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Standards for medical practice

e.g., Conduct a chest examination:

- Observe respiratory efforts and note presence/ absence of respiratory distress
- Confirm midline tracheal position with gentle palpation anteriorally
- Percuss the chest on left and right
- Ascultate the chest using using the diaphragm of the stethoscope on both right and left sides

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Standards for flying a plane

e.g.,

- Conducting a preflight inspection
- Normal and cross-wind approach and landing
- Straight turns and climbing turns
- Effective visual scanning
- Runway incursion avoidance
- Crossed control stalls
- S-turns across a road

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X No equivalent in teaching

- Objectives for coursework and for student teaching and other clinical experiences lack similarly precise professionally-determined and agreed-upon learning objectives
- Performance expectations for graduates of teacher education underspecified and weakly assessed

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X We lack a reliable system to prepare professionals for practice

A curriculum off-center, emphasizing knowledge and beliefs rather than practice

Field experience often focused more on reflection than on development of actual skill and judgment

Assessments that do not appraise professional effectiveness

Inappropriate subject matter preparation

Inadequate preparation for diversity of U.S. classrooms

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X Would we do this in any other occupation or profession?

Put untrained people to work, and in settings where skillful performance is most needed

Allow standards of good practice to vary by income, race, or geography

Believe that skillful performance depends on being smart and having common sense

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X Four barriers to a serious system for professional training in teaching

1. The pervasiveness of the "smart person" orientation coupled with faith in experience
   - If experience were reliable, then most teaching veterans would be skillful (not so)
   - Example of 49 x 25
2. Preoccupation with "pathways" debates
3. A confounded view of "professionalism"
   - Agreement on the complexity of practice
   - A belief in the importance of teachers developing their own approaches and working with others to develop teaching practice
   - Disdain for "prescriptiveness" and detail: "de-skilling" teaching (an irony)
4. Big: Lack of attention to teaching
   - A "black box" orientation: Value-added measurement that fails to investigate variation in teaching practices
   - Orientation to "constructivist" or "student-centered" classrooms (the learner is all-important, overdone to the point of not highlighting the special role and responsibility of the teacher
   - Weak language (e.g., student-centered versus teacher-centered; engages all students)

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X Why the problem is one of professional training

The scale of the need

Teaching as unnatural, intricate, and deliberate work

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Knowing how to do multi-digit multiplication

$$\begin{array}{r} 49 \\ \times\ 25 \\ \hline \end{array}$$

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Seeing multiplication from the learner's perspective

(a)

$$\begin{array}{r} 49 \\ \times\ 25 \\ \hline 405 \\ 108 \\ \hline 1485 \end{array}$$

(b)

$$\begin{array}{r} 49 \\ \times\ 25 \\ \hline 225 \\ 100 \\ \hline 325 \end{array}$$

(c)

$$\begin{array}{r} 49 \\ \times\ 25 \\ \hline 1250 \\ 25 \\ \hline 1275 \end{array}$$

What might students have done to produce these answers?

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What practices of teaching do you see?

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Daily warm-ups: Practice with positive and negative mixed numbers

1. $-4\frac{2}{3}+1\frac{5}{6}$

2. $1\frac{3}{8}-\frac{-3}{4}$

3. $-1\frac{2}{5}\cdot-3\frac{1}{2}$

4. $2\frac{1}{8}\div1\frac{3}{4}$

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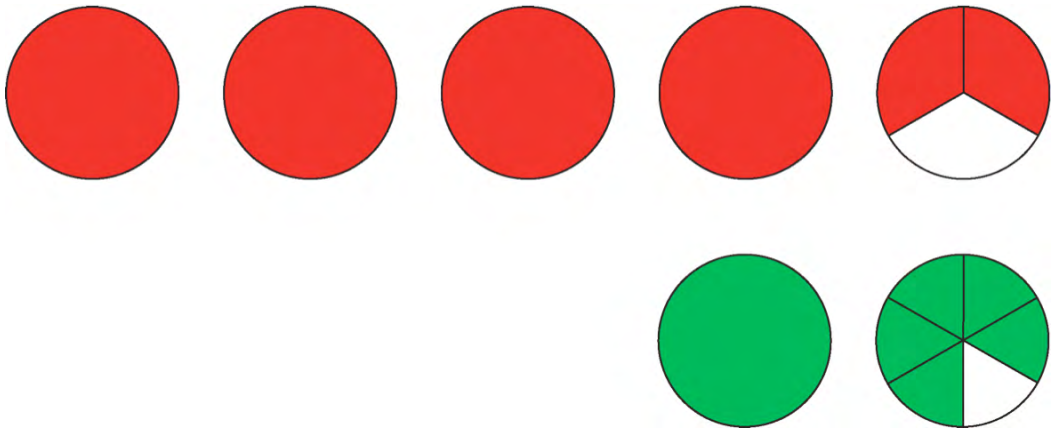
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Modeling addition of negative and positive fractions

