



Resources to Promote Equity and Excellence in Mathematics Teaching and Learning for English Learners

This document includes resources and website links that could serve to illustrate specific mathematics strategies for teachers in the way that the new Mathematics Framework calls for. These, together with specific ELD standards connections and framed within the appropriate lens, scaffolds, and strategies, could be a great tool to support **mathematics instruction development in conjunction with language development and support**. The intersections of mathematics instruction and language instruction **must be explicitly** signaled and addressed.

Equity

What is equity in education?

How can the content be strengthened?

Mathematics Education Through the Lens of Social Justice: Acknowledgment, Actions, and Accountability

*“NCSM and TODOS understand that moving forward with social justice demands change in institutional structures, teaching and learning environments, community engagement practices, and individual actions. Incremental approaches to address urgent calls for action have made little difference in how many children experience mathematics in our nation’s schools. This is repeatedly documented by the disparities in learning opportunities and outcomes in mathematics education based on race, class, culture, language, and gender. Immediate and transformative change is necessary. These changes must occur in multiple settings and at multiple levels including classrooms, district offices, school boards, universities, legislatures, and communities. **Three components are needed for a just, equitable, and sustainable system of mathematics education for all children.** There must be **acknowledgment** of the unjust system of mathematics education, its legacy in segregation and other forms of institutional systems of oppression, and the hard work needed to change it. The **actions taken** must be driven by commitments to re-frame, re-conceptualize, intervene, and transform mathematics education policies and practices that do not serve to promote fair and equitable mathematics teaching and learning. And there must be professional **accountability** to ensure these changes are made and sustained. This is the challenge and work of social justice in mathematics education to do right by our children and move forward together”.*

https://www.todos-math.org/assets/docs2016/2016Enews/3_pospaper16_wtodos_8pp.pdf

National Council of Teachers of Mathematics- Access and Equity in Mathematics Education NCTM Position

*“Creating, supporting, and sustaining a culture of access and equity require being responsive to students’ backgrounds, experiences, cultural perspectives, traditions, and knowledge when designing and implementing a mathematics program and assessing its effectiveness. **Acknowledging and addressing** factors that contribute to **differential outcomes among groups of students are critical** to ensuring that **all students** routinely have opportunities to experience high-quality mathematics instruction, learn challenging mathematics content, and receive the support necessary to be successful. Addressing equity and access includes both ensuring that all students attain mathematics proficiency and increasing the numbers of students from racial, ethnic, linguistic, gender, and socioeconomic groups who attain the highest levels of mathematics achievement.”*

<https://www.nctm.org/Standards-and-Positions/Position-Statements/Access-and-Equity-in-Mathematics-Education/>



Definition of Equity- From the Aspen Institute School Leadership Guide

*“The Aspen Education & Society Program defines educational equity as every student having access to full and equal opportunity to succeed in life. To achieve this outcome, all students **deserve access to the right resources, academic rigor, and rich opportunities to develop their agency and identity**, all of which are essential to prepare for college and career—irrespective of their race, gender, sexual orientation, ethnicity, tribal status, language, nationality/immigration status, disability, family background, or family income.”*

<https://www.aspeninstitute.org/publications/integrating-social-emotional-and-academic-development-sead-an-action-guide-for-school-leadership-teams/>

What resources can be cited or included?

Californians Dedicated to Education Foundation: Educational Equity

<https://youtu.be/tcPGacPFt6E>

Pathway to Equity in Mathematics Instruction (<https://equitablemath.org/>)

Dismantling Racism in Mathematics Instruction : [STRIDE 1](#)

Collective Action to Develop Awareness: Equity and Social Justice in Mathematics Education

<https://www.nctm.org/webinars/EquitySocialJustice/>

Teaching for Excellence and Equity in Mathematics

Special Issue Mathematics Education: Through the Lens of Social Justice

https://www.todos-math.org/assets/documents/TEEM/teem7_final1.pdf

Designing mathematics classes to promote equity and engagement

[https://www.dropbox.com/home/Mathematics%20and%20ELs/Resources%20and%20Research?preview=Designing+mathematics+classes+to+promote+equity+and+engagement+_+Journal+of+Mathematical+Behavior+\(2016\).pdf](https://www.dropbox.com/home/Mathematics%20and%20ELs/Resources%20and%20Research?preview=Designing+mathematics+classes+to+promote+equity+and+engagement+_+Journal+of+Mathematical+Behavior+(2016).pdf)

Culturally and Linguistically Sustaining Pedagogy and Practices

What is culturally sustaining and culturally relevant pedagogy?

