



Assessment and feedback for learning: Beyond closed book exams



@CarlessDavid

University of Hong Kong,

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Imperial College London



Overview

1. Assessment functions
2. Examinations, learning & alternatives
3. Feedback possibilities
4. Implications



Assessment for relationships

Building trust

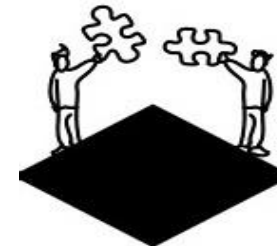


Clarifying expectations

Exemplars

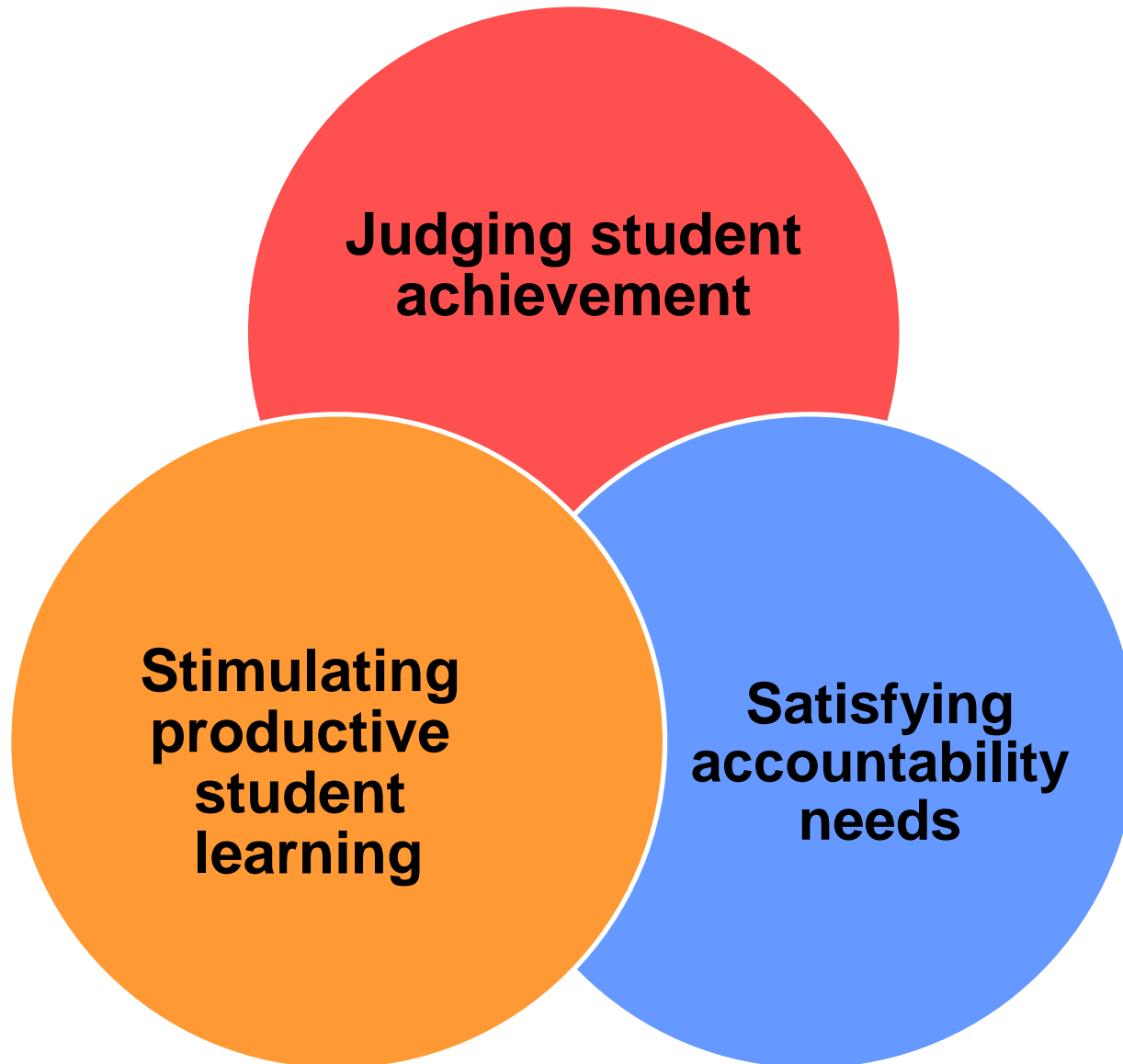
Sharing responsibilities

CO-DESIGN





Competing assessment functions





Disciplinary factors

Signature pedagogies

Signature assessment
designs

... Signature feedback
practices (Carless et al., 2020)



