Reflection ≠ 批判性反思

Critical Reflection ≠ 對反思批判

Critical Reflection可包括：

對反思作批判

對反思作反思

教學反思：課堂教學能量提升的一種策略

呂斌

香港中文大學 香港教育研究所

優質學校進計劃

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畫

有關反思的層次，過往有不少學者曾對其作出不同的描述（Carr & Kemmis, 1986; Handal, 1990; Sparks-Langer et al., 1990），²綜合各人的分析，反思大抵可以劃分為以下三種的層次：

1. **技術合理化水平（technical reflection）**：這是最底層的反思，只著重對教學的技術性、程序性問題的思考，關注的是有關「怎麼」等教學技巧上的執行問題。
2. **理論分析水平（reasonable reflection）**：這是第二層反思，能夠透過教學行為層面來分析行為背後的原因，但這種分析多根據個人的經驗進行，進一步則是能夠引用某些學理原則作為行為的標準。
3. **價值判斷水平（critical reflection）**：這是最高層次的反思，以道德、價值、原則作為標準。處於這一層次的教師關注知識的價值，以至整個教學行為背後的教育道德和價值意義，能夠從社會、文化、政治意義來分析教學行為。

教學反思：課堂教學能量提升的一種策略

呂斌

香港中文大學 香港教育研究所

優質學校進計劃

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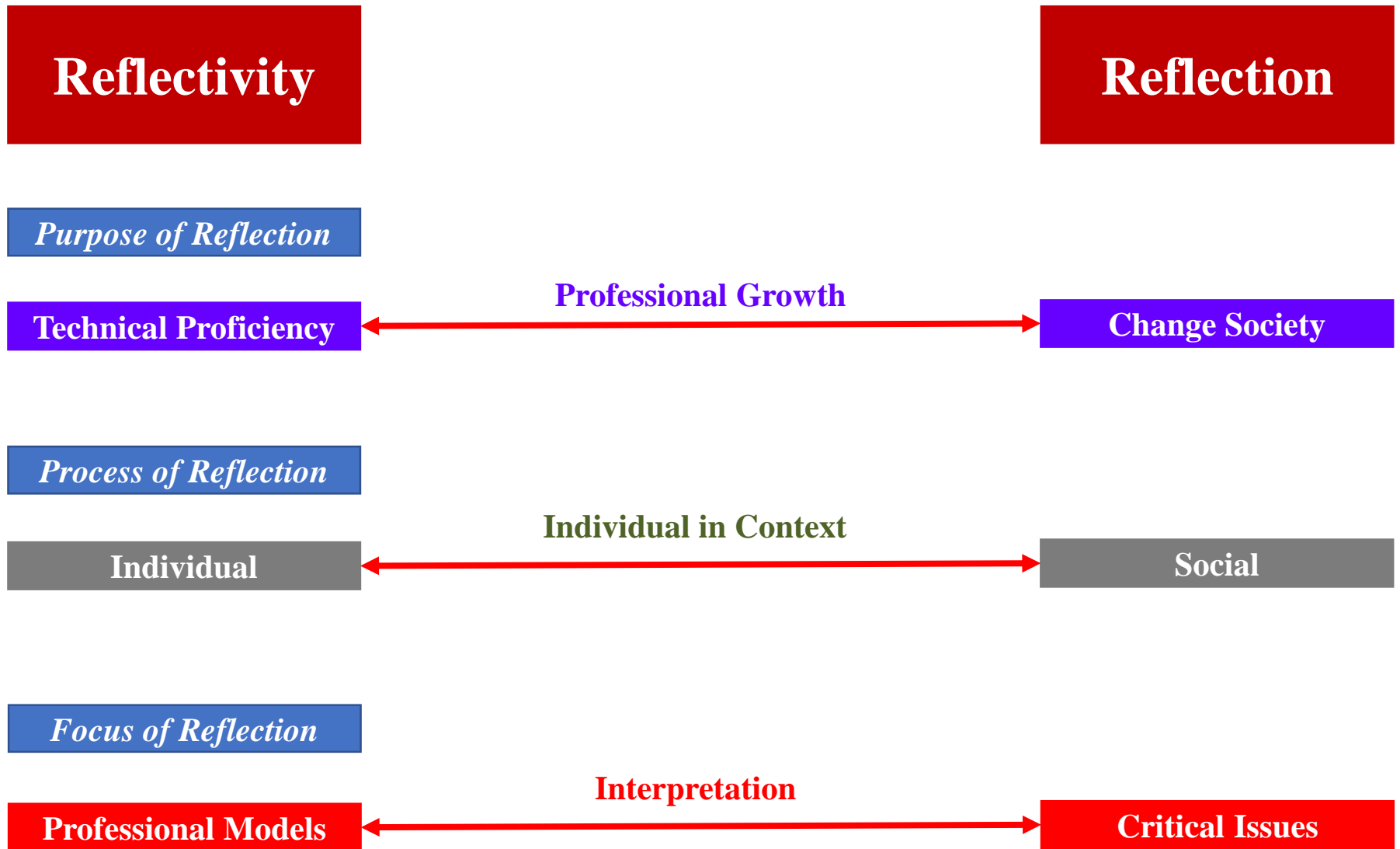
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2. **理論分析水平（reasoned reflection）** 這是一層反思，多對教學行為背後的原因，作進一步分析多根據個人的經驗進行，進一步則是能夠引用某些學理原則作為行為的解釋。
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這樣解讀過於牽強，更導致混淆

Procee's Dimensions of Reflection Model



Chan's Dimensions of Reflection Model

Reflectivity
反思品質

Reflection
反思方式

深度

廣度

隨意反思

言行
能力
素養
哲學
真理

個人
環境
社會
人類
萬物

刻意反思

Critical反思

兩者，沒有必然的對應關係

Content vs. Process

亞基米德原理

Reflectivity
反思品質

深度

言行
能力
素養
哲學
真理

廣度

個人
環境
社會
人類
萬物

Reflection
反思方式

隨意反思

刻意反思

關鍵反思

兩者，沒有必然的對應關係

Content vs. Process

Critical Reflection...

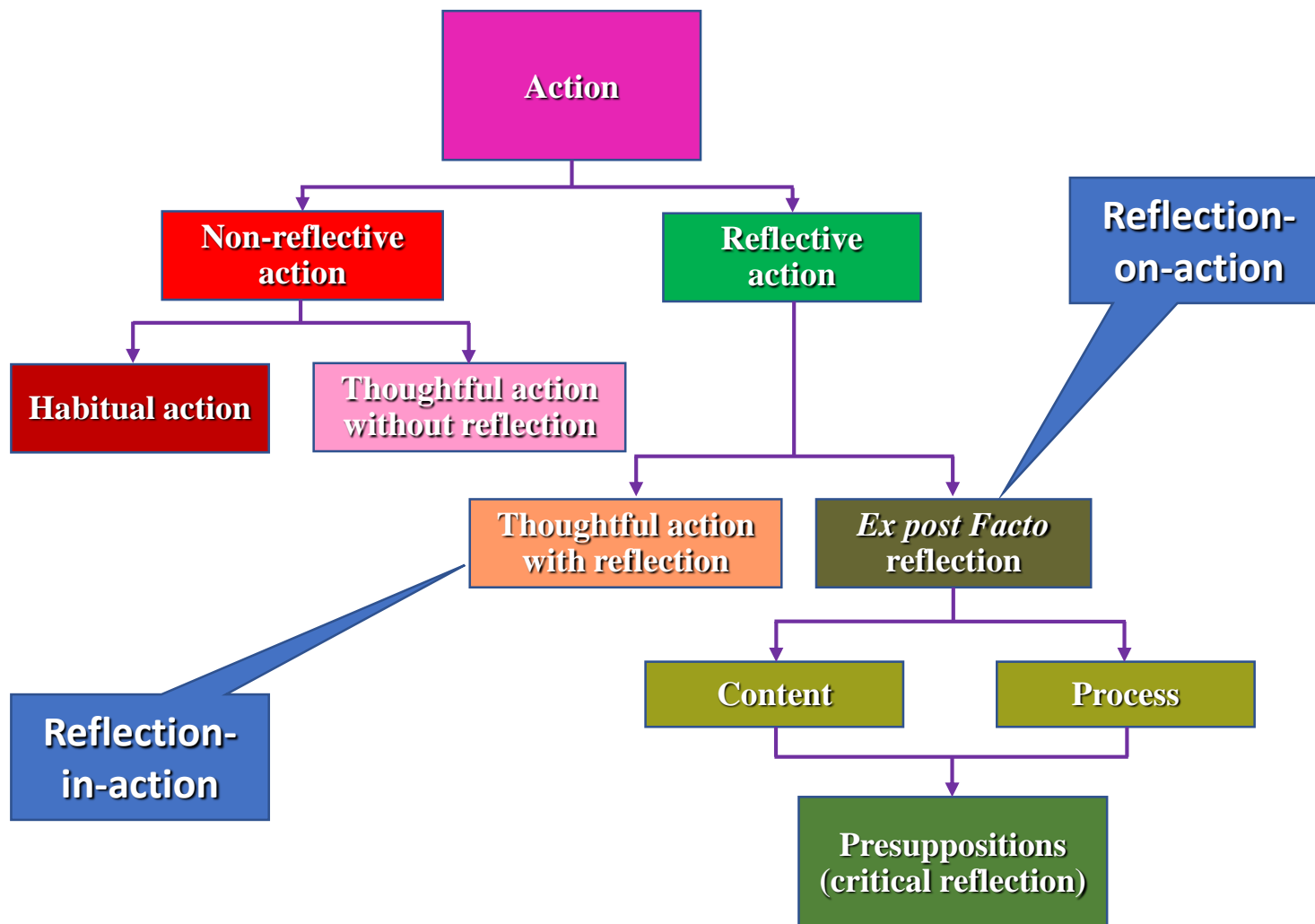
是指反思的内容？

Content ?