How can the content be strengthened?

Author Interview: 'Culturally Sustaining Pedagogies' by Larry Ferlazzo

“This is an important question, one we have of course thought deeply about. In order to explore this question we'll need to first define culturally sustaining pedagogy: CSP seeks to perpetuate and foster—to sustain—linguistic, literate, and cultural pluralism as part of schooling for positive social transformation and revitalization. CSP positions dynamic cultural dexterity as a necessary good, and sees the outcome of learning as additive, rather than subtractive, as remaining whole rather than framed as broken, as critically enriching strengths rather than replacing deficits. Culturally sustaining pedagogy exists wherever education sustains the lifeways of communities who have been and continue to be damaged and erased through schooling. As such, CSP explicitly calls for schooling to be a site for sustaining—rather than eradicating—the cultural ways of being of communities of color. CSP builds on decades of crucial asset-based pedagogical research that has countered pervasive deficit approaches to prove that our practices and ways of being as students and communities of color are legitimate and should be included meaningfully in classroom learning. Whether explicitly stated or not, this tradition of asset-based pedagogical research has fought against persistent, ongoing beliefs in White superiority and the systemic racism they engender.”

http://blogs.edweek.org/teachers/classroom_qa_with_larry_ferlazzo/2017/07/author_interview_culturally_sustaining_pedagogies.html



What resources can be cited or included?

Teaching Linguistics- Balancing the communication equation: An outreach and engagement model

https://www.linguisticsociety.org/sites/default/files/e01_94.3Mallinson.pdf

What are we seeking to sustain through culturally sustaining pedagogy? A loving critique forward

D. Paris, H. Alim,

<https://www.semanticscholar.org/paper/What-are-we-seeking-to-sustain-through-culturally-A-Paris-Alim/7a3b8f2aa3fb77121781159cd8ba8ef388d1477>

Teaching Mathematics to English Language Learners

Beatrice Moore-Harris

<http://www.lessonpick.com/downloads/strategies-for-teaching-math-to-ells/>

“Culturally Sustaining Pedagogy,” California Department of Education, January 16, 2020,

<https://www.cde.ca.gov/pd/ee/culturallysustainingped.asp>

“Dismantling Racism 2016 Workbook,” dismantlingRacism.org, 2016

<https://resourcegen-eration.org/wp-content/uploads/2018/01/2016-dRworks-workbook.pdf>

“Author Interview: ‘Culturally Sustaining Pedagogies,’” Education Week (blog), July 6, 2017, Ferlazzo,

Larry. https://blogs.edweek.org/teachers/classroom_qa_with_larry_ferlazzo/2017/07/author_interview_culturally_sustaining_pedagogies.html

How to Support Struggling Students (Mastering the Principles of Great Teaching Series) Jackson, Robyn R. and Claire Lambert., Alexandra, VA: ASCD Publications, 2010.

“White Supremacy Culture,” Dismantling Racism: A Work- book for Social Change Groups, 2001, Jones,

Kenneth and Tema Okun. https://www.thc.texas.gov/public/upload/preserve/museums/files/White_Supremacy_Culture.pdf

Pathway to Equity in Mathematics Instruction: (<https://equitablemath.org/>)

Creating Conditions to Thrive: [STRIDE 3](#)

Dismantling Racism in mathematics Instruction: [STRIDE 1](#)

Professional Learning

Mathematics, the Common Core, and Language: Recommendations for Mathematics Instruction for ELs Aligned with the Common Core Judit Moschkovich, University of California, Santa Cruz

https://ell.stanford.edu/sites/default/files/pdf/academic-papers/02-JMoschkovich%20Math%20FINAL_bound%20with%20appendix.pdf

“Political Conocimiento for Teaching Mathematics: Why Teachers Need It and How to Develop It.”

