EFFECTIVE PRACTICES

Research Briefs and Evidence Ratings

Center on Innovations in Learning

NEW!
District Support for School Success

Our thanks to Dr. Jan Donley who researched and wrote the Effective Practices Briefs as well as ranked the Practices.

The Center on Innovations in Learning (CIL) is a national content center established to work with regional comprehensive centers and state education agencies (SEA) to build SEAs' capacity to stimulate, select, implement, and scale up innovation in learning.

Learning innovations replace currently accepted standards of curricular and instructional practice with new practices demonstrated to be more effective or more efficient in the context in which they are applied.

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The opinions expressed herein do not necessarily reflect the position of the supporting agencies, and no official endorsement should be inferred.

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Evidence Base and Effect Size Rating for Effective Practices

Evidence/ Effect Size Rating*

*Please note: The strength of evidence ratings are intended to provide a broad snapshot of the degree to which each effective practice area is supported by high-quality research. John Hattie's effect size results are included where appropriate to provide further information on the strength of evidence in each area. These ratings are not intended to correspond to the evidence ratings provided by the U.S. Department of Education and should not be used as a guide for evaluating interventions.

CORE FUNCTION:

School Leadership and Decision-Making

EFFECTIVE PRACTICE

Establish a team structure with specific duties and time for instructional planning.

INDICATOR

- A team structure is officially incorporated into the school governance policy.
- All teams have written statements of purpose and by-laws for their operation.
- All teams operate with work plans for the year and specific work products to produce.
- All teams prepare agendas and minutes for their meetings.
- The principal maintains a file (physical or electronic) of the agendas, work products, and minutes of all teams.
- A Leadership Team consisting of the principal, teachers who lead the Instructional Teams, and other key professional staff meets regularly (twice a month or more for an hour each meeting) to review implementation of effective practice.
- The Leadership Team serves as a conduit of communication to the faculty and staff.
- The Leadership Team shares in decisions of real substance pertaining to curriculum, instruction, and professional development.
- The school's Leadership Team regularly looks at school performance data and aggregated classroom observation data and uses that data to make decisions about school improvement and professional development needs.
- The Leadership Team reviews the principal's summary reports of classroom observations and takes them into account in planning professional development.

STRENGTH OF EVIDENCE RATING

Promising/ Moderate

Not surprisingly, almost all of the research is descriptive, correlational, and/or qualitative rather than causal for this effective practice. However, the studies demonstrate positive findings for the importance of shared/distributed leadership and for data-based school and instructional team decision-making. In addition, Hattie's recent, updated meta-analysis suggests a very strong effect size for "teachers' collective efficacy" which is in all likelihood a function of many of these practices. In addition, considerable evidence supports leader-ship/instructional teams using student data for decision-making.

- Yearly learning goals are set for the school by the Leadership Team, utilizing student learning data.
- The Leadership Team monitors school-level student learning data.
- Teachers are organized into grade-level, grade-level cluster, or subject-area Instructional Teams.
- Instructional Teams meet regularly (e.g., twice a month or more for 45 minutes each meeting) to review implementation of effective practice and student progress.
- Instructional Teams meet for blocks of time (e.g., 4- to 6-hour blocks, once a month; whole days before and after the school year) sufficient to develop and refine units of instruction and review student learning data.
- Instructional Teams use student learning data to identify students in need of instructional support or enhancement.

STRENGTH OF EVIDENCE RATING

Promising/ Moderate

See previous page.

EFFECTIVE PRACTICE

Focus the principal's role on building leadership capacity, achieving learning goals, and improving instruction.

INDICATOR

- A team structure is officially incorporated into the school governance policy.
- The principal develops the leadership capacity of others in the school.
- The principal models and communicates the expectation of improved student learning through commitment, discipline, and careful implementation of effective practices.
- The principal participates actively with the school's teams.
- The principal keeps a focus on instructional improvement and student learning outcomes.
- The principal monitors curriculum and classroom instruction regularly.
- The principal spends at least 50% of his/her time working directly with teachers to improve instruction, including classroom observations.

STRENGTH OF EVIDENCE RATING

Promising/ Moderate

Not surprisingly, almost all of the research is descriptive, correlational, and/or qualitative rather than causal for this effective practice. However, the studies demonstrate positive findings for principals building staff leadership capacity and focusing on instruction and student learning outcomes by maintaining close focus on classrooms. In addition, Hattie's recent, updated meta-analysis suggests a very →

- The principal compiles reports from classroom observations, showing aggregate areas of strength and areas that need improvement without revealing the identity of individual teachers.
- The principal celebrates individual, team, and school successes, especially related to student learning outcomes.
- The principal offers frequent opportunities for staff and parents to voice constructive critique of the school's progress and suggestions for improvement.
- The principal plans opportunities for teachers to share their strengths with other teachers.

STRENGTH OF EVIDENCE RATING

→ strong effect size for "teachers' collective efficacy" which is in all likelihood a function of these practices.

EFFECTIVE PRACTICE

Align classroom observations with professional development.

INDICATOR

- All teachers improve their practice by responding to the principal's observations relative to indicators of effective teaching and classroom management.
- All teachers improve their practice by responding to observations by peers relative to indicators of effective teaching and classroom management.
- All teachers improve their practice by assessing themselves relative to indicators of effective teaching and classroom management.
- All teachers develop individual professional development plans based on classroom observations and self-assessments.

STRENGTH OF EVIDENCE RATING

Several experimental studies have documented positive impacts of teachers receiving feedback through self, peer, and principal classroom observations (e.g., see Kane, Gehlbach, Greenberg, Quinn, & Thai, 2015; Steinberg & Sartain, 2015). Hattie's research additionally shows strong effect sizes for "micro-teaching", which includes teachers' reviewing their lessons for evaluation purposes.

CORE FUNCTION:

Curriculum, Assessment, and Instructional Planning

EFFECTIVE PRACTICE

Engage instructional teams in developing standards-aligned units of instruction.

INDICATOR

- Instructional Teams develop standards-aligned units of instruction for each subject and grade level.
- Units of instruction include standards-based objectives and criteria for mastery.
- Units of instruction include pre-/post-tests to assess student mastery of standards-based objectives.
- Units of instruction include specific learning activities aligned to objectives.
- Instructional Teams develop materials for their standards-aligned learning activities and share the materials among themselves.
- Materials for standards-aligned learning activities are well-organized, labeled, and stored for convenient use by teachers.

STRENGTH OF EVIDENCE RATING

Strong

There is a good deal of evidence of the effectiveness of instructional teams (e.g., professional learning communities) positively benefitting student learning and ensuring that units of instruction are standards-aligned; in addition, frequent assessment of student learning is research-supported (Hattie, 2012).

EFFECTIVE PRACTICE

Engage instructional teams in assessing and monitoring student mastery.

