Outcomes for healthcare undergraduates using wikis and MS PowerPoint in computer supported collaborative assessment: the influence of student approaches to learning

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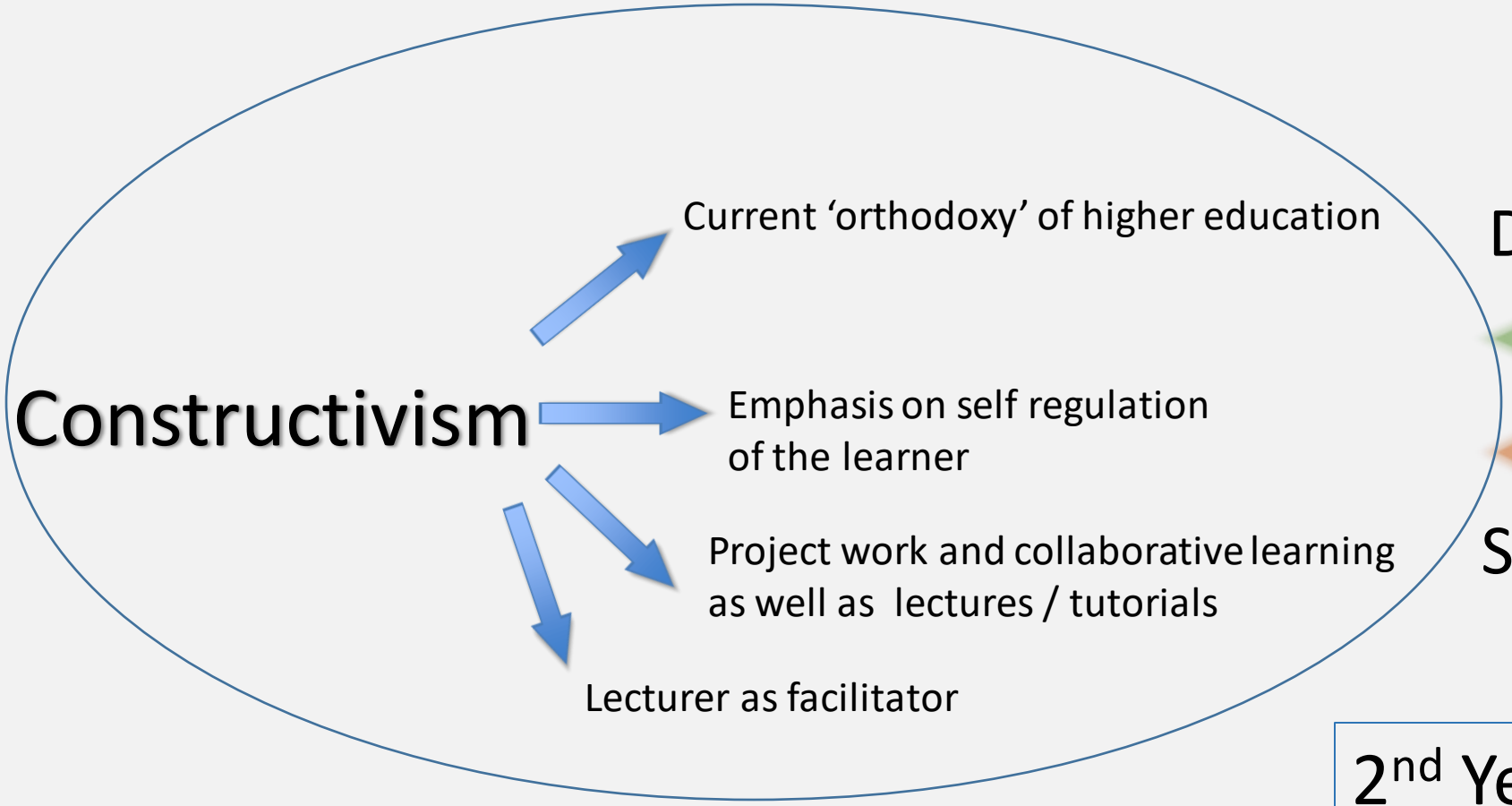
Constructivism in education / Student Approach to Learning (SAL)



