

Principles for High-Quality, Standards-Aligned Professional Learning

Introduction to the Principles

Why Professional Learning Principles?

Professional learning aligned to college- and career-ready standards has the power to improve instruction as well as student outcomes. But too often teachers are receiving incoherent professional learning that does not result in effective and equitable instructional practice or improved student achievement.

There is not one “perfect” model of professional learning, but research points to conditions that must be met for it to be effective. Walking into any given professional learning moment can and *should* look different from district to district, school to school, and even teacher to teacher, if it is to meet the unique needs of that setting. The design of each of those experiences must reflect certain research-based non-negotiables, or Principles for High-Quality, Standards-Aligned Professional Learning:

Principle 1: Professional learning must be content-focused. Professional learning builds teachers’ content knowledge and pedagogical content knowledge necessary to teach the concepts of their discipline.

Principle 2: Professional learning must be teacher- and student-centered. Professional learning promotes collective responsibility for students’ learning and cultivates a dynamic culture for adult learning.

Principle 3: Professional learning must be instructionally relevant and actionable. Professional learning is anchored in the instructional priorities of teachers’ daily work and is sustained in a coherent system of collaborative planning, classroom practice, observation, feedback, and continuous cycles of inquiry grounded in evidence of student learning.

These Principles are intended to provide clarity and direction for those charged with selecting or designing professional learning for teachers and those who support teachers. The Principles articulate what needs to be true based on a synthesis of existing knowledge about professional learning, while leaving space for a diversity of structures to match the needs of a local setting. **All three Principles need to be reflected** for professional learning to impact instruction in a meaningful way.

Where did these Principles come from?



Student Achievement Partners developed these Principles for High-Quality, Standards-Aligned Professional Learning by distilling existing research and listening to voices from the field. One of the first stages of the process was to survey the research base and to curate from it the essential features of effective professional learning through a lens of college- and career-ready aligned instruction. Concurrently, Student Achievement Partners interviewed stakeholders, including teachers, instructional coaches, school-building leaders, system leaders and advisors, and designers and deliverers of professional learning to learn about the experiences of the field. This knowledge review resulted in three Principles, each supported by specific descriptors that define the principle operationally to bridge theory and practice.

How can the Principles help?

There are a number of challenges facing those who are designing, selecting, and implementing professional learning. Few resources exist to support school and district leaders in evaluating the wide range of professional learning offerings for quality and alignment to college- and career-ready standards. There is little information on the college- and career-ready standards-aligned literacy and mathematics content teachers should be learning to build on their knowledge and advance their practice. As a result, professional learning is often divorced from the instructional vision and academic priorities of a school or system, pulling teachers in various directions – at times contradictory – and offering little sustained support to teachers in applying what they have learned. A broad understanding of the evidence-based attributes that need to be present to ensure effective professional learning can start to address these challenges. The Principles for High-Quality, Standards-Aligned Professional Learning meet this need. With the common understanding of high-quality professional learning as defined by the three Principles, decision makers can begin wielding more power, whether as consumers or designers of professional learning.

This work of designing and engaging in professional learning is hard, and it is the work of many. The changes suggested by these Principles may not be simple or quick. But this change is necessary, especially for students for whom we can and must do better. When these evidence-based components are in place, teachers will begin to have the support they need to enable powerful learning for all students.

Principles for High-Quality, Standards-Aligned Professional Learning

- 1. Content-Focused:** Professional learning builds teachers' content knowledge and pedagogical content knowledge necessary to teach the concepts of their discipline. Consistent with this principle, professional learning must:
 - a. Focus on specific instructional strategies and content knowledge in literacy and mathematics¹ that helps teachers teach the standards for their grade and the underlying concepts of the discipline² (Ball, 2011; Jensen et al., 2016; Lynch et al., 2019; Schoenfeld, 2014; Weiland et al., 2018).
 - b. Anchor pedagogical strategies within the specific context of the instructional materials being used in the classroom to inform and improve student learning (Cobb et al., 2018; Desimone & Garet, 2015; Gallagher, 2016; Jensen et al., 2016; Lynch et al., 2019; Weiland et al., 2018).
 - c. Equip teachers with strategies for equitable instruction that provide all students with access to grade-level content and tasks (for example, appropriate scaffolds to access grade-level text, access prior mathematical knowledge in the context of grade-level work) (Ladson-Billings, 1995; Leana, 2011; Peske & Haycock, 2006).
 - d. Ground learning in research about how students best acquire specific knowledge and skills (Gay, 2002; Gersten et al., 2010; Jensen et al., 2016; Timperley, 2007).
 - e. Project a clear vision of research-based instructional practices that are focused on student learning and support educators to make sense of the practices through hands-on and intellectually engaging approaches (Darling-Hammond et al., 2009; Desimone, 2011; Gersten et al., 2010; Rhoton & Wojnowski, 2006; Timperley, 2007; Willis, 2002).