什麼是Critical Reflection？

- ❑ *Critical reflection* occurs when we analyze and challenge the validity of our presuppositions and assess the appropriateness of our knowledge, understanding and beliefs given our present contexts (Mezirow, 1990).
- ❑ 當我們分析和挑戰我們所作假設的確實性、以及評估我們現有的知識、理解和信仰的恰當性時，便會有critical reflection

Mezirow's Critical Reflection (1990)



事後反思 = critical reflection

Critical Reflection...

還是反思的程序？

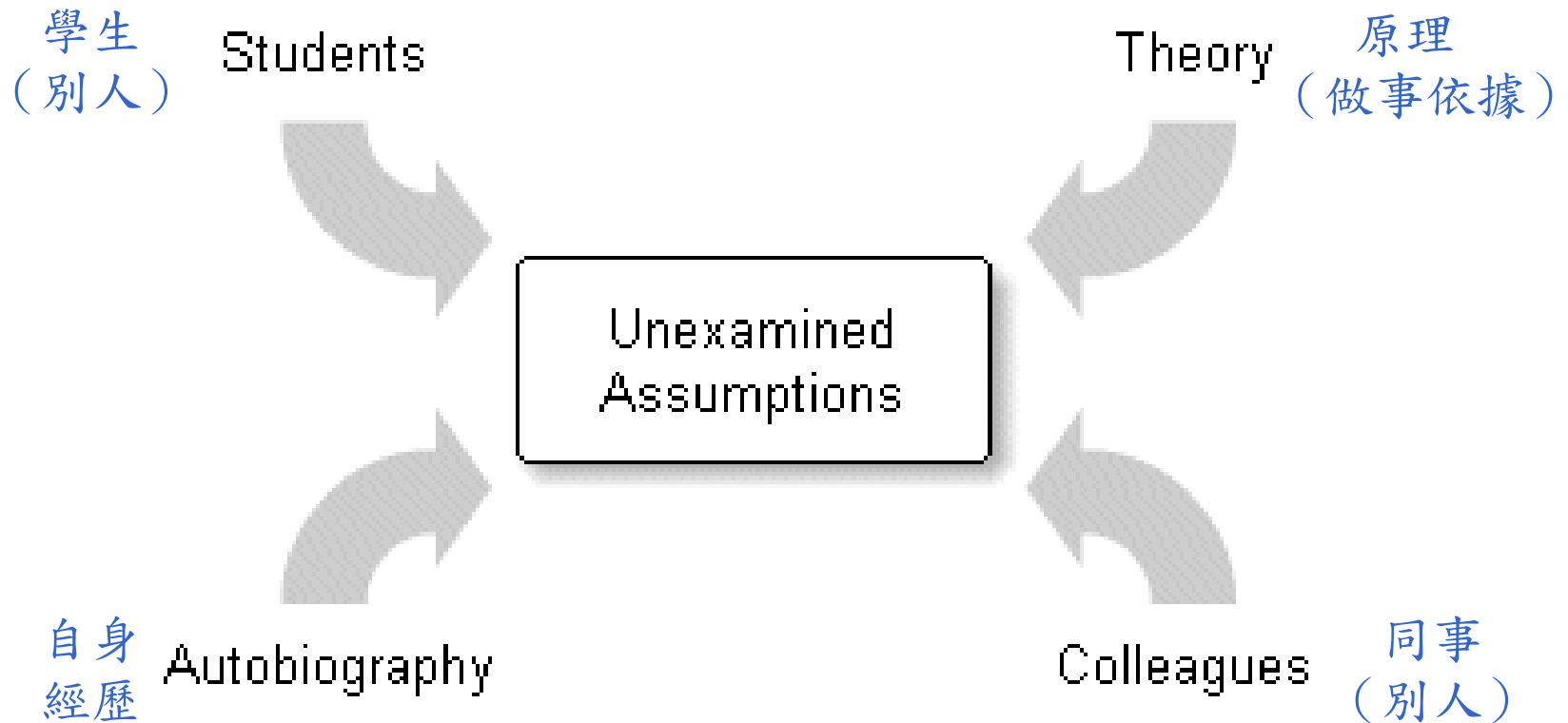
Process ?

什麼是Critical Reflection？

- Brookfield（1990）認為關鍵性反思分三階段：
 1. 介定假設：這些假設存在於我們的思想和行動，包括那些已認為理所當然的想法、深信不疑的常識和不言而喻的規則。
 2. 評估和審議這些假設的真偽。
 3. 使假設變得更具包容性和綜合性，以及使用這種新形成的知識，更恰當地引領我們今後的行動和實踐。

挑戰信念、仔細分析、提升境界

Brookfield's Model



Critical reflection perspectives
Adapted from Brookfield, (1995)

Brookfield's Model



子曰：三人行必有我師焉，擇其善者而從之，其不善者而改之。《論語述而》

Three models of critical reflection identifying two frameworks that provides guidance for reflecting within each model.

Model of critical reflection	Framework	General comments
Dewey's model of reflective learning		Knowledge can be constructed through active reflection on past and present experiences. Pragmatic approach.
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	Borton's framework	Simplified model using 3 questions: What? So what? Now what? Very easy to remember.
	Rolfe's framework	Expanded Borton's framework. Added questions to each step. Turned the last step back to form reflexive cycle.
		Generic, easily adapted to suit most situations.

* Adapted from Rolfe et al (2011).