INDICATOR

- Unit pre-tests and post-tests are administered to all students in the grade level and subject covered by the unit of instruction.
- Unit pre-test and post-test results are reviewed by the Instructional Team.
- Instructional Teams review the results of unit pre-/post-tests to make decisions about the curriculum and instructional plans and to "red flag" students in need of intervention (both students in need of tutoring or extra help and students needing enhanced learning opportunities because of their early mastery of objectives).

STRENGTH OF EVIDENCE RATING

Strong

Mastery learning and frequent assessment of student mastery through formative assessment approaches are well-supported by research (Hattie & Timperley, 2007). Hattie's effect sizes also show strong effects for mastery learning and frequent formative evaluation.

EFFECTIVE PRACTICE

Assess student learning frequently.

INDICATOR

- The school assesses each student at least 3 times each year to determine progress toward standards-based objectives.
- The school provides all teachers timely reports of results from standardized and objectives-based assessments.
- The school maintains a central database that includes each student's test scores, placement information, demographic information, attendance, behavior indicators, and other variables useful to teachers.
- All teachers assess student progress frequently using a variety of evaluation methods and maintain a record of the results.

STRENGTH OF EVIDENCE RATING

Strong

Frequent assessment of student mastery through formative assessment approaches is well-supported by research (e.g., Hattie, 2016).

CORE FUNCTION:

Classroom Instruction

EFFECTIVE PRACTICE

Deliver sound instruction in a variety of modes.

SUB-AREA

Preparation

INDICATOR

- All teachers are guided by a document that aligns standards, curriculum, instruction, and assessment.
- All teachers develop weekly lesson plans based on aligned units of instruction.
- All teachers use objectives-based unit pre-tests and post-tests.
- All teachers individualize instructional plans in response to individual student performance on pre-tests and other methods of assessment to provide support for some students and enhanced learning opportunities for others.
- All teachers maintain a record of each student's mastery of specific learning objectives.

STRENGTH OF EVIDENCE RATING

Strong

While research evidence is indirect to support this one, Hattie's recent effect size results suggest that teacher clarity and individualizing instruction through Response to Instruction/Multi-tiered Systems of Support are highly beneficial to academic performance (e.g., clearly communicating intentions of lesson and success criteria).

SUB-AREA

Teacher-directed instruction/whole-class or small group/interacting with students

INDICATOR

- All teachers reteach following questioning.
- All teachers use open-ended questioning and encourage elaboration.
- All teachers redirect student questions.
- All teachers encourage peer interaction.
- All teachers encourage students to paraphrase, summarize, and relate.
- All teachers encourage students to check their own comprehension.
- All teachers verbally praise students.

STRENGTH OF EVIDENCE RATING

The instructional strategies recommended within this effective practice are soundly supported by high quality research: review and reinforcement, classroom questioning (particularly deeper level), direct and explicit metacognitive strategy instruction, using writing and discussion as tools for deeper content learning. In addition, Hattie's effect sizes are large for areas such as metacognition/self-regulated learning, teacher questioning, and small group work.

SUB-AREA

Computer-based instruction

INDICATOR

- All teachers have documentation of the computer program's alignment with standards-based objectives.
- All teachers assess student mastery in ways other than those provided by the computer program.

STRENGTH OF EVIDENCE RATING

Hattie's recent effect size results suggest moderate impact of Computer Assisted Instruction; however, it is possible that ensuring alignment with standards can contribute to more positive impacts. In addition, recent computer-based assessments for learning show strong results for this form of formative assessment for personalizing learning. (Shute & Rahimi, 2017). Authentic assessment that includes things like observations of performance at a task, however, is research-supported and essential to accurately gauge student learning.

EFFECTIVE PRACTICE

Maintain sound classroom management.

INDICATOR

- All teachers provide students with curriculum-related activities for use when the student is waiting for assistance from the teacher.
- Transitions between instructional modes are brief and orderly.
- All teachers use a variety of instructional modes (whole-class, teacher-directed groups, student-directed groups, independent work, computer-based, and homework).
- All teachers maintain well-organized student learning materials in the classroom.
- All teachers display classroom rules and procedures in the classroom.
- All teachers reinforce classroom rules and procedures by positively teaching them.
- All teachers conduct an occasional "behavior check.
- All teachers engage all students (e.g., encourage silent students to participate).

STRENGTH OF EVIDENCE RATING

For elementary overview of research, see What Works Clearinghouse: https://ies.ed.gov/ncee/wwc/Docs/PracticeGuide/behavior_pg_092308.pdf.

EFFECTIVE PRACTICE

Use sound homework practices and communicate with parents.

INDICATOR

- All teachers maintain a file of communication with parents.
- All teachers regularly assign homework (4 or more days a week).
- All teachers check, mark, and return homework.
- All teachers systematically report to parents the student's mastery of specific standards-based objectives.
- All teachers regularly make "interactive" assignments that encourage parent-child interaction relative to school learning.

STRENGTH OF EVIDENCE RATING

Hattie's recent effect size research shows a low/moderate effect size (.29) for assigning homework. However, if it is assigned effectively, it can be beneficial (e.g., see Carr, 2013; Van Voorhis, 2011).

EFFECTIVE PRACTICE

Provide a tiered system of instructional and behavioral supports and interventions.

INDICATOR

- The school implements a reliable and valid systemwide screening process for academics and behavior that includes the assessment of all students multiple times per year and establishes decision rules to determine those students in need of targeted intervention.
- The school implements a tiered instructional system that allows teachers to deliver evidence-based instruction aligned with the individual needs of students across all tiers.
- The school's tiered instructional system includes documentation that describes what interventions are provided and how interventions are selected and assigned to students and how fidelity will be monitored.
- The school implements a systemwide monitoring process that utilizes collaborative instructional teams who meet regularly to review student data from screening, progress monitoring, and outcome assessment to identify next steps for instruction for students across all tiers.

STRENGTH OF EVIDENCE RATING

Strong

Practice guides developed and available through What Works Cleaninghouse suggest the effectiveness of Response to Intervention approaches for elementary reading and math (Gerstron, 2009). In addition, recent effect sizes by John Hattie (2016) are high (1.07).

CORE FUNCTION:

Personalized Learning: Digital Learning

EFFECTIVE PRACTICE

Use appropriate technological tools and programs to enhance student learning.

INDICATOR

- Administrators, teachers, staff, students, parents, and other stakeholders participate in an organized training and support system incorporating program methodologies (including the use of online tools and curricula) and the proper use of the learning management and student management systems.
- Instructional teams determine which digital learning tools (hardware) are appropriate based on device availability, Internet and broadband access, and device use policies (such as "bring your own device").
- School leaders and peer mentors regularly observe and measure instances of online, hybrid, or blended teaching to ensure instruction is implemented fully and with fidelity.
- Online programs generate accessible and actionable student data about their use, performance, and progress.
- All teachers use appropriate technological tools to enhance instruction.
- All teachers use online curricula with content, assignments, and activities clearly aligned to identified standards (state or national).

