



Mathematics for English Language Learners (MELL) Classroom Practices Framework

Developed by the Project Leaders of the
Texas State University System
Mathematics for English Language Learners Initiative

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The MELL initiative is a partnership between the Texas State University System (TSUS), its component universities, and the Texas Education Agency (TEA).

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For The

Math for English Language Learners (MELL) Initiative

**A Texas State University System (TSUS) and
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Introduction:

The MELL Classroom Practices Framework (CPF) is a synthesis document compiled by the Texas State University System (TSUS) Math for English Language Learners (MELL) Initiative and funded by a grant from the Texas Education Agency (TEA). In the summer of 2004, TEA, in response to the lingering achievement gap in mathematics between Limited English Proficient (LEP) students and other students, worked with TSUS and its five partner institutions to establish the MELL Initiative. The primary purpose of the MELL Initiative is to develop resources for professional development targeted at improving mathematics instruction for English Language Learners, especially those at the secondary level. MELL and TEA staff identified the need for a concise document that could not only capture the essence of the research but could also provide a roadmap for use in future resources. The MELL Classroom Practices Framework was developed in response to this need.

The MELL CPF was generated collaboratively by MELL and TEA staff and was guided by the question of “What do the findings of our research investigations suggest in regard to classroom practices that contribute to successful math instruction for English Language Learners.” This framework represents the collective thinking of the MELL partners about what the research investigations revealed and it is our intention that all of the MELL professional development products support teachers in implementing these classroom practices. Over time, as additional insights are gleaned from ongoing work, it is likely that this evolving framework will be revised.

Much, perhaps most, of this framework is comprised of elements of effective instruction that is appropriate for all students, and clearly all students would be well-served by these suggested practices regardless of their language proficiency. It appears, however, from our investigations, that the success of ELL students is more highly dependent on receiving instruction geared to their specific needs. In other words, while many students who are not experiencing a language barrier might be able to experience success with less than optimal instructional practices, few ELL students can thrive in such an environment. For this reason, creating a rich classroom experience for ELL students is not simply desirable, but rather is necessary if they are to have a chance to succeed. The MELL Classroom Practices Framework is targeted at achieving this goal.

1 Learning Atmosphere & Physical Environment

- 1.1 A caring classroom atmosphere of mutual respect and support is facilitated by the teacher who:
 - 1.1.1 Knows each child as an individual,
 - 1.1.2 Embraces languages, customs, and cultures of ELL students,
 - 1.1.3 Provides culturally rich learning materials,
 - 1.1.4 Encourages self-expression and provides positive recognition,
 - 1.1.5 Builds student confidence and esteem,
 - 1.1.6 Fosters an emotionally safe environment that allows students to feel secure and to take risks.
- 1.2 The classroom is visually rich to support student learning.
 - 1.2.1 Incorporates displays of student produced work, whenever possible,
 - 1.2.2 Is colorful and thought stimulating,
 - 1.2.3 Contains pertinent, real-world information and applications,
 - 1.2.4 Reinforces math-specific vocabulary and concepts,
 - 1.2.5 Provides color-coded learning supports when appropriate.
- 1.3 Room arrangement facilitates student interaction and group work.

2 Instructional Practices

- 2.1 Instructional practices foster cooperation and collaboration.
- 2.2 Concepts are presented accurately, logically, and in engaging ways.
- 2.3 Multiple representations incorporate mathematics learning levels: concrete, semi-concrete, and abstract.
- 2.4 The teacher employs student-centered instructional practices.
 - 2.4.1 Approaches content from a concept-oriented constructivist method,
 - 2.4.2 Surrounds students with different modalities (e.g., aural, visual, kinesthetic),
 - 2.4.3 Connects new concepts to prior learning,
 - 2.4.4 Encourages students to refine and reflect about their own work and verbalize concept understanding “in their own words”,
 - 2.4.5 Chooses homework to optimize individual content development,
 - 2.4.6 Provides extra help and resources on an individual basis.
- 2.5 Students are frequently partnered with peer learners to enhance learning opportunities.
 - 2.5.1 To develop math content,
 - 2.5.2 To aid English language development,

- 2.5.3 To insure sustained active participation in the class,
- 2.5.4 To welcome new students into an established learning community.
- 2.6 Instructional activities are varied and support diverse learning styles and multiple intelligences, including for instance:
 - 2.6.1 Frequent use of models,
 - 2.6.2 Music as a motivator and anchor,
 - 2.6.3 Mind maps, poster-walks, and word walls
 - 2.6.4 Key vocabulary and cognates presented in different forms,
 - 2.6.5 Vivid adjectives.

3 Mathematics Content & Curriculum

- 3.1 Glossary of mathematical terms is always available for reference.
- 3.2 Content is aligned to appropriate grade-level, mathematics TEKS and professional standards.
- 3.3 Content is based on diagnosed student needs.
- 3.4 Content is systematically designed to incorporate sound learning principles.
 - 3.4.1 To incorporate increased complexity,
 - 3.4.2 To present a cohesive big-picture through chunking,
 - 3.4.3 To connect concepts through bridging and scaffolding,
 - 3.4.4 To emphasize multidisciplinary understandings,
 - 3.4.5 To reflect on inherent patterns by comparing and contrasting concepts.
- 3.5 Curriculum is challenging, relevant, age-appropriate, and well-paced
 - 3.5.1 To include contextually-based problems,
 - 3.5.2 To incorporate student realities,
 - 3.5.3 To involve interactive problem solving.

4 Language Practices

- 4.1 Language support is offered without supplanting English instruction.
- 4.2 Support is aligned with student's diagnosed language needs.
- 4.3 Language used is appropriate to age and grade level and presented in a socially meaningful context.
- 4.4 Mathematics-specific vocabulary is explicitly and implicitly taught and reinforced through repetition.

- 4.5 Teachers are knowledgeable about the second language acquisition theories and best practices embodied in Texas Administrative Code, Title 19, Part II, Chapter 128.
- 4.6 Ideally, dual language instructional support should be offered.
- 4.7 When dual language teachers are not available, sheltered instruction should be utilized to provide strong language support by addressing content through ESL.

5 Family & Community Involvement

- 5.1 Schools connect to student's family-life by embedding contextual experiences and skills in teaching and curriculum.
- 5.2 Projects are relevant and promote family interaction.
- 5.3 Opportunities are available for English-speaking higher grade-level students to mentor ELL lower grade-level students either in an in-school or after-school program, as appropriate.
- 5.4 Teacher engages in frequent communication with families
 - 5.4.1 About activities and events in which parents can participate,
 - 5.4.2 About student progress.
- 5.5 Teacher utilizes services provided by a community liaison and is knowledgeable about community resources.
- 5.6 Parents are informed about the benefits of using their most cognitively advanced language at home.

6 Assessment of Student Learning

- 6.1 Classroom assessment is designed to foster student success.
- 6.2 Assessment methods allow students frequent opportunities to demonstrate mastery in a variety of ways.
- 6.3 Various assessment techniques are used to measure student understandings.
- 6.4 Grades are oriented to promote and emphasize valid step-by-step logical reasoning processes.
- 6.5 Assessment data and results shape instructional planning.
- 6.6 Flexible time allotments are given to demonstrate concept mastery.

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