Gutierrez, Rochelle. In Building Support for Scholarly Practices in Mathematics Methods, edited by Signe E. Kastberg, et al., 11-38. North Carolina: Information Age Publishing, 2017.

“Living Mathematx: Towards a Vision for the Future.” Gutierrez, Rochelle. In Proceedings of the 39th

Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education, eds. Enrique Galindo and Jill Newton, 2–26 Indiana: Hoosier Association of Mathematics Teacher Educators, 2017.



EL Centered strategies:

10 Ways to Help ELLs Succeed in Math

<https://www.scholastic.com/teachers/articles/teaching-content/10-ways-help-ells-succeed-math/>

Math Instruction for English Language Learners By Kristina Robertson

<https://www.colorincolorado.org/article/math-instruction-english-language-learners>

Number Talks: Building Numerical Reasoning

<https://www.scholastic.com/teachers/blog-posts/alycia-zimmerman/number-talks-grow-mathematical-minds/>

VIDEO: <https://www.scholastic.com/teachers/videos/teaching-content/number-talks-building-numerical-reasoning/>

Fostering Math Practices

(Videos of actual lessons to foster math practices and develop critical thinking)

<http://www.fosteringmathpractices.com/contemplate-then-calculate-in-action-video-resources/>

<http://www.fosteringmathpractices.com/connecting-representations-in-action-video-resources/>

Engage NY

Math Studio Talk Video Series: K- 5th Activities and models to help students develop flexible thinking and deep understanding of math concepts.

<https://www.engageny.org/content/math-studio-talk-common-core-instruction-video-series>

Video Library K-12 Mathematics

<https://www.engageny.org/content/k-12-mathematics>

<https://www.engageny.org/resource/grade-k-math-fluency-koa1>

Video Professional Development Series: Mathematics various grades 3rd-12th

<https://www.engageny.org/resource/video-professional-development-series>

Integrating Math and Language Arts: Why use children's literature to teach math?

<http://teacher.scholastic.com/reading/bestpractices/math.htm>

Using Children's Literature to Teach Math

<http://www.marilynburnsmathblog.com/using-childrens-literature-to-teach-math/>

<http://www.marilynburnsmathblog.com/category/video-clips/>

English Language Learners and Math Achievement: A Study of Opportunity to Learn and Language Accommodation

Technical, Jamal Abedi, Mary Courtney, Seth Leon, Jenny Kao, and Tarek Azzam
CRESST/UCLA

<https://cresst.org/wp-content/uploads/R702.pdf>

Math Talk 101- (Considerations for EL's and diverse learners needed)

<https://www.scholastic.com/teachers/blog-posts/genia-connell/math-talk-101/>

Linguistic Modification

Part I: Language Factors in the Assessment of English Language Learners: The Theory and Principles Underlying the Linguistic Modification Approach

Jamal Abedi, Ph.D. University of California, Davis and the Advance Research and Data Analyses Center

Part II: A Guide to Linguistic Modification: Increasing English Language Learner Access to Academic Content by Edynn Sato, Ph.D. Assessment and Accountability Comprehensive Center and WestEd

https://ncela.ed.gov/files/uploads/11/abedi_sato.pdf



“Critical Praxis,” McLaren, Peter L. and Jean Jinsun Ryoo, Jenifer Crawford, Dianna Moreno. in Encyclopedia of Curriculum Studies, ed. Craig Kridel, 51. Thousand Oaks, CA: Sage Publications, 2010.

5 Practices for Orchestrating Productive Mathematics Discussions, Smith, Margaret Schwan and Mary Kay Stein. Reston, VA: National Council of Teachers of Mathematics, 2011.

Pathways to Equity in Mathematics Instruction
References for each stride

Pathway to Equity in Mathematics Instruction: (<https://equitablemath.org/>)

Toolkit References for every Stride

https://www.dropbox.com/sh/96hnt4z27ciqczq/AAD_Y4W5cLISk8TdMOaTTqGUWa?dl=0