Lee Shulman



WAYS FORWARD FOR EXAMINATIONS



Beyond closed book exams

Are conventional exams still fit for purpose?



“I don’t want to memorize for an exam: I’ve spent 15 years doing that in school”.

(Business student, Carless, 2015, p. 125)



Open & closed book exams

Exams focused on application more than recall

Semi-open: e.g. 1 page “cheat sheet”

Student unfamiliarity with open book exams



Comparing Open-Book and Closed-Book Examinations: A Systematic Review

Steven J. Durning, MD, PhD, Ting Dong, PhD, Temple Ratcliffe, MD, Lambert Schuwirth, MD, PhD, Anthony R. Artino, Jr, PhD, John R. Boulet, PhD, and Kevin Eva, PhD

Abstract

Purpose

To compare the relative utility of open-book examinations (OBEs) and closed-book examinations (CBEs) given the rapid expansion and accessibility of knowledge.

Method

A systematic review of peer-reviewed articles retrieved from MEDLINE, ERIC, Embase, and PsycINFO (through June 2013). In 2013–2014, articles that met inclusion criteria were reviewed by at least two investigators and coded for six outcome categories: (1) examination preparation, (2) test anxiety, (3) exam performance, (4) psychometrics and

logistics, (5) testing effects, and (6) public perception.

Results

From 4,192 identified studies, 37 were included. The level of learner and subject studied varied. The frequency of each outcome category was as follows: (1) exam preparation ($n = 20$; 54%); (2) test anxiety ($n = 14$; 38%); (3) exam performance ($n = 30$; 81%); (4) psychometrics and logistics ($n = 5$; 14%); (5) testing effects ($n = 24$; 65%); and (6) public perception ($n = 5$; 14%). Preexamination outcome findings were equivocal, but students may prepare more extensively for CBEs. For during-examination outcomes, examinees

appear to take longer to complete OBEs. Studies addressing examination performance favored CBE, particularly when preparation for CBE was greater than for OBE. Postexamination outcomes suggest little difference in testing effects or public perception.

Conclusions

Given the data available, there does not appear to be sufficient evidence for exclusively using CBE or OBE. As such, a combined approach could become a more significant part of testing protocols as licensing bodies seek ways to assess competencies other than the maintenance of medical knowledge.



Balanced exam diet

- Closed book – learning fundamentals
- Semi open-book
- Open book
- Take home but without collusion



Tackling cheating concerns



LaToya Washington, M.Ed

@L_D_Washington



If you're worried that students will Google and cheat on assessments, then create a better assessment.

12:29 AM · Jan 13, 2021 · Twitter for Android

815 Retweets **157** Quote Tweets **7,106** Likes





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TWO-STAGE EXAMS



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Main proponent

Nobel-prize winning
Physicist,
UBC, Canada



Carl Wieman



Procedures

Stage 1. Students complete the exam individually (80-90% weighting)

Stage 2. Students re-do (part of) the exam in groups submitting one answer sheet (10-20% weighting)



Applications

M/C, calculations, short answers

Main disciplines:
Hard sciences, Medicine,
Engineering, Economics

Please write your full name in CAPITAL letters on the line below:

Please write your Candidate number on the line below:

Please write your three digit language code in the boxes and shade the numbers in the grid on the right.

Are you: Female? Male?

