Designing Learner-Centered Assessments

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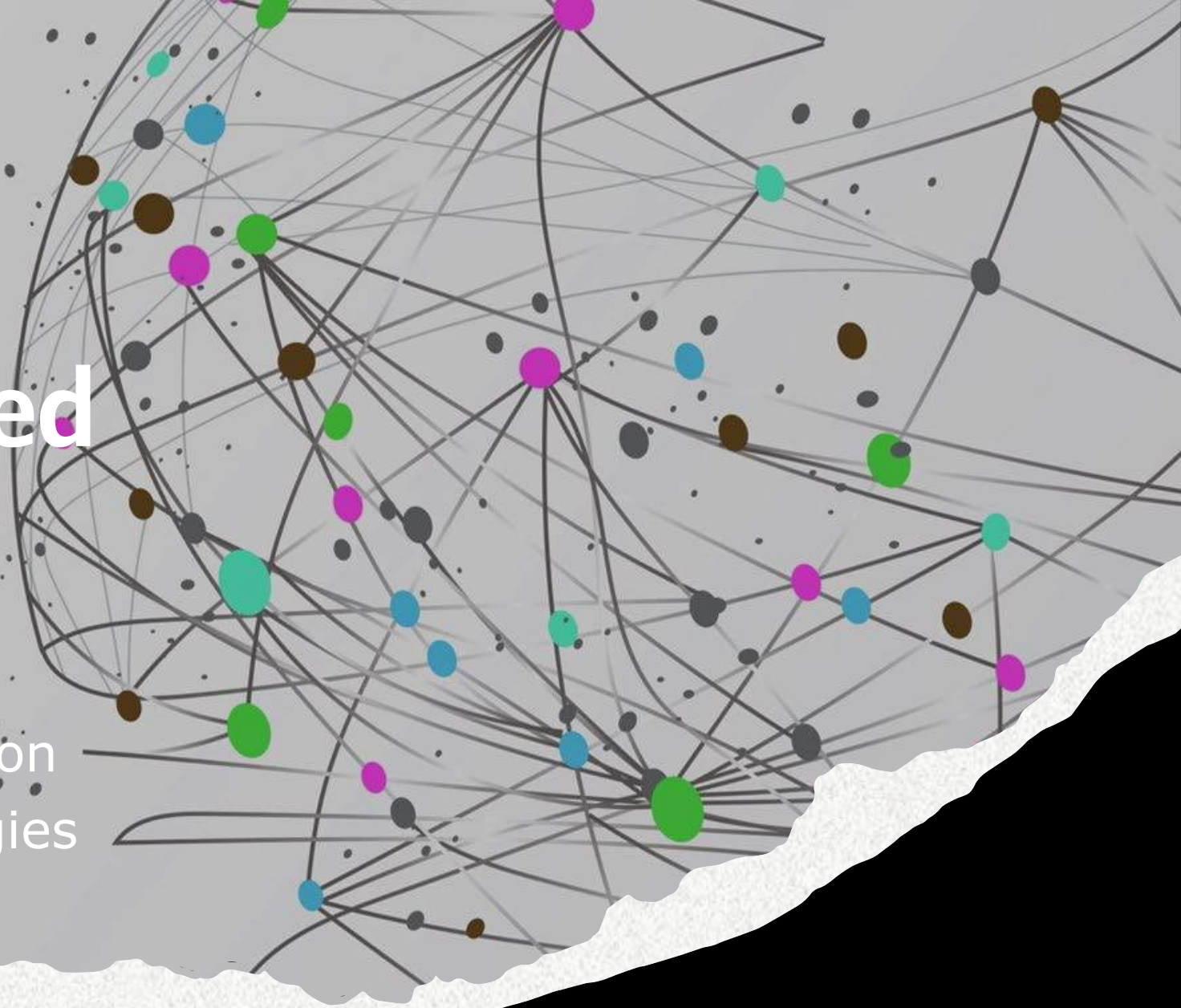
ED5023 Assessment Strategies



Introduction

Learner-centered assessment can include both self- and peer assessment (Bayat & Naicker, 2012)