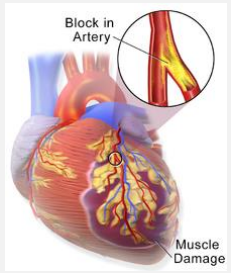
Deep Learning tendency

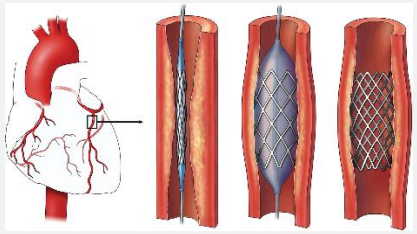
Surface Learning tendency

2nd Year
BSc Diagnostic Radiography students

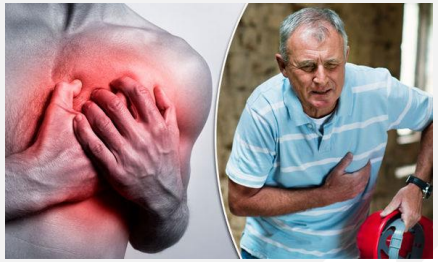
Knowles, 1975; Marton and Sãljo, 1976; Biggs, 2003; Thomas, 2008. Johnston, 2010. Entwistle, 2009.

The established formative assessment – MS PowerPoint group presentation

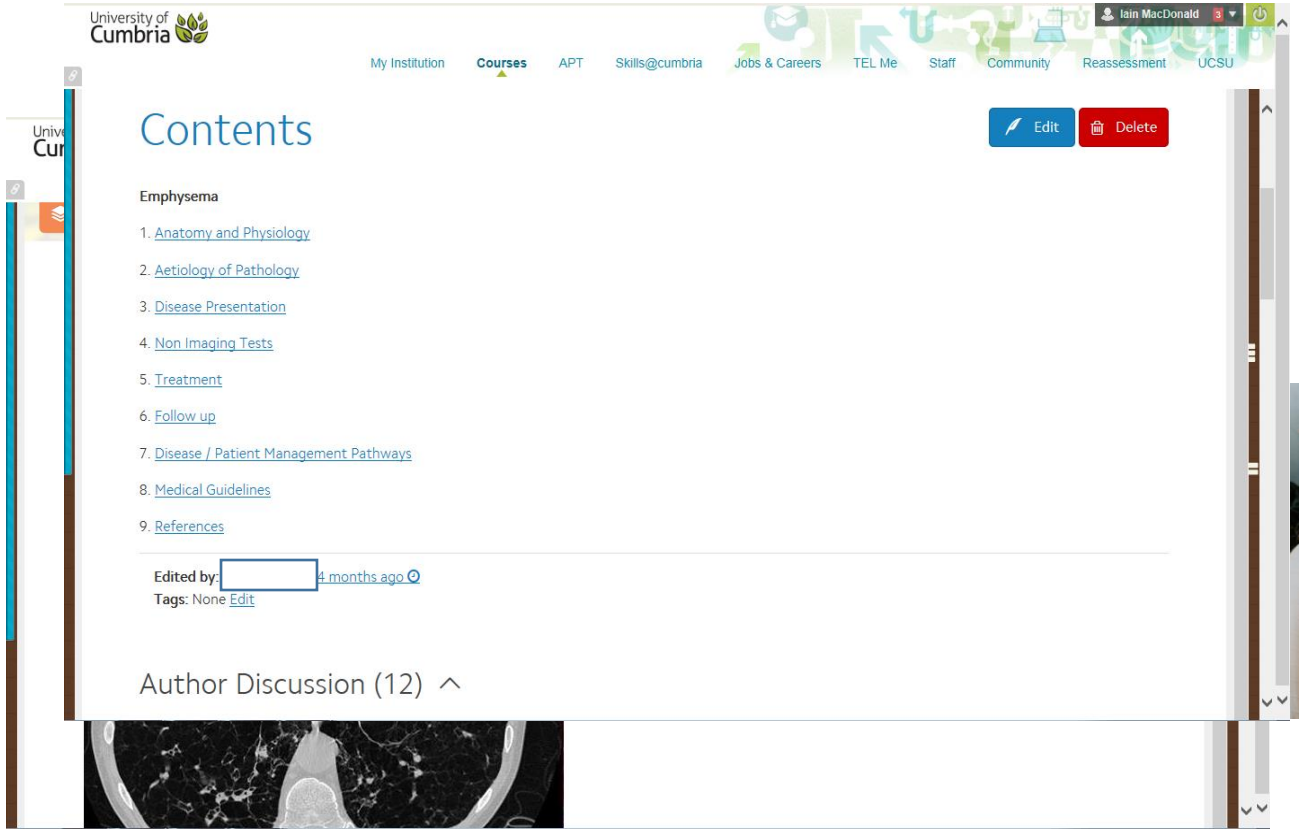




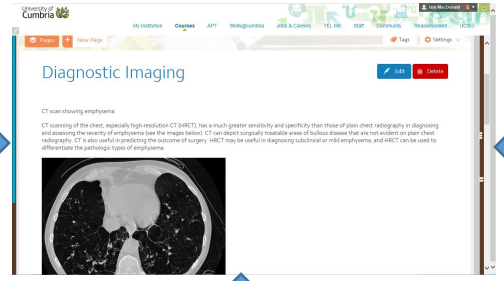
Heart disease



The wiki - Computer Supported Collaborative Learning (CSCL) – the novel approach



Dumfries



Sunderland

Carlisle

Wiki - A ‘web communication and collaboration tool that can be used to engage students with others in a collaborative environment’
(Parker and Chao, 2006)

Methods - Questionnaire

- Action research approach – 2 cycles
- Online anonymous questionnaire – learning approach (based on Entwistle's ASSIST – Approaches and study skills inventory for students, 1998)
    - Preconceptions of wiki and MS PowerPoint
    - Actual experience of carrying out wiki and MS PowerPoint
    - General views on collaborative learning
    - 'Open' text to encourage their own experience to emerge
- Selected upper quartile of surface learning tendency students (cycle 1 *n*= 8; cycle 2 *n*=5) and deep learning tendency students (cycle 1 *n*=8; cycle 2 *n*=5)