STRENGTH OF EVIDENCE RATING

Moderate

Determining the strength of evidence is challenging as the nature of the technology used in schools and how that technology is used, is constantly changing. The use of digital tools to personalize learning is increasing, but research evidence on the effectiveness of these approaches is only emerging. Recent meta-analyses on using technology tools/programs such as one-to-one laptops, computer-based scaffolding, and intelligent tutoring have shown positive effects and are consistent with earlier research that suggested that technology used to support instruction produced greater gains than technology used for direct instruction. However, Hattie's most recent meta-analysis shows moderate effect sizes for computer-assisted instruction and the use of various digital tools.

- All teachers use online curricula whose goals are measureable and clearly state what students will know or do at the end of instruction.
- All teachers regularly add new content and teaching suggestions to the online learning content catalog.
- All teachers use online, hybrid, or blended learning as a part of a larger pedagogical approach that combines the effective socialization opportunities within the classroom with the enhanced learning opportunities available in online instruction.
- All teachers enable students to place selected work into a digital portfolio that is updated throughout the student's school experiences and provides a picture of interests, skills, competencies, and growth over time.

STRENGTH OF EVIDENCE RATING

See previous page.

CORE FUNCTION:

Personalized Learning: Blended Learning

EFFECTIVE PRACTICE

Mix traditional classroom instruction with online delivery of instruction and content, including learning activities completed outside the school, granting the student a degree of control over time, place, pace, and/or path.

INDICATOR

- All teachers receive initial and ongoing training and support in effective use of blended learning methods.
- Instructional teams determine which blended learning model is appropriate for the school or individual classroom.
- All teachers build students' ability to learn in contexts other than school.
- All teachers connects students' out-of-school learning with their school learning.
- Hardware, web browser, and software requirements are specified to students and parents before the use of online instruction outside of school.
- All teachers employing blended learning methods make sure that technology and data enhance relationships but do not pretend to substitute for them.
- Instructional teams and teachers use fine-grained data to design for each student a learning path tailored to that student's prior learning, personal interests, and aspirations.

STRENGTH OF EVIDENCE RATING

Moderate

While positive results have been shown for college/adults, very little research has examined the impact on K-12 learning. See Brodersen and Melluzzo, February 2017, "Summary of research on online and blended learning programs that offer differentiated learning options," published on WWC site. This review was published after the Effective Practice Brief was completed, and it contains a description of individual Blended Learning programs supported by rigorous research. Research on individual BL programs is mixed; some experimental and quasi-experimental studies yield positive findings (Cognitive Tutor Algebra), while other studies addressing a variety of BL programs found no significant differences. However, BL appears to show promise in helping with differentiated instruction and connecting out-of-school with in-school learning. To ensure fidelity of implementation, schools must consider available technology and how low-income students' needs will be supported, and allow for extensive professional learning opportunities for teachers. Because there are large-scale experimental and quasi-experimental studies that support BL, but not many studies involving K-12, it is rated as "Moderate."

CORE FUNCTION:

Personalized Learning: Cognitive Competency

EFFECTIVE PRACTICE

Intentionally address students' accessible background knowledge to facilitate new learning.

INDICATOR

- The School Community Council ensures that all parents understand the purpose of a standards-aligned curriculum, their own children's progress, and their role in supporting learning at home.
- The School Community Council ensures that all volunteers understand cognitive competency and their roles relative to its enhancement in students.
- All teachers and teacher teams plan instruction based on the aligned and expanded curriculum that includes rich reading, writing, memorization, and vocabulary development.
- All staff conducting co-curricular programs fulfill the purposes of the programs including appropriate elements of the aligned curriculum and other cognitive competency activities.
- The school's key documents explain the value of cognitive competency and how it is enhanced through specific roles and relationships.
- The school promotes cognitive competency in school rituals and routines, such as morning announcements, awards assemblies, hallway and classroom wall displays, and student competitions.
- All teachers reinforce elements of mastered knowledge that can be retained in memory through recitation, review, questioning, and inclusion in subsequent assignments.
- All teachers include vocabulary development (general vocabulary and terms specific to the subject) as learning objectives.
- All teachers assign rich reading and the application of the reading in written work and discussion.

STRENGTH OF EVIDENCE RATING

Strong

The instructional strategies recommended within this effective practice are soundly supported by high quality research: review and reinforcement, activation of prior knowledge, classroom questioning (particularly deeper level), direct and explicit reading strategy instruction, using writing and discussion as tools for deeper content learning, and explicit vocabulary instruction. The "School Community Council" indicators are expert-recommended strategies that offer ways to further build cognitive competency into school contexts.

CORE FUNCTION:

Personalized Learning: Metacognitive Competency

EFFECTIVE PRACTICE

Provide instruction and modeling of metacognitive processes and strategies to enhance student self-management of learning.

INDICATOR

- The School Community Council ensures that all parents understand metacognitive competency, learning strategies, and ways they can support their children's self-management of learning at home.
- The School Community Council ensures that all volunteers understand metacognitive competency and their roles relative to its enhancement in students.
- All teachers and teacher teams plan instruction based on the aligned and expanded curriculum that includes objectives for student management of their learning.
- All staff conducting co-curricular programs fulfill the purposes of the programs including appropriate elements of student management of learning.
- The school's key documents explain the value of metacognitive competency and how it is enhanced through specific roles and relationships.
- The school promotes metacognitive competency in school rituals and routines, such as morning announcements, awards assemblies, hallway and classroom wall displays, and student competitions.
- All teachers teach and model the metacognitive process (goals, strategies, monitoring, and modification) and specific learning strategies and techniques.
- All teachers include self-checks, peer-checks, and documentation of learning strategies as part of assignment completion.
- All teachers teach methods of logic, synthesis, evaluation, and divergent thinking.
- All teachers build students' metacognitive skills by teaching learning strategies and their appropriate application.
- All teachers build students' metacognitive skills by providing students with processes for determining their own mastery of learning tasks.
- All teachers build students' ability to use a variety of learning tools.

STRENGTH OF EVIDENCE RATING

Strong

There is strong research support for teaching approaches that address students' metacognitive competency through direct and explicit instruction, such as goal-setting, self-monitoring, and peer and self-asessment. The "School Community Council" indicators are expert-recommended strategies that offer ways to further build metacognitive competency into school contexts.

CORE FUNCTION:

Personalized Learning: Motivational Competency

EFFECTIVE PRACTICE

Promote a growth mindset, stretch students' interests, connect learning to student aspirations, and differentiate instruction to enhance students' engagement and persistence with learning.

