Reimagining Elementary Teacher Education

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The ideas shared in this seminar have grown out of collaborative work to redesign the University of Michigan elementary teacher education program undertaken in the Elementary Curriculum Design Group (ECDG).

Overview of today's seminar

What makes elementary teacher education complicated?

University of Michigan as an example

- Oriented around practice
- Subject-matter serious
- Grounded in ethical obligations

Challenges in program design work

Driving question

What are the core elements of a practice-focused teacher education program that reflects the complexity of elementary teaching?

Typical pedagogies of teacher education

Pedagogies of reflection

Pedagogies of investigation

→supporting beginning teachers in developing a knowledge base and analytical skills

(Grossman, Hammerness, & McDonald, 2009;
also Ball & Forzani, 2009)

The nature of teaching: Interactive and contingent

Interactive

- for example, working with multiple small groups of children conducting a science investigation

Contingent

- for example, leading a whole-class discussion of mathematics

(Grossman, Hammerness, & McDonald, 2009)

The nature of teaching: Unnatural and intricate

Unnatural

- asking questions to which one already knows the answers
- eliciting mistakes and problematic thinking

Intricate

- engaging in tasks and moves that may be invisible to a casual observer
- coordinating numerous tasks, moves, and goals
- managing ~25 individuals moving toward understanding subject matter in a caring environment

(Ball & Forzani, 2009)

The nature of *elementary* teaching: Extensive in scope

Teaching all academic subject areas

- language arts
- mathematics
- social studies
- science

Understanding child development

Recognizing professional obligations

Understanding the social and democratic foundations of schooling

Teacher knowledge & practice

Elementary teachers need….

- rich knowledge base for teaching, including
  - substantive knowledge of the discipline
  - understanding and abilities with regard to the disciplinary practices
- a robust suite of high-leverage teaching practices that constitute a rich practice base for teaching

… in all the subject areas they teach …

…. to support the learning of all the learners in their classrooms

University of Michigan as an example

Our goal:
Well-started beginners

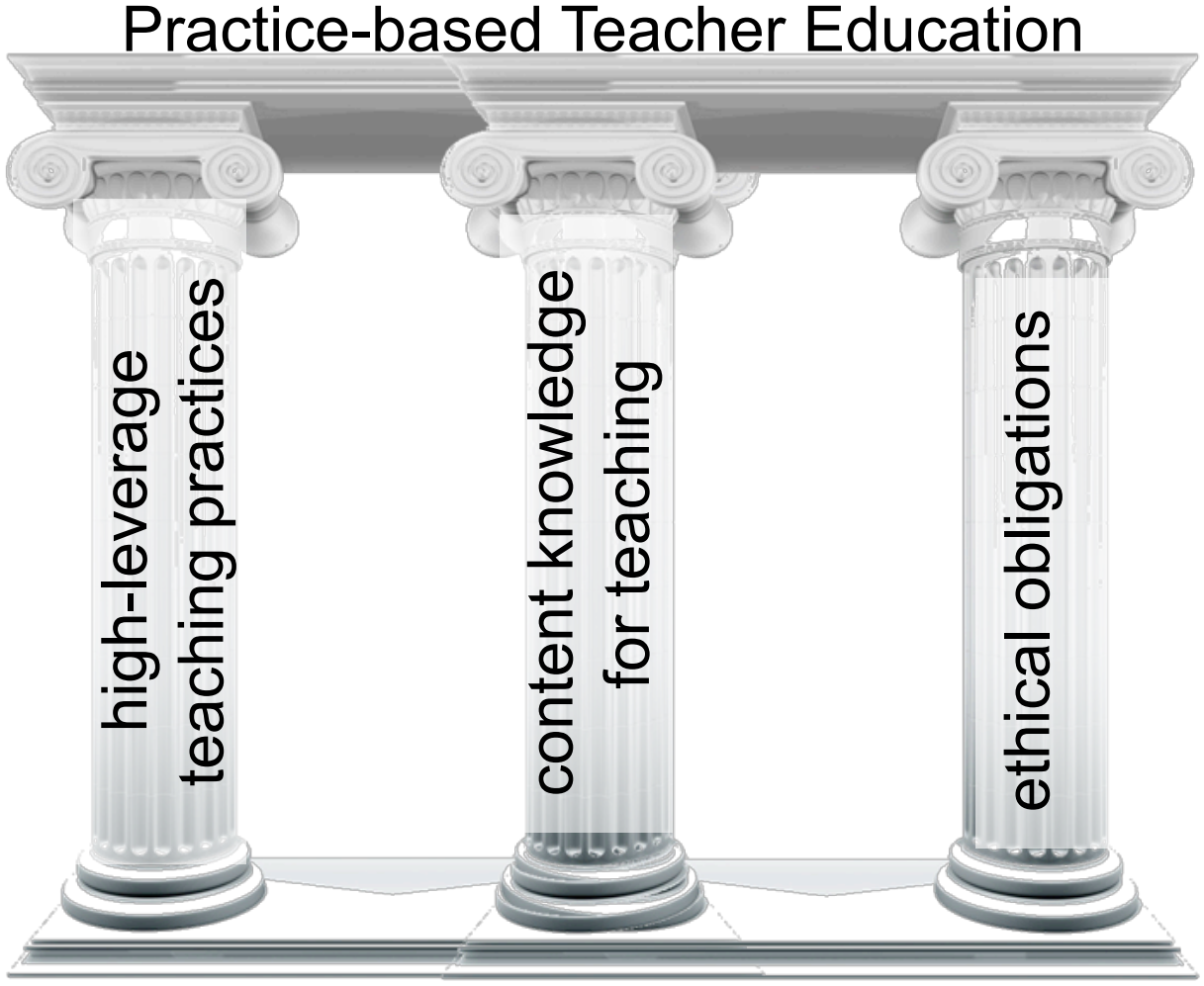
Teachers who demonstrate beginning proficiency with the high-leverage practices