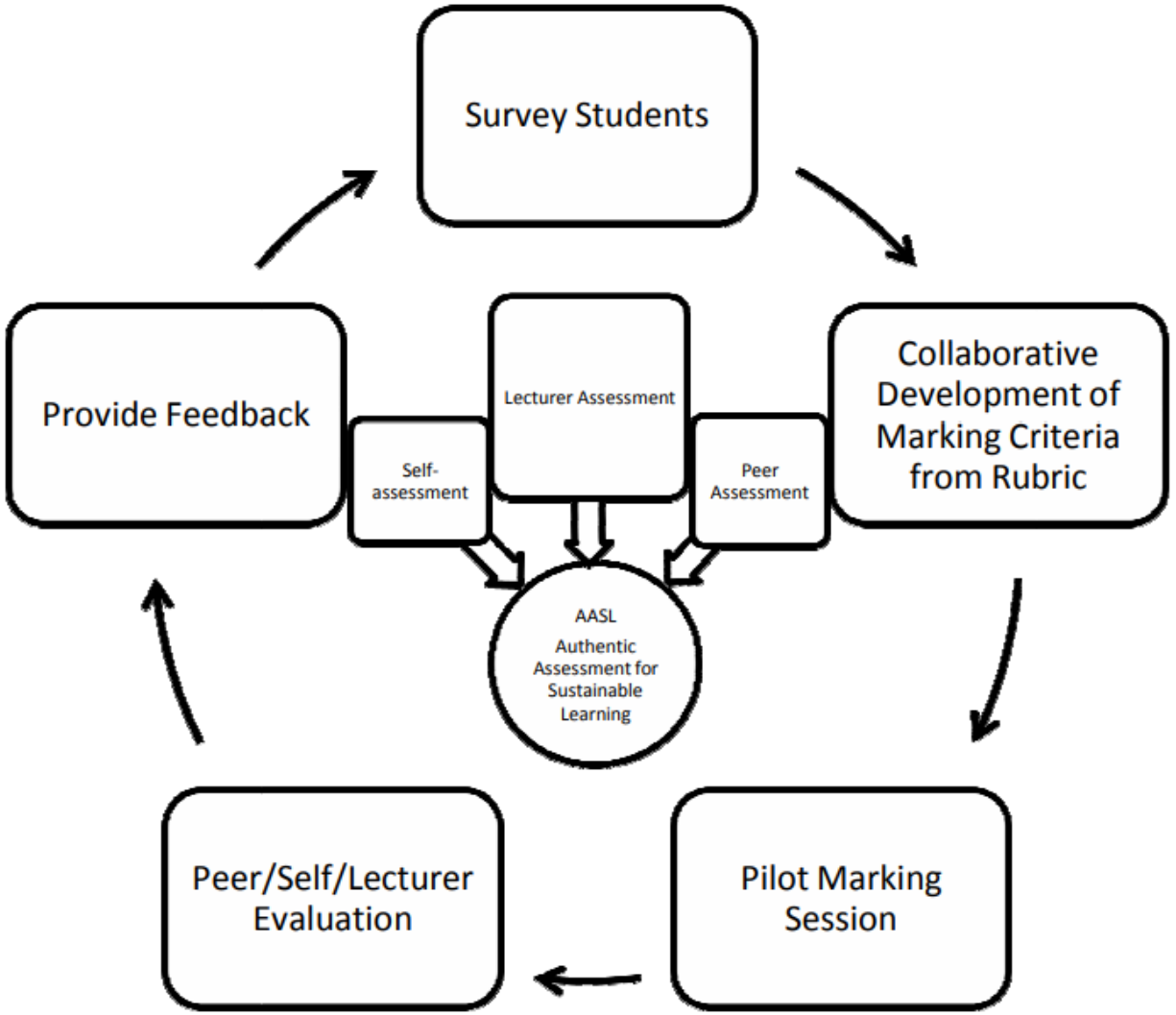
Self- and peer assessment has been used successfully as a “transition pedagogy” (Kearney, 2019. p. 4) for first-year university students

The Plan-Do-Study-Act (PDSA) Cycle (Vermont Agency of Education, 2019) will be used to test whether similar peer assessment can be used as a transition pedagogy for students in their first semester of the International Baccalaureate Diploma Programme (IBDP) Physics course

The Authentic Self and Peer Assessment for Learning (ASPAL) Model

Figure 1

The ASPAL Model



Note. Adapted from Kearney and Perkins (2014).

