

Elements of Effective Teaching

A Product of the National Center for Education Evaluation at IES

Introduction

Through its “Ask an Expert” service, REL Northwest responds to requests from state and local education leaders for quick-turnaround, evidence-based information on topics that address high-leverage needs in the Northwest region.

For this “Ask an Expert,” leaders from a state education agency wanted to better understand the research behind elements of effective teaching. REL Northwest experts Caitlin Beatson and Sarah Barzee, along with team members Hannah Jarmolowski and Ione Heigham, developed this product to address the state education agency's needs. The product may inform other school districts as they make decisions about teaching practices and teacher evaluation tools.

Overview

Teachers influence student outcomes more than any other school factor (Chetty et al., 2013; McCafferty et al., 2003). Effective teachers improve student outcomes—academic and behavioral (Jackson, 2018; Doan, 2019; Kraft, 2019). So, what makes teaching effective?

This fact sheet summarizes research on key elements of effective teaching and illustrates how those elements align with professional practice metrics used in various teacher evaluation tools.¹

Research on Elements of Effective Teaching

Research indicates that elements of effective teaching that positively impact student outcomes fall within six general categories: (1) preparation and planning; (2) professionalism and collaboration; (3) classroom management; (4) teacher expectations; (5) instructional delivery; and (6) assessment and feedback.

Below, we describe elements of effective teaching in each of these categories and summarize the evidence supporting each element.

¹ The information presented in this fact sheet is based on selected literature and does not represent a comprehensive review of all the research on this topic.

Elements of Effective Teaching

Preparation and Planning

Effective teachers possess and apply essential content and pedagogical knowledge; plan lessons that align with appropriate learning standards and relevant guidelines; and use high-quality curriculum and instructional materials.

- Teacher preparedness, reflected by certification status (a proxy for knowledge and skill base), predicts student achievement (Darling-Hammond, 2000; Podolsky et al., 2019).
- Preparing materials, planning activities, and managing workflow supports student learning and academics (LePage et al., 2005; Stronge, 2018).
- Implementing curricula and instructional materials aligned with rigorous academic standards leads to student learning gains (Chingos & Whitehurst, 2012; Kaufman et al., 2018).

Professionalism and Collaboration

Effective teachers engage in high-quality professional learning; communicate regularly with students and their families; and collaborate with colleagues.

- High-quality professional learning contributes to growth in teachers' knowledge and practice which leads to improved student outcomes. Professional learning is effective when it is content focused, incorporates active adult learning, supports collaboration, uses models of effective practice, provides coaching and expert support, offers feedback and reflection, and is of sustained duration (Darling-Hammond et al., 2017).
- Teacher–family communication increases student engagement, including on-task behavior and classroom participation, which is associated with improved student achievement (Kraft & Dougherty, 2013).
- Teacher collaboration during professional development results in positive outcomes for both teachers and students (Sturko & Gregson, 2008; Gersten et al., 2010; Schmoker, 2006).

Classroom Management

Effective teachers foster positive relationships with students and create a motivating and supportive classroom culture that affirms students' strengths and maximizes their learning.

- Universal classroom management approaches—those implemented with an entire class—that support prosocial behavior and prevent or reduce inappropriate behavior lay the groundwork for effective instructional practices and student learning (Oliver et al., 2011).
- Proactive management—such as clearly stating expectations and anticipating when students may struggle—and culturally responsive teaching practices are associated with improvements in student behavior, engagement, and achievement (Larson et al., 2018; Simonsen et al., 2008; Same et al., 2018).
- Classroom management that builds positive relationships and community increases students' engagement, motivation, and learning (Brophy, 1998; Muñoz et al., 2013; Same et al., 2018).

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Teacher Expectations

Effective teachers identify and address implicit biases and maintain high expectations for every student.

- Adopting interventions to support teachers' expectations—such as those that create awareness that teacher expectations can be inaccurate and/or biased towards particular groups of students—raises teacher expectations and subsequent student achievement (de Boer et al., 2018; Rubie-Davis et al., 2015).
- When teachers have high expectations for students, students tend to achieve higher academic outcomes (Same et al., 2018; Berns, 2016).
- When teachers have low expectations of students, these expectations can become a self-fulfilling prophecy that disproportionately hurts students of color and students from low-income families (Gersten et al., 2010).

Instructional Delivery

Effective teachers use evidence-based instructional practices and vary their approaches to meet different student needs.

- Teachers' use of multiple evidence-based instructional strategies—such as presenting lesson content at a rate or pace that promotes learning, relating new concepts to previous lessons, and pausing to give students time to think about concepts—increases instructional quality and student academic engagement (Lara-Alecio et al., 2012; Reddy et al., 2021).
- Evidence-based instruction that incorporates student well-being and is aligned with student needs increases their academic achievement (McCart & Choi, 2020).
- Designing instruction based on students' diverse needs is motivating and improves their academic outcomes (Goddard et al., 2015).

Assessment and Feedback

Effective teachers provide positive and timely performance feedback to students and assess student learning progress to inform adjustments to instruction.

- Formative assessment—a process through which assessment-elicited evidence of student learning is gathered and instruction is modified in response to feedback—is positively associated with student motivation and achievement (Cauley & McMillan, 2010).
- Teachers' use of formative assessment and frequent feedback contributes to students' use of self-regulated learning strategies, such as tracking their learning progress (Makkonen & Jaquet, 2020).
- A combination of both positive and performance gap feedback increases student achievement (Faulconer et al., 2022).

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Annotated Bibliography

This annotated bibliography includes a list of citations to sources for each of the six categories. Under each citation, the design, sample, and data sources are listed, and the key points relevant to elements of effective teaching are summarized. Text in bold are the key takeaways.