"Subject-matter serious" elementary teachers who are able to represent the content with integrity

Ethical teachers who recognize and can act on their professional obligations

…. all with room (and tools!) for further growth and development

Pillars of the UM teacher ed program



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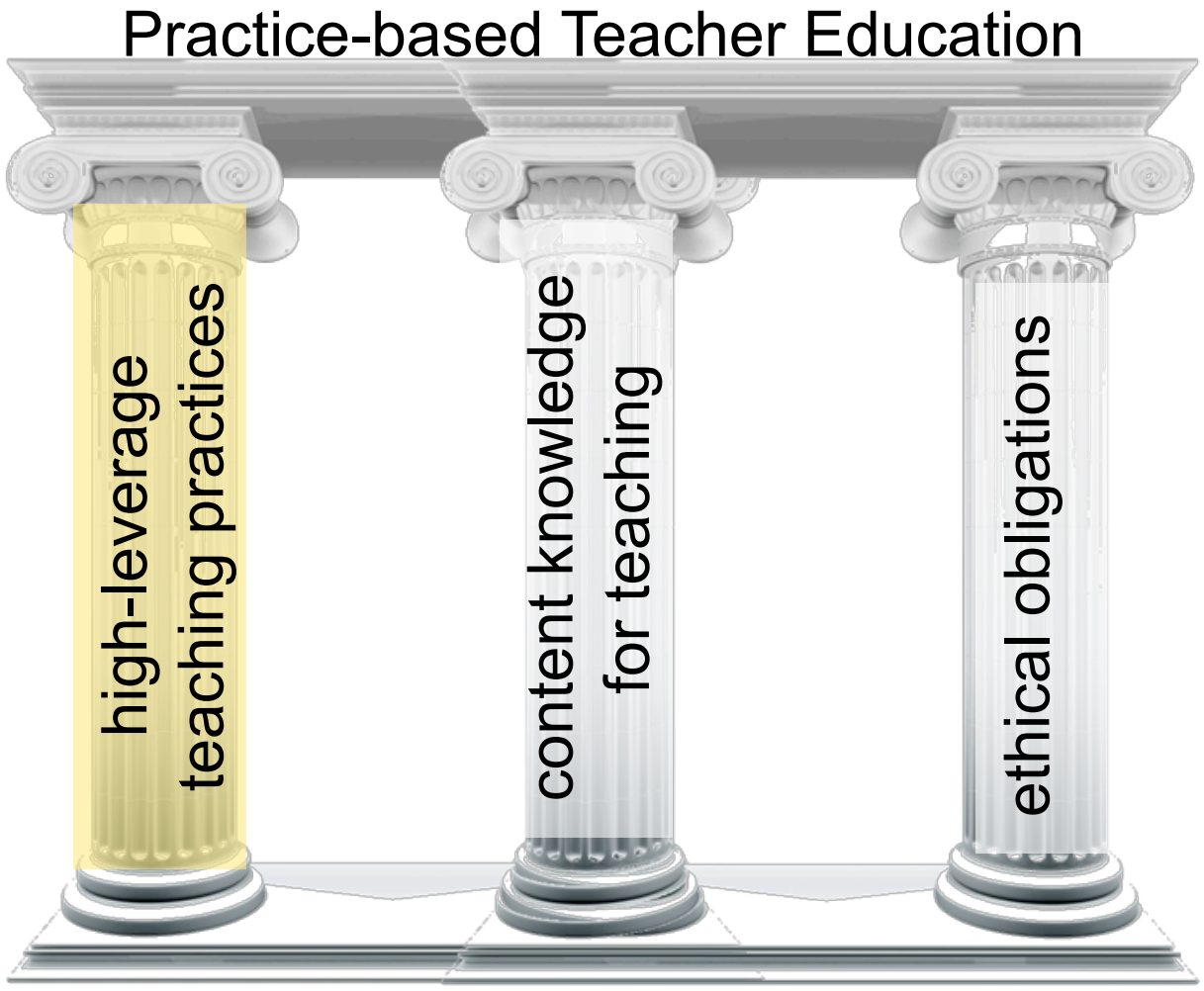