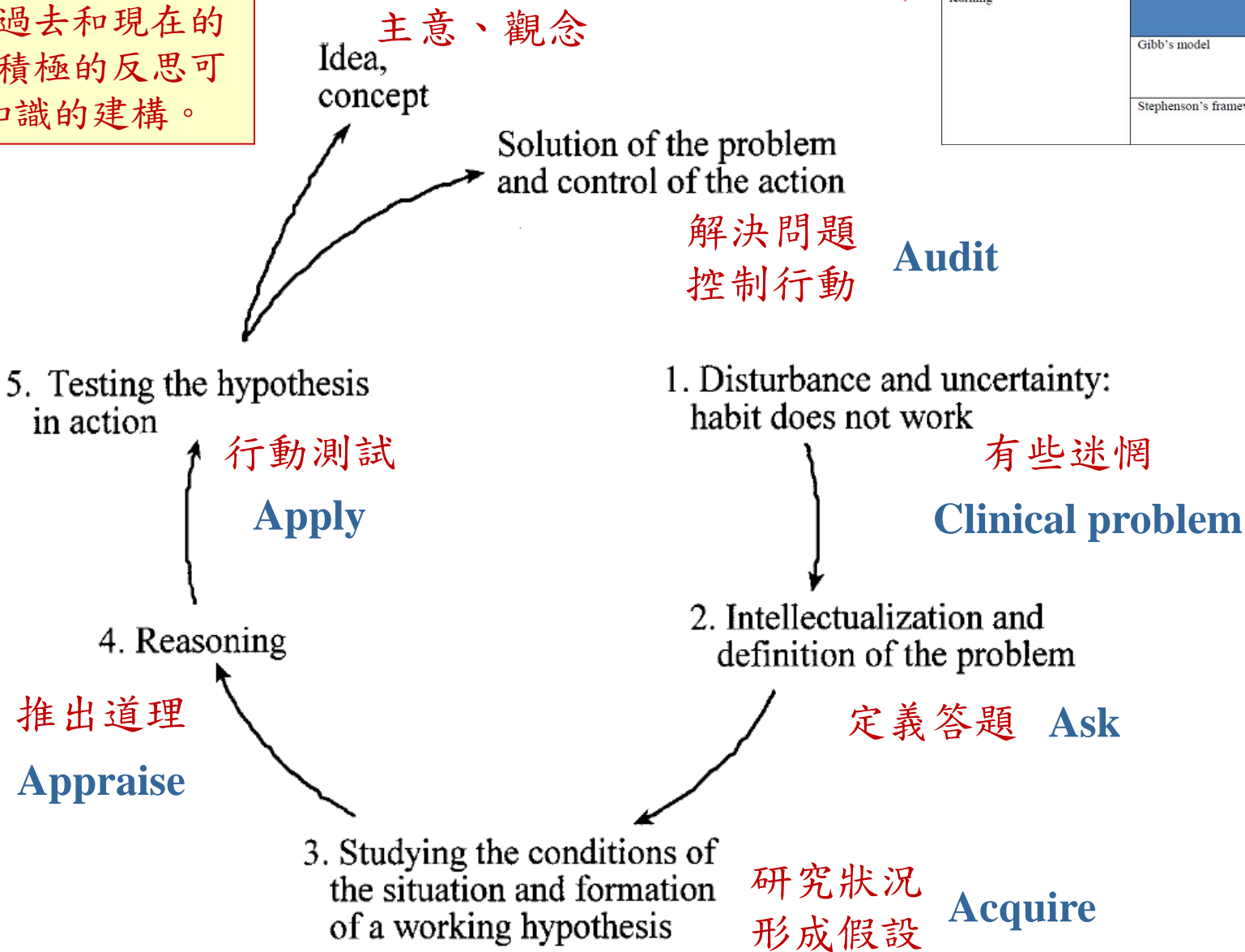
Dewey's Model of Reflective Learning

- Dewey's model
 - 透過對過去和現在的經驗作積極的反思可達成知識的建構
 - 是務實的做法
- Gibb's model
 - 是一個循環框架
 - 一般的和非特異性的方法來反思
 - 新手可能會發現它太模糊而需要進一步指引
- Stephenson's framework
 - 一套詳細的提示問題
 - 著重於行動的後果，並檢視實務知識

透過對過去和現在的經驗作積極的反思可達成知識的建構。



Model of critical reflection	Framework
Dewey's model of reflective learning	
	Gibb's model
	Stephenson's framework

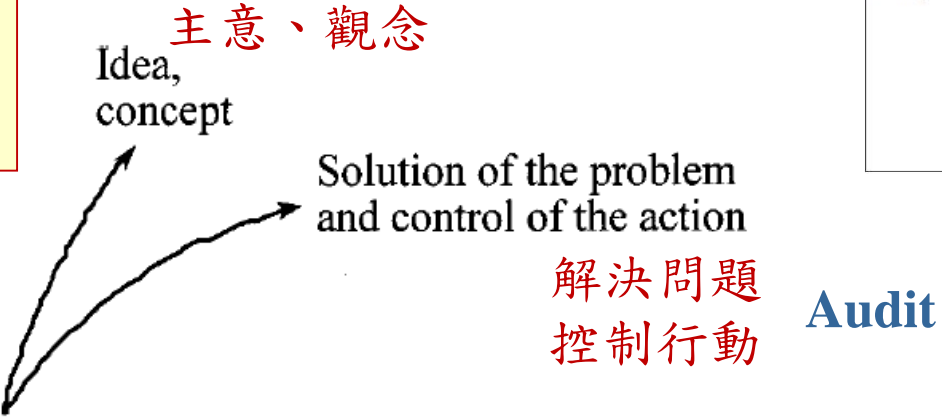


Dewey's model of reflective thought and action.

透過對過去和現在的經驗作積極的反思可達成知識的建構。



Model of critical reflection	Framework
Dewey's model of reflective learning	
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Dewey's Model of Reflective Learning

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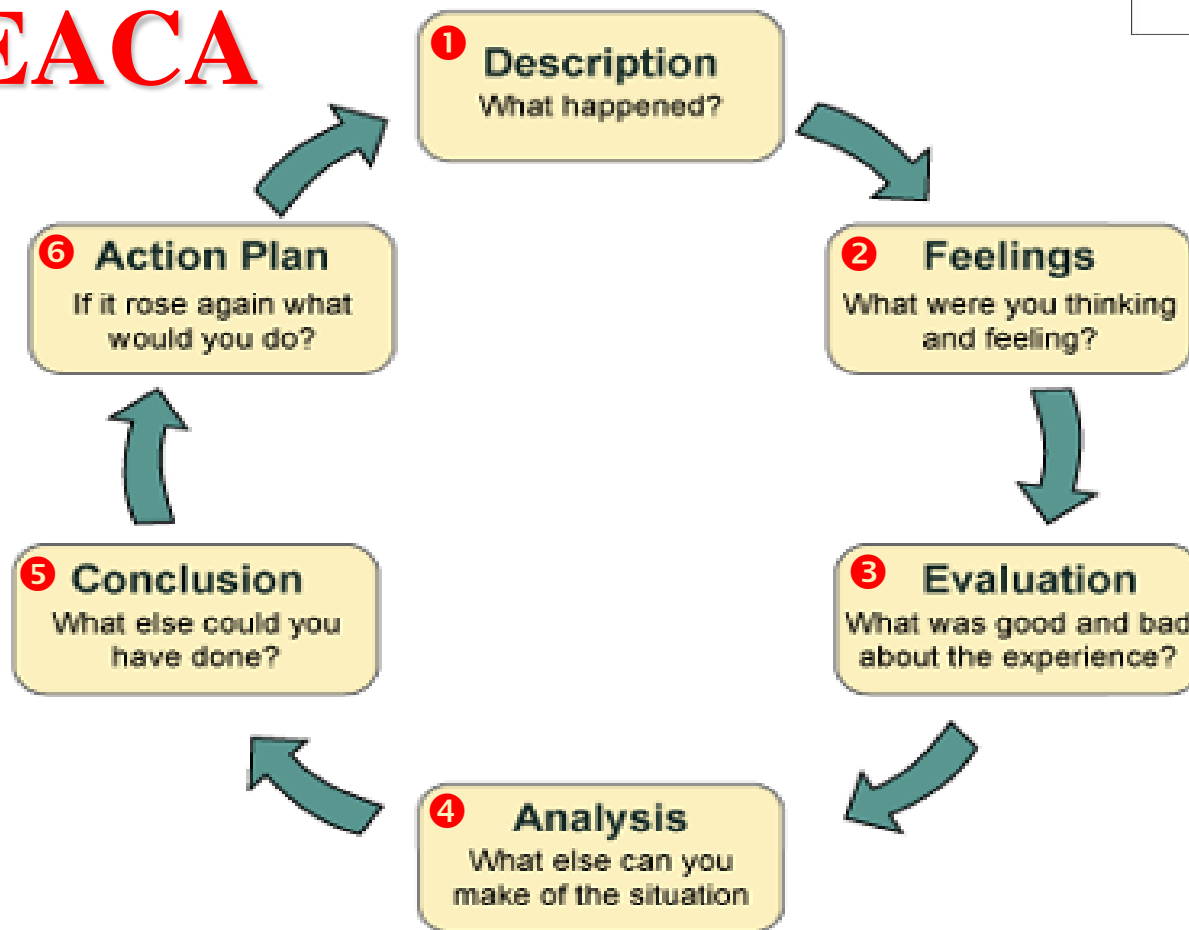
Gibb's Cycle Model

FEACA



Gibbs Reflective Cycle

d-FEACA



Model of critical reflection	Framework
Dewey's model of reflective learning	
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Gibbs, G. (1988) *Learning by Doing: A guide to teaching and learning methods*. Further Education Unit, Oxford Brookes University, Oxford.

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About 'A student's own framework for reflection' (Holm and Stephenson 1995)

Choose a situation


Ask yourself

- What was my role in this situation?
- Did I feel comfortable or uncomfortable? Why?
- What actions did I take?
- How did I, and others, act?
- Was it appropriate?
- How could I have improved the situation for myself, the patient, my mentor?
- What can I change in the future?
- Do I feel as if I have learnt anything new about myself?
- Did I expect anything different to happen? What and why?
- Has it changed my way of thinking in any way?
- What knowledge from theory and research can I apply to this situation?
- What broader issues, for example, ethical, political or social, arise from this situation?
- What do I think about these broader issues?

Holm D and Stephenson S (1994) Reflection – A Student's Perspective. In Palmer A, Burns S and Bulman C (eds) *Reflective Practice in Nursing: the growth of the professional practitioner*.

