Building bridges & growing branches: designing learning activities to support self- & peer-assessment practices

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Learning activities: rationale
- Process & consolidate formative information
- Design as self- & peer-assessment tasks
- Align knowledge construction with level of course learning objectives, progressive summative assessment items
- For any mode of learning or delivery

Learning activities for any instructional mode of learning
- Lectures
- Computer managed tests
- Group projects
- Lab book
- Journal article review
- Pre-lab questions

How is expertise developed?
- I Unconscious incompetence
  Memorizing without fully understanding
  “We don’t know that we don’t know”
- II Conscious incompetence
  Repetition and practice - accessing spontaneously
  “We know what we don’t know”
- III Conscious competence
  Problem solving & application - acquisition knowledge base
  “Can do if know how to”
- IV Unconscious competence
  Expertise - depends how knowledge is linked and stored
  - ability to notice relevant and subtle features
  “Blend skills to become habits”

Enter small group, reciprocal peer (or near-peer) learning!
The learning environment (1): process, application & problem solving
- Interactive, cross-table group talk
- Same learning facilitators – stability
- Acknowledgment of all questions, all students
- Assessment tasks for diverse abilities
- Awareness of prior knowledge, skills
The learning environment (2): process, application & problem solving

- Cultivate a scholarly yet empathic approach
- Activities group/class oriented, not individual
- Encourage reference to all resource material
- Proximal on-line access, if required
- Explore, analyse, apply, theorise, reflect

THE LEARNING ENVIRONMENT (3): process, application & problem solving

- No fear of judgment or retribution
- Facilitators do not evaluate assessment items
- Facilitators design/structure learning activities
- Activities multi-structured; consolidation
- Learning within students ZPD; comfort zone

BE MINDFUL OF...

- Learning styles of students
  - Active & reflective, sensing & intuitive, visual & verbal, sequential and global
- Probing - double-loop learning
- Diversity of student population
- Importance of active learning
- Importance of self- & peer assessment
- Aligning with level of assessment

ALIGNING WITH ASSESSMENT

- Support from teaching staff
  - Provide formatively based questions and answers
  - Provide working models
  - Communicate with facilitators re. student concerns
  - Provide facilitators with practice exam Qs & As
  - View learning activities prepared for module
- Re-attending lectures
- Collating leaders activities – resources
- Staff/facilitator meetings
- Coordinators supervise sessions

GRADE DISTRIBUTION: CHEM1012: effect of PASS attendance

<table>
<thead>
<tr>
<th>Grade</th>
<th>% Students in each grade</th>
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<tr>
<td>1-4 PASS</td>
<td>189</td>
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<tr>
<td>5+PASS</td>
<td>561</td>
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(1) STRUCTURE/CONTEXTS

- Group questions with poster presentation
- Definitions & glossary – wall chart
- Lecture based Qs – muddiest points
- Flow charts & concept maps
- T/F; Fill in blanks; Grid; Crosswords
- Scribe instructed by group
- Authentic, real-life: “you are a…”, PBL scenarios, hypotheticals

(2) STRUCTURE/CONTEXTS

- Group team competitions: games?
- Role play actions of molecules, muscles etc
- Debates and mock trials
- Analogies, simplify explanations
- MCQs and reverse MCQs
- Critical thinking or “challenge” questions

FORMS OF FORMATIVE ASSESSMENT TARGETED

- Self-assessment
- Peer assessment
- Group based assessment
- Computer based assessment
- Workplace or situational assessment X

Attendance: Mean Grade with OP score

WHAT IS EFFECTIVE/GOOD LEARNING?

“That which is learned with enthusiasm and which is retained and can be applied to a speciality or to life in general. Preferably to both.”

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