Preparation and Planning

Chingos, M., & Whitehurst, G. (2012). *Choosing blindly: Instructional materials, teacher effectiveness, and the Common Core*. Brookings Institution.
<https://www.brookings.edu/research/choosing-blindly-instructional-materials-teacher-effectiveness-and-the-common-core/>

Design	Literature review
Sample	na is not applicable*
Data Source	Existing research

*The article did not indicate how many studies were included in the review.

The authors shared three recommendations:

- 1. State education agencies should collect data from districts on the instructional materials in use in their schools.** The collection of comprehensive and accurate data will require states to survey districts, and in some cases, districts may need to survey their schools. In the near term, many states can quickly glean useful information by requesting purchasing reports from their districts' finance offices. Building on these initial efforts, states should look to initiate future efforts to survey teachers, albeit on a more limited basis;
- The federal government's National Center for Education Statistics should aid states in this effort by developing data collection templates for them to use through its Common Education Data Standards (CEDS) and guiding how states can use and share data on instructional materials; and
3. Organizations with an interest in education reform should support this effort.

Darling-Hammond, L. (2000). Teacher quality and student achievement. *Education Policy Analysis Archives*, 8(1). <https://doi.org/10.14507/epaa.v8n1.2000>

Design	Correlational study
Sample	52,000 public school teachers and 9,500 public school principals (SASS) and statewide student NAEP scores from all states that administered the exam
Data Source	Survey of policies across 50 states, state case study analyses, the 1993–94 Schools and Staffing Surveys (SASS), and the 1990, 1992, 1994, and 1996 National Assessment of Educational Progress (NAEP)

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This study assessed quantitative and qualitative data to examine if and how teacher qualifications relate to student achievement at the state level. **Researchers found those teacher quality variables, specifically full certification and a major in their field, are more strongly related to student achievement than factors such as class size, spending, and student demographics.** Additionally, state and local policies such as NCATE accreditation of teacher preparation programs, district hiring standards, and less so, state professional standards boards are correlated with teacher qualifications.

Kaufman, J. H., Opfer, V. D., Bongard, M., Pane, J. D., & Thompson, L. E. (2018). *Changes in what teachers know and do in the Common Core era: American Teacher Panel Findings from 2015 to 2017*. RAND Corporation. <https://doi.org/10.7249/rr2658>

Design	Descriptive analysis
Sample	Teachers across the United States completed 2,745 surveys in 2015, 3,542 surveys in 2016, and 2,698 surveys in 2017
Data Source	RAND American Teacher Panel (ATP) survey was administered to teachers in 2015, 2016, and 2017

Use of standards-aligned curricula matters: **Teachers using standards-aligned materials—and fewer materials that were not aligned—had more knowledge about their state standards and reported their students engaging in more standards-aligned practices.**

LePage, P., Darling-Hammond, L., Akar, H., with Gutierrez, C., Jenkins-Gunn, E., & Rosebrock, K. (2005). Classroom Management. In Darling-Hammond, L., Bransford, J. (Eds.). *Preparing teachers for a changing world: What teachers should learn and be able to do*, 327–357. Jossey-Bass. <https://psugtep.pbworks.com/f/Preparing%20Teachers%20for%20a%20Changing%20World.pdf>

Design	Information analysis
Sample	na is not applicable*
Data Source	Existing research and theory

*Note. This is a secondary source.

This chapter presents a review of research on classroom management suggesting that planning and preparation support classroom management. **Results indicate that teachers’ ability to prepare materials, plan activities, and manage workflow is related to student learning and academic achievements.**

Nordgren, K., Kristiansson, M., Liljekvist, Y., & Bergh, D. (2021). Collegial collaboration when planning and preparing lessons: A large-scale study exploring the conditions and infrastructure or teachers’ professional development. *Teaching and Teacher Education*, 108, 103513. <https://doi.org/10.1016/j.tate.2021.103513>

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Design	Correlational study
Sample	A stratified random sample of 2,285 primary and secondary teachers in Sweden
Data Source	Teacher surveys

This study explores how teachers perceive the working conditions for planning and preparing their lessons, focusing on collegial collaboration and systematic and formative teaching. **The results show a systematic correlation between a supportive, collegial structure for planning and preparation and teachers' validation of their teaching and working conditions.**

Penuel, W. R., Gallagher, L. P., & Moorthy, S. (2011). Preparing teachers to design sequences of instruction in Earth systems science: A comparison of three professional development programs. *American Educational Research Journal*, 48(4), 996–1025.
<https://doi.org/10.3102/0002831211410864>

Design	Randomized controlled trial
Sample	53 grade 6, 7, and 8 teachers from 19 middle schools in a large urban school district in the southeastern United States
Data Source	Classroom observations, teacher post-unit surveys, and unit assessments

This study investigated whether and how professional development can help teachers design sequences of instruction that lead to improved science learning. **Results indicated that the two programs most effective at improving students' science learning were the ones in which teachers received explicit instruction in models of teaching.**

Podolsky, A., Darling-Hammond, L., Doss, C., & Reardon, S. (2019). *California's positive outliers: Districts beating the odds*. Learning Policy Institute.
<https://learningpolicyinstitute.org/product/positive-outliers-districts-beating-odds-report>

Design	Quantitative analysis
Sample	435 California districts
Data Source	District-level student test scores, California Department of Education data, American Community Survey Data, and education demographic and geographic estimates data