$$-4\frac{2}{3}+1\frac{5}{6}$$

Red "pies" to represent negative numbers

Green "pies" to represent positive numbers



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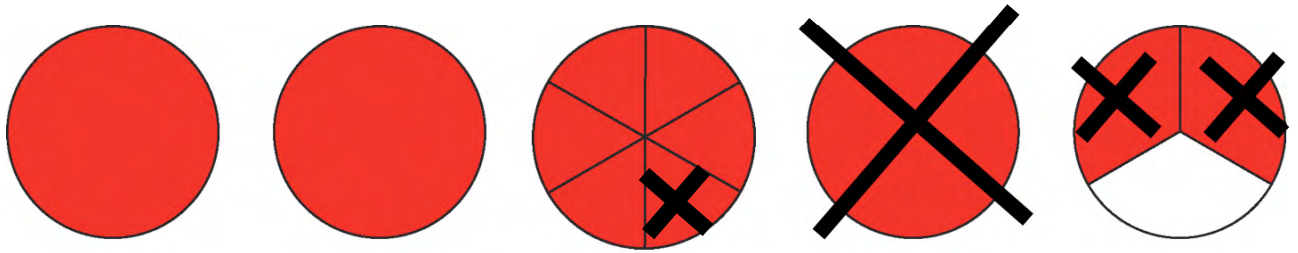
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Modeling

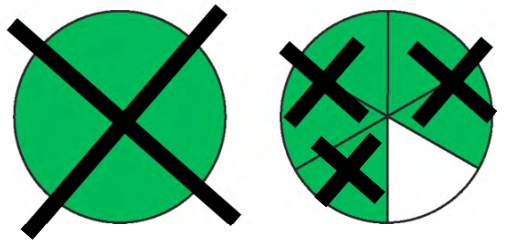
$$-4\frac{2}{3}+1\frac{5}{6}$$

Red "pies" to represent negative numbers

Green "pies" to represent positive numbers



Answer: $-2\frac{5}{6}$

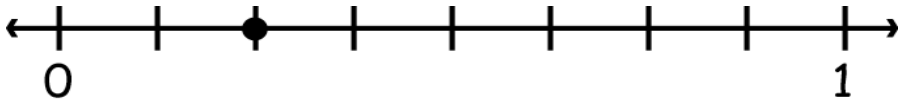


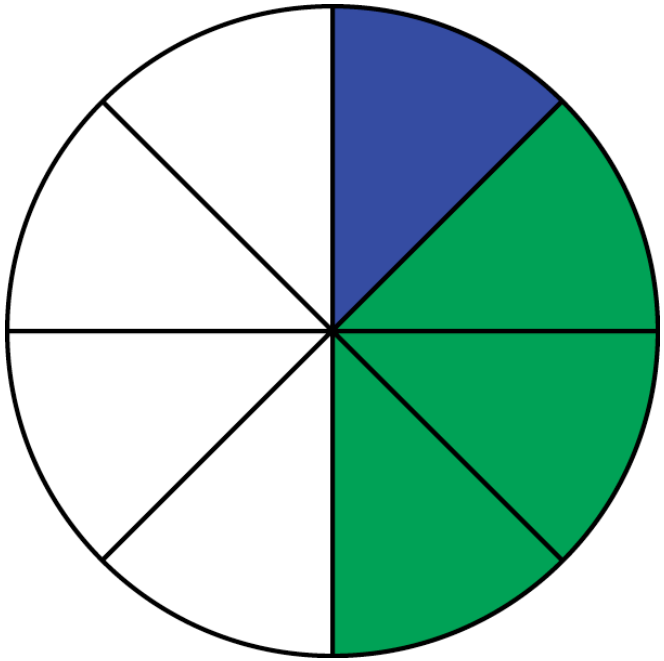
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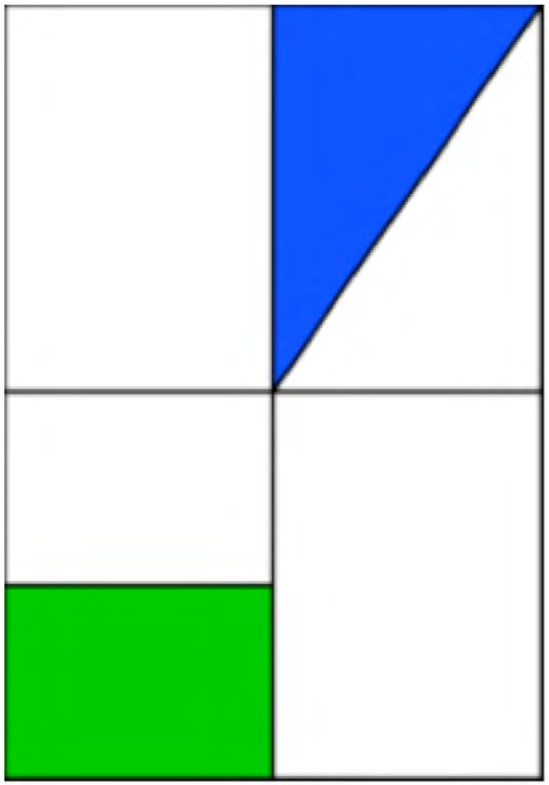
How are fractions typically taught at the upper elementary level?

