

THE CENTER FOR TEACHING & LEARNING
MATHEMATICS

University of Northern Iowa

235 East Bartlett, University of Northern Iowa
Cedar Falls, Iowa 50614

319.273.7650 : www.uni.edu/ctlm



TEACHING MATHEMATICS TO STRUGGLING LEARNERS

PROFESSIONAL DEVELOPMENT





TEACHING MATHEMATICS TO STRUGGLING LEARNERS

When it still doesn't make sense...

The mathematics achievement gap for struggling students is well documented. Teachers often ask, "What do I do when universal or core instruction is not enough?"

The Center for Teaching and Learning Mathematics (CTLM) at the University of Northern Iowa has combined forces with experts in the fields of mathematics and special education. This team will address the need for professional development that supports special education teachers in closing the achievement gap for struggling students. The resulting professional development courses, *Teaching Mathematics to Struggling Learners (TMSL)*, will build mathematics content knowledge and increase understanding and implementation of research-supported instructional and assessment strategies, specific to mathematics intensive intervention.

These professional development courses support special education teachers in effective use of intervention time by providing:

- **Quality Resources**
- **Research-Based Instructional Strategies**
- **Multiple Methods of Formative Assessment**





FOUNDATIONAL RESEARCH

The Common Core Standards and the Common Core Standards for Mathematical Practice provide a firm foundation for universal or core instruction. The *Teaching Mathematics to Struggling Learners (TMSL)* program focuses on intensive instruction when universal or core instruction is not enough.

The TMSL program implements the following Institute of Educational Sciences (IES) recommendations:

- Interventions should include instruction on solving word problems that is based on common underlying structures
- Screen all students to identify those at risk for potential mathematics difficulties, and provide interventions to students identified as at risk
- Intervention materials should include opportunities for students to work with visual representations of mathematical ideas, and interventionists should be proficient in the use of visual representations of mathematical ideas
- Explicit and systematic instruction
- Interventions at all grade levels should devote about 10 minutes in each session to building fluent retrieval of basic arithmetic facts

Teachers will receive support around:

Intervention and Materials

- Knowing the structure and content of Specially Designed Instruction (SDI)
- Knowing the structure and content of the diagnostic and formative assessment materials

Professional Development

- Coaching and peer support
- Purposeful planning / collaboration
- Trouble shooting (what do I do if...?)

Confidence in teaching mathematics

- Building pedagogical content knowledge
- Building instructional strategies
- Common understanding and implementation of strategies
- Resources for Standards and Learning Progressions (Cole and Wasburn-Moses, 2010)



COURSE OFFERINGS

Teaching Mathematics to Struggling Learners: Building Your Confidence is the foundational course focused on the theory of best practice for struggling learners, understanding the Iowa Multi-Tiered Support System (MTSS), and implementation of one Do the Math unit.

Teaching Struggling Learners: Addition, Subtraction, and Place Value focuses on diagnosing and addressing student difficulties and developing mathematical content knowledge for teaching in the areas of addition, subtraction, and place value.

Teaching Struggling Learners: Multiplication and Division focuses on diagnosing and addressing student difficulties and developing mathematical content knowledge for teaching in the areas of multiplication and division.

Teaching Struggling Learners: Fractions focuses on diagnosing and addressing student difficulties and developing mathematical content knowledge for teaching in the area of fractions.

These four courses align to both materials available and the structure for intervention found in Waterloo elementary schools. These courses will support Instructional Strategists in implementation of *Do the Math* resources during intensive intervention time. These courses are well-aligned with current MTSS initiatives, and participating Instructional Strategists will find direct support for their work through these courses.



TARGET AUDIENCE

Twenty Waterloo Schools Instructional Strategists and Special Education Instructional Coaches that serve grades 3-5

BENEFITS:

IMPROVE your ability to differentiate instruction, utilize progress monitoring and diagnostic assessments, and implement *Do the Math* resources

RECEIVE \$720 per each course, \$1,440 per each year (if you attend all sessions and complete all implementation)

SAVE \$1,048.50 on tuition for EACH course taken for CREDIT (NOT AUDIT). Regular rate is \$1348.50, YOUR rate is \$300

EARN a total of 12 hours of graduate workshop credit over the two-year grant period

EXPECTATIONS:

Commit. It is important for you to commit to this work for two years (January 2015 - December 2016)

Attend and participate in all course sessions

Complete all assigned coursework prior to due dates – all coursework for these courses is required by auditors as well as those taking for credit

Ensure a daily 30-minute intervention time with a flexibly chosen group of five or less students (at least one student must be entitled in mathematics)

Videotape your teaching, and submit it for self, peer, and instructor reflection