This report summarizes the results of a quantitative analysis that identifies districts in which students of color, as well as their White peers, have demonstrated extraordinary levels of academic achievement, measured by California's new assessments in English language arts and mathematics, taking into account race and family income and education levels. These results show that, aside from socioeconomic status, a major predictor of student achievement is the preparedness of teachers. **The proportion of teachers holding less than a full credential (that is, an intern credential, temporary or short-term permit, or waiver for their teaching position) shows a strong negative association with student achievement for all student groups.**

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Stronge J. H. (2018). *Qualities of effective teachers*, 3rd ed. Association of Supervision and Curriculum Development. https://files.ascd.org/staticfiles/ascd/pdf/siteASCD/publications/books/QualitiesOfEffectiveTeachers3rdEd_Stronge_0318.pdf

Design	Literature review
Sample	na is not applicable
Data Source	Existing research and theory

Planning is a deliberate process that results in teachers being well-prepared. Organizing time and preparing materials in advance of instruction have been noted as important aspects of effective teaching. Teachers must consider a variety of factors when planning instruction, including what should be taught, how it will be taught, and how students will be assessed. **Evidence suggests that once teachers develop their instructional plans, they follow those plans while continuously adjusting them to fit the needs of different situations.**

Professionalism and Collaboration

Darling-Hammond, L., Hyler, M. E., & Gardner, M. (2017). *Effective teacher professional development*. Learning Policy Institute. <https://doi.org/10.54300/122.311>

Design	Systematic review
Sample	35 studies
Data Source	To be included, studies featured a careful experimental or comparison group design or they analyzed student outcomes with statistical controls for context variables and student characteristics

Based on a review of research, the authors determined that **successful professional development includes the following seven characteristics:**

1. **Is content focused**
2. **Incorporates active learning utilizing adult learning theory**
3. **Supports collaboration, typically in job-embedded contexts**
4. **Uses models and modeling of effective practice**
5. **Provides coaching and expert support**
6. **Offers opportunities for feedback and reflection**
7. **Is of sustained duration**

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. <https://doi.org/10.3102/0002831209361208>

Design	Randomized controlled trial
Sample	81 grade 1 teachers, 468 students, 19 schools, across three states
Data Source	Classroom observations and teacher knowledge exams

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Randomized field trials were used to examine the impact of the Teacher Study Group (TSG), a professional development model, on grade 1 teachers' reading comprehension and vocabulary instruction, their knowledge of these areas, and the comprehension and vocabulary achievement of their students. **Classroom observations of teaching practice showed significant improvements in TSG schools. TSG teachers also significantly outperformed control teachers on the teacher knowledge measure of vocabulary instruction.** The results indicated insignificant effects on students' oral vocabulary.

Kraft, M. A., & Dougherty, S. M. (2013). The effect of teacher–family communication on student engagement: Evidence from a randomized field experiment. *Journal of Research on Educational Effectiveness*, 6(3), 199–222. <https://doi.org/10.1080/19345747.2012.743636>

Design	Randomized field experiment; clustered randomized assignment
Sample	Grade 6 and 9 students in 14 class-taking groups, with 69 students in the treatment group and 71 students in the control group (students were participating in a summer academy at MATCH in Boston, which serves a largely low-income, minority population)
Data Source	Class participation, on-task behavior, surveys, and interviews with teachers and students

This clustered randomized assignment study examined the impact of teacher communication with students and parents on student engagement with school, along with classroom observations. Students received one phone call home and one text message per day. **Classroom observations and homework records indicate that students in the treatment group had increased homework completion and class participation rates and fewer incidences of needing to be redirected to on-task behavior.** After conducting a survey and interviews with students and teachers, the researchers concluded that teacher communication forged stronger relationships with students, and increased both student motivation and parental engagement.

Sturko, P. A., & Gregson, J. A. (2008). Learning and collaboration in professional development for career and technical education teachers: A qualitative multi-case study. *Journal of STEM Teacher Education*, 45(3), 5. <https://ir.library.illinoisstate.edu/jste/vol45/iss3/5/>

Design	Qualitative case study
Sample	Six CTE teachers at the Comprehensive Senior High School
Data Source	Participant interviews, classroom observations, materials, and self-assessments

This multi-case study explored the learning and collaboration of six Career and Technical Education (CTE) teachers in two different types of professional development experiences: a course on integrating reading, writing, and mathematics skills into CTE curricula, delivered by a master teacher and a small teacher study group that met regularly to improve teaching practice. **This study found that collaborating during teacher professional development improves teacher outcomes such as improved classroom observations, professional knowledge, and community building.**

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Classroom Management

Brophy, J. (1998). *Motivating Students to Learn.*, 1st ed. New York: McGraw Hill.

LePage et al., (2005).

Design	Review of research
Sample	na is not applicable*
Data Source	Existing research and theory

*Note. This is a secondary source.

This book describes research-based principles for motivating students to learn within the realities of a classroom learning community. **Effective classroom management is defined as enhancing students' engagement, motivation, and learning by developing relationships and community.**

Hochweber, J., Hosenfeld, I., & Klieme, E. (2014). Classroom composition, classroom management, and the relationship between student attributes and grades. *Journal of Educational Psychology*, 106(1), 289–300. <https://doi.org/10.1037/a0033829>

Design	Quasi-experimental design
Sample	31,038 grade 8 students from 1,470 classrooms in Rhineland-Palatinate, Germany
Data Source	Self-reported mathematics grades, standardized mathematics test scores, and surveys

The study examined the extent to which the relationships between student self-reported mathematics grades and different types of student variables (standardized mathematics test scores; interest and effort in mathematics; parental education) are predicted by classroom composition and teachers' classroom management. **Classroom management was found to moderate the association between academic classroom composition and the parental education–grade relationship, indicating a noticeable grade advantage of students with high parental education in classrooms with both unfavorable academic composition and ineffective classroom management.**