What difficulties do students frequently have?





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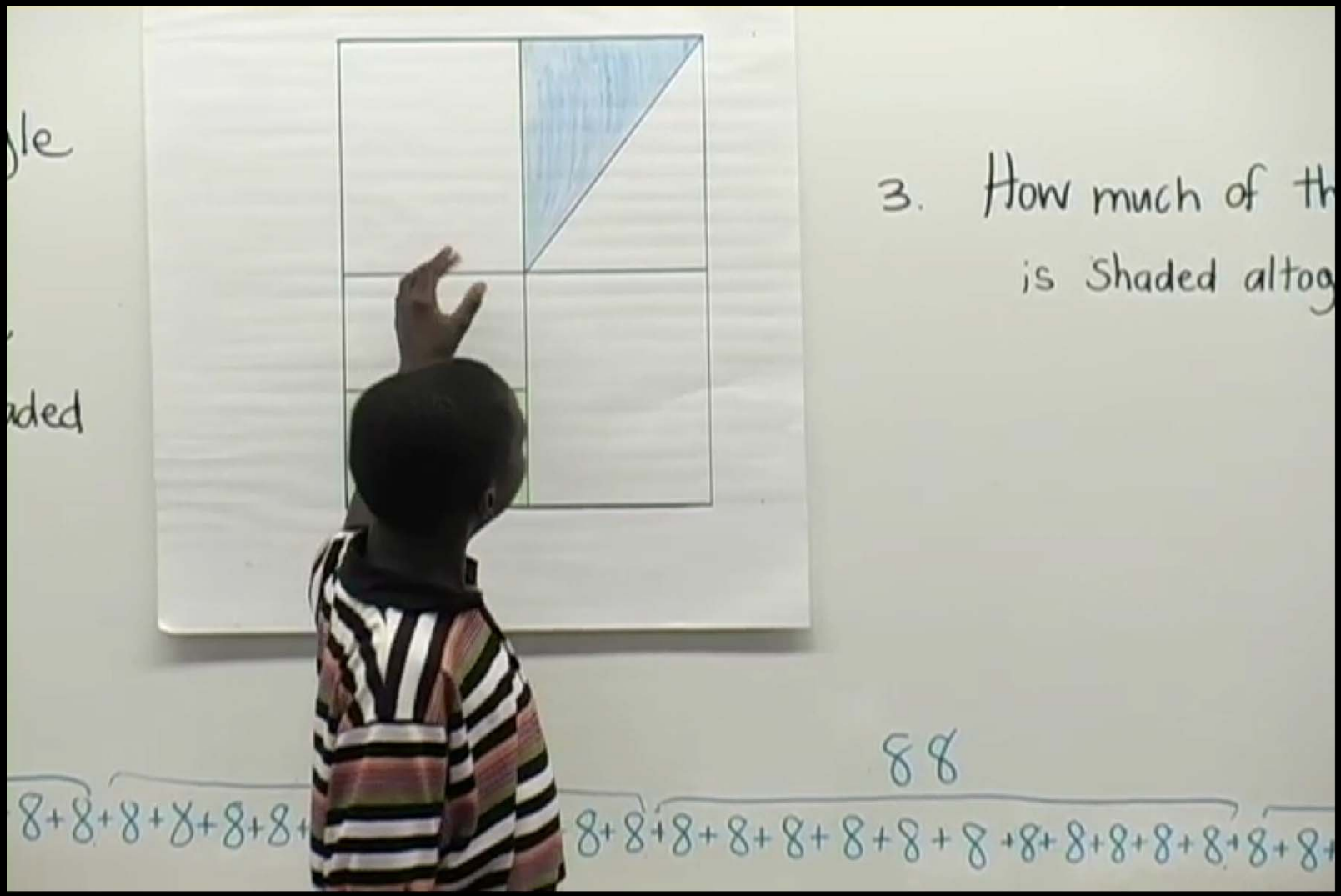


What fraction of the big rectangle is shaded blue?