- 2. Teacher- and Student-Centered:** Professional learning promotes collective responsibility for students' learning and cultivates a dynamic culture for adult learning. Consistent with this principle, professional learning must:
 - a. Contribute to a trusting and motivating adult culture where curiosity and improvement are valued, and educators feel safe taking risks and learning from mistakes (Baum & Krulwich, 2016; Davis, 2013; Lynch et al., 2019; Saunders et al., 2009; Timperley, 2007; Willis, 2002).
 - b. Challenge educators' mindsets, expectations, attitudes, and biases about students, particularly students facing barriers of racism and/or poverty, so that educators have positive views of student capabilities and high expectations for all students (Cobb et al., 2018; Timperley, 2007; Ukpokodu, 2011).
 - c. Require and support teachers to design and deliver instruction that is responsive to and respects the value of all students' backgrounds, languages, cultures, points of view, knowledge, and skills (Gay, 2002; Hammond, 2015; Ladson-Billings, 1995).
 - d. Encourage teachers and students to think critically about and respond to how representation of multiple perspectives and identities are evident in instructional materials, taking action when materials are lacking in representation (Gay, 2002; Hammond, 2015; Kozleski, 2010; Ladson-Billings, 1995; Villegas & Lucas, 2002).

¹ The Principles are intended to inform the creation of coherent and robust professional learning for all teachers while acknowledging the heterogeneity of students and the diversity of educator roles within any school system. Refer to other complementary, evidence-based professional learning resources for information regarding educators working across instructional disciplines and with specific student populations. For example, [Professional Development Essentials For Educators of Multilingual Learners](#) and [The National Center on Educational Outcomes](#).

² Language demands embedded within college- and career-readiness standards for English language arts, literacy, and mathematics, span interpretive, productive, and interactive linguistic competencies. Such standards require students to acquire and produce ever-increasing English language complexity as they proceed through the grades to engage in—and master—a range of disciplinary practices and performances.

- e. Solicit teacher input and feedback to inform the design and delivery of ongoing professional learning (Boston Consulting Group, 2014; Calvert, 2016; Leana, 2011; Ronfeldt et al., 2015; Santagata et al., 2011; Saunders et al., 2009).
 - f. Build educators' capacity to sustain discipline-specific professional learning through development of school and/or school district content expertise in mathematics and literacy (Calvert, 2016; Desimone & Garet, 2015; Saunders et al., 2009).
- 3. Instructionally Relevant and Actionable:** Professional learning is anchored in instruction and is sustained in a coherent system of collaborative planning, classroom practice, observation, feedback, and continuous cycles of inquiry grounded in evidence of student learning. Consistent with this principle, professional learning must:
- a. Constantly focus and refocus what educators are learning on implications for improved student learning (Elmore, 2008; Gersten et al., 2010; Guskey & Yoon, 2009; Saunders et al., 2009).
 - b. Organize learning experiences with teachers and teams who share the same content focus (for example, grouping by subject and grade level) so teachers can target specific, shared learning goals (Calvert, 2016; Desimone, 2011; Rhoton & Wojnowski, 2006; Lynch et al., 2019).
 - c. Include regular collaborative opportunities for teachers to design, rehearse, and refine instructional practices, tasks, and assignments; examine student work to determine progress; and design the next cycle of learning and teaching (Croft et al., 2010; Darling-Hammond et al., 2009; Garrett et al., 2019; Guskey & Yoon, 2009; Lynch et al., 2019; Moldoveanu & Narayandas, 2016; Rhoton & Wojnowski, 2006; Saunders et al., 2009; Stigler & Hiebert, 1999; Weiland et al., 2018; Yoon et al., 2007).
 - d. Provide teachers with sustained follow-up, structured feedback, and opportunities to reflect as they transfer what they've learned to the classroom (for example, through observation with a content-specific observation rubric such as the [Instructional Practice Guide](#) or other content-specific observation rubrics) (Desimone, 2011; Gulamhussein, 2013; Jensen et al., 2016; Lynch et al., 2019; Russell et al., 1999; Sachs, 2004; Truesdale, 2003; Willis, 2002).
 - e. Align with the school and/or school district's vision of discipline-specific instructional improvements, and be monitored by analyzing replicable evidence of teacher and student learning (Cobb et al., 2018; Guskey & Yoon, 2009; Jensen et al., 2016).