Larson, K. E., Pas, E. T., Bradshaw, C. P., Rosenberg, M. S., Day-Vines, N. L., & Gregory, A. (2018). Examining how proactive management and culturally responsive teaching relate to student behavior: Implications for measurement and practice. *School Psychology Review*, 47(2), 153–166. <https://doi.org/10.17105/SPR-2017-0070.V47-2>

Design	Structural equation modeling
Sample	274 teachers in 18 schools: 106 elementary school teachers in 9 elementary schools and 168 middle school teachers in 9 middle schools in one district that included suburban and urban fringe settings and served a diverse student body (about 41% of the students were White, nearly one third (34%) of the students were Black, and about 13% of students were Hispanic/Latino)
Data Source	Teacher surveys and observations

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The study examined the association between student behaviors and the observed use of teacher self-reported efficacy in using culturally responsive teaching and proactive behavior management practices. **Results indicated a statistically significant association between observations of culturally responsive teaching and proactive behavior management practices, with observed positive student behaviors in classrooms.**

Muñoz, M. A., Scoskie, J. R., & French, D. L. (2013). Investigating the “black box” of effective teaching: The relationship between teachers’ perception and student achievement in a large urban district. *Educational Assessment, Evaluation and Accountability*, 25, 205–230. <https://doi.org/10.1007/s11092-013-9167-9>

Design	Quasi-experimental design
Sample	261 grade 4 teachers, and 6,962 students from a school district of nearly 100,000 students in Kentucky
Data Source	Surveys and student standardized test scores

This investigation focused on the relationship between attributes of effective teaching, as perceived by both more and less effective teachers, and grade 4 reading achievement results of their students. **Findings indicated that the more effective teachers value classroom management and organization as the number one characteristic of effective teaching; that, in turn, enables the more effective teachers to focus classroom time on student learning.**

Oliver, R. M., Wehby, J. H., & Reschly, D. J. (2011). Teacher classroom management practices: effects on disruptive or aggressive student behavior. *Campbell Systematic Reviews*, 7(1), 1–55. <https://doi.org/10.4073/csr.2011.4>

Design	Systematic review and meta-analysis
Sample	Existing research
Data Source	Existing research

**Note. This is a secondary source.*

This review examines the effects of teachers’ universal classroom management practices in reducing disruptive, aggressive, and inappropriate behaviors. The specific research questions addressed are: Do teachers’ universal classroom management practices reduce problem behavior in classrooms with students in kindergarten through grade 12? What components make up the most effective and efficient classroom management programs? **Whole-classroom, multi-component programs for classroom management have a significant, positive effect on decreasing problem behavior in the classroom.** Students in the treatment classrooms in all 12 studies showed less disruptive, inappropriate, and aggressive behavior in the classroom compared to untreated students in the control classrooms where “treatment as usual” or typical classroom management practices were occurring. **Teachers who use universal classroom management approaches can expect to experience improvements in student behavior, improvements that establish the context for effective instructional practices to occur.**

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Simonsen, B., Falcon, S., Briesch, A., Myers, D., & Sugai, G. (2008). Evidence-based practices in classroom management: Considerations for research to practice. *Education and Treatment of Children*, 31(3), 351–380. <https://doi.org/10.1353/etc.0.0007>

Design	Systematic review
Sample	Approximately 80 studies
Data Source	Studies that used group experimental, group quasi-experimental, experimental single-subject designs, or causal-comparative

This paper describes the outcomes of a systematic literature search conducted to identify evidence-based classroom management practices. **Although the need for additional research exists, 20 practices, in general, were identified as having sufficient evidence to be considered for classroom adoption.** The categories for the practices are as follows:

1. Maximize structure and predictability
2. Post, teach, review, monitor, and reinforce expectations
3. Actively engage students in observable ways
4. Use a continuum of strategies to acknowledge appropriate behavior
5. Use a continuum of strategies to respond to inappropriate behavior

Teacher Expectations

Berns, R. (2016). *Child, family, school, and community: Socialization and support*, 10th ed. Cengage Learning, Inc. <https://www.cengage.com/c/child-family-school-community-socialization-and-support-10e-berns/9781305088979/>

Design	Review of research
Sample	na is not applicable*
Data Source	Existing research and theory

*Note. This is a secondary source.

When teachers' expectations are communicated to the students, and selective reinforcement results in shaping students' behavior, teachers' expectations may change outcomes for students. By becoming aware of possible biases in their behavior caused by their expectations, teachers can make a conscious effort to interact objectively with each child.

de Boer, H., Timmermans, A. C., & van der werf, M. P. C. (2018). The effects of teacher expectation interventions on teachers' expectations and student achievement: Narrative review and meta-analysis. *Educational Research and Evaluation*, 24(3–5), 180–200. <https://doi.org/10.1080/13803611.2018.1550834>

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Design	Systematic review
Sample	19 studies on teacher expectation interventions
Data Source	Intervention studies on teacher expectations

This study provides a systematic review of the effects of 19 teacher expectation interventions. **The results indicated that it was possible to raise teacher expectations and subsequent student achievement.** The narrative review suggested that the intervention type, changing teacher behaviors, creating awareness of expectancy effects or addressing the beliefs underlying the expectations did not affect the effectiveness, but teacher support for the intervention did.