Blackwell Scientific Publications: Oxford 53-62

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Habermas's Model of Critical Reflection

- ❑ 基於知識的三個方面：技術、實用和解放。關鍵性理論方法。
- ❑ Taylor's framework：描述了三種類型與反思有關的活動：技術、實用和解放。高度結構化。
- ❑ Kim's framework：稱為關鍵反思探究。三個階段反思：描述性、反思、關鍵/解放。應用程序和產品到每一期。

Taylor：技巧、實務、解放

Kim：描述、反思、關鍵/解放

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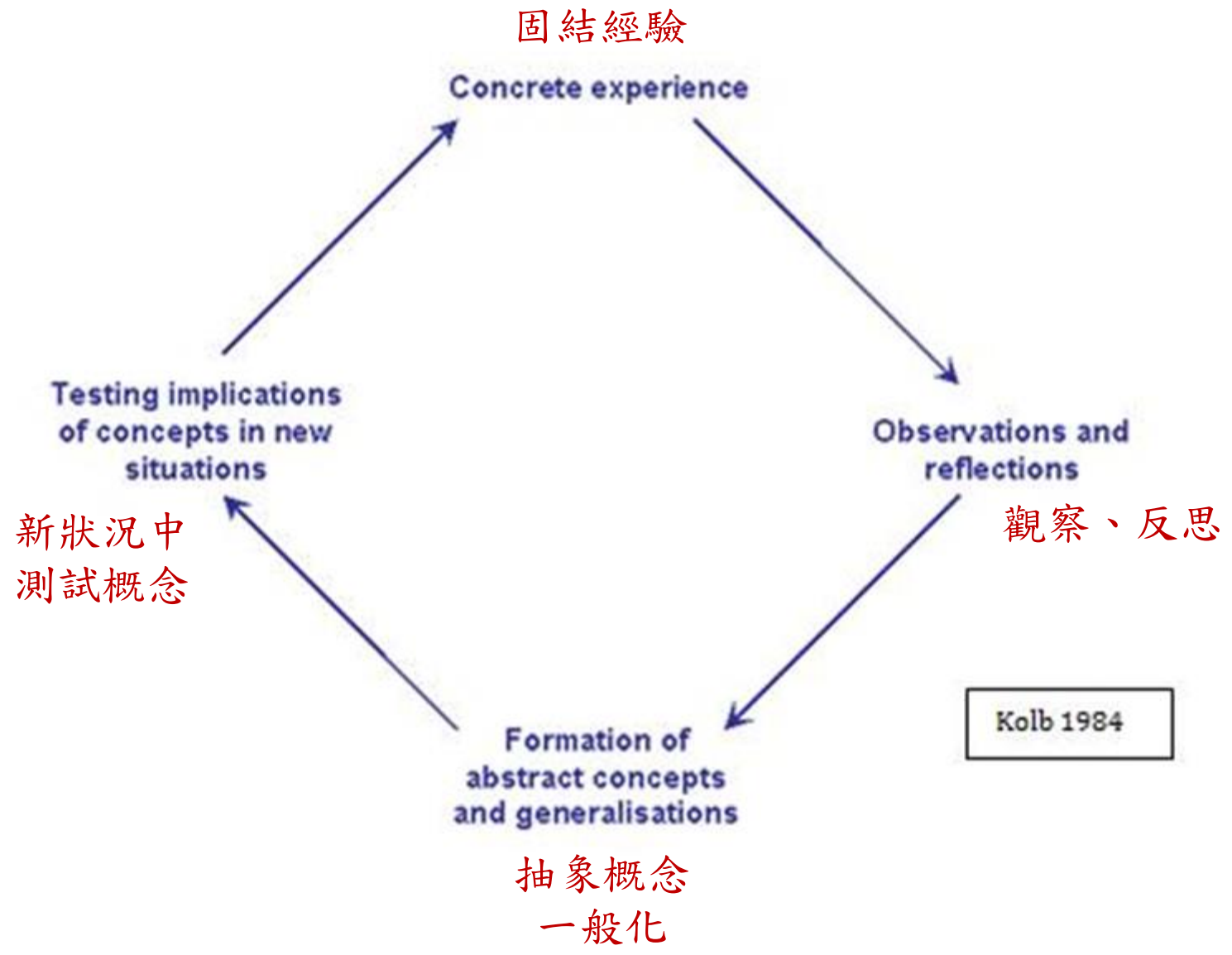
* Adapted from Rolfe et al (2011).

Kolb's Model of Reflexive Learning

- Kolb's model
 - 整合思維和實踐的企圖
 - 體驗式學習方法
- Borton's framework
 - 使用三個問題的簡化模型：什麼？所以呢？怎麼辦？
 - 很容易記住
- Rolfe's framework
 - 擴大Borton的框架
 - 加入問題到每一個步驟，最後一步回轉，形成反思循環



Kolb's model of reflexive learning	
	Borton's framework
	Rolfe's framework



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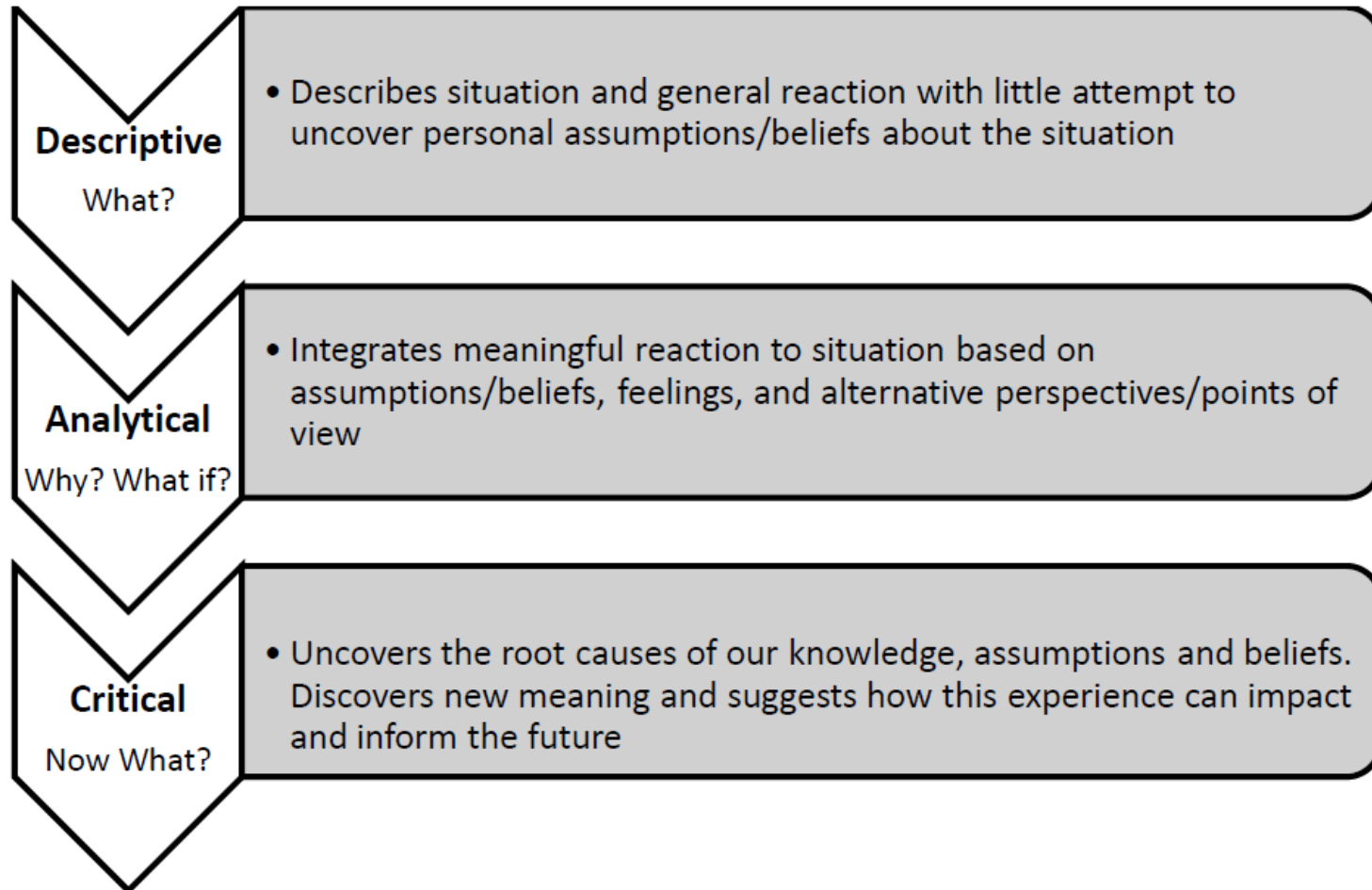
Borton's Framework



Kolb's model of reflexive learning	
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Borton's Framework