Assessment Objective

- To improve student understanding and application of the IBDP Physics internal assessment (scientific investigation report) conclusion and evaluation criteria

Success Criteria

- Based on principles of successful transition pedagogy from Kearney (2019)
- A successful learner-centered peer assessment should:
  - Help students adapt to IBDP Science assessment criteria
  - Foster autonomous and independent learning
  - Increase student engagement in the assessment process
  - Help alleviate some of the stress of IBDP assessment
  - Facilitate equal participation and engagement of all students

Pilot Group

- Group of 8 students in first semester of DP Physics
- Ages 16-17
- Mixture of nationalities

Predictions

Increased engagement with the draft feedback process

Increased use of criteria-specific vocabulary during draft feedback process interactions

Improved scores in conclusion and evaluation criteria

Implementation

- Generate and analyze experimental data (students)
- Develop collaborative criteria interpretation document
- Write and submit conclusion and evaluation (students)
- Set up anonymous, randomized peer feedback and assessment activity
- Analyze peer feedback, student reflections and grades

Data Collection Plan

Baseline data – grades and reflections of previous cohort

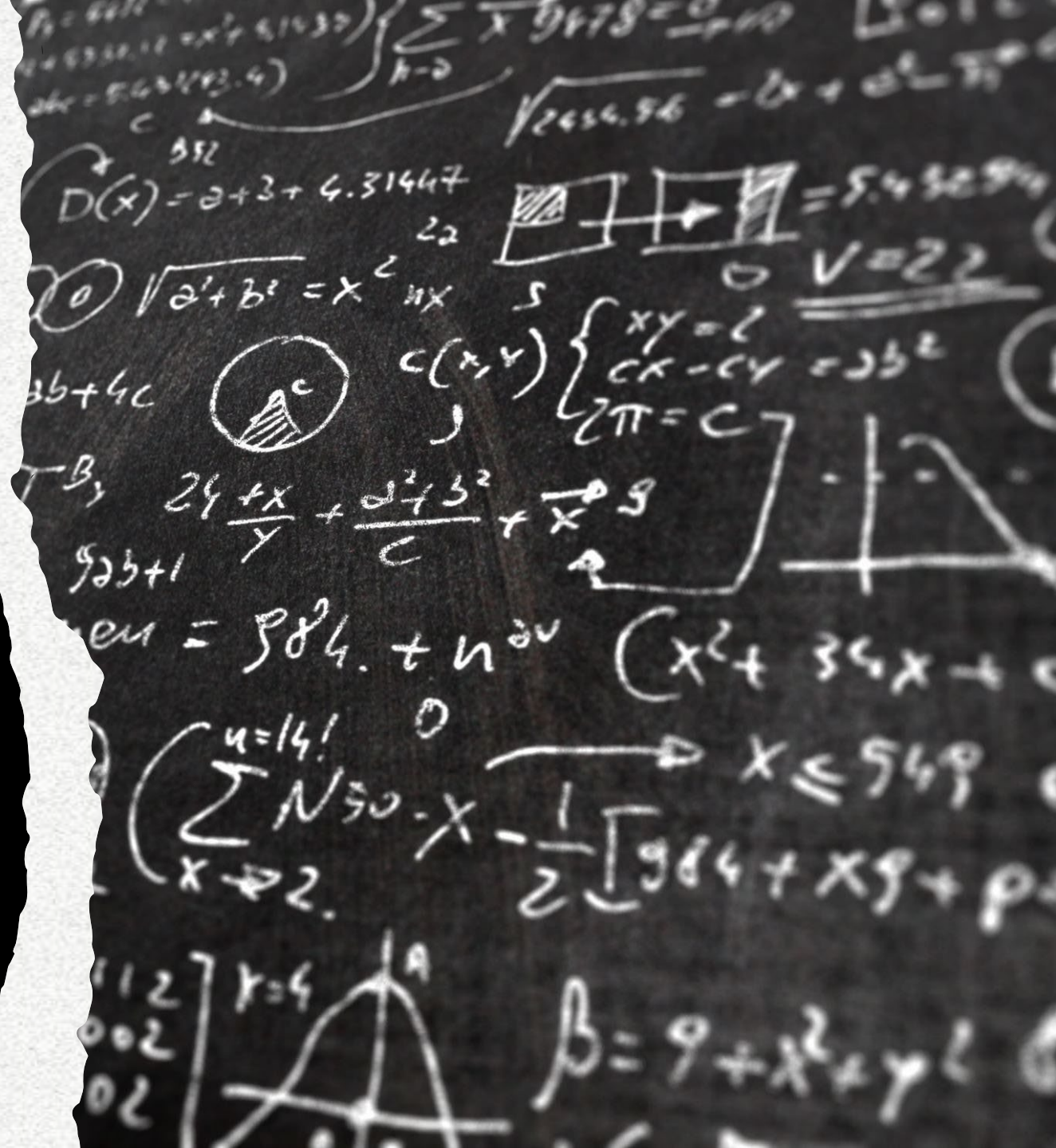
Need both process measures and outcome measures (Vermont Agency of Education, 2019)