How These Principles Were Developed

Student Achievement Partners engaged in an evidence-based collaborative design process to create an actionable set of Principles. Key components of the design process included:

Review of Existing Scholarship

Student Achievement Partners surveyed a variety of literature about effective professional learning, including quantitative, qualitative, peer-reviewed, and non-peer-reviewed research. Studies and articles were curated by conducting an internal research identification process and evaluating recommendations from partners and advisors. To distill the list of over 200 studies and articles, Student Achievement Partners first selected papers that utilized rigorous research methods (peer-reviewed, involved treatment conditions and control groups, and larger sample sizes) and included results regarding measurable student achievement. Essential features of effective professional learning associated with improved student achievement were identified. The selected qualitative research elaborated on elements of effective professional learning that were suggested in the quantitative studies. The descriptors in the Principles highlight the themes from the research studies and explanatory articles.

Empathy Interviews

Student Achievement Partners conducted over 50 empathy interviews with teachers, instructional coaches, school leaders, system leaders, professors, and researchers. Hearing from the diverse voices of people closest to the daily challenges of designing, implementing, and experiencing professional learning provided a practical context for the evidence-based Principles.

Contributions from Partners

Student Achievement Partners engaged with partners and advisors who served as collaborators, lending their expertise and experience to provide valuable feedback at various stages to strengthen the evidence base and message of the Principles.

Acknowledgements

Advisory Group

Student Achievement Partners is grateful for the feedback, guidance, and support of a distinguished group of Advisors who served as valuable thought partners in the development of the Principles. Their perspectives about what makes actionable, impactful professional learning strengthened the Principles immeasurably.

Dr. Harold Asturias

Director
*Center for Mathematics
Excellence and Equity*

Dr. Magda Chia

Director for Strategy, Impact and Policy
*Understanding Language, Stanford
University*

Dr. Paul Cobb

Research Professor in Math Education, Professor
Emeritus, Department of Teaching and Learning
Vanderbilt University

Rachel Curtis

Rachel Curtis Consulting

Phil Daro

Mathematics Educator and Consultant

Dr. Laura Desimone

Director of Research, College of Education and Human Development Professor, School of Education and Joseph R. Biden, Jr. School of Public Policy and Administration
University of Delaware

Francis (Skip) Fennell

Professor Emeritus
McDaniel College
Past President
National Council of Teachers of Mathematics (NCTM) and Association of Mathematics Teacher Educators (AMTE)

Crystal Gonzales

Executive Director
English Learners Success Forum

Dr. Heather Hill

Professor
Harvard Graduate School of Education

Dr. Stephanie Hirsh

Former Executive Director
Learning Forward

Ben Jensen

Chief Executive Officer
Learning First

Dr. Chonda Long

Director of Professional Development
National Council of Teachers of Mathematics

Brian Pick

Former Chief, Teaching & Learning
DC Public Schools

Dr. Alan Schoenfeld

Elizabeth and Edward Conner Professor of Education and Affiliated Professor of Mathematics
University of California at Berkeley

Doug Sovde

Director of K–12 Education Strategy, Policy, and Services
Dana Center

Dr. John W. Staley

Chair *U.S. National Commission on Mathematics Instruction*
Baltimore County Public Schools

Ross Wiener

Vice President and Executive Director, Education and Society Program
Aspen Institute

Special Thanks

Special thanks is also given to the diverse group of teachers, district and school leaders, partners, and others who gave generously of their time throughout the development of the Principles. From sharing their firsthand accounts of what *hasn't* worked in professional learning to sharing concrete ideas for what *does*, these individuals and organizations played an integral role in helping us identify what these Principles needed to say and inspire us all to do.

Achievement Network**Aspen Institute****Katherine Baldwin**

Project Director
Bank Street Education Center

Valerie Barron

Director
TNTP

Denise Glyn Borders, Ed.D.