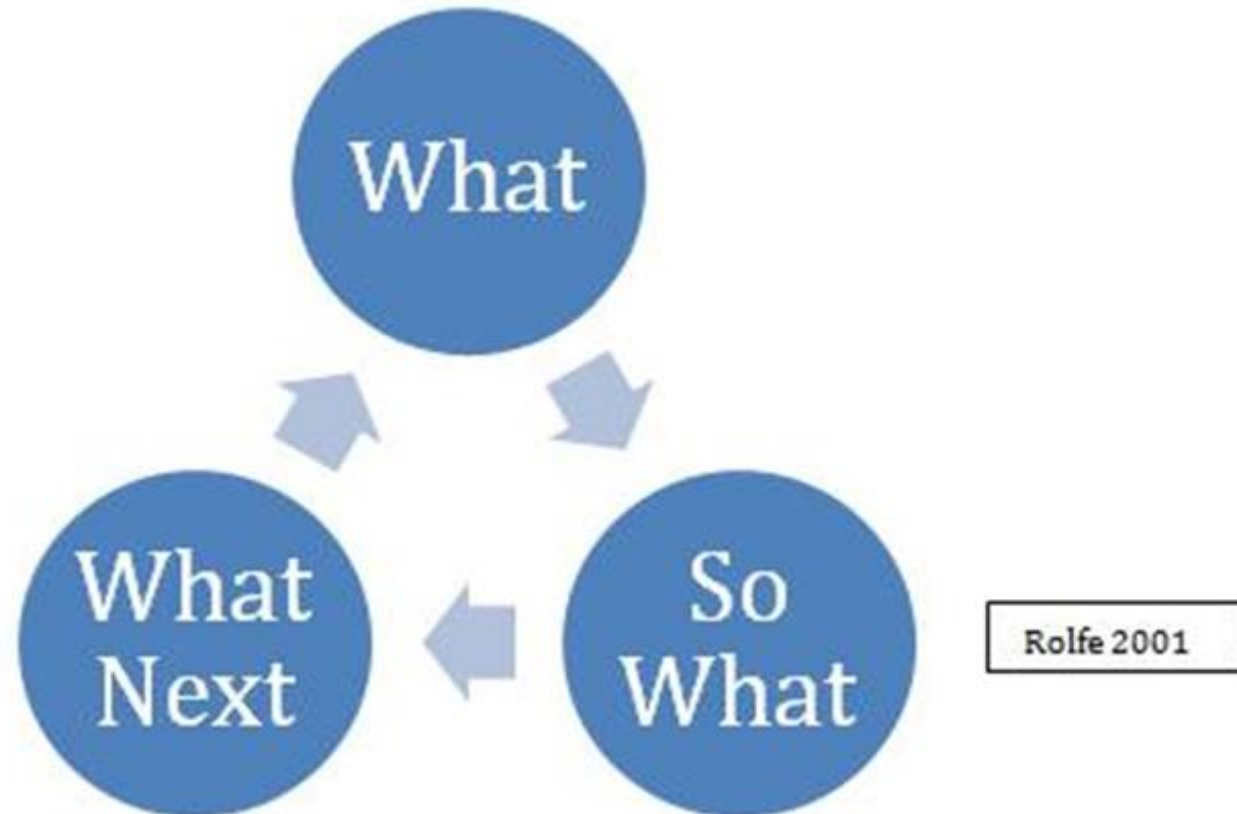
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Rolfe's Framework



Schön's Reflection

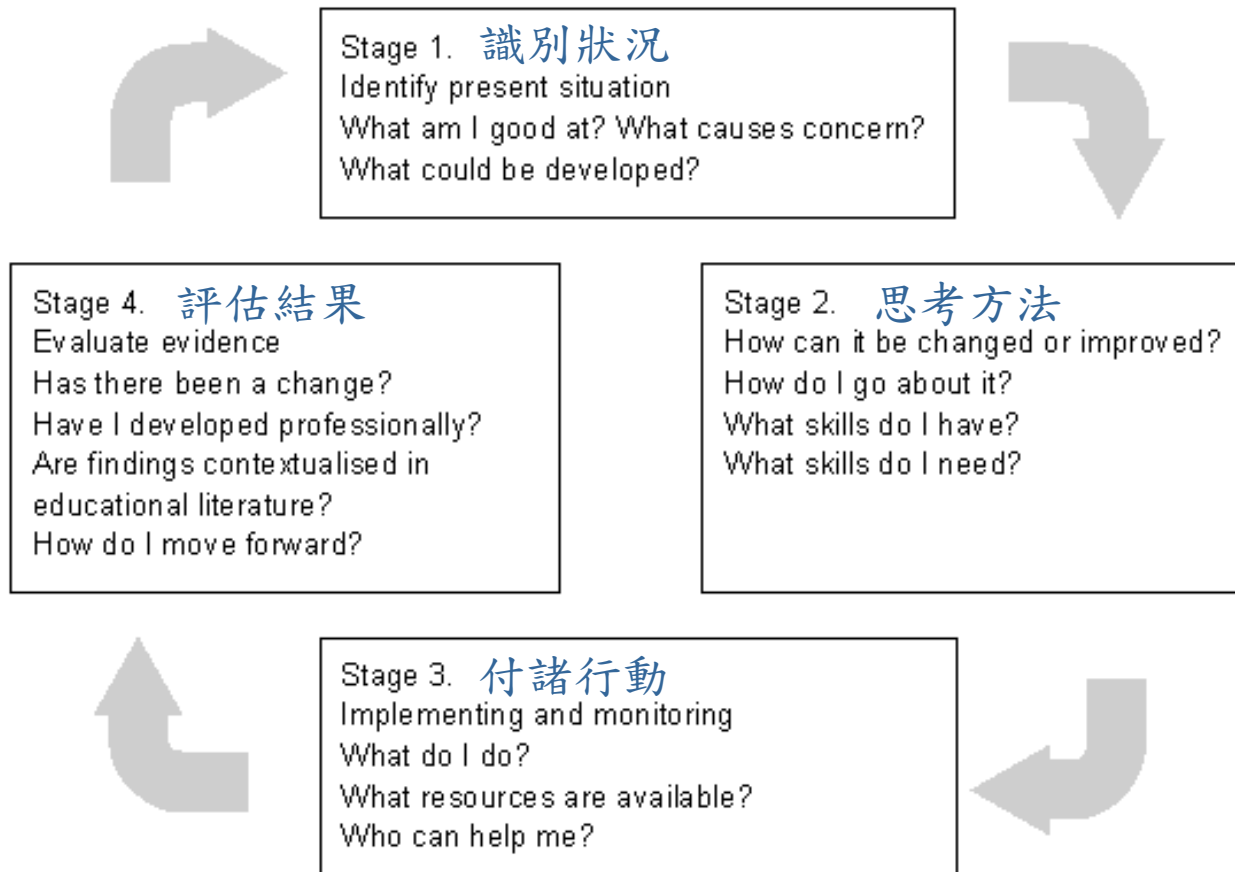


Cowan's Model



Mentoring and Coaching — Reflective Model

Rhodes, Stokes and Hampton (1994)



Atkins & Murphy's Model of Reflective Practice (1993)

Stage 1 感到不適

This is triggered by an awareness of uncomfortable feelings and thoughts.

Stage 2 明辨分析

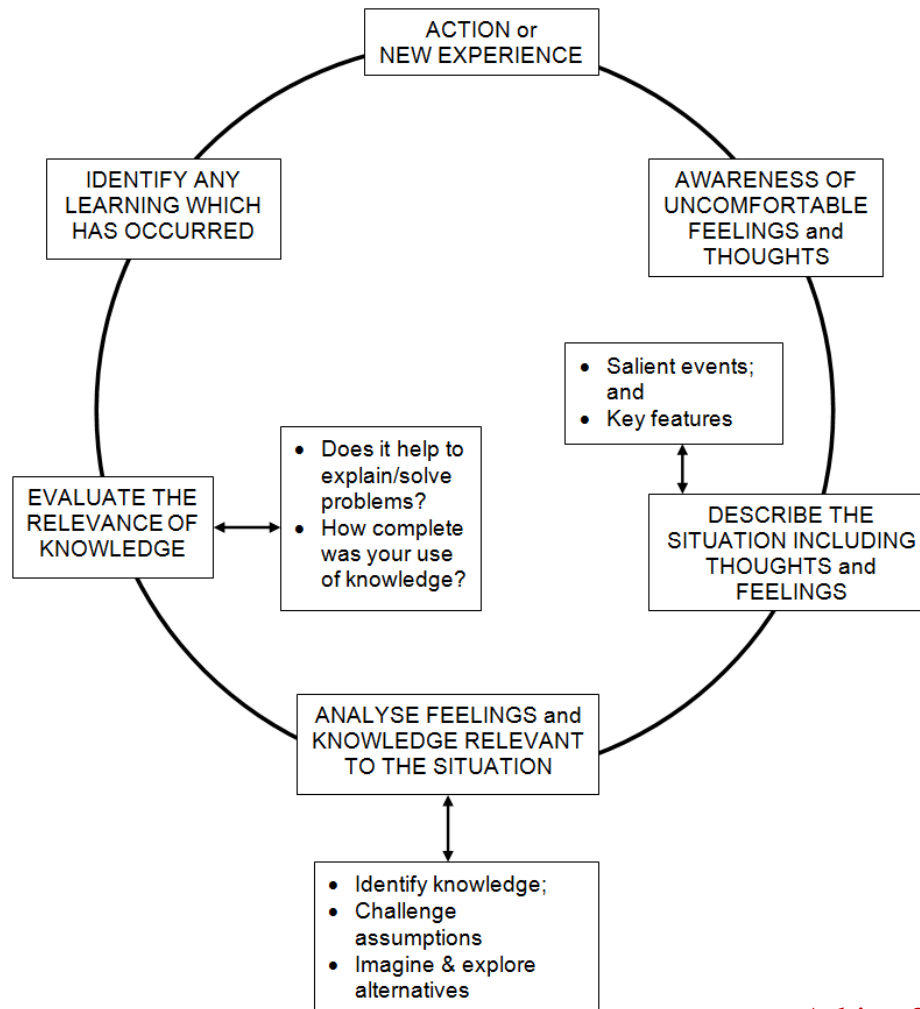
This involves a critical analysis of the situation, which is constructive and involves an examination of feelings and knowledge.