Process measures - peer feedback activity completion rates and word counts

Outcome measures – conclusion and evaluation criteria grades, student reflections, final investigation grades

Development Process (rationale for the approach and format used)

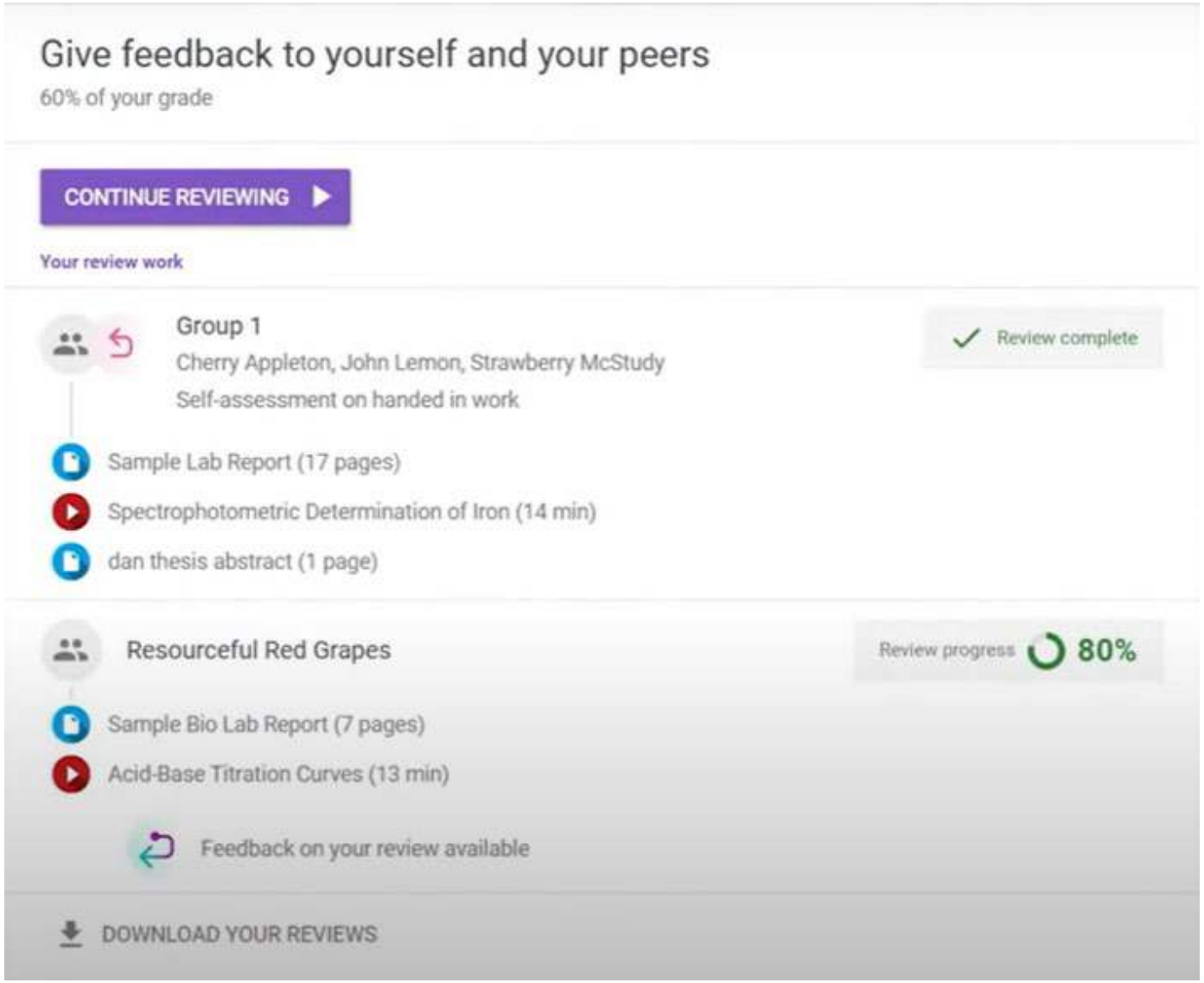
- Combination of the online and interactive peer-marked tutorials of Bayat and Naicker (2012) with elements of Kearney and Perkins' (2014) ASPAL model
- Previous experiments with Peergrade.io (currently being migrated to FeedbackFruits.com) has been conducted, but without applying the PDSA Cycle