INDICATOR

- The School Community Council ensures that all parents understand motivational competency (a growth mindset, the value of mastery, and connecting learning tasks with students' personal apirations) and how they can enhance motivational competency at home.
- The School Community Council ensures that all volunteers understand motivational competency and their roles relative to its enhancement in students.
- All teachers and teacher teams plan instruction with a curriculum guide that includes methods to enhance student motivation to learn.
- All staff conducting co-curricular programs fulfill the purposes of the programs including appropriate elements of enhancing student motivation to learn.
- The school's key documents explain the value of motivational competency and how it is enhanced through specific roles and relationships.
- The school promotes motivational competency in school rituals and routines, such as morning announcements, awards assemblies, hallway and classroom wall displays, and student competitions.
- All teachers promote a growth mindset by attributing learning success to effort and self-regulation and insist upon (and reward) persistence to mastery.
- All teachers encourage self-direction by giving students choice in the selection of topics and the application of learning strategies.
- All teachers help students articulate their personal aspirations and connect their learning to the pursuit of these aspirations.
- All teachers stretch students' interests to find value in new topics and connect learning tasks to students' personal aspirations.
- All teachers differentiate assignments to provide the right balance of challenge and attainability for each student.

STRENGTH OF EVIDENCE RATING

Strong

Randomized control trials have demonstrated the effectiveness of interventions designed to impact noncognitive student variables, such as growth mindset, building interest in learning topics, providing choices within learning, and connecting learning to student aspirations. The "School Community Council" indicators are expert-recommended strategies that offer ways to further build motivational competency into school contexts.

CORE FUNCTION:

Personalized Learning: Social/Emotional Competency

EFFECTIVE PRACTICE

Provide instruction, modeling, classroom norms, and caring attention that promotes students' self-respect, management of emotions, concern for others, and responsibility.

INDICATOR

- The School Community Council ensures that all parents understand social/emotional competency and their role in enhancing their children's growth in (1) understanding and managing emotions, (2) setting and achieving positive goals, (3) feeling and showing empathy for others, (4) establishing and maintaining positive relationships, and (5) making responsible decisions.
- The School Community Council ensures that all volunteers understand social/emotional competency and their roles relative to its enhancement in students.
- All teachers and teacher teams plan instruction with a curriculum guide that includes objectives for social/emotional competency.
- All staff conducting co-curricular programs fulfill the purposes of the programs including appropriate elements of social/emotional competency.
- The school selects, implements, and evaluates evidenced-based programs that enhance social/ emotional competency.
- The school's key documents explain the value of social/ emotional competency and how it is enhanced through specific roles and relationships.
- The school promotes social/ emotional competency in school rituals and routines, such as morning announcements, awards assemblies, hallway and classroom wall displays, and student competitions.
- All teachers teach and reinforce positive social skills, self-respect, relationships, and responsibility for the consequences of decisions and actions.
- All teachers establish classroom norms for personal responsibility, cooperation, and concern for others.
- All teachers are attentive to students' emotional states, guide students in managing their emotions, and arrange for supports and interventions when necessary.
- All teachers use cooperative learning methods and encourage questioning, seeking help from others, and offering help to others.

STRENGTH OF EVIDENCE RATING

Strong

The research evidence on implementing strategies to address social/ emotional competency is strong. Please see: https://ies.ed.gov/ncee/edlabs/projects/project.asp?projectID=443 for a recent review of SEL programs for young children. Please see: http://secondaryguide.casel.org/casel-secondary-guide.pdf for evidence-based approaches for middle and high school students. The "School Community Council" indicators are expert-recommended strategies that offer ways to further build social/ emotional competency into school contexts.

CORE FUNCTION:

Family Engagement in a School Community

EFFECTIVE PRACTICE

Explain and communicate the purpose and practices of the school community to comprehensively engage students' families and other stakeholders.

INDICATOR

- Parent (Family) representatives advise the School Leadership Team on matters related to family-school relations.
- The school's key documents (Parent Involvement Guidelines, Mission Statement, Compact, Homework Guidelines, and Classroom Visit Procedures) are annually distributed and frequently communicated to teachers, school personnel, parents (families), and students.
- The school's Parent (Family) Involvement Guidelines include a vision statement about the importance of family-school partnership in a school community.
- The school's Compact includes responsibilities (expectations) that communicate what parents (families) can do to support their students' learning at home (curriculum of the home) and what the school does to support.

STRENGTH OF EVIDENCE RATING

Strong

Hattie's meta-analysis yields strong effect sizes in the area of the importance of the home environment (.52) and parent involvement (.49). In addition, a large high-quality study showed that family social capital (e.g., parent/child discussions about school, parents checking homework, parent attendance at school events/ meetings) is strongly predictive of students' academic achievement (Dufur et al., 2013, Kraft, M., 2013; Jeynes, 2010; Jeynes, 2017).

EFFECTIVE PRACTICE

Provide two-way school-home communication linked to learning

INDICATOR

- The "ongoing conversation" between school personnel and parents (families) is candid, supportive, and flows in both directions.
- The school regularly communicates with parents (families) about its expectations of them and the importance of the curriculum of the home (what parents can do at home to support their children's learning).
- The school's website has a parent (family) section that includes information on home support for learning, announcements, parent activities/resources, and procedures on how families may post items.

STRENGTH OF EVIDENCE RATING

Hattie's meta-analysis yields strong effect sizes in the area of the importance of the home environment (.52) and parent involvement (.49). In addition, a large high-quality study showed that family social capital (e.g., parent/child discussions about school, parents checking homwork, parent attendance at school events/meetings) is strongly predictive of students' academic achievement (Dufur et al., 2013).

EFFECTIVE PRACTICE

Educate parents to support their children's learning and teachers to work with parents.

INDICATOR

- Professional development programs for teachers include assistance in working effectively with families.
- The school provides parents (families) with practical guidance to maintain regular and supportive verbal interactions with their children.
- The school provides parents (families) with practical guidance to establish a quiet place for children's studying at home and consistent discipline for studying at home.
- The school provides parents (families) with practical guidance to encourage their children's regular reading habits at home.
- The school provides parents (families) with practical guidance to model and encourage respectful and responsible behaviors.

STRENGTH OF EVIDENCE RATING

Hattie's meta-analysis yields strong effect sizes in the area of the importance of the home environment (.52) and parent involvement (.49). In addition, a large high-quality study showed that family social capital (e.g., parent/child discussions about school, parents checking homwork, parent attendance at school events/meetings) is strongly predictive of students' academic achievement (Dufour et al., 2013)

CORE FUNCTION:

Preschool Early Learning

EFFECTIVE PRACTICE

Provide children quality early learning opportunities.

INDICATOR

- The school has a system in place for determining the nature and extent of early learning opportunities each student has accessed prior to school entry.
- All pre-K teachers have specialized education in early childhood education or child development.
- Pre-K Instructional Teams design the curriculum to be aligned with the state early learning standards and align instructional plans to the curriculum.
- All pre-K teachers ensure that all students are involved in activities each day that are designed to stimulate development in all domains: social/emotional, physical, approaches to learning, language, and cognitive development.
- All pre-K teachers meet with family members (parents or guardians) formally at least two times a year to engage in two-way communication regarding students' cognitive, social/emotional, and physical development outside the classroom.