Reading Reading Reading Reading Reading Reading

Module taken (shade one box): Academic General Training

| Question No. | Mark | Answer | Mark |
|--------------|------|--------|------|
| 1 | 21 | | |
| 2 | 22 | | |
| 3 | 23 | | |
| 4 | 24 | | |
| 5 | 25 | | |
| 6 | 26 | | |
| 7 | 27 | | |
| 8 | 28 | | |
| 9 | 29 | | |
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| 15 | 35 | | |
| 16 | 36 | | |
| 17 | 37 | | |
| 18 | 38 | | |
| 19 | 39 | | |
| 20 | 40 | | |

Marker 2 Initials: Marker 1 Initials: Band Score: Reading Total:



Outcomes

- Positive student response
- Improved achievement when working collaboratively

(Levy, Svoronos & Klinger, 2018)

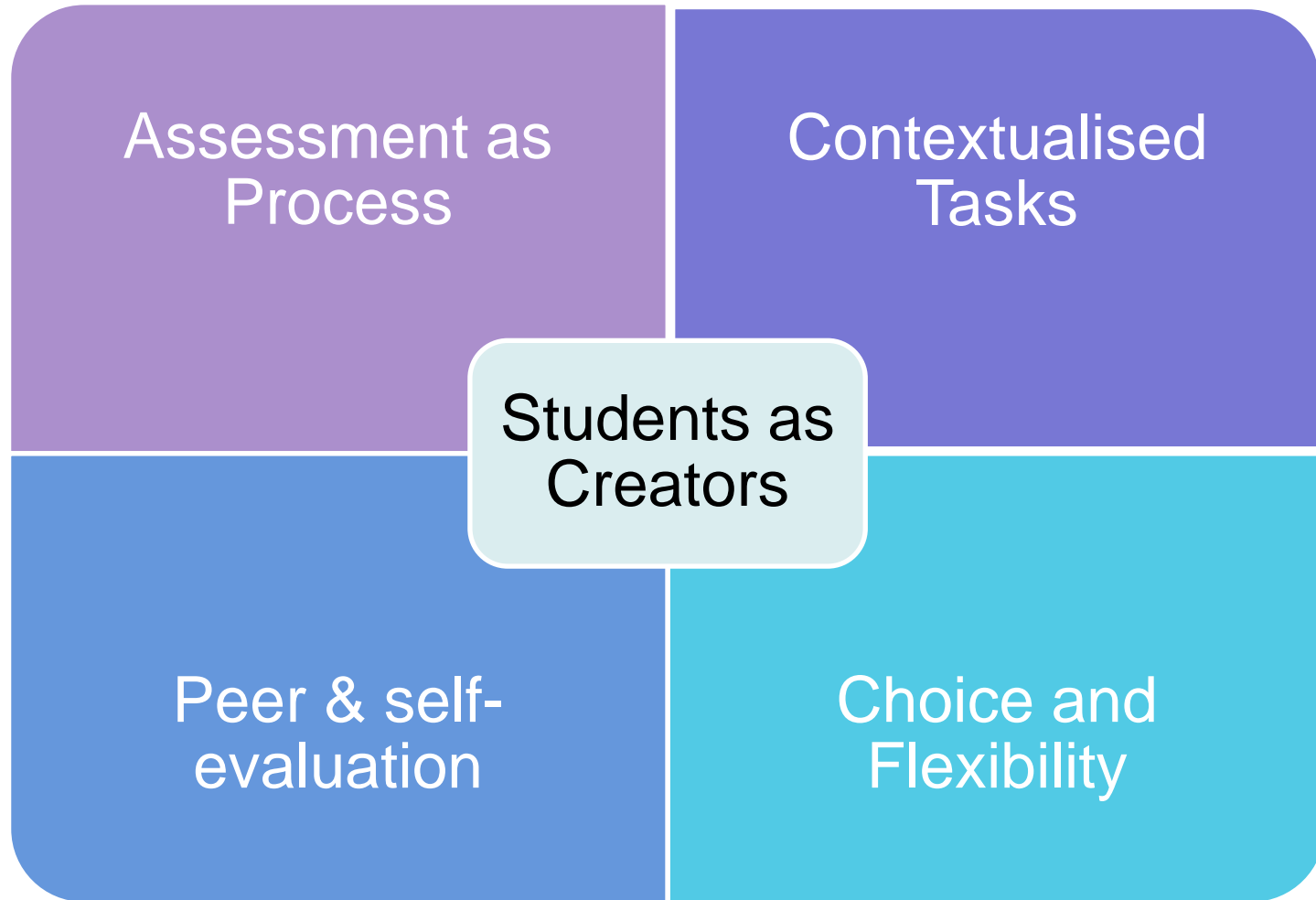
BUT



ALTERNATIVE ASSESSMENT DESIGNS



Authentic Assessment



Adapted from Eddy & Lawrence (2013)



Oral assessment

Oral assessment as alternative to exams

Students generally well-prepared

Teachers can adjust to students' levels

Differentiates students' capacities

Some practical challenges



Alternative Assessment to Lab Reports: A Phenomenology Study of Undergraduate Biochemistry Students' Perceptions of Interview Assessment

Nikita L. Burrows,* Jonathan Ouellet, Jaimy Joji, and Jillian Man



Cite This: *J. Chem. Educ.* 2021, 98, 1518–1528



Read Online

ACCESS |



Metrics & More



Article Recommendations



Supporting Information

ABSTRACT: Research has begun to explore the undergraduate laboratory in many facets, such as students' feelings, goals, and instructional approaches to the laboratory. However, research has not explored the experiences of students with summative assessment in the laboratory. This qualitative study investigates the experiences of upper-level undergraduate students' exposure to lab interviews as an oral summative assessment. A phenomenological approach guided the analysis and interpretation of data gathered from 16 semistructured student interviews. The exploration of the data resulted in the development