High-leverage teaching practices

What does it mean?

How do we support interns' development?

How do we assess interns?

What challenges do we face, and how have we addressed them?

Considerations for high-leverage practices

Considerations related to high-quality teaching

- the practice is likely to be powerful in advancing students' learning
- the practice is likely to be useful in many different contexts and content areas

Considerations related to high-quality teacher education

- the practice could be learned by a beginner
- the practice could be assessed

High-leverage practices: Examples

Explaining core content

Choosing and using representations and examples

Engaging students in rehearsing an organizational routine

Choosing and modifying lesson plans for a specific learning goal

Conducting a meeting with a parent or guardian about a student

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Pedagogies of teacher education

Pedagogies of reflection

Pedagogies of investigation

→supporting beginning teachers in developing a knowledge base and analytical skills

Pedagogies of practice

→supporting beginning teachers in being able to do the work of teaching

(Grossman, Hammerness, & McDonald, 2009; also Ball & Forzani, 2009)

Teaching professional practice

Representations of practice

- video records
- cases

Decompositions of practice

- working on elements of lesson planning
- practicing writing on the board or using one's voice

Approximations of practice

- engaging in a role play or rehearsal
- teaching a small group of students

(Grossman, Compton, et al., 2009)

Approximating practice with our interns: An example

Children as Sensemakers #1

- elicit, interpret, and develop thinking
- science: day and night
- one lower-elementary child (interview, interactive reading, work with physical model, assess)

Children as Sensemakers #2

- elicit, interpret, and develop thinking
- mathematics: fractions
- small group of middle school students (interview, design and implement targeted instruction)

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Assessments of Teaching Practice

- Based on actual performance, appropriate to the practice being assessed
- Entails, captures, and enables the appraisal of the doing of teaching
- Conducted in a variety of settings, depending on the practice: real classrooms, in "performance centers", through simulations; some live and some scored through records of practice

Program-level assessment

Core purposes

- determining proficiency with practices and provide feedback
- supporting instructional decision design and decision making
- demonstrating program effectiveness

Central stakeholders

- interns
- instructors
- program administrators
- accrediting organizations

Program-level assessment

Key decision making points in the program

- admissions
- readiness to assume greater teaching responsibility
- program exit

Assessments

- aligned with purposes
- grounded in practice
- appraised through collective professional deliberation
- organized to be efficient and sustainable

Example Assessments of High Leverage Practice

Assessment	High Leverage Practice	Description	Evidence
Using management moves effectively	engaging students in an organizational or managerial routine	Intern video records examples of implementing classroom management strategies in a field placement	video and write up
Introduction letter to families	writing correct, comprehensible, and professional messages to colleagues, parents, and others	Interns draft a letter in which they introduce themselves and share a few classroom practices	A one page letter
Eliciting and analyzing students' thinking	elicit and probe student thinking about content identifying common patterns of student thinking	Interns analyze a set of student work in math Interns interview a simulated "student" to elicit and probe thinking	observation