What fraction of the big rectangle is shaded green?

What fraction of the big rectangle is shaded altogether?

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March 7, 2010

Sunday NYT magazine

- Elizabeth Green

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X Making practice the centerpiece of teacher education, and an example from the University of Michigan

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X How can we get from the INTASC standards/principles to the grain size needed to build a practice-focused system for the training of teachers (both initial and continuing)?

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Core components of practice-focused professional education

1. A **curriculum** focused on high-leverage practices, content knowledge for teaching, and professionalism
2. **Instructional activities** focused on the development of professional skill and capability
3. Deliberate and specific **clinical training**
4. **Assessments** focused on practice

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What characterizes "high leverage" practices?

- Central to building bridges between students and content
- Crucial to improve the learning and achievement of all students
- Address inequities that can arise from diversity of opportunity and experience
- Highly useful and frequent in teaching
- Not natural to do; improve upon normal help

(Ball, Sleep, Boerst, & Bass, 2009; Grossman & McDonald, 2008; Grossman, Compton, Igra, Ronfeldt, & Shahan, 2009; Lampert & Graziani, 2009)

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Examples of high-leverage practices

- Explaining ideas and processes
- Choosing and using representations, examples, and models of core content
- Setting up and managing small-group work
- Recognizing and identifying common patterns of student thinking in a content domain
- Selecting and using specific methods to assess students' learning on an on-going basis
- Conducting a meeting with a parent or caregiver

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X Resources for developing practice-centered teacher education

- Comparative investigations of other professions (Grossman et al., 2009)
- Some key work within subject areas (Franke & Chan, 2009; Lampert & Graziani, 2009; Ball, Sleep, Boerst, and Bass, 2009; Hatch & Grossman, 2009)
- New approaches to settings and activities to learn practice (Lampert, 2006); use of records of practice (Lampert & Ball, 1998; Ball & Cohen, 1999; Hatch & Grossman, 2009)
- Experience with performance assessment for some aspects of practice (e.g., PACT, National Board for Professional Teaching Standards, INTASC)

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The challenge

Professionals working toward practice-centered teacher education will need to manage at least five inherent problems:

1. Specify and develop consensus around the core tasks and activities of teaching
2. Choose the elements of practice most necessary for entrants to the profession
3. Articulate those elements at an effective grain-size
4. Manage the general and subject-specific aspects of teaching practice
5. Manage the context-specific nature of practice

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X1. Specifying and developing consensus around core tasks and activities of teaching

- Absence of robust professional knowledge base
- Link between particular teaching practices and student learning not always clear
- Weak common language for describing and studying teaching

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X2. Choosing elements most important for competent beginning practice

- Given vast scope of teaching practice and brevity of professional training, what is most important?
- Are some aspects of practice fundamental to more advanced elements?
- Are there elements of practice that are best or only learned through formal training (rather than experience)?
- What makes a "safe" beginner?

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X3. Articulating core practices at an effective grain-size

- How to decompose the intricate practice of teaching into parts that are small enough to be learnable but are still meaningful?
- Does it matter if core practices are of different "grain-sizes"?
- What to do about practices that cut across multiple elements of instructional work?

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X4. Managing the general and the subject-specific aspects of teaching

- How does the work of teaching differ from one subject to the next?
- Are there practices that all elementary teachers, all secondary teachers, or all K-12 teachers need to be able to do, independent of their field?
- What are the subject-specific practices that are most important for beginners?
- How to manage without a common K-12 curriculum in the U.S.