STRENGTH OF EVIDENCE RATING

Strong

There are a number of rigorous experimental studies that show that high-quality pre-K programs positively impact student outcomes (e.g., Lipsey, Farran, & Hofer, 2015), and the practices suggested by the indicators are all supported by research.

CORE FUNCTION:

High School Leadership and Decision-Making

EFFECTIVE PRACTICE

Make decisions to assist students based on data.

INDICATOR

- The Leadership Team monitors rates of student transfer, dropout, graduation, and post-high school outcome (e.g., student enrollment in college, students in careers) using a longitudinal data system.
- The Leadership Team implements, monitors, and analyzes results from an early warning system at the school level using indicators (e.g., attendance, academic, behavior) to identify students at risk for dropping out of high school.

STRENGTH OF EVIDENCE RATING

Moderate

The research is still in its infancy regarding the impact of Early Warning Systems. However, two rigorous recent studies have produced mixed results, with positive impacts for some indicators, and no effects for others. Ensuring fidelity to implementation is a key variable (see: https://ies.ed.gov/ncee/edlabs/regions/midwest/pdf/REL_2017272.pdf for a recent large-scale study).

EFFECTIVE PRACTICE

Distribute management duties.

INDICATOR

- The traditional roles of the principal and other administrators (e.g., management, discipline, security) are distributed to allow adequate time for administrative attention to instruction and student supports.

STRENGTH OF EVIDENCE RATING

Moderate

Not surprisingly, almost all of the research is descriptive, correlational, and/or qualitative rather than causal for this effective practice. However, the studies demonstrate positive findings for the importance of shared/distributed leadership.

CORE FUNCTION:

High School: Opportunity to Learn

EFFECTIVE PRACTICE

Ensure content mastery and graduation.

INDICATOR

- The school provides all students with academic supports (e.g., tutoring, co-curricular activities, tiered interventions) to keep them on track for graduation.
- The school provides all students extended learning opportunities (e.g., summer bridge programs, afterschool and supplemental educational services, Saturday academies, enrichment programs) to keep them on track for graduation.
- The school provides all students with opportunities for content and credit recovery that are integrated into the regular school day to keep them on track for graduation.

STRENGTH OF EVIDENCE RATING

Moderate/ Strong

This practice has many components, and there are varying levels of research support for each of them. Tutoring, particularly peer tutoring, is helpful, along with extracurricular program participation and afterschool programs, according to Hattie. It is also unclear whether credit recovery programs, either online or face-to-face, are effective at changing the trajectory for students at-risk of failing to graduate: http://www.air.org/sites/default/files/downloads/report/Online-vs-F2F-Credit-Recovery.pdf and https://ies.ed.gov/ncee/edlabs/regions/southeast/pdf/REL_2017217.pdf

EFFECTIVE PRACTICE

Prepare students for postsecondary options.

INDICATOR

- The school provides all students with opportunities to enroll in and master rigorous coursework for college and career readiness.
- The school provides all students with academic supports (e.g., supplemental interventions) when needed to enable them to succeed in rigorous courses designed for college and career readiness.
- The school provides all students with supports and guidance to prepare them for college and careers (e.g., career awareness activities, career exploration, college visits, advising).
- All teachers integrate college and career guidance and supports relevant to their subject areas into their taught curricula.
- The school routinely provides all students with information and experience in a variety of career pathways.

STRENGTH OF EVIDENCE RATING

Evidence from International Baccalaureate and dual enrollment programs show some statistically significant benefits for students, as do Talent Search and Career Academies programs.

EFFECTIVE PRACTICE

Extend learning opportunities for students.

INDICATOR

- The school expects all students to participate in activities to develop skills outside of the classroom (e.g., service learning, athletics, enrichment, internships).
- The school provides all students with opportunities to learn through nontraditional educational settings (e.g., virtual courses, dual enrollment, service learning, work-based internships).

STRENGTH OF EVIDENCE RATING

Hattie shows large effect sizes for service learning programs (.58) and moderate effect sizes for extracurricular program participation; research on dual enrollment programs is strong as well; effectiveness of virtual courses in general is not well known.

EFFECTIVE PRACTICE

Assist students with transitions.

INDICATOR

- The school provides freshman students with formal supports as they make the transition to high school (e.g., summer bridge programs, freshman academies).
- The school provides senior students with formal supports as they make the transition out of high school (e.g., college and career planning, job fairs).
- The school tracks the postsecondary school placements and experiences of their graduates and reports the results to the school board, faculty, and school community.

STRENGTH OF EVIDENCE RATING

Talent Development High Schools and the Diplomas Now program offer some rigorous evidence of success for helping students transition to high school by implementing smaller learning communities (e.g., Kemple, Herlihy, & Smith 2005). However, more evidence is needed.

CORE FUNCTION:

District Support for School Success

EFFECTIVE PRACTICE

Improve the school within a framework of district support.

SUB-AREA

Team Structure

INDICATOR

- The district operates with district-level and school-level Leadership teams.
- A team structure for the district and schools is officially incorporated into district policy.
- All district and school teams have written statements of purpose and by-laws for their operation.
- All district and school teams operate with work plans for the year and specific work products to produce.
- All district and school teams prepare agendas for their meetings and keep minutes of their meetings.

STRENGTH OF EVIDENCE RATING

Demonstrates a Rationale

Not surprisingly, almost all of the research is descriptive, correlational, and/or qualitative rather than causal for this effective practice. However, the studies demonstrate positive findings for the importance of shared/distributed leadership, and most educational leadership experts recommend that teaming processes be modeled at all levels of the system.

EFFECTIVE PRACTICE

Align district improvement processes and supports with a clear district vision and direction.

SUB-AREA
Vision and Direction

INDICATOR

- The school board and superintendent present a unified vision for district and school improvement.
- The superintendent and other central office staff are accountable for district and school improvement and student learning outcomes.
- The superintendent models and communicates the expectation of improved student learning through commitment, discipline, and careful implementation of sound practices.
- The superintendent celebrates individual, team, and district/school successes, especially related to student learning outcomes.

STRENGTH OF EVIDENCE RATING

Much of the research is descriptive, correlational, and/or qualitative rather than causal for this effective practice. However, a meta-analysis of 27 studies showed districts with higher achievement levels showed clear alignment of board, superintendent, and school efforts in pursuit of, and support for, non-negotiable goals (Waters & Marzano, 2006). Also, research on effective superintendents has demonstated they emphasize collaborative approaches and ensure that sufficient time is allocated to improve instructional practice (Forner, Bierlein-Palmer, & Reeves, 2012; Kirtman & Fullan, 2016).

EFFECTIVE PRACTICE

Provide schools with resources, training, and support for technology and data management.

SUB-AREA
Data and Technology

INDICATOR

- The district provides the technology, training, and support to facilitate the school's data management needs.
- The district ensures that key pieces of user-friendly data are available in a timely fashion at the district, school, and classroom levels.
- The district sets district, school, and student subgroup achievement targets.