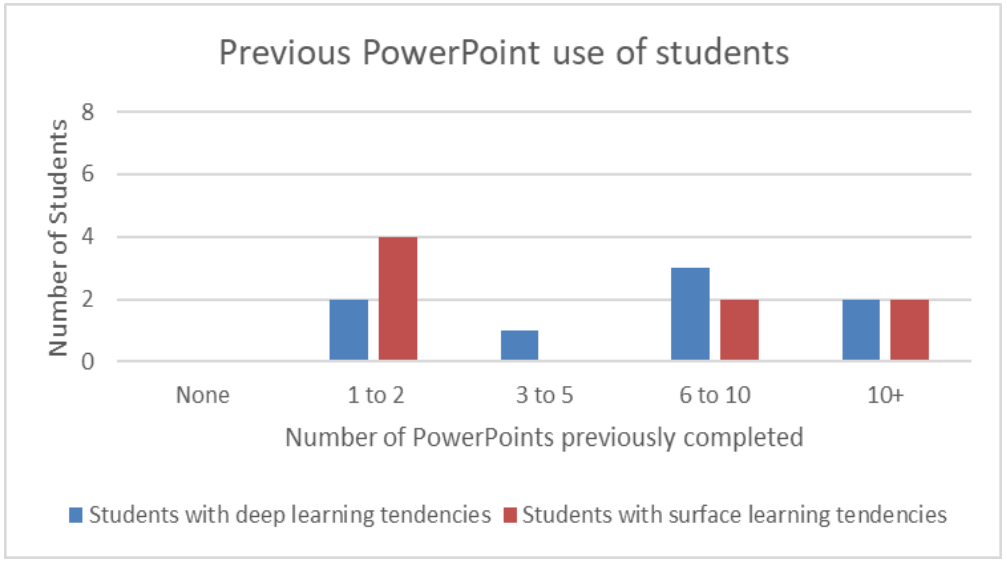
Methods – Analysis

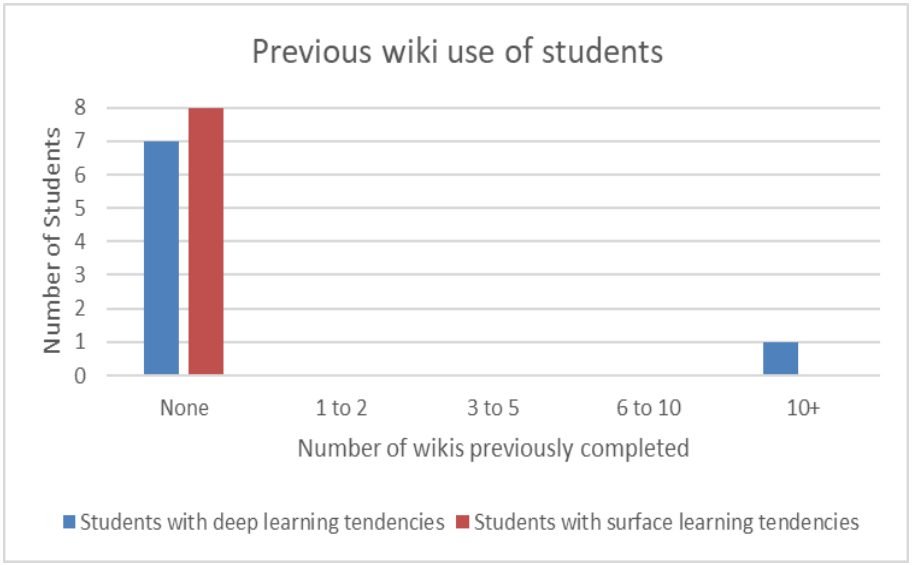
- Text analysis – coded responses
- Cycle 1 – 3193 words / 798 quotations from the 16 participants.
- Atlas.ti software used – excellent

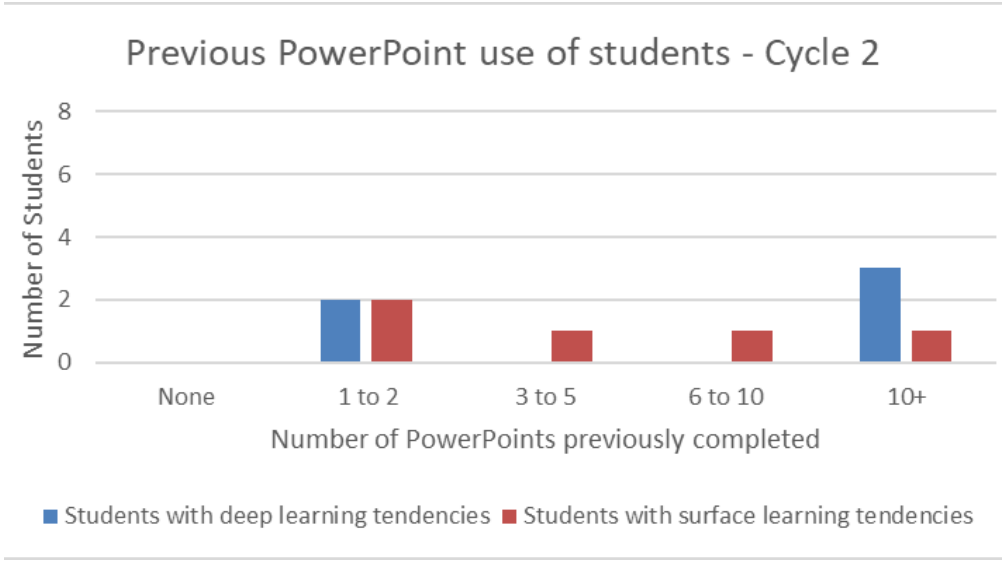
Themes:

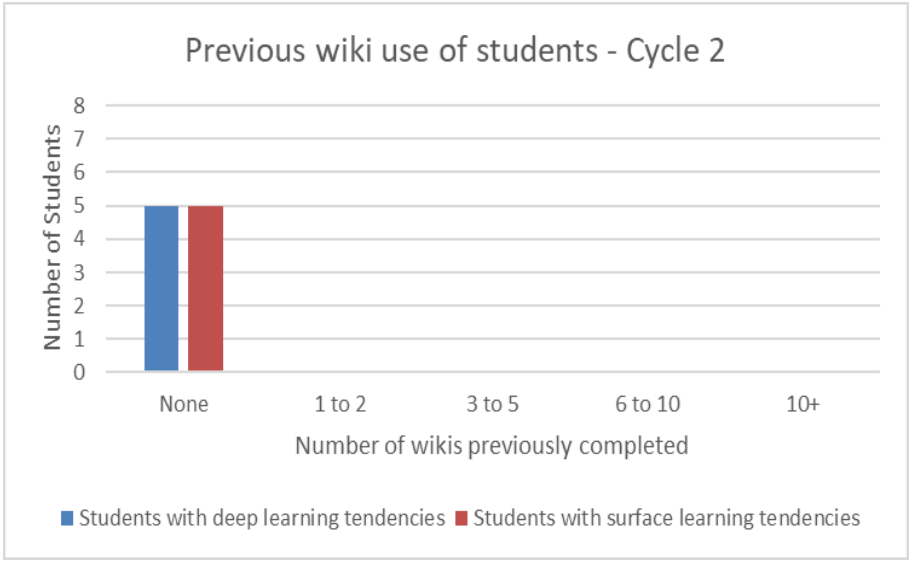
1. Confidence levels (7 codes)
2. Division of the workload (8 codes)
3. Wiki production process (9 codes)
4. Team working/group dynamics (20 codes)
5. Learning specifically in groups (13 codes)
6. Formative assessment affordances (4 codes)
7. Specific affordances of wikis (18 codes)
8. Specific affordances of presentations (16 codes)