High-leverage teaching practices

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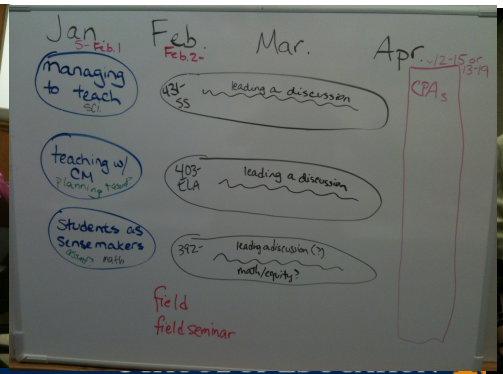
Program-level challenges

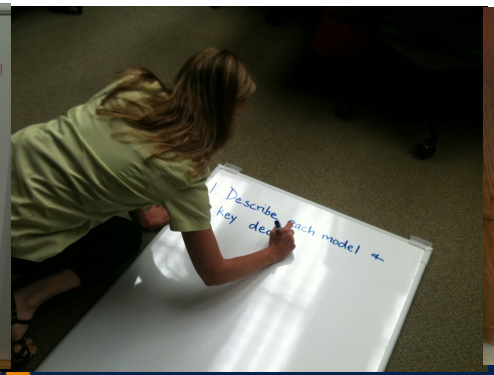
- Choosing and articulating practices that are key across the teaching of multiple subjects
- Designing courses and structures that can be collectively taught and stable over time
- Supporting and maintaining settings for practice-based learning opportunities
- Building capacity among teacher educators to do this kind of work
- Developing assessment tasks that can elicit the intended practices
- Ensuring fairness with respect to what is being appraised and the teaching contexts of the appraisal

Address challenges through: Social structures

The Elementary Curriculum Design Group

- ~20 members from across the program who play different roles and have different subject area foci
- meeting routinely (and frequently)
- engaging in activities such as:
  - collective design of program structures and frameworks
  - deliberation about substantive instructional issues
  - dialog about common courses





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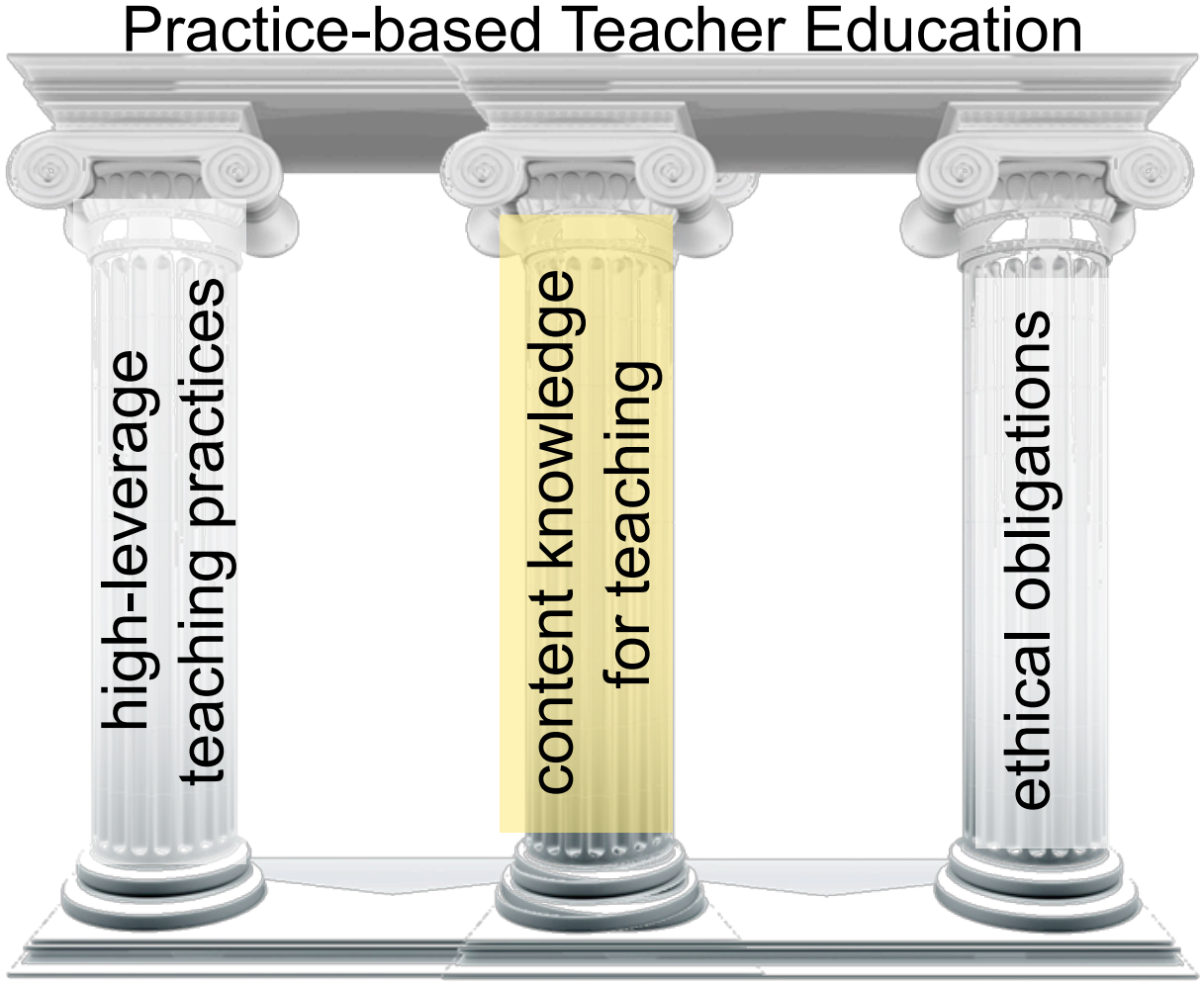