STRENGTH OF EVIDENCE RATING

Much of the research is descriptive, correlational, and/or qualitative rather than causal for this effective practice. The research here clearly suggests that districts must take a proactive approach to encourage and help schools use data systems and data-informed decision making, (Cho & Wayman, 2014; Wayman, Cho, & Shaw, 2017). Qualitative research shows promise for districts providing data coaches and fostering teachers' work to use data within PLCs (Marsh, et al., 2015; Wayman & Jimerson, 2014).

EFFECTIVE PRACTICE

Strategically manage personnel to provide most effective staff where needed most.

SUB-AREA
Personnel

INDICATOR

- The district provides incentives for staff who work effectively in hard-to-staff schools.
- The district recruits, trains, supports, and places personnel to competently address the problems of schools in need of improvement.

STRENGTH OF EVIDENCE RATING

There are some methodologically strong studies that support the use of financial incentives to attract and help retain effective teachers in hard-to-staff schools (e.g., Glazerman, et al., 2013; Clotfelter, et al., 2008; Springer, et al., 2016). However, pay for performance structures have produced mixed or ineffective results (e.g., Springer et al., 2012). In addition, providing supports to enhance teacher working conditions (Ladd, 2011) can help retain effective teachers, and providing autonomy to principals also supported by research (Rangal, 2018). Information-rich hiring practice can also help districts and schools identify the right types of teachers for hard-to-staff schools (Norton, et al., 2014).

EFFECTIVE PRACTICE

Strategically target resources and interventions to demonstrated school and student need.

SUB-AREA
Improvement Support

INDICATOR

- The district regularly reallocates resources to support school, staff, and instructional improvement.
- The district intervenes early when a school is not making adequate progress.
- The district works with the school to provide early and intensive intervention for students not making progress.
- The district allows school leaders reasonable autonomy to do things differently in order to succeed.

STRENGTH OF EVIDENCE RATING

Research is primarily case study/qualitative/descriptive. However, intervening early with struggling schools and students is intuitive, and the use of frequent formative assessments towards this end is well-supported by research (Hattie, 2016; Zavadasky, 2013). In addition, districts are recommended to shift from a controlled service delivery role towards a more supportive role that allows some degree of principal and school autonomy for improvement (Honig, et al., 2010; Rangal, 2018).

EFFECTIVE PRACTICE

Take the change process into account.

INDICATOR

- The district examines existing school improvement strategies being implemented across the district and determines their value, expanding, modifying, and culling as evidence suggests.
- The district ensures that an empowered change agent (typically the principal) is appointed to head each school that needs rapid improvement.
- The district ensures that the change agent (typically the principal) is skilled in motivating staff and the community, communicating clear expectations, and focusing on improved student learning.
- The district is prepared for setbacks, resistance, and obstacles on the path to rapid and substantial improvement.

STRENGTH OF EVIDENCE RATING

Not surprisingly, almost all of the research is descriptive, correlational, and/or qualitative rather than causal for this effective practice. However, research shows that the hiring of effective principals in hard-to-staff schools is critical, and identifying the key competencies necessary for these leaders can help schools ensure the right leaders are in place (Steiner & Hassel, 2011). In addition, the close monitoring of implementation and outcomes for school improvement initiatives is necessary in order to know whether the initiatives are working and make adjustments within a cycle of continuous improvement (Hanover Research, 2014).

EFFECTIVE PRACTICE

Clarify district-school expectations.

INDICATOR

- The school reports and documents its progress monthly to the superintendent, and the superintendent reports the school's progress to the school board.
- The district designates a central office contact person for the school, and that person maintains close communication with the school and an interest in its progress.
- District and school decision makers meet at least twice a month to discuss the school's progress.
- District policies and procedures clarify the scope of site-based decision making granted a school and are summarized in a letter of understanding.
- The district provides a cohesive district curriculum guide aligned with state standards or otherwise places curricular expectation on the school.

STRENGTH OF EVIDENCE RATING

Most of the research is descriptive, correlational, and/or qualitative rather than causal for this effective practice. Close and frequent communication that allows for school staff to provide feedback and input into decision making is identified in recent reports as critical for school improvement (e.g., Kistner, et al., 2017). Lane, et al (2013, 2014) have conducted mixed methods analysis that show that a district liasion who can frequently communicate with low-performing schools, providing monitoring and support as needed, are also of benefit. Also important is the district providing standards-aligned curriculum and the corresponding training for implementation, which has a well-established research base (Hattie, 2012; Lane, 2013).

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Effective Practices Briefs

Core Function: School Leadership and Decision Making

Effective Practice: Establish a team structure with specific duties and time for instructional planning

Overview: Effective teams are vital to school improvement and success. Leadership and Instructional Teams must operate within a clearly defined team structure that specifies team members' duties and provides ample time for instructional planning. Principals should share leadership with team members and allocate roles that are aligned with team members' expertise. Leadership teams analyze data, set school goals, monitor patterns of practice within classrooms, and determine professional learning needs. Instructional Teams need sufficient time to collaborate to develop standards-aligned instructional strategies, monitor student learning data, and adjust instruction to meet learning goals. If possible, teachers should also collaborate across grade levels on vertical Instructional Teams to ensure year-to-year instructional alignment and facilitate communication on individual students.

Evaluate Your Practice: To what extent is leadership shared at your school with teachers or other staff with appropriate expertise? Do your school's teams have written purpose statements and operational by-laws, specified work plans/products, and written agendas/minutes? Are these documents stored in a physical or electronic file? Does your leadership team meet at least twice monthly? How does your leadership team communicate its work to all key school stakeholders? Does your leadership team regularly review a variety of disaggregated school data, plan for professional development, and set yearly learning goals? How much time is allocated for Instructional Teams to meet, and are meetings occurring frequently? Do your Instructional Teams regularly review student learning data to identify students in need of instructional support or enhancement? Are both horizontal and vertical Instructional Teams operating to best address student learning needs?

Introduction

Sparks (2013) describes the power of teams within schools:

> Schools will improve for the benefit of every student only when every leader and every teacher is a member of one or more strong teams that create synergy in problem solving, provide emotional and practical support, distribute leadership to better tap the talents of members of the school community, and promote the interpersonal accountability that is necessary for continuous improvement. Such teamwork not only benefits students, it also creates the "supportive leadership" and the process and time for meaningful collaboration that enable teachers to thrive and are better able to address the complex challenges of their work. (p. 28)

School improvement therefore depends, in part, on how well teachers work together with their principal and colleagues (Louis, Leithwood, Wahlstrom, & Anderson, 2010). Research shows that when principals work with a team of teachers, forming school-based leadership teams, the speed at which improvement efforts occur is increased (Pedersen, Yager, & Yager, 2010). Further, school leadership models are more effective when they distribute responsibilities to a team, rather than promoting unilateral decisions and actions (Hanover Research, 2013; The Wallace Foundation, 2013). Such a distributed system allows individuals to contribute in their areas of particular strength or interest (Institute for Educational Leadership, 2001); this expertise is best engaged wherever it exists in an organization rather than seeking it only in a formal role or structure (Harris, 2004). Leadership teams also must have structures that require specific duties for team members and sufficient time for planning. This brief describes how school leaders can best

develop and monitor these team structures that promote school improvement.