The Assessment

Figure 2

Screenshot from the peer feedback and assessment activity



Note. Adapted from FeedbackFruits (2023).

Data Analysis

Compare baseline data with outcome measures

Code student reflections and feedback comments into themes relevant to success criteria

Analyze process measures for equality of engagement

Analyze longitudinal data to verify predictions

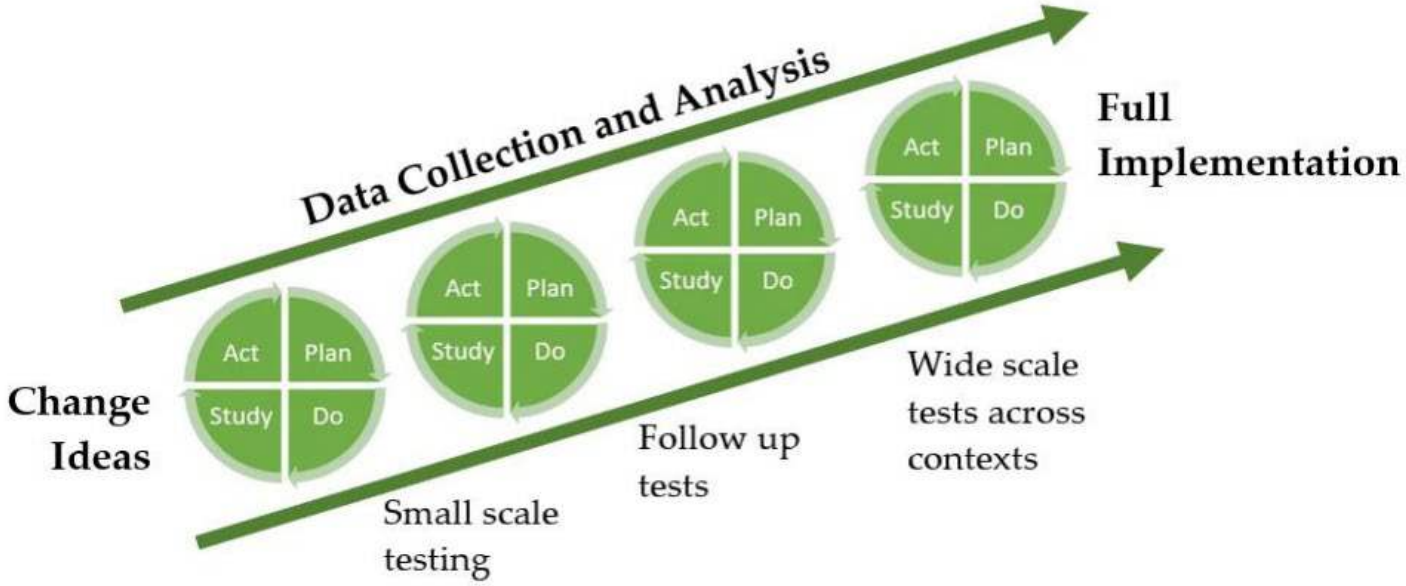
Interventions and Revisions

- If students are not interacting meaningfully with the online peer assessment and feedback activity, more detail may be required in the criteria rubrics, or more scaffolding for how to give feedback may be needed
- If success criteria and/or predictions are only partially fulfilled the activity can be modified for the next cycle by adding a more “fine-grained” rubric or feedback sentence starters

Multiple Cycles

Figure 3

Improvement Science Approach to Implementation



Note. Adapted from Vermont Agency of Education (2019).

Conclusion

Facilitating student participation in the assessment process can result in improved educational outcomes

Digital tools now exist that can automate and anonymize this process, thus removing barriers to implementation

The Plan-Do-Study-Act Cycle can be used to evaluate whether improved outcomes actually result from the process, and to iteratively improve it if they don’t

References

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