Gershenson, S., & Papageorge, N. (2018). The power of teacher expectations: How racial bias hinders student attainment. *Education Next*, 18(1), 64–70. <https://www.educationnext.org/power-of-teacher-expectations-racial-bias-hinders-student-attainment/>

Design	Correlational analysis of longitudinal data
Sample	Data are from a nationally representative sample of roughly 6,000 students from the cohort of students who were in grade 10 in 2002; data were collected annually through 2012*
Data Source	Teacher surveys and degree attainment data from the National Center for Education Statistics

*Note. The number of surveys included in the sample is not available.

College completion rates for both White students and Black students are systematically higher for students whose mathematics teachers had higher educational expectations for them. White teachers were 9 percentage points less likely to expect a Black student to earn a college degree than their Black colleagues when both teachers were evaluating the same student.

Rubie-Davies, C. M., Peterson, E. R., Sibley, C. G., & Rosenthal, R. (2015). A teacher expectation intervention: Modelling the practices of high expectation teachers. *Contemporary Educational Psychology*, 40, 72–85. <https://doi.org/10.1016/j.cedpsych.2014.03.003>

Design	Randomized controlled trials
Sample	84 Teachers
Data Source	Students' mathematics scores and teacher surveys

This study is a randomized control trial of a teacher expectation field intervention. **Those in the intervention group attended four workshops at which were presented the instructional strategies and practices of high-expectation teachers. Students in the classes of the intervention group teachers significantly improved their mathematics achievement over one year, showing a rate of improvement beyond that shown by the students of the control group teachers.** Teachers reported high levels of satisfaction with their changed practices and, overall, there was a demonstrable degree of integrity in the implementation of the intervention as measured by the researchers.

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Same, M. R., Guarino, N. I., Pardo, M., Benson, D., Fagan, K., & Lindsay, J. (2018). *Evidence-supported interventions associated with Black students' education outcomes: Findings from a systematic review of research*. U.S. Department of Education, Institute of Education Sciences, Regional Educational Laboratory Midwest. <https://files.eric.ed.gov/fulltext/ED581117.pdf>

Design	Systematic review
Sample	24 studies*
Data Source	To be included in the review of research, studies explicitly mention associations between an intervention and Black students' achievement in mathematics or reading, dropout rates, or graduation rates and showed Tier 1 (strong evidence), Tier 2 (moderate evidence), or Tier 3 (promising evidence) levels of evidence

* Note. Some interventions were included in multiple studies.

22 interventions had promising evidence to support Black students' outcomes. Those include consulting with district assistance and intervention teams, hiring certified teachers, adopting the Elementary School Success Profile Model of Assessment and Prevention, adopting the Good Behavior Game with enhanced academic curriculum, connecting male Black youth with school and community mentors, encouraging parents to become involved with their child's education at home, encouraging parental involvement at school, adopting the Positive Action program, adopting the Student Success Skills program, developing student-teacher relationships, using formative assessments, including specific topics in mathematics instruction for students in kindergarten and grade 4, communicating high expectations to students, assigning homework, using instructional reform practices in mathematics, increasing instructional time in mathematics, encouraging students to participate in out-of-school programs, implementing a summer reading program with free books, encouraging participation in urban debate leagues, and introducing Black students to self-affirmation techniques.

Instructional Delivery

Goddard, Y., Goddard, R., & Kim, M. (2015). School instructional climate and student achievement: An examination of group norms for differentiated instruction. *American Journal of Education*, 122(1), 111–131. <https://doi.org/10.1086/683293>

Design	Multilevel structural equation modeling
Sample	A stratified random sample of 76 public elementary schools in Michigan, which included 5,031 grade 5 students
Data Source	Mathematics and reading assessment data and teacher surveys*

*Note. The number of teachers surveyed was not reported.

Results confirmed that school norms for teaching practices consistent with designing instruction based on students' needs were positively and significantly associated with differences among schools in mathematics and reading achievement.

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Lara-Alecio, R., Tong, F., Irby, B. J., Guerrero, C., Huerta, M., & Fan, Y. (2012). The effect of an instructional intervention on middle school English learners' science and English reading achievement. *Journal of Research in Science Teaching*, 49(8), 987–1,011. <https://doi.org/10.1002/tea.21031>

Design	Quasi-experimental design
Sample	166 treatment students and 80 comparison students from four randomized intermediate schools in an urban district in Southeast Texas
Data Source	District benchmark tests, state standardized tests, Dynamic Indicators of Basic Literacy Skills (DIBELS), and fidelity measures

This study examined the effect of a quasi-experimental project on grade 5 English learners' achievement in state-mandated standards-based science and English reading assessment. The intervention consisted of ongoing professional development and specific instructional science lessons with inquiry-based learning, direct and explicit vocabulary instruction, integration of reading and writing, and enrichment components. **Results suggested a significant and positive intervention effect in favor of the treatment students as reflected in higher performance in districtwide curriculum-based tests of science and reading and standardized tests of oral reading fluency.**

McCart, A. B., & Choi, J. H. (2020). *State-wide social and emotional learning embedded within equity-based MTSS: Impact on student academic outcomes*. [Research Brief]. SWIFT Education Center. <https://files.eric.ed.gov/fulltext/ED607500.pdf>

Design	Pearson correlation analysis
Sample	42 elementary schools from 28 districts in California with an average enrollment of 501 students, about 60% of whom were receiving Free and Reduced Meals (FARM)
Data Source	Grade 3 Smarter Balanced Assessment Consortium (SBAC) English language arts and mathematics summative assessment data

When SEL-MTSS is implemented with fidelity as measured by a validated measurement tool, student academic achievement is improved. **The correlational analysis shows a positive and significant association between SEL-MTSS and academic achievement.** The t-tests further support the significance of ELA score improvement, which was not observed in matched control group schools. Improvement in mathematics scores was not statistically significant.

