

# Classroom assessment for emergent learning

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## 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)
- 12

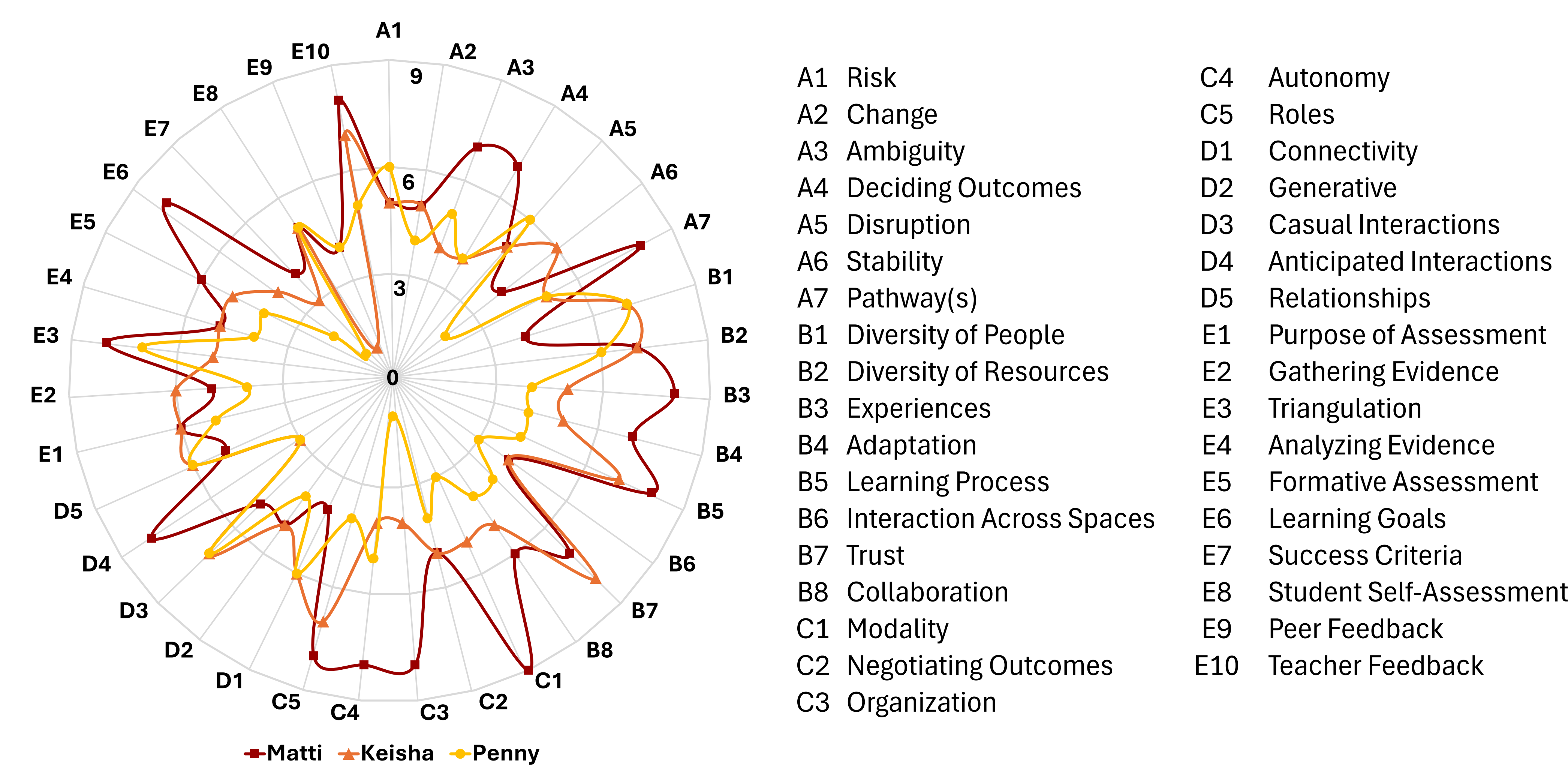
K-12 teachers from Ontario, Alberta, and Saskatchewan
- 24

interviews focused on their experiences with assessment and complexity
- 3

multi-week action research projects embedded in teachers' classrooms
- 57

students in grade 8 humanities, grade 8 coding, and grade 4/5 French

## Results



- 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