President/ CEO
Learning Forward

Sherry Chen

Partner
UPD Consulting

Corinne Colgan

Chief, Teaching and Learning
District of Columbia Public Schools

Cheryl Becker Dobbertin

Director of Secondary Education
East Irondequoit CSD

Cory Epler

Chief Academic Officer
Nebraska Department of Education

ERS**Christina Gonzalez**

Director, ELA Learning Design
Instruction Partners

Genevieve Quist Green

Director of School Design
Education Resource Strategies

Ellen Greig

Senior Director, Products & Curriculum
New Teacher Center

Emily Hofer

Managing Director, Literacy Content
The Achievement Network

Jean Hurst

Teacher/Instructional Coach
Genesee Community Charter School

Instruction Partners**Vaishali Joshi**

Managing Director of Content Design
Teaching Lab

Chris Kalmbach

Elementary Math Coach
Moses Lake School District

Shyla Kinhal

Program Director
Leading Educators

Rebecca Kockler

Consultant

Andrea LaGala Lamb

Math Coach/Specialist
Waltham Public Schools

Janise Lane

Executive Director of Teaching and Learning
Baltimore City Public Schools

Leading Educators**Learning Forward****Allison Leslie**

Chief Academic Officer
Compass Community Schools

Giselle Lundy-Ponce

ELL Issues and Policy Specialist
American Federation of Teachers

Sarah Luvaas

Teacher
Redland Elementary, Oregon City School District

Jacqueline Magee

Director
Learning First

Michele Mailhot

Mathematics Specialist
Maine Department of Education

Laura Meili

Managing Director of Program Strategy
Leading Educators

Chris Miller

Director, Cluster Support Model
DC Public Schools

Nicole Murnane

Senior Associate
Learning First

New Leaders**New Teacher Center****April Pforts**

State Supervisor of Mathematics
Iowa Department of Education

Max Ray-Riek

Director of 6-12 Professional Learning
Illustrative Mathematics

Relay Graduate School of Education**Melissa Romano**

Classroom Educator
Helena School District

Amy L. C. Rudat

Senior Director, ELA
Unbounded.org

Ashlee Saddler

Director, CLDE
Aurora Public Schools

Tricia Stoll

Instructional Coach
Gulfport School District

Teaching Lab**TNTP****UnboundEd****Victoria Van Cleaf**

Executive Vice President
TNTP

Denise M. Walston

Director of Mathematics
Council of the Great City Schools

Joanne Weiss

Independent Consultant
Weiss Associates LLC

Judy Wurtzel

Senior Director, Education
Charles and Lynn Schusterman Family Foundation

Works Cited

- Ball, D. L., & Forzani, F. M. (2011). Building a Common Core for learning to teach: And connecting professional learning to practice. *American Educator*, 35(2), 17-39.
- Baum, K., & Krulwich, D. (2016). *The Artisan Teaching Model for instructional leadership: Working together to transform your school*. ASCD.
- Boston Consulting Group. (2014). *Teachers know best: Teachers' views on professional development*. Bill and Melinda Gates Foundation.
- Calvert, L. (2016). *Moving from compliance to agency: What teachers need to make professional learning work*. Learning Forward and NCTAF.
- Cobb, P., Jackson, K., Henrick, E., Smith, T. M., & the MIST Team. (2018). *Systems for instructional improvement: Creating coherence from the classroom to the district office*. Harvard Education Press.
- Croft, A., Coggshall, J. G., Dolan, M., Powers, E., & Killion, J. (2010). *Job-embedded professional development: What it is, who is responsible, and how to get it done well*. National Comprehensive Center for Teacher Quality, Mid-Atlantic Comprehensive Center, and National Staff Development Council.
- Darling-Hammond, L., Wei, R. C., Andree, A., Richardson, N., & Orphanos, S. (2009). *Professional learning in the learning profession*. National Staff Development Council.
- Davis, J. (2013). Supporting creativity, inclusion and collaborative multi-professional learning. *Improving Schools*, 16(1), 5-20.
- Desimone, L. M. (2011). A primer on effective professional development. *Phi Delta Kappan*, 92(6), 68-71.
- Desimone, L., & Garet, M. (2015). Best practice in teachers' professional development in the U.S. *Psychology, Society, & Education*, 7(3), 252-263.
- Elmore, R. (2008). *Improving the instructional core*. Harvard University, School of Education.
- Gallagher, A. (2016). *Professional development to support instructional improvement: Lessons from research* (working paper). SRI International.
- Garrett, R., Citkowicz, M., & Williams, R. (2019). How responsive is a teacher's classroom practice to intervention? A meta-analysis of randomized field studies. *Review of Research in Education*, 43(1), 106-137.
- Gay, G. (2002). Preparing for culturally responsive teaching. *Journal of Teacher Education*, 53(2), 106-116.
- Gersten, R., Dimino, J., Jayanthi, M., Kim, J. S., & Santoro, L. E. (2010). Teacher study group: Impact of the professional development model on reading instruction and student outcomes in first grade classrooms. *American Educational Research Journal*, 47(3), 694-739.
- Gulamhussein, A. (2013). *Teaching the teachers: Effective professional development in an era of high stakes accountability*. Center for Public Education.
- Guskey, T. R., & Yoon, K. S. (2009). What works in professional learning. *Phi Delta Kappan*, 90(7), 495-500.
- Hammond, Z. (2015). *Culturally responsive teaching and the brain: Promoting authentic engagement and rigor among culturally and linguistically diverse students*. Corwin, a SAGE company.