Reddy, L. A., Shernoff, E., & Lekwa, A. (2021). A randomized controlled trial of instructional coaching in high-poverty urban schools: Examining teacher practices and student outcomes. *Journal of School Psychology*, 86, 151–168. <https://doi.org/10.1016/j.jsp.2021.04.001>

Design	Randomized controlled trial
Sample	2,195 students and 106 teachers in 14 high-poverty urban elementary schools
Data Source	Classroom observations and teacher surveys

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This study employed a three-cohort, waitlist-controlled, randomized block design to investigate the effectiveness of the Classroom Strategies Coaching Model (CSC) in 14 high-poverty urban elementary schools. The CSC Model is guided by observations of teachers' instructional and behavioral management practices as measured by the Classroom Strategies Assessment System. Multilevel negative binomial modeling revealed that teachers in the CSC coaching condition had significant improvements in the frequency of academic and behavior praise as compared to teachers in the waitlist control condition. **Multilevel linear models revealed that, relative to the waitlist control condition, teachers in the CSC coaching condition demonstrated significant improvements in the quality of instruction, behavior management, and classwide student academic engagement.** Teachers reported significant improvements in classwide student academic and behavioral functioning, instrumental support, and student well-being support. No change was found in teacher stress.

Schmoker, M. (2006). Results NOW: How we can achieve unprecedented improvements in teaching and learning. *Journal of Educational Administration*, 46(3), 430–433. <https://doi.org/10.1108/09578230810869365>

Design	Action research
Sample	1,500 schools
Data Source	Case studies and anecdotes

Findings suggest that **teachers optimizing time students spend reading in classrooms, administrators monitoring curriculum implementation, and teachers developing and leading professional learning communities** improve the quality of education for students.

Feedback and Assessment

Cauley, K. M., & McMillan, J. H. (2010). Formative assessment techniques to support student motivation and achievement. *The Clearing House: A Journal of Educational Strategies, Issues and Ideas*, 83(1), 1–6. <https://doi.org/10.1080/00098650903267784>

Design	Literature review
Sample	na is not applicable*
Data Source	Existing research

*Note. The article does not indicate how many studies were reviewed.

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This article discusses five key practices that teachers can use to gather important information about student understanding, provide feedback to students, and enable students to set and attain meaningful learning goals.

1. Provide clear learning targets
2. Offer feedback about progress toward meeting learning targets
3. Attribute student success and mastery to moderate effort
4. Encourage student self-assessment
5. Help students set attainable goals for improvement

Each of the techniques can enhance student motivation as well as achievement.

Makkonen, R., & Jaquet, K. (2020). *The association between teachers' use of formative assessment practices and students' use of self-regulated learning strategies*. REL 2021-041. U.S. Department of Education, Institute of Education Sciences, Regional Educational Laboratory Midwest. <https://files.eric.ed.gov/fulltext/ED609117.pdf>

Design	Descriptive study
Sample	3,228 teachers and 24,480 students across three school districts in Arizona
Data Source	Teacher and student surveys

Responding students in classrooms with teachers who participated in formative assessment training reported using self-regulated learning strategies more frequently. The frequency of responding to teachers' formative assessment practices had a small positive association with the number of self-regulated learning strategies that their students reported using.

Elements of Effective Teaching

Comparison of Tools for Evaluating Teaching Effectiveness²

Five “generic” (that is, not state-specific) tools for evaluating teaching effectiveness include the following. These tools describe characteristics of teacher knowledge, skills, and performance—collectively called “professional practice.”

1. **5D+™ Rubric for Instructional Growth and Teacher Evaluation**

The 5D+ Rubric comprises five dimensions—Purpose, Student Engagement, Curriculum and Pedagogy, Assessment for Student Learning, and Classroom Environment and Culture—that are divided into 13 subdimensions. The 5D+ Rubric also includes Professional Collaboration and Communication, which is based on activities and relationships that teachers engage in outside of classroom instruction.

2. **Classroom Assessment Scoring System**

The preK–3rd CLASS tool measures three broad domains of educator-child interactions: Emotional Support, Classroom Organization, and Instructional Support. Within each of these domains are multiple dimensions of educator-child interactions.

3. **Focused Teacher Evaluation Framework**

The Marzano Focused Teacher Evaluation Model identifies 23 key elements, or professional and instructional strategies. These 23 elements are divided into four domains, which include three elements for Standards-Based Planning, ten for Standards-Based Instruction, seven for Conditions for Learning, and three for Professional Responsibilities.

4. **The Framework for Teaching**

The Framework for Teaching outlines 22 components and 76 elements organized into four domains of teaching responsibility: Planning and Preparation, Learning Environments, Learning Experiences, and Principled Teaching.

5. **Teaching and Learning Standards Rubric**

The Teaching and Learning Standards Rubric focuses on four key domains: Instruction, the Learning Environment, Designing and Planning Instruction, and Professionalism.

²Appendix A includes a table that illustrates alignment of each of these example tools’ professional practice components with the elements of effective teaching described in this fact sheet. Each cell lists the professional practice components embedded in the corresponding column’s evaluation tool that align with the corresponding row’s elements of effective teaching. For example, the 5D+ Rubric for Instructional Growth and Teacher Evaluation includes in its “Purpose” dimension the professional practice “Learning target(s) connected to standards.” That professional practice aligns with the elements of effective teaching category “Professionalism and Collaboration.”