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X5. Managing the context-specific nature of instructional practice

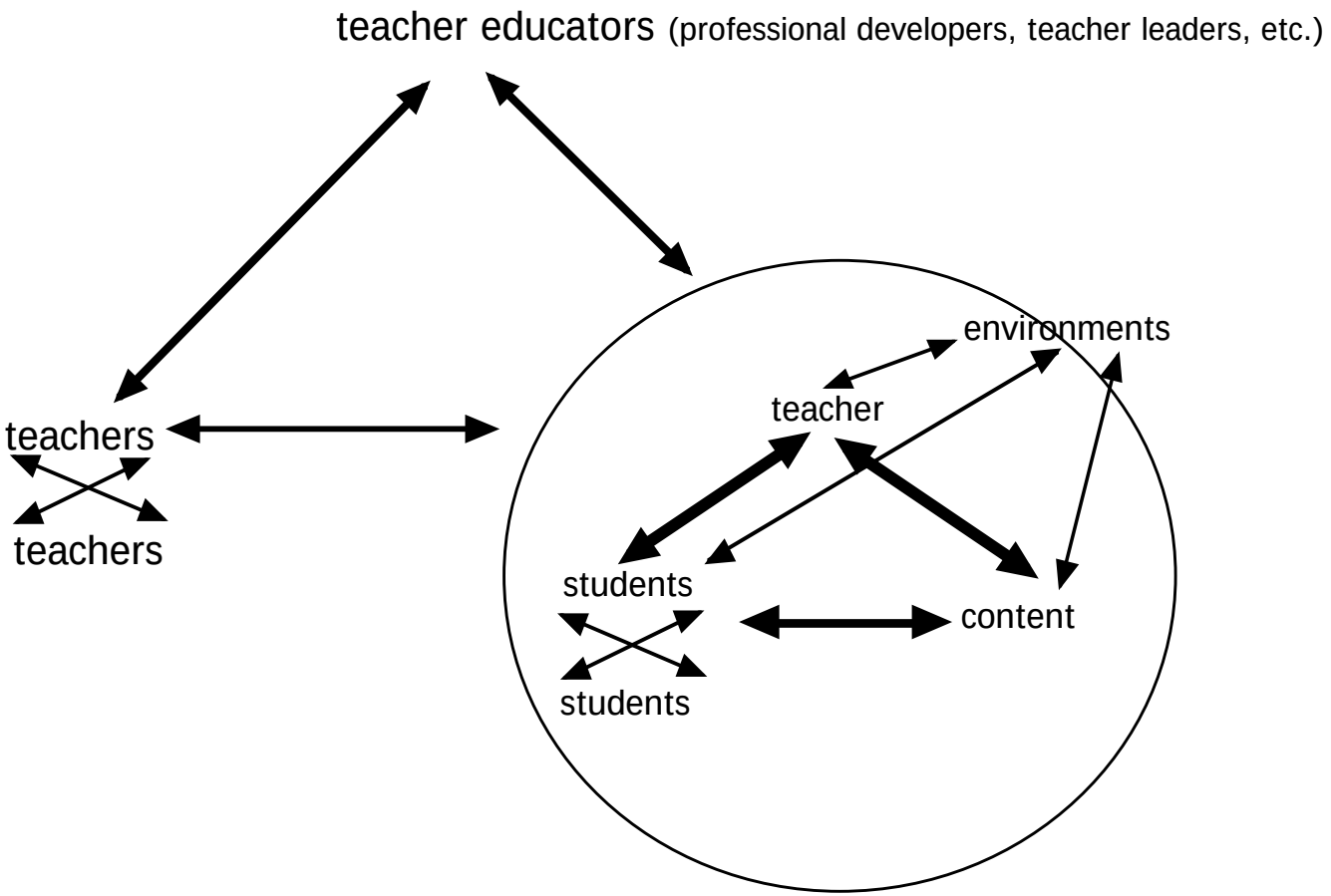
- How does context interact with a given teaching practice?
- How can we account for that interaction in teacher education, particularly given the diversity of learners and instructional contexts in the United States?

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X Teaching practice: Essential to getting skillful teaching in every classroom

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Teaching practice as the content of teacher education



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Context for the videoclip

Intern teacher in a one-year training program

Teacher educator and interns rehearsing and closely preparing before practicing with students:

- Learning to talk about and read a book
- Practicing articulating and integrating different instructional goals

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Performing instructional moves:
Rehearsing reading aloud

1. Word study:

   wind — wind

   (whined)

2. Setting up reading with specific guiding questions
3. Anticipating and providing directions
4. Using one's voice, writing on clipboard



See Lampert, M. & Graziani, F. (2009). Instructional activities as a tool for teachers' and teacher educators' learning in and for ambitious practice. Elementary School Journal, 109 (5), pp. 491-509.

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Next steps

1. Work together to:
   - Create a system of initial teacher licensure that sets a first level of standards for responsible beginning practice.
   - Develop the professional continuum, for levels of proficient practice and licensure.
2. The Teacher Education Institute at the University of Michigan in partnership with other organizations and agents
   - Design, training, research, policy and communications to build a system of professional training

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