Content knowledge for teaching

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Content knowledge for teaching (CKT)

Frame: knowledge used in practice

- "knowledge *entailed by* the work of teaching"

What do we mean by "knowledge"?

- Knowledge, practices, habits of mind

What do we mean by the "work of teaching"?

- The activities in which teachers engage, and the responsibilities they have, to teach content, both inside and outside of the classroom

(Ball, Thames, & Phelps, 2008)

Mathematical Knowledge for Teaching: An example from multiplication

Multiply:

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

(Ball et al., 2011)

Knowing multiplication for teaching: Analyzing children's errors

How was each answer produced?

What might lead a child to make these errors?

(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)

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

(Ball et al., 2011)

Knowing multiplication for teaching: Analyzing correct answers

Is there a method? Would it work to multiply any two whole numbers?

(a)
$$\begin{array}{r} 49 \\ \times\ 25 \\ \hline 225 \\ 1000 \\ \hline 1225 \end{array}$$

(b)
$$\begin{array}{r} 49 \\ \times\ 25 \\ \hline 245 \\ 98 \\ \hline 1225 \end{array}$$

(c)
$$\begin{array}{r} 49 \\ \times\ 25 \\ \hline 45 \\ 200 \\ 180 \\ 800 \\ \hline 1225 \end{array}$$

(Ball et al., 2011)

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Developing subject-matter serious elementary teachers

Methods courses

- work on subject-specific knowledge for teaching
- for example: fractions in math methods or changes of state in science methods

Cross-subject courses

- work on practices and knowledge across multiple subject areas
- for example: using a lesson design considerations framework across all subject areas in Teaching with Curriculum Materials

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Assessing content knowledge for teaching

Through assessments that:

- focus primarily on knowledge needed for elementary school teaching
- attend to how content knowledge for teaching is used in examples of enacted practice

Assessing of CKT in Practice

End of program Assessments

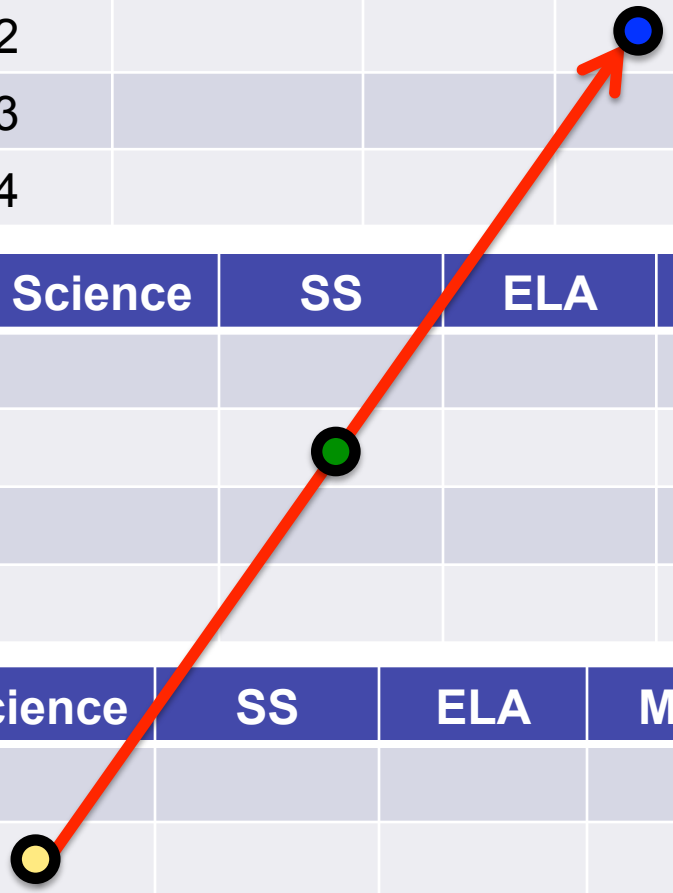
HLPs	Science	SS	ELA	Math	Misc
1					
2					
3					
4					