What are the responsibilities for principals and all school teams?

The more willing principals are to share leadership, the better students' academic success and teacher motivation (Louis et al., 2010). Redding (2007) states that, "The principals' role is not only to share leadership, but to build the leadership capacity of others in the school" (p. 43). By creating formal leadership structures, such as a leadership team, staff members will grow and develop in their roles, and the principal will be able to share leadership tasks among them (Hallinger & Murphy, 2013). The principal must also establish the work conditions that enable teachers to improve their practice (Yager & Yager, 2011); for example, provide professional development targeted to teacher needs, access to key data for planning, and sufficient time for teams to meet to do their collaborative work.

Intentional planning is also required to ensure organization and collaboration among classroom teachers, principals, and teacher-leaders within team structures. Teams need clear expectations for their purposes and roles for team members, as well as clear definitions of explicit team practices they will execute (Redding, 2007; Sparks, 2013 ; Yager & Yager, 2011). The school's governance policy should include a description of all teams and how they are structured; this ensures that these structures will endure through school leadership changes (Redding, 2007). School teams should also develop written statements and bylaws that describe their purposes and goals in order to give structure and substance to teams, keep members "on the same page," and ensure accountability. All formal teams should also develop work plans and specific work products to produce for the school year, in order to avoid the "activity but little accomplishment" pitfall (Redding, 2007; Sparks, 2013; Turning Points, 2001). Team meetings need a facilitator(s), written agenda, and minutes recorded, in order to keep everyone focused on team goals (Redding, 2007; Sparks, 2013). The principal must ensure that team agendas, minutes, and work products are stored in an accessible file for further reference (Redding, 2007). Finally, the principal should ensure that teams pause for reflection and celebrate progress and successes (Sparks, 2013).

What are the responsibilities for leadership teams, and how can they function most effectively?

A school leadership team is a group of individuals who work to create a strong organizational process for school improvement. They orchestrate and coordinate the efforts of administrators, teachers and other staff, make school governance decisions, and coordinate school improvement initiatives. Leadership teams facilitate community involvement in the development of the school improvement plan and create and encourage parent involvement (Hanover Research, 2013). These teams are tasked with both representing the beliefs and concerns of the entire staff and also serving as a conduit of communication to relay information back to staff (Redding, 2007). Leadership teams often consist of teachers who lead Instructional Teams, other key professional staff, and principals and assistant principals; because of the wide range of experiences within these groups, the delegation and distribution of tasks should be conducted according to their areas of expertise (Spillane, 2005). In addition, a principal does not have expertise in every area of his or her instructional responsibility, particularly when it comes to secondary content areas. Principals should share or distribute leadership to those with content area expertise and should partner with the leadership team to oversee their work (Hallinger & Murphy, 2013; Von Frank, 2011). The expertise of an effective leadership team allows and empowers the team to make substantive decisions involving curriculum, instruction, and professional development (Redding, 2007).

Leadership teams should be situated to access and review a broad range of school achievement, climate, and satisfaction data to enable them to make decisions on the focus and direction of the school and where resources can best be directed; however, professional development on how to analyze and apply data for school improvement will likely be essential (Wayman & Cho, 2008). Leadership teams should examine both aggregated and overall student performance data, in order to set yearly learning goals and make decisions on using resources for professional development (Redding, 2007). Leadership teams at effective turnaround schools in one study examined data disaggregated by student subgroup at the overall school level to focus on areas that need schoolwide improvement, at the classroom level to focus on teacher strengths and need areas, and at the individual student level to address needs of individual

students (Herman et al., 2008). Frequent monitoring of student learning data may be necessary; for example, leadership team review of benchmark assessment data during the year can provide teachers with timely information on where students need the most assistance, and adjustments can be made to instruction and/or additional student supports can be provided (Coffey, 2009). Leadership teams can also work with the principal to conduct classroom observations and discern "patterns of practice" which aggregate data from several or all teachers without revealing teachers' individual identities. The leadership team can then use the observation data to determine what professional learning is needed for individual teachers, grade levels, or building-wide (Redding, 2006). In order for leadership teams to be effective, ample time must be provided for critical conversations, observation, and collaboration. Teams should ideally meet twice per month for at least an hour, to ensure time for productive and deep conversation (Redding, 2006).

What are the responsibilities for Instructional Teams, and how can they function most effectively?

Sparks (2013) argues that the teacher-to-teacher professional learning that occurs regularly as teachers confer to 1) assist each other in lesson improvement, 2) deepen their content understanding, 3) analyze student work and data, and 4) problem-solve, is often the most important source of instructional improvement in schools. Instructional planning time allotted to teachers, however, is often used individually to grade student work, prepare for their next lesson, or look for additional resources. Hattie (2012) suggests that the most powerful method of planning occurs when teachers work as a team to develop instructional plans, identify common consensus on what is worth teaching, collaborate to share their beliefs of challenges and progress, and evaluate the impact of their planning on student outcomes. Shared school leadership that is instruction-focused and Instructional Teams in which teachers work collectively to improve instruction are components that are shared by schools that show large and long-term improvement in student learning (Allensworth, 2012; Goddard, Goddard, & Tschannen, 2007). According to Redding (2006), "Instructional Teams are manageable groupings of teachers by grade level or subject area who meet to develop instructional strategies aligned to the standards-based curriculum and to monitor the progress of the students in the grade level or subject area for which the team is responsible" (p. 46). Instructional Teams may also include teacher leaders, instructional coaches, and assistant principals (Fenton, n.d.). These teams should be research-based and provide professional development to increase members' abilities to use distributed leadership practices while focusing on student learning outcomes (Center for Educational Leadership, n.d.).

These teams must be given sufficient time to engage in their critical work, which can be challenging but is essential for their success (Hattie, 2012; Redding, 2007). Twice monthly 45-minute meetings provide a minimum standard for teachers to maintain communication and organize their work; however, longer periods are more desirable for teachers to thoroughly review a variety of student data and adjust lessons (Berry, Daughtrey, & Wieder, 2009). These meetings must have an explicit agenda and focus, with minutes that document the team's work (Berry et al., 2009; Redding, 2006). Instructional Team meetings allow teachers to maintain communication, analyze formative and summative student data, and discuss plans and interventions necessary to meet individual students' needs. Instructional Teams that are created to enable vertical collaboration (across grade level) allow teachers to relay their knowledge about individual student needs to the next teacher and align instructional strategies across grade levels; these teams may be particularly effective in high-needs schools (Berry, et al., 2009). In addition, a "block of 4 to 6 hours of time once a month is necessary for curricular and instructional planning, and additional whole days before and after the school year are a great advantage" (Redding, 2006, p. 46). This extended time is necessary for aligning curriculum to standards and/or aligning lesson plans to the curriculum.