Results





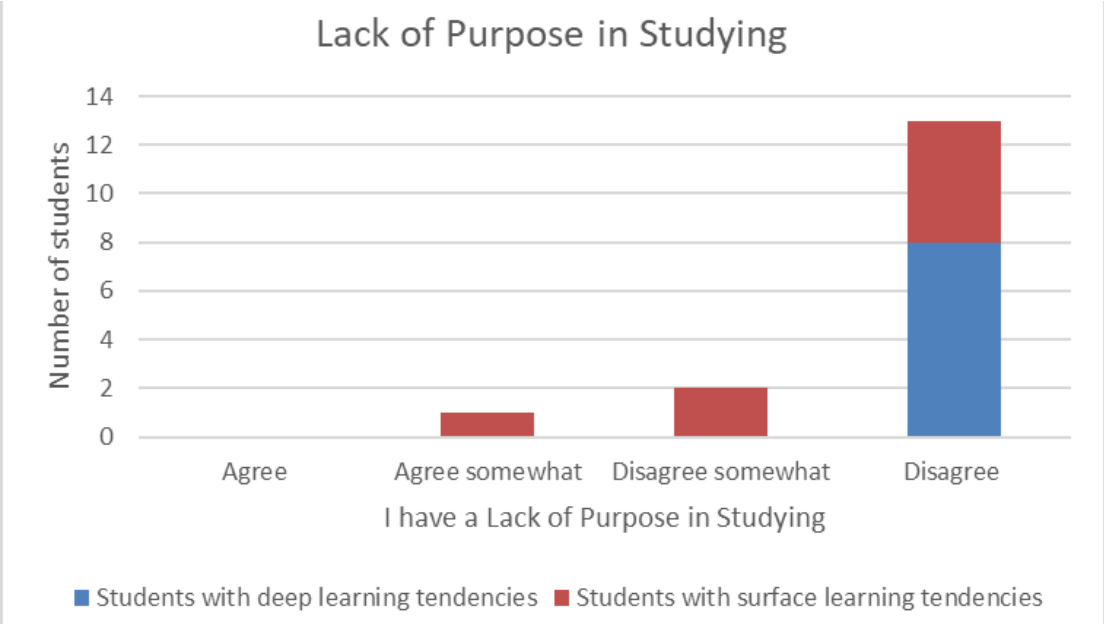




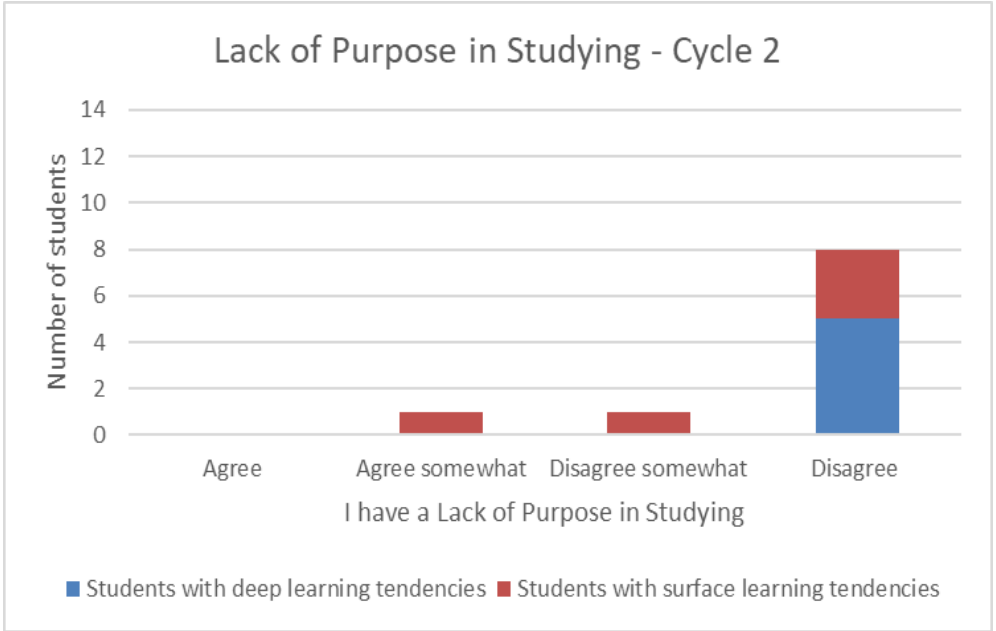
MS PowerPoint

Wiki

Results - ‘I shouldn’t have done this course’



Cycle 1



Cycle 2

Cycle 1 Results

- **MS PowerPoint** - gave much greater perceived greater level of socially constructed knowledge
- **MS PowerPoint** seen as challenging – due to public performance – but worthwhile skills learned
- **Wiki** - a significant challenge to students – unstructured, not used before
- **Wiki software** - Surface learning tendency students found challenging
- **Wiki** - Surface learning tendency found them less valuable than the MS PowerPoint presentations – 'poor use of time'

Main changes for Cycle 2

Wiki:

- Structured template – the same areas considered as the final summative assessment
- Choice of pathology
- Feedback more structured – based on published criteria
- Longer and more in-depth practical session

MS PowerPoint:

- Dedicated session on presentation skills

More generally:

- Emphasis on value of collaborative learning
- Encouragement of communication options e.g. WhatsApp / Messenger (experience from cycle 1)

Cycle 2 Key Results

- Wiki more equivalent to MS PowerPoint in terms of socially constructed learning (deep and surface learning tendency students)
- *No* reports that wiki was poor use of time (more than half surface learning tendency students reported this in cycle 1)
- Fewer reports of software problems by surface learning tendency students (*n*=3 cycle 1; *n*=1 cycle 2)
- All surface learning tendency students satisfied with amount of collaborative activities (*n*=5/5) in the course.

Cycle 2 Results - continued

- **Consistent finding:** Only deep learning tendency students discussed the affordance of online learning (cycle 1 n=4/8; cycle 2 n=2/5)
- **Consistent finding**: No discussion about producing MS PowerPoints
- **Consistent finding:** Anxiety - Surface learning tendency students reported greater levels of anxiety with MS PowerPoint presentations
- **Consistent findings:**

  Written Feedback (wiki) welcomed by those with deep learning tendency particularly

  Verbal feedback (presentations) compromised by stressful environment

Discussion

- Student approach to learning can influence design of computer supported collaborative learning
- Surface learner attitude toward wiki was a concern – but appeared to be able to be *modified* by use of extended practical online sessions
- Students appeared to welcome group work activities
- Relatively small sample size – but could be scaled up
- Should we more frequently use student approach to learning (SAL) to configure groups?

Summary

- The wiki nicely supplements other forms of formative assessment. Increases variety of assessment & improves inclusiveness of assessment
- An extended practice run in a computer lab with the group is highly recommended – particularly for surface learners
- Should be more understanding of the optimal methods of introducing novel technology enhanced assessment for all learning approaches – developing research in this area

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