Year 1 Assessments

HLPs	Science	SS	ELA	Math	Misc
1					
2					
3					
4					

Baseline Assessments

HLPs	Science	SS	ELA	Math	Misc
1					
2					
3					
4					



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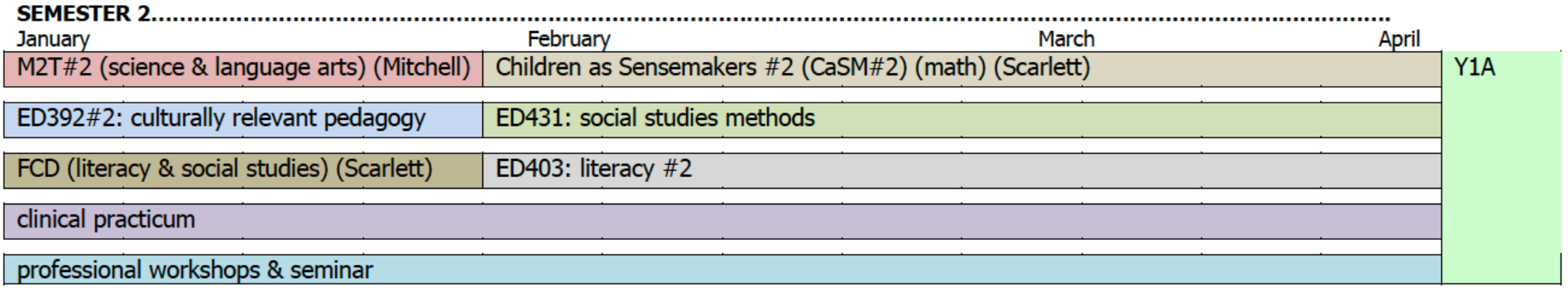
Program-level challenges

- Orchestrating consistent attention to all subject areas, every term
- Coordinating work on content with other departments on campus
- Developing CKT in multiple subjects among teacher educators
- Developing assessment tasks that can elicit CKT on its own *and* within practice
- Advising students early on regarding needed content coursework about a program still in flux

Address challenges through: Programmatic structures

- The program design necessitates people working together
  - program addresses every subject matter in every semester
  - individual courses that focus on practices across subject areas
  - courses supporting trajectories of work on particular practices
- a commitment to jointly designed courses that transition from one instructor to another over time