- Jensen, B., Sonnemann, J., Roberts-Hull, K., & Hunter, A. (2016). *Beyond PD: Teacher professional learning in high-performing systems*. National Center on Education and the Economy.
- Kozleski, E. (2010). *Culturally responsive teaching matters!* Equity Alliance at ASU.
- Ladson-Billings, G. (1995). Toward a theory of culturally relevant pedagogy. *American Educational Research Journal*, 32(3), 465-491.
- Leana, C. (2011). The missing link in school reform. *Stanford Social Innovation Review*, 9(4), 30-35.
- Lynch, K., Hill, H. C., Gonzalez, K. E., & Pollard, C. (2019). Strengthening STEM instruction in schools: Learning from research. *Policy Insights From the Behavioral and Brain Sciences*, 6(2), 236-242.
- Moldoveanu, M., & Narayandas, D. (2016). *The skills gap and the near-far problem in executive education and leadership development* (Working paper #17-019). Harvard Business School.
- Peske, H., & Haycock, K. (2006). *Teaching inequality: How poor and minority students are shortchanged on teacher quality*. Education Trust.
- Rhoton, J., & Wojnowski, B. (2006). Building ongoing and sustained professional development. In J. Rhoton & P. Shane (Eds.), *Teaching Science in the 21st Century* (pp.113-125). NSTA Press.
- Ronfeldt, M., Farmer, S. O., McQueen, K., & Grissom, J. A. (2015). Teacher collaboration in instructional teams and student achievement. *American Educational Research Journal*, 52(3), 475-514.
- Russell, S. J., Schifter, D., & Bastable, V. (1999). Teaching to the big ideas. In M. Solomon (Ed.), *The Diagnostic Teacher* (pp. 30-33). Teachers College Press.
- Sachs, S. (2004). Evaluation of teacher attributes as predictors of success in urban schools. *Journal of Teacher Education*, 55(2), 177-187.
- Santagata, R., Stigler, J. W., Kersting, N., & Givvin, K. B. (2011). Problem implementation as a lever for change: An experimental study of the effects of a professional development program on students' mathematics learning. *Journal of Research on Educational Effectiveness*, 4(1), 1-24.
- Saunders, W., Goldenberg, C., & Gallimore, R. (2009). Increasing achievement by focusing grade-level teams on improving classroom learning: A prospective, quasi-experimental study of Title I schools. *American Educational Research Journal*, 46(4), 1006-1033.
- Schoenfeld, A. (2014). What makes for powerful classrooms, and how can we support teachers in creating them? A story of research and practice, productively intertwined. *Educational Researcher*, 43(8), 404-412.
- Stigler, J., & Hiebert, J. (1999). *The teaching gap: Best ideas from the world's teachers for improving education in the classroom*. Free Press.
- Timperley, H., Wilson, A., Barrar, H., & Fung, I. (2007). *Teacher professional learning and development*. Ministry of Education, New Zealand.
- Truesdale, W. T. (2003). The implementation of peer coaching on the transferability of staff development to classroom practice in two selected Chicago public elementary schools. *Dissertation Abstracts International*, 64(11). University Microfilms No. 3112185.
- Ukpokodu, O. (2011). How do I teach mathematics in a culturally responsive way? *Multicultural Education*, 19(3), 47-56.
- Villegas, A. M., & Lucas, T. (2002). Preparing culturally responsive teachers: Rethinking the curriculum. *Journal of Teacher Education*, 53(1), 20-32.

Weiland, C., McCormick, M., Mattera, S., Maier, M., & Morris, P. (2018). Preschool curricula and professional development features for getting to high-quality implementation at scale: A comparative review across five trials. *AERA Open*, 4(1), 1-16.

Willis, S. (2002). Creating a knowledge base for teaching: A conversation with James Stigler. *ASCD Educational Leadership*, 59(6), 6-11.

Yoon, K. S., Duncan, T., Lee, S. W-Y., Scarloss, B., & Shapley, K. L. (2007). *Reviewing the evidence on how teacher professional development affects student achievement* (REL 2007–No. 033). Regional Educational Laboratory Southwest.