

Assessing Elementary Mathematics Instructional Leader Programs

Nicole Rigelman
Portland State University
rigelman@pdx.edu

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Session Overview

- Standards and “work” informing our program
- Conceptual framework informing our assessment system
- Purposes and examples of assessment and evaluation
- Ways that teacher leaders contribute to the assessment process
- Questions and answers

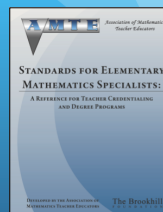
What do Elementary Mathematics Instructional Leaders (EMILs) do?

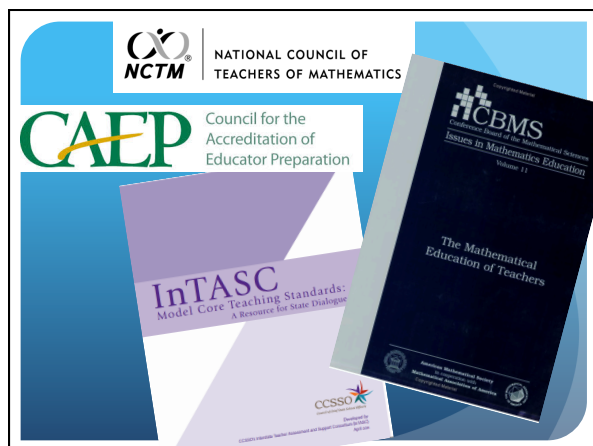
They work in different settings and are asked to do a variety of tasks:

- Coach/mentor other teachers, including preservice teachers, with their mathematics instructional practice
- Serve as a teacher leader/coordinator
- Teach multiple classes of elementary students (e.g., one teacher teaching math to all the 4th graders)
- Teach special groups of students (remedial, enrichment, pull-out or in-class)
- Plan and provide professional learning opportunities for teachers

Standards for Elementary Mathematics Specialists

A Reference for Teacher Credentialing and Degree Programs





EMIL Program Guidelines

Prerequisites:

- Teacher licensure
- At least three years of successful experience in teaching mathematics

Components:

- 24 quarter hours (16 semester hours) spanning all of the program components outlined in the standards.
- Includes supervised mathematics specialist practicum - working with a range of students and teachers.

Areas of Knowledge/Expertise for EMILs

- **Content Knowledge** for Teaching Mathematics
- **Pedagogical Knowledge** for Teaching Mathematics
- **Leadership Knowledge and Skills**

Areas of Knowledge/Expertise for EMILs

- **Content Knowledge** for Teaching Mathematics
 - Specialized mathematics knowledge for teaching.
 - Deep understanding of mathematics.
- **Pedagogical Knowledge** for Teaching Mathematics
- **Leadership Knowledge and Skills**

Areas of Knowledge/Expertise for EMILs

- **Content Knowledge** for Teaching Mathematics
- **Pedagogical Knowledge** for Teaching Mathematics
 - Learners and learning
 - Teaching
 - Curriculum and assessment
- **Leadership Knowledge and Skills**

Areas of Knowledge/Expertise for EMILs

- **Content Knowledge** for Teaching Mathematics
- **Pedagogical Knowledge** for Teaching Mathematics
- **Leadership Knowledge and Skills**
 - Develop awareness of professional resources
 - Engage in ongoing collaborative learning
 - Lead professional development
 - Evaluate educational structures supporting equity
 - Influence policy affecting mathematics education
 - Communicate among various stakeholders

Conceptual Framework Informing our Assessment System

- Teachers learn about practice *in practice* (Ball & Cohen, 1999) ... so teacher leader assessment should be connected to the day-to-day work of teaching and leading.
- Authentic assessments provide a more accurate measure of teacher knowledge (Darling-Hammond, 2006)... so theory is integrated with practice and measured through performance assessments.
- Courses convey a consistent message about effective mathematics teaching and learning (Zeichner, 2001)... so teacher leaders see relationships among mathematics content, pedagogy, learning, and leading that support student and teacher learning. In the process of conveying their learning, teacher leaders build confidence about their practice.

Our Program for EMILs

Content-Focused Pedagogy Courses (choose five)

- CI 511 Building a System of Tens
- CI 512 Making Meaning for Operations (3 credits)
- CI 513 Reasoning Algebraically about Operations (3 credits)
- CI 514 Patterns, Functions, and Change (3 credits)
- CI 515 Examining Features of Shapes (3 credits)
- CI 516 Measuring Space in One, Two and Three Dimensions (3 credits)
- CI 517 Working with Data (3 credits)

Advanced Mathematics Methods Course

- CI 518 Implementing Mathematics Reform (3 credits)

Leadership-Focused Courses

- CI 519 Leadership and Coaching in Mathematics (3 credits)
- CI 509 Elementary Mathematics Specialist Clinical Experience (3 credits)

Assessing Proficiency for EMILs

"Collection of Evidence" compiled throughout program...

Content Knowledge for Teaching Mathematics

- Examples - clinical interviews of students to understand learning trajectories within the base ten structure of number; analysis of students' written work for misconceptions/errors in thinking about measurement concepts

Pedagogical Knowledge for Teaching Mathematics

- Examples - Problem Based Lesson Implementation and Analysis; Curriculum Analysis Project

Leadership Knowledge and Skills

- Examples - MS practicum assessment; professional development plan; analysis of video recording collaborative lesson planning cycle

Teacher Leaders Contribute to the Assessment Process

- Because the "collection of evidence" is building throughout the program, teacher leaders choose which items they would like to include in their electronic portfolio.
- Teacher leaders select assignments, projects, and reflections that convey who they are as a mathematics teacher and leader.
- The portfolio is intended to serve as a tool that supports teacher leaders with synthesizing and communicating their learning to others (e.g., tool in the job hunt).

References

- Association of Mathematics Teacher Educators (2013). *Standards for Elementary Mathematics Specialists: A Reference for Teacher Credentialing and Degree Programs*. San Diego, CA: AMTE.
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- Darling-Hammond, L. (2006). Assessing teacher education: The usefulness of multiple measures for assessing program outcomes. *Journal of Teacher Education*, 57(2), 120-130.
- Zeicher, K., & Wray, S. (2001). The teaching portfolio in US teacher education programs: What we know and what we need to know. *Teaching and Teacher education*, 17(5), 613-621.