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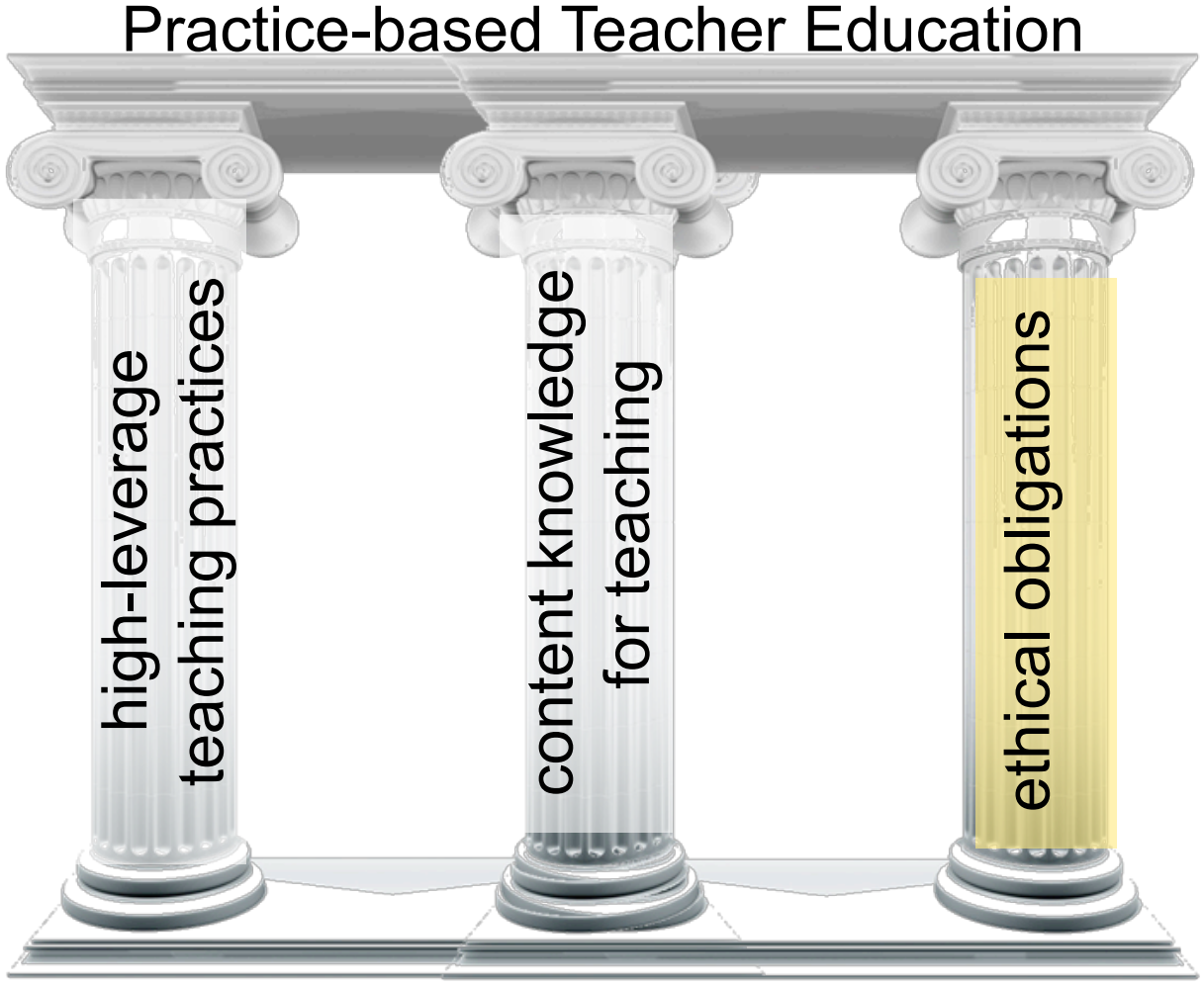

Ethical obligations

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Ethical obligations: Examples

To care for and demonstrate a commitment to every student

To work to ensure equitable access to learning opportunities

To treat students, colleagues, caregivers, and community members with respect and generosity in all communications with and about them

To represent the ideas of the academic disciplines that one teaches with integrity

Ethical obligations

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Preparing ethical elementary teachers

Coursework on multicultural education

- semester 1: social foundations of schooling
- semester 2: culturally-relevant pedagogies
- semester 3: working with families

Infusing equity across the rest of the program

- in courses (as a consideration in the Lesson Design Considerations Framework; in Managing to Teach)
- in the field with mentors and field instructors

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Toward Assessing Professional Ethics

Initial assessment

- Noticing the use of professional ethics in a case study

Ongoing assessment

- Observations of the use professional ethics in field-based activities

Possibilities

- Engaging in professional ethics scenarios

Ethical obligations

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Program-level challenges

- Nurturing a view that ethics aren't just something interns have or don't have, but can be worked on
- Coordinating work on ethics across courses and contexts of work
- Supporting the routine use of ethical perspectives in the work of teaching
- Developing assessments that can fairly and reliably elicit and characterize the use of ethics

Address challenges through: Foundational frameworks

Make explicit our goals and intentions with our redesign

- establish a taken-as-shared starting point for our work
- allow us to articulate and record our institutional memory
- help newcomers determine how we work and what we value