Elements of Effective Teaching

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Appendix A

Professional Practice Components

Example Tools for Evaluating Teaching Effectiveness

The identified tools for evaluating teaching effectiveness describe characteristics of teacher knowledge, skills, and performance—collectively referred to as "professional practice." This row includes the number and categories of professional practice components in each identified tool. Specific terms for professional practice components vary by tool.	5D+ Rubric for Instructional Growth and Teacher Evaluation	Classroom Assessment Scoring System (Pre-K–3)	Focused Teacher Evaluation Framework	The Framework for Teaching	Teaching and Learning Standards Rubric
	Five dimensions—Purpose, Student Engagement, Curriculum and Pedagogy, Assessment for Student Learning, and Classroom Environment and Culture—divided into 13 subdimensions; also includes Professional Collaboration and Communication	Three broad domains of educator-child interactions: Emotional Support, Classroom Organization, and Instructional Support; within each of these domains are multiple dimensions of educator-child interactions	Twenty-three elements divided into four domains, which include three elements for Standards-Based Planning, ten for Standards-Based Instruction, seven for Conditions for Learning, and three for Professional Responsibilities	Twenty-two components and 76 elements organized into four domains of teaching responsibility: Planning and Preparation, Learning Environments, Learning Experiences, and Principled Teaching	Four key domains: Instruction, the Learning Environment, Designing and Planning Instruction, and Professionalism

Elements of Effective Teaching

Example Tools' Related Professional Practice Components

	5D+ Rubric for Instructional Growth and Teacher Evaluation	Classroom Assessment Scoring System (Pre-K–3)	Focused Teacher Evaluation Framework	The Framework for Teaching	Teaching and Learning Standards Rubric
<p>Planning and Preparation: Effective teachers possess and apply essential content and pedagogical knowledge; plan lessons that align with appropriate learning standards and relevant guidelines; and use high-quality curriculum and instructional materials.</p>	<p>Purpose</p> <ul style="list-style-type: none"> - Learning target(s) connected to standards - Lessons connected to previous and future lessons, broader purposes and transferable skill - Design of performance task - Communication of learning target(s) - Success criteria <p>Curriculum & Pedagogy</p> <ul style="list-style-type: none"> - Alignment of instructional materials and tasks - Teacher knowledge of content 		<p>Standards-Based Planning</p> <ul style="list-style-type: none"> - Planning standards-based lessons/units - Aligning resources to standard(s) - Planning to close the achievement gap using data <p>Professional Responsibilities</p> <ul style="list-style-type: none"> - Maintaining expertise in content and pedagogy <p>Standards-Based Instruction</p> <ul style="list-style-type: none"> - Identifying critical content in the standards 	<p>Planning and Preparation</p> <ul style="list-style-type: none"> - Applying knowledge of content and pedagogy - Knowing and valuing students - Setting instructional outcomes - Using resources effectively - Planning coherent instruction 	<p>Designing and Planning Instruction</p> <ul style="list-style-type: none"> - Instructional plans <p>Instruction</p> <ul style="list-style-type: none"> - Standards and objectives - Teacher content knowledge
<p>Planning and Preparation: Effective teachers possess and apply essential content and pedagogical knowledge; plan lessons that align with appropriate learning standards and relevant guidelines; and use high-quality curriculum and instructional materials.</p>	<p>Purpose</p> <ul style="list-style-type: none"> - Learning target(s) connected to standards - Lessons connected to previous and future lessons, broader purposes and transferable skill - Design of performance task - Communication of learning target(s) - Success criteria <p>Curriculum & Pedagogy</p> <ul style="list-style-type: none"> - Alignment of instructional materials and tasks - Teacher knowledge of content 		<p>Standards-Based Planning</p> <ul style="list-style-type: none"> - Planning standards-based lessons/units - Aligning resources to standard(s) - Planning to close the achievement gap using data <p>Professional Responsibilities</p> <ul style="list-style-type: none"> - Maintaining expertise in content and pedagogy <p>Standards-Based Instruction</p> <ul style="list-style-type: none"> - Identifying critical content in the standards 	<p>Planning and Preparation</p> <ul style="list-style-type: none"> - Applying knowledge of content and pedagogy - Knowing and valuing students - Setting instructional outcomes - Using resources effectively - Planning coherent instruction 	<p>Designing and Planning Instruction</p> <ul style="list-style-type: none"> - Instructional plans <p>Instruction</p> <ul style="list-style-type: none"> - Standards and objectives - Teacher content knowledge

Elements of Effective Teaching **Example Tools' Related Professional Practice Components**