of an outcome space with three fundamental features and students' core perceptions about lab interviews. This outcome space explores students' feelings, performances, and perceived conceptual understandings before, during, and after the interview process. Implications and suggestions for the design and improvement of assessment practices are discussed.

KEYWORDS: *Upper-Division Undergraduate, Chemical Education Research, Biochemistry, Testing/Assessment*

FEATURE: Chemical Education Research





Oral assessment example

Biochemistry lab reports

F2F interaction promotes higher-order thinking

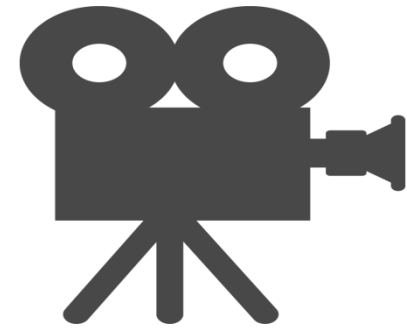
Increased student accountability

(Burrows et al., 2021)



Assessed video presentations

Students record a 5 minute oral presentation and upload for assessment



E.g. Talk about a course topic that has most personal meaning for you & explain why



Using assessed blogs to enhance student engagement

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ABSTRACT

In this paper, we investigate the powerful role of blogging to promote student engagement. We use the experience of students on four courses at one university, which all included blogging in their assessment portfolio. The paper draws on focus groups undertaken with the students participating in the courses to provide a detailed examination of how and why blogging fosters engagement. We show how a focus on assessment practices, including blogging, is an important addition to the literature on student engagement. In the empirical section, we present detailed findings from the student interviews, including discussion of how blogging enables students to develop their own voices as part of the writing process. The evidence suggests that a broader understanding of student engagement depends not only on the complex interaction between students and assessment practices, but on understanding the role of students' investment in the learning process.