Support us in developing a sustainable, coherent, and consistent program

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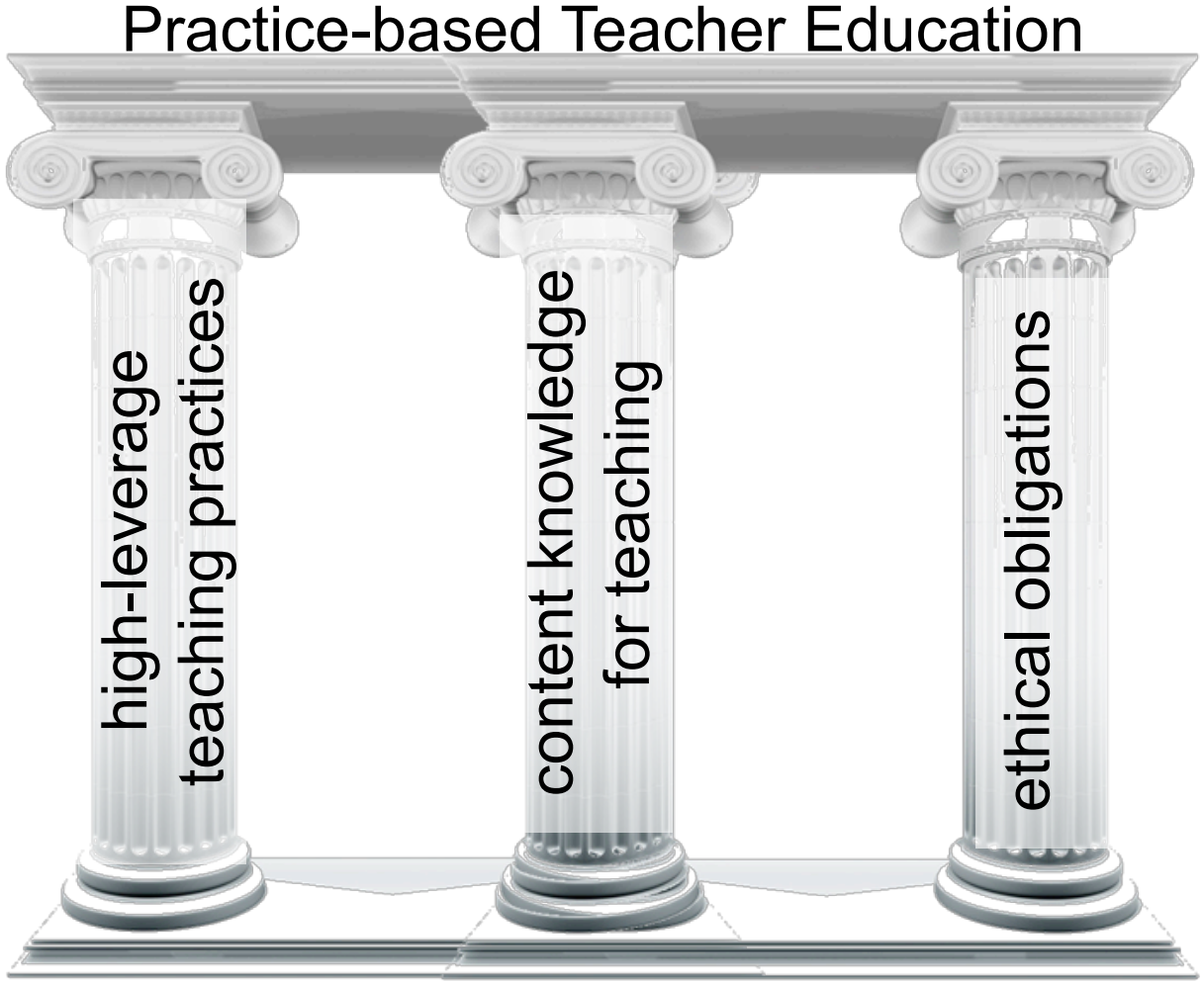

Revisiting key challenges

Program design

Program administration

Instruction within the program

Exploring ways to address the challenges

- Foundational frameworks
  - Refining and using documents like the principles & assumptions framework
- Social structures
  - Establishing a group for collective design
- Programmatic structures
  - Enabling co-design and co-teaching

Moving forward

- Continue to refine the design and structure of a program focused on supporting the development of well-started beginning teachers
- Continue to refine structures and frameworks that enhance the sustainability, consistency, and coherence of the program
- Establish a research program that contributes to program improvement and the wider profession