	5D+ Rubric for Instructional Growth and Teacher Evaluation	Classroom Assessment Scoring System (Pre-K–3)	Focused Teacher Evaluation Framework	The Framework for Teaching	Teaching and Learning Standards Rubric
<p>Professionalism and Collaboration: Effective teachers engage in high-quality professional learning; communicate regularly with students and their families; and collaborate with colleagues.</p>	<p>Professional Collaboration & Communication</p> <ul style="list-style-type: none"> - Collaboration with peers and administrators to improve student learning - Communication and collaboration with parents and guardians - Communication within the school community about student progress - Support of school, district and state curricula, policies and initiatives - Ethics and advocacy 		<p>Professional Responsibilities</p> <ul style="list-style-type: none"> - Adhering to school and district policies and procedures - Maintaining expertise in content and pedagogy - Promoting teacher leadership and collaboration 	<p>Principled Teaching</p> <ul style="list-style-type: none"> - Engaging in reflective practice - Documenting student progress - Engaging families and communities - Contributing to school community and culture - Growing and developing professionally - Acting in service of students 	<p>Professionalism</p> <ul style="list-style-type: none"> - Growing and developing professionally - Reflecting on teaching - Community involvement - School responsibilities
<p>Classroom Management: Effective teachers foster positive relationships with students and create a motivating and supportive classroom culture that affirms students' strengths and maximizes their learning.</p>	<p>Student Engagement</p> <ul style="list-style-type: none"> - Capitalizing on students' strengths <p>Classroom Environment & Culture</p> <ul style="list-style-type: none"> - Classroom arrangement and resources - Learning routines - Use of learning time - Student status - Norms for learning 	<p>Emotional Support</p> <ul style="list-style-type: none"> - Positive climate - Negative climate - Educator sensitivity <p>Classroom Organization</p> <ul style="list-style-type: none"> - Behavior management - Productivity 	<p>Conditions for Learning</p> <ul style="list-style-type: none"> - Organizing students to interact with content - Establishing and acknowledging adherence to rules and procedures - Using engagement strategies - Establishing and maintaining effective relationships in a student-centered classroom 	<p>Learning Environments</p> <ul style="list-style-type: none"> - Cultivating respectful and affirming environments - Fostering a culture for learning - Maintaining purposeful environments - Supporting positive student behavior - Organizing spaces for learning 	<p>Learning Environment</p> <ul style="list-style-type: none"> - Managing student behavior - Environment - Respectful culture <p>Instruction</p> <ul style="list-style-type: none"> - Motivating students - Grouping students
<p>Teacher Expectations: Effective teachers identify and address implicit biases and maintain high expectations for every student.</p>	<p>Purpose</p> <ul style="list-style-type: none"> - Communication of learning target(s) - Success criteria <p>Student Engagement</p> <ul style="list-style-type: none"> - Ownership of learning 	<p>Emotional Support</p> <ul style="list-style-type: none"> - Regard for child perspectives <p>Classroom Organization</p> <ul style="list-style-type: none"> - Productivity 	<p>Conditions for Learning</p> <ul style="list-style-type: none"> - Organizing students to interact with content - Establishing and acknowledging adherence to rules and procedures - Communicating high expectations for each student to close the achievement gap 	<p>Planning and Preparation</p> <ul style="list-style-type: none"> - Setting instructional outcomes <p>Learning Environments</p> <ul style="list-style-type: none"> - Supporting positive student behavior <p>Learning Experiences</p> <ul style="list-style-type: none"> - Communicating about purpose and content 	<p>Learning Environment</p> <ul style="list-style-type: none"> - Expectations - Respectful culture <p>Instruction</p> <ul style="list-style-type: none"> - Grouping students

Elements of Effective Teaching **Example Tools' Related Professional Practice Components**

	5D+ Rubric for Instructional Growth and Teacher Evaluation	Classroom Assessment Scoring System (Pre-K–3)	Focused Teacher Evaluation Framework	The Framework for Teaching	Teaching and Learning Standards Rubric
<p>Instructional Delivery: Effective teachers use evidence-based instructional practices and vary their approaches to meet different student needs.</p>	<p>Student Engagement</p> <ul style="list-style-type: none"> - Ownership of learning - Capitalizing on students' strengths - Opportunity and support for participation and meaning making - Student talk <p>Curriculum & Pedagogy</p> <ul style="list-style-type: none"> - Discipline-specific teaching approaches - Differentiated instruction for students - Use of scaffolds 	<p>Emotional Support</p> <ul style="list-style-type: none"> - Positive climate - Regard for child perspectives <p>Classroom Organization</p> <ul style="list-style-type: none"> - Productivity - Instructional learning formats <p>Instructional Support</p> <ul style="list-style-type: none"> - Concept development - Language modeling 	<p>Standards-Based Instruction</p> <ul style="list-style-type: none"> - Previewing new content - Helping students process new content - Using questions to help students elaborate on content - Helping students practice skills, strategies and processes - Helping students examine similarities and differences - Helping students examine their reasoning - Helping students revise knowledge - Helping students in cognitively complex tasks <p>Conditions for Learning</p> <ul style="list-style-type: none"> - Using engagement strategies 	<p>Learning Experiences</p> <ul style="list-style-type: none"> - Communicating about purpose and content - Using questioning and discussion techniques - Engaging students in learning - Responding flexibly to student needs 	<p>Instruction</p> <ul style="list-style-type: none"> - Presenting instructional content - Lesson structure and pacing - Activities and materials - Questioning - Grouping students - Thinking - Problem solving
<p>Assessment and Feedback: Effective teachers provide positive and timely performance feedback to students and assess student learning progress to inform adjustments to instruction.</p>	<p>Purpose</p> <ul style="list-style-type: none"> - Design of performance task <p>Student Engagement</p> <ul style="list-style-type: none"> - Quality of questioning <p>Assessment for Student Learning</p> <ul style="list-style-type: none"> - Student self-assessment - Student use of formative assessments over time - Quality of formative assessment methods - Teacher use of formative assessments - Collection systems for formative assessment data 	<p>Instructional Support</p> <ul style="list-style-type: none"> - Quality of feedback 	<p>Conditions for Learning</p> <ul style="list-style-type: none"> - Using formative assessment to track progress - Providing feedback and celebrating progress 	<p>Planning and Preparation</p> <ul style="list-style-type: none"> - Designing and analyzing assessments <p>Learning Experiences</p> <ul style="list-style-type: none"> - Using assessment for learning <p>Principled Teaching</p> <ul style="list-style-type: none"> - Documenting student progress 	<p>Designing and Planning Instruction</p> <ul style="list-style-type: none"> - Student work - Assessment <p>Instruction</p> <ul style="list-style-type: none"> - Academic feedback

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