ARTICLE HISTORY

Received 12 October 2018

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KEYWORDS

Assessment; blogging;
student engagement;
student learning



Blogs as assessment

- Process
- Reflections
- Students as communicators more than receivers of knowledge

(Christie & Morris, 2019)



Vlogs as assessment

Short personal responses

Peer feedback

Summative written and/or oral reflection





Assessment design principles

- Iterative sequences of worthwhile tasks
- E.g. 2-3 tasks for a 10/20 week course
- Or cumulative task: eportfolio, blog, vlog



Pause for comments

- Possibilities
- Challenges
- Sharing
- Queries



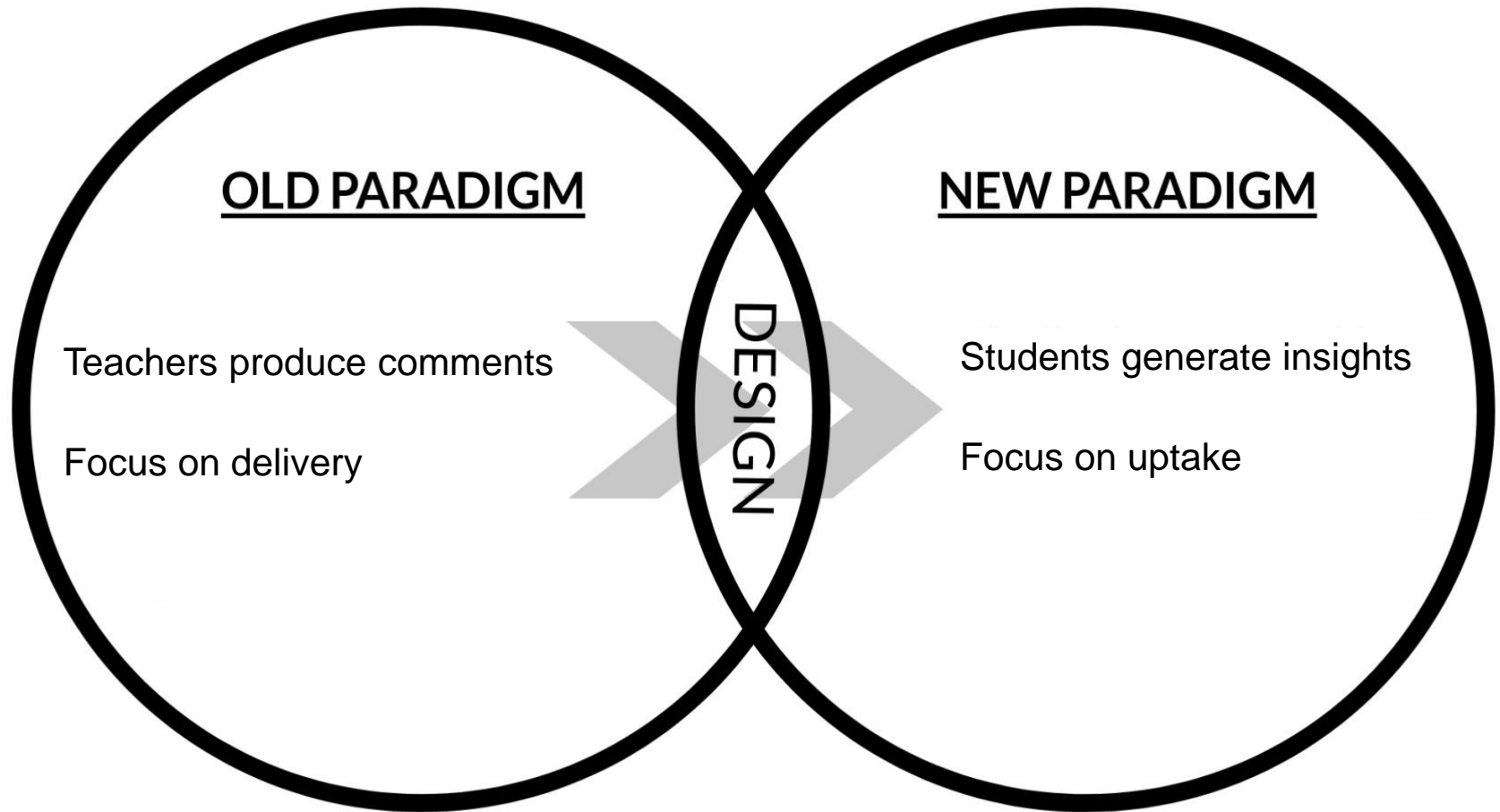


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FEEDBACK DESIGNS



Comments → uptake



(Winstone & Carless, 2019)