Stage 3 發展新貌

This involves the development of a new perspective on the situation.



Atkins and Murphy's Cycle of Reflection



Atkins S, Murphy K (1994) Reflective Practice.
Nursing Standard 8(39)49-56.

Critical Reflection : **OUR CHOICE**

- ❑ Critical reflection = 能掌握要領*的反思
- ❑ 既有效能又有品質的反思
- ❑ 利用易學易用的方法（工具）來達成高品質的反思

Good Reflection

*要領：重要議題 + 高效程序

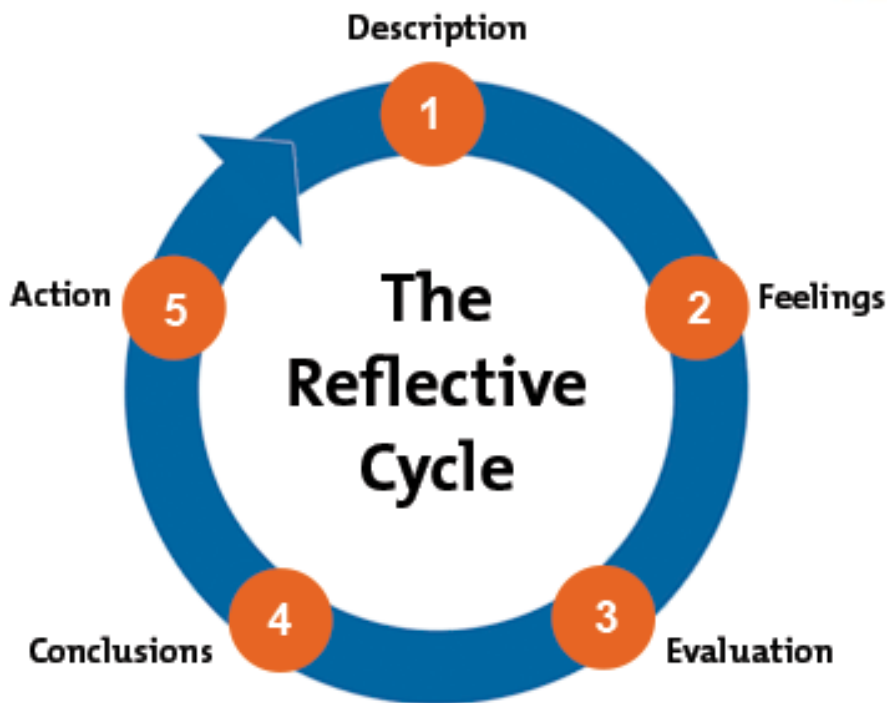
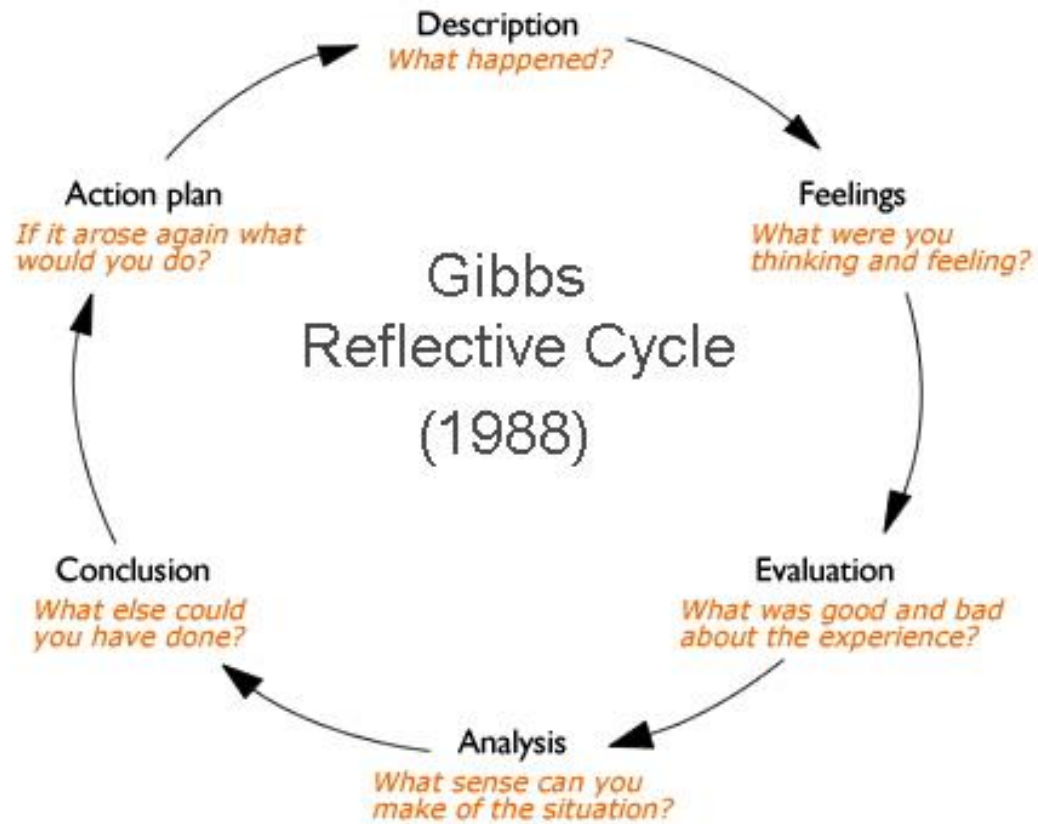
討論大綱

- 前言
- Critical Reflection是什麼
- Critical Reflection怎樣學得到/做得到
- 結語

Reflective Writing & The 5Rs Framework for Reflection

5R Framework	What is it?	Critical Questions to Ask
Reporting	A brief descriptive account of a situation / issue (ie.the reflective trigger)	What happened, what the situation / issue involved
Responding	Your emotional / personal response to the situation / issue etc	Your observations, feelings, questions about the situation / issue
Relating	Personal and/or theoretical understandings relevant to the situation / issue	Making connections between the situation / issue and your experience, skills, knowledge and understanding
Reasoning	Your explanation of the situation / issue	Explaining the situation/issue in terms of the significant factors, relevant theory and/or experience
Reconstructing	Drawing conclusions and developing a future action plan	Your deeper level of understanding about the situation / issue that is used to reframe / reconstruct your future practice and further develop your understanding of professional practice

