Classroom assessment for emergent learning

Michael Holden, PhD | mi.holden@uwinnipeg.ca

Research Question

How do teachers provoke and support emergent learning through formative classroom assessment?

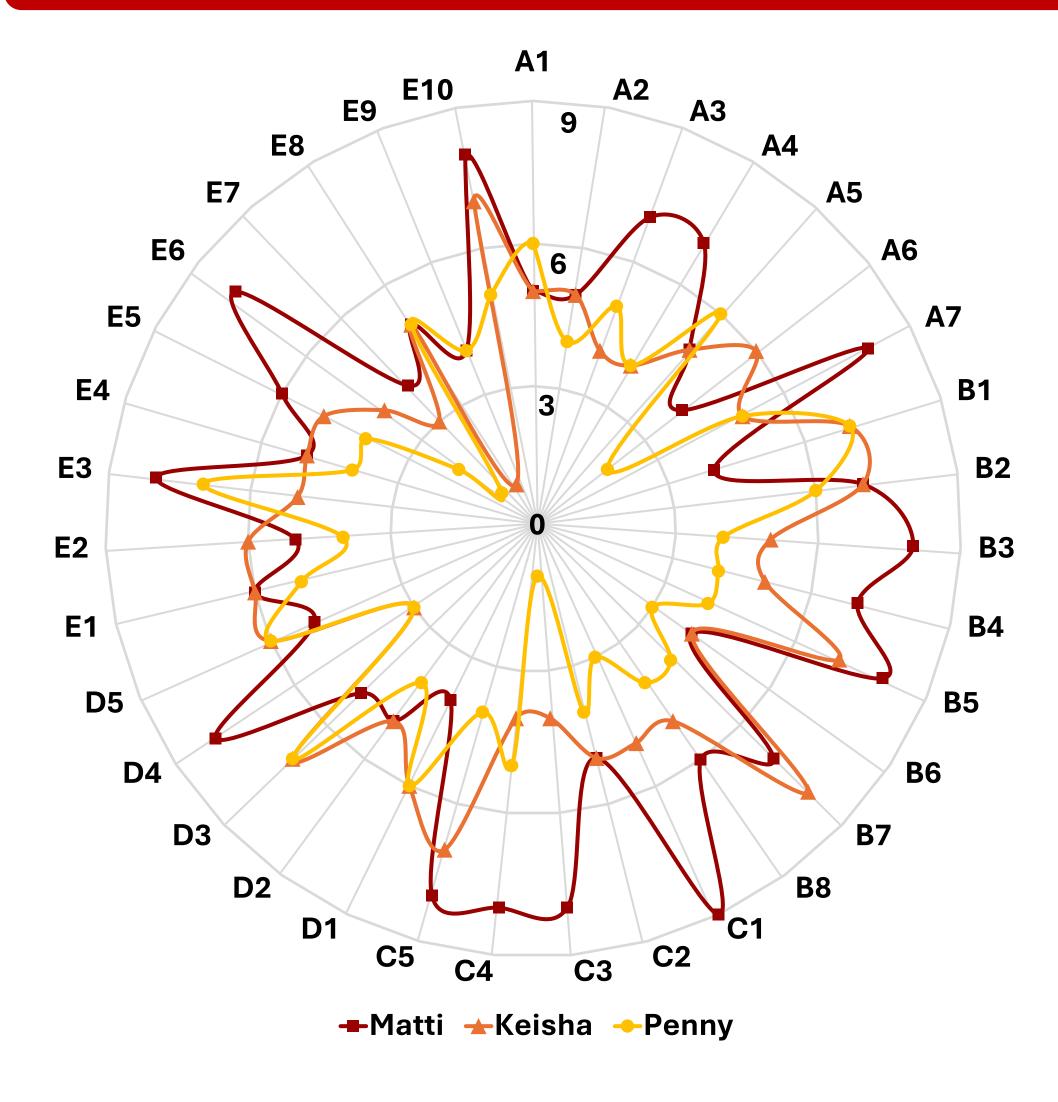
Perspective

- **Complexity thinking** attempts to understand and describe systems as their agents interact and change over time (Byrne, 2005)
- Complex adaptive systems are defined by their unpredictability, self-organization, levels, porous boundaries, feedback loops, and sensitivity to initial conditions (Cilliers, 2010; Fenwick et al., 2011; Ricca, 2012)
- **Emergence** refers to the iterative, continuous process of phenomena arising from agents' interactions in a system (Clayton, 2004)
- Emergent learning occurs when individual students or classroom collectives jump to new levels of understanding in unexpected ways (Bolden & DeLuca, 2016)
- **Classroom assessment** requires teachers to use assessment data to inform next steps in instruction and students to use assessment data to inform next steps in learning (Andrade, 2013; Bonner, 2013; Brookhart, 2003)
- **Teachers** must be able to adapt based on complex, confounding, locally situated variables (Cizek, 2009; Xu & Brown, 2016)
- **Students** must be actively involved in interpreting how learning should proceed to meet their individual needs (Stobart, 2008)
- Assessment processes enables teachers and students to understand how learning is occurring and how they can adapt in context (Shepard, 2019)

Methods

- Case study (Stake, 2006; 2010) examining how teachers use classroom assessment to provoke and support emergent learning
- Action research (Stringer, 2014) projects examining how teachers look, think, and act as their assessment efforts unfold in context
- System mappings (Williams et al., 2012) tracing various enabling conditions
- In vivo constant comparative analysis (Merriam, 2009; Thomas, 2006)
- K-12 teachers from Ontario, Alberta, and Saskatchewan
- interviews focused on their experiences 24 with assessment and complexity
- multi-week action research projects embedded in teachers' classrooms
- students in grade 8 humanities, **57** grade 8 coding, and grade 4/5 French

Results



- A1 Risk A2 Change
- A3 Ambiguity
- A4 Deciding Outcomes
- A5 Disruption
- A6 Stability
- A7 Pathway(s)
- B1 Diversity of People
- B2 Diversity of Resources
- B3 Experiences
- **B4** Adaptation
- **Learning Process**
- **B6** Interaction Across Spaces
- Trust
- **B8** Collaboration
- C1 Modality
- C2 Negotiating Outcomes
- C3 Organization

- C4 Autonomy
- C5 Roles
- Connectivity D1
- Generative D2
- **Casual Interactions D3**
- **Anticipated Interactions D4**
- D5 Relationships
- Purpose of Assessment E1
- E2 Gathering Evidence
- E3 Triangulation **E4**
- **Analyzing Evidence**
- Formative Assessment E5
- E6 Learning Goals
- Success Criteria E7
- E8 Student Self-Assessment
- Peer Feedback
- E10 Teacher Feedback

- Flexibility, adaptability, iteration: Design with uncertainty in mind, adjust as new data arises, engage in cycles of revision and change
- Mutual trust and student agency: Foreground multidirectional trust and substantive student agency in learning and assessment
- Valuing learning as a shared, ongoing **process:** Engage all stakeholders beyond assessment as an event, product, or solely student-focused activity
- **Equity in context:** Explicitly attend to teaching, learning, and assessment (in)equities to enable student success
- Joy and confidence: Emphasize joy and confidence in the learning process, especially as mutually supportive ideas
- Anchored pedagogies: Assert a strong, contextualized pedagogical stance with a clear perspective on the relationship between teaching, learning, and assessment

This dissertation draws on research supported by the Social Sciences and Humanities Research Council.