Feedback design

Assessment task 1



Assessment task 2



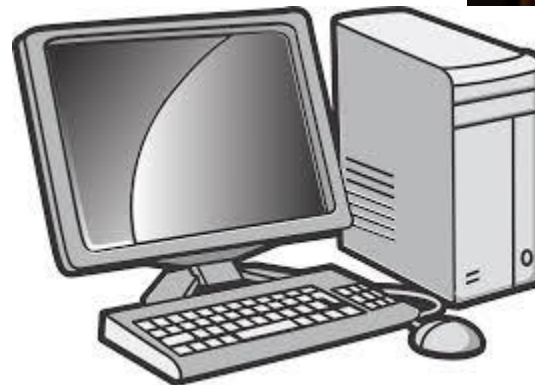
Assessment task 3

Uptake



Teacher role

Design learning environments for students to generate feedback





Audio peer feedback to promote deep learning in online education

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Abstract

We investigated the relation between providing and receiving audio peer feedback with a deep approach to learning within online education. Online students were asked to complete peer feedback assignments. Data through a questionnaire with 108 respondents and 14 interviews were used to measure to what extent deep learning was perceived and why. Results support the view that both providing and receiving audio peer feedback indeed promote deep learning. As a consequence of the peer feedback method, the following student mechanisms were triggered: "feeling personally committed," "probing back and forth," and "understanding one's own learning process." Particularly important for both providing and receiving feedback is feeling personally committed. Results also show that mechanisms were a stronger predictor for deep learning when providing than when receiving. Given the context in which instructors face an increasing number of students and a high workload, students may be supported by online audio peer feedback as a method to choose a deep approach to learning.

KEYWORDS

audio, deep approaches to learning, online learning, peer feedback, teaching/learning strategies



Audio peer feedback

Feeling personally committed

Understanding own learning processes

Comparing own work with that of peers

(Filius et al., 2019)



Learning by comparison

Peer feedback outcome: learners compare own work with that of others & then revise (Nicol, 2020; van Poopstra et al., 2017)





Enhanced implementation of PF

- Scaffolding & coaching
- Selling benefits
- Modelling

- Multiple reviews e.g. trios
- Leveraging comparisons
- Opportunities for dialogue then revision



Summary





Assessment design principles

1. Assessment integrated with instruction & ILOs
2. Encourage deep approaches to learning
3. Spread student effort
4. Mirror real-life uses of the discipline
5. Design for feedback interaction



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QUESTIONS
&
COMMENTS



Chemistry Education Research and Practice

ARTICLE

Developing laboratory skills by incorporating peer-review and digital badges

Michael K. Seery,* Hendra Y. Agustian, Euan D. Doidge, Maciej M. Kucharski, Helen M. O'Connor and Amy Price.

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www.rsc.org/

Laboratory work is at the core of any chemistry curriculum but literature on the assessment of laboratory skills is scant. In this study we report the use of a peer-observation protocol underpinned by exemplar videos. Students are required to watch exemplar videos for three techniques (titrations, distillations, preparation of standard solutions) in advance of their practical session, and demonstrate the technique to their peer, while being reviewed. For two of the techniques (titrations and distillations), the demonstration was videoed on a mobile phone, which provide evidence that the student has successfully completed the technique. In order to develop digital literacy skills, students are required to upload their videos to a video sharing site for instructor review. The activity facilitated the issuing of digital badges to students who had successfully demonstrated competency. Students' rating of their knowledge, experience, and confidence of a range of aspects associated with each technique significantly increased as a result of the activity. This work, along with student responses to questions, video access, and observations from implementation are reported in order to demonstrate a novel and useful way to incorporate peer-assessment of laboratory skills into a laboratory programme, as well as the use of digital badges as a means of incorporating and documenting transferable skills on the basis of student generated evidence.



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Two-stage exams in action

2 minute video on two-stage exams

<https://www.youtube.com/watch?v=ZVFwQzIVFy0>



Connected program-based assessment

Judicious balance of continuity & variety of assessment tasks

Enabling familiarity with expectations

Latent learning from previous feedback



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