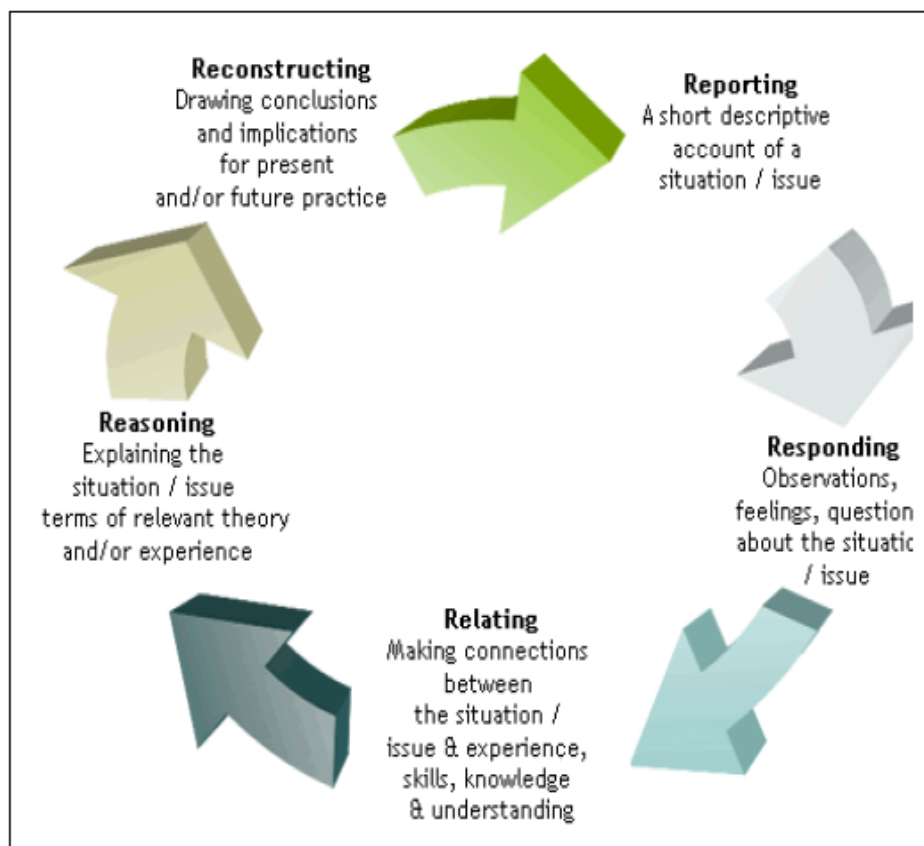
5Rs的來源



14年之後.....

The 5Rs

The 5Rs are modified from a body of work that has been undertaken in Queensland by Bain et al. (2002). The 5Rs are Reporting, Responding, Relating, Reasoning and Reconstructing. More about each of the Rs is shown below and sample questions relating to each part of the 5Rs model are mapped against the Reflection on Action model in the table below.



Critical Reflection : **OUR CHOICE**

- 能掌握要領、兼顧效率與深度的反思
- 既有效能又有品質的反思
- 利用易學易用的方法（工具）來達成高品質的反思

Critical Reflection的前提

- ❑ 能力（能與不能）
- ❑ 態度（為與不為）

Critical Reflection的前提——能力

- 思考能力：要能critical thinking

Critical Reflection的前提——態度

- 回應
- 認同
- 願意
- 喜歡
- 難捨
- 自然

Critical Reflection的方法（工具）

- ❑ Reflective writing
- ❑ Reflective summaries
- ❑ Diagrammatic representation
- ❑ Creative representation
- ❑ Perspective taking
- ❑ Interaction

Morrow (2009): Teaching critical reflection in healthcare professional education

Reflective Writing

- ❑ Learning journals/diaries (Wall et al., 2004)
- ❑ Memos (Dowling, 2006)
- ❑ Reflective notes (Smith, 2008)
- ❑ Critical Incident Technique (Flanagan, 1954)
- ❑ Critical Portfolio (Brockbank and McGill, 1998)

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Reflective Summaries

- ❑ Tabulation or lists of reflective themes (Alversson and Sköldberty, 2009)
- ❑ Feedback/self-evaluation forms (Boud et al., 1995)

Feedback & Self-Evaluation Form

Coachee Observer Programme Leader Self-evaluation Please use appropriate

Coach: _____ Coachee: _____ Date: _____ Session: 6

Programme Leader: _____ Observer: _____ Workshop: _____

Indicate the degree to which the following qualities or skills were present and demonstrated in the session. You can refer to the Skills, Qualities & Competencies of Coaching.

Skills & Qualities	Low	Moderate	Clear	Significant
1.				
2.				
3.				
4.				
5.				
6.				

General Review

1. What worked well in the session?

2. What did not work?

3. What does the coach need to do more or less of?

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Feedback & Self-Evaluation Form

Coachee
 Observer
 Programme Leader
 Self-evaluation
 (Please tick appropriate box)

Coach:
Coachee:
Date:
Session: of 6

Programme Leader:
Observer:
Workshop:

Indicate the degree to which the following qualities or skills were present and demonstrated in the session. You can refer to the Skills, Qualities & Competencies of Coaching.

Skills & Qualities	Low	Moderate	Clear	Significant
1. <input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. <input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. <input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. <input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. <input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. <input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

General Review

1. What worked well in the session?

2. What did not work?

3. What does the coach need to do more or less of?

Diagrammatic representation

- ❑ Concept maps, mind maps and conceptual diagrams (Eppler, 2006)

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Creative Representation

- ❑ Pictures/images (Stronach et al., 2007)
- ❑ Story writing (Plummer, 2001), polyvocality (Riley et al., 2003)
- ❑ Videoing/film-making (Pauwels, 2006)

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Perspective Taking

- ❑ Stakeholder/service user views (Roth and Tobin, 2002)
- ❑ Reflective interview (Bolam et al., 2003)

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Interaction

- ❑ Peer- or group-discussion (Brookfield, 1987)
- ❑ Problem-based learning (Fyrenius et al., 2007)
- ❑ Service user involvement in teaching (Felton and Stickley, 2004)

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Critical Reflection的方法（工具）

- 利用指引和表格帶領思路（效率）
- 經由製作文字紀錄、繪圖、拍攝影片來助長思維（深度）
- 反思過程加入討論和互動（深度）

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A “Critical” Reflection Framework

The what?

A description of the incident/experience with just enough detail to support doing your “So what?” section. For example, description about who, what, why, when, where.

So what?

This is the sense-making section that asks you to surface general meaning, significance, your position / view point; actions; emotions (pre-during-post).

Now what?

This section makes connections from the experience / incident to further actions. For example, what would you do differently / the same next time? How come? What are key points, lessons learnt to share with your colleagues, network and/or group outside the network? (eg. idea, product, process, concept)? How will you do this?

The DEAL Model for Critical Reflection

- ❑ Describe
- ❑ Examine
- ❑ Articulate Learning

The DEAL Model for Critical Reflection – Describe, Examine, and Articulate Learning

Describe

Describe Experience(s) Objectively

Part I: Overview of “big picture” – what have I done since the last reflection session?

Part II: Home in on 2 or 3 key experiences to focus the reflection on - What were the most significant or reflection-worthy experiences?

- Where was I?
- Who else was there?
- When did this experience take place?
- What was said?
- What did I/others do?
- Why were we there? (NOTE: Be careful here. “Why” can be an objective question, as in “we were having this conversation because the Director had scheduled a meeting of the entire group and had invited both me and Mr. Smith” but it can also open the door to interpretation, as in “we were having this conversation because the Director wanted me and Mr. Smith to advise her”)

Assess Progress Since Last Reflection

- What were my goals as articulated at the end of the previous reflection session and/or in my articulated learnings from the previous reflection session? What specific conclusions did I intend to enact or test based on my previous articulated learnings?
- What specific steps did I take in order to attain these goals?
- What obstacles—internal and external—hindered me? What factors made me more effective?
- In what ways did my attempts to attain goals or to enact or test conclusions proceed as expected, based on my earlier understanding, and in what ways was I surprised?
- What do my attempts to enact or test previous conclusions tell me about the validity of those conclusions? In what specific ways is my understanding of those conclusions changing yet again?
- How can I change my behavior or mentality in order to make better progress toward my goals? What specific steps do I need to take in order to continue refining my understanding?

Examine Experience from a Personal Perspective

- How did this experience make me *feel* (positively and/or negatively)? How did I handle my emotional reactions? Do I believe I should have felt differently than I did?
- What *assumptions or expectations* did I bring to the situation (including my assumptions about other persons involved) and how did they affect my actions? To what extent did they prove true? If they did not prove true, why was there a discrepancy?
- How have *past experiences* influenced the manner in which I acted or responded to this situation? Am I comfortable with the influence past experiences has on me?
- What personal *strengths / weaknesses* of mine did the situation reveal? In what ways did they affect the situation, positively and negatively? What might I do to build on strengths/ overcome weaknesses?
- Why did I, or did I not, experience *difficulty working/interacting with other people*? What might I do differently next time to minimize such difficulties?
- What personal *skills* did I draw on in handling this situation? What personal skills would I like to have had in order to have handled it better and how might I develop them?
- How did this situation reveal my own *attitudes or biases*, toward other people, toward the organization in question, etc.? Do I need to make any changes?

Examine

Examine Experience from a Civic Perspective

- What was I / someone else *trying to accomplish*? In taking the actions I / they did, was the focus on *symptoms* of problems or *causes* of problems? Was the focus (symptom or cause) appropriate to the situation? How might I / they focus more on underlying causes in the future?
- What *roles* did each person / group / organization involved in the situation play and why? What alternative roles could each have played?
- Did I / other individuals act *unilaterally* or *collaboratively* and why? Should I / they have worked with others in a different way?
- Did I *reinforce* or *challenge* an assumption or social system by the way I acted? How does this experience highlight the relationship between and larger systems?
- How else could I have handled the situation? Identify both *the paths of least resistance and the paths of greater resistance*. Why did I / others follow the path I / they did?
- What *agendas* did I and others bring to the situation? Are these agendas appropriate? Are they understandable? Are they shared? How are these agendas related to larger social or cultural issues?
- In what ways did *power differentials* emerge in this experience? What are the sources of power in this situation and who benefits and is harmed? In what ways might any dependencies be eliminated?
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- How did *leadership* emerge in this situation, on my part and/or on the part of others?
- What is in the interest of the *common good* in this situation? In what ways is the *individual good* (mine or that of other people) linked to and/or contrary to the common good? What tradeoffs between them are involved?
- In what way did any other *tradeoffs* (long-term / short-term; justice / efficiency; etc.) emerge in this situation? Were the trade-offs made appropriate or inappropriate and why?
- What *changes* does this experience suggest are needed: within my group, within the organization, within our society more generally? How can these changes be accomplished: with individual action or collective action / working within the system or challenging the system / etc.?
- How does this experience help me to better understand the *organization's vision, mission, and goals*? What does it reveal to me about the relationship between the organization and those it serves? What does it suggest about how this relationship might be improved?

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- Instructor's specific course-related questions.

Articulate Learning

- 1) What did I learn?
- 2) How, specifically, did I learn it?
- 3) Why does this learning matter, why is it important?

In what ways will I use this learning, what goals shall I set in accordance with what I have learned in order to improve myself and / or the quality of my learning and / or the quality of my future?

Articulate

The DEAL model was developed by Dr. Patti Clayton of North Carolina State University http://www.ncsu.edu/cece/resources/deal_model.php. Dr. Clayton references Kiser's Integrative Processing Model in the original document.

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Introduction to Critical Reflection

Louise Aronson, MD MFA
Marieke Kruidering, PhD
Patricia O' Sullivan, PhD

University of California, San Francisco

Effective Critical Reflection

- 4 part format based on clinical note structure

 - 4 parts = S.O.A.P.
 - Subjective
 - Objective
 - Assessment
 - Plan
-

Subjective

- Discusses the experience
 - What happened? (content)
 - How did it happen? (process)
 - Why did it happen? (premise/
assumptions)

 - Considers emotion as well as intellect
-

Objective

- Includes data
 - Feedback, multiple perspectives
 - Peer, patient, other professional, faculty
 - Scholarly/journal articles
 - Expert consultation
 - Open-minded, open-ended queries to others involved about their interpretations of events
 - Web-based resources
-

Assessment

- Draws parallels to past experience
 - Go beyond the particular experience
 - How is this a larger challenge or opportunity for you?

 - Explicitly identifies learning issues
 - Those selected must stem clearly from the information in S and O
-

Plan

- Should be SMART
 - Specific
 - Measurable
 - Attainable
 - Relevant
 - Timely

 - Note when and how you will assess the plan's effectiveness
-

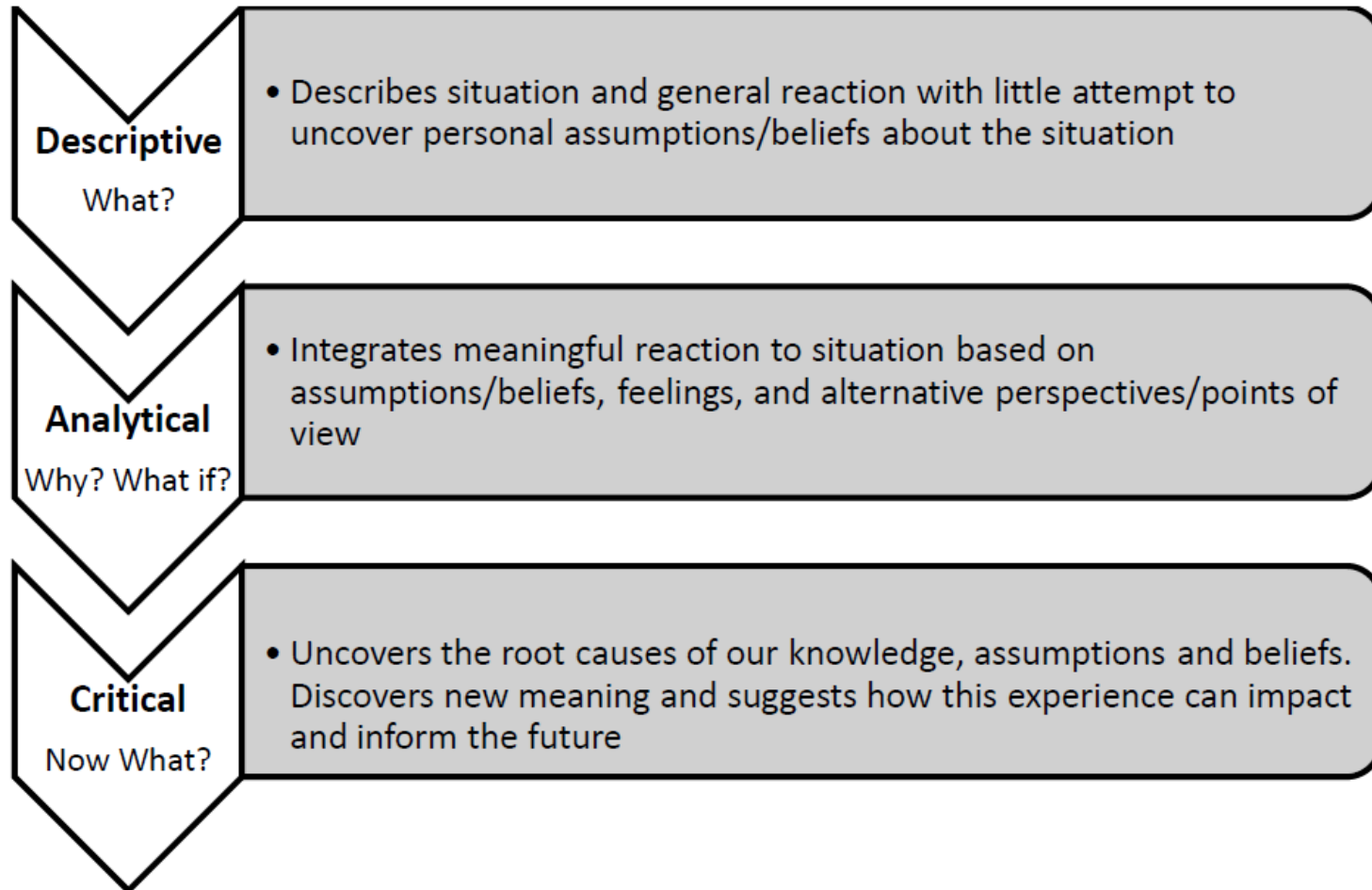
Healthcare Matrix

Competencies \ Aims	Safe	Timely	Effective	Efficient	Equitable	Patient-Centered
Assessment of Care						
Patient Care (Overall Assessment) Yes/No						
Medical Knowledge & Skills (What must we know?)						
Interpersonal & Communication Skills (What must we say?)						
Professionalism (How must we behave?)						
System-Based Practice (On whom do we depend and who depends on us?)						
Improvement						
Practice-Based Learning & Improvement (What have we learned? What will we improve?)						
Information Technology						
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Kolb's model of reflexive learning	
	Borton's framework
	Rolfe's framework



Borton's Framework



Healthcare Matrix

原來也是一種critical reflection的架構

Competencies	Aims	Safe	Timely	Effective	Efficient	Equitable	Patient-Centered
Assessment of Care							
Patient Care (Overall Assessment) Yes/No							
Medical Knowledge & Skills (What must we know?)			Descriptive What?	<ul style="list-style-type: none"> Describes situation and general reaction with little attempt to uncover personal assumptions/beliefs about the situation 			
Interpersonal & Communication Skills (What must we say?)			Analytical Why? What if?	<ul style="list-style-type: none"> Integrates meaningful reaction to situation based on assumptions/beliefs, feelings, and alternative perspectives/points of view 			
Professionalism (How must we behave?)			Critical Now What?	<ul style="list-style-type: none"> Uncovers the root causes of our knowledge, assumptions and beliefs. Discovers new meaning and suggests how this experience can impact and inform the future 			
System-Based Practice (On whom do we depend and who depends on us?)							
Improvement							
Practice-Based Learning & Improvement (What have we learned? What will we improve?)							
Information Technology							

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討論大綱

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結語

- ❑ Reflection是Critical thinking：能力 + 態度
- ❑ Critical Reflection仍是Critical thinking
 - ❑ 是追求深度、有架構/程序的good reflection
 - ❑ 要使用一些技巧和工具
- ❑ 重點：keep it simple, stupid (**KISS**)，甚至...
make it simple, stupid (**MISS**)
- ❑ 事實毫不困難



謝謝參與
敬請賜教