Indicators to Support the Effective Practice
A team structure is officially incorporated into the school governance policy.
All teams have written statements of purpose and by-laws for their operation.
All teams operate with work plans for the year and specific work products to produce.
All teams prepare agendas and minutes for their meetings.
The principal maintains a file (physical or electronic) of the agendas, work products, and minutes of all teams.

Indicators to Support the Effective Practice
A Leadership Team consisting of the principal, teachers who lead the Instructional Teams, and other key professional staff meets regularly (twice a month or more for an hour each meeting) to review implementation of effective practice.
The Leadership Team serves as a conduit of communication to the faculty and staff.
The Leadership Team shares in decisions of real substance pertaining to curriculum, instruction, and professional development.
The school's Leadership Team regularly looks at school performance data and aggregated classroom observation data and uses that data to make decisions about school improvement and professional development needs.
The Leadership Team reviews the principal's summary reports of classroom observations and takes them into account in planning professional development.
Yearly learning goals are set for the school by the Leadership Team, utilizing student learning data.
The Leadership Team monitors school-level student learning data.
Teachers are organized into grade-level, grade-level cluster, or subject-area Instructional Teams.
Instructional Teams meet regularly (e.g., twice a month or more for 45 minutes each meeting) to review implementation of effective practice and student progress.
Instructional Teams meet for blocks of time (e.g.,4 to 6 hour blocks, once a month; whole days before and after the school year) sufficient to develop and refine units of instruction and review student learning data.
Instructional Teams use student learning data to identify students in need of instructional support or enhancement.

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Core Function: School Leadership and Decision Making

Effective Practice

Focus the principal's role on building leadership capacity, achieving learning goals, and improving instruction

Overview: School improvement requires principals to assume roles that allow them to improve instruction and build leadership capacity of staff so that learning goals are achieved. The principal must shape an academic vision that includes high expectations for student learning, share and cultivate leadership among staff, improve instruction by being intimately involved and connected to teaching and learning, provide a hospitable educational climate, and effectively manage people, data, and school processes.

Evaluate your Practice: How does the principal model and communicate high expectations for student learning? How are staff members encouraged to pursue professional learning and growth opportunities? Does the principal share leadership with staff who possess the competencies to lead progress towards the school vision and goals? How does the principal build leadership capacity in others? Is the principal able to spend significant time on instructional tasks (keeping a log can provide data), and if not, what duties can be managed by someone else? Does the principal frequently conduct classroom observations and look for research-based practices, and are these data periodically aggregated and shared? Are teachers given prompt and constructive feedback that is used to plan professional development? Is there a structure in place to allow staff to share with each other their strengths relative to effective practices and what they have learned in professional learning? How does the principal share and celebrate successes within the school? By what means does the principal solicit and encourage constructive critique of the school's progress and improvement process?

Introduction

Principals in low-achieving or high poverty, minority schools tend to have a greater impact on student outcomes than principals at less challenging schools (Leithwood, Louis, Anderson, & Wahlstrom, 2004; Louis, Leithwood, Wahlstrom, & Anderson, 2010). Therefore, principal leadership is critical to many low-performing schools in order to institute changes that will result in school improvement and academic success. While it may have once been expected that principals would handle all of their schools' leadership tasks, it is no longer possible for one person to lead a school entirely on his or her own, given the ever growing burden placed on schools (Von Frank, 2011). The principal must work in collaboration with stakeholders to establish the vision and learning goals for the school and then ensure that staff members are in the best roles to maximize their own knowledge and skills, as well as ensure that the necessary resources are available to implement the vision (Murphy, Elliott, Goldring, & Porter, 2007). This practice brief highlights the research support for the roles that principals must assume within their school communities in order to bring about improvement and students' academic success.

According to the Wallace Foundation (2013), there are five key responsibilities for principals as leaders. Each of these responsibilities must interact with the others in order for optimal leadership to occur.

1. **Shape a vision of academic success for all students.**

Principals must establish a schoolwide commitment to high academic standards and a focus on goals for student progress. This is critical because research has shown that high expectations contribute to the closing of the achievement gap (Porter et al., 2008). Effective principals ensure that all staff adopts these high expectations, which are critical to establishing a schoolwide learning improvement agenda (Knapp, Copland, Honig, Plecki, & Portin, 2010). The principal "must create a 'shared vision of learning' that allows for commonality across stakeholders and provides motivation for hard work and continual improvement" (Hallinger & Murphy, 2013, p. 17). This vision for learning

includes not only the students, but also the adult learning that is essential for students' success. The principal must help educators see that they have a stake both in elevating their own professional growth and in elevating the growth of their colleagues, and all share collective responsibility to improve student learning (Lambert, 2002).

The principal must not only espouse the school's vision and expectations for the success of all students, but also demonstrate them in his or her own behavior as well (Lucas & Valentine, 2002; Marks & Printy, 2003; Murphy, 2007). As Murphy (2007) describes:

> Effective principals and other school-based leaders articulate the vision through personal modeling and by communicating with others in and around the organization…They demonstrate through their actions the organization's commitment to the values and beliefs at the heart of the mission as well as to the specific activities needed to reach goals. (p. 73)

This modeling of expected behaviors not only clarifies how teachers and students should act, but can also lead to the empowerment of teachers in their practice and informal leadership roles (Lucas & Valentine, 2002). Principals can model behaviors that contribute to positive school cultures and academic success, for example, by personally enforcing discipline with students, which leads to a true sense of shared responsibility and a genuine feeling of support for teachers (Murphy, 2007). By remaining active in the process of curricular and instructional decisions, observations, and growth, principals demonstrate the importance of teaching and place value on the teachers themselves in carrying out the school's vision (Murphy, 2007).

2. Cultivate leadership in others.

Distributed leadership in schools involves sharing responsibility on all administrative levels, working through teams, and engendering collective responsibility for student outcomes (Ritchie & Woods, 2007). The more willing principals are to share leadership, the better students' academic success and teacher motivation (Louis et al., 2010). Research shows that a principal's influence does not diminish as others gain influence in situations with distributed authority in decision-making. In fact, when principals and teachers share leadership, teachers' relationships with one another and with the principal are improved and made stronger (Louis et al., 2010). Further, principals need not be concerned that they will lose influence as others gain influence. Although "higher-performing schools awarded greater influence to most stakeholders…little changed in these schools' overall hierarchical structures" (Louis et al., 2010, p. 8).

Redding (2007) states that, "The principals' role is not only to share leadership, but to build the leadership capacity of others in the school" (p. 43). Effective school leaders can build this capacity in part by running the school through a collaborative or shared lens (Murphy et al., 2007). Through their practice of shared leadership, effective principals encourage collaboration among staff and a sense of school community:

> Effective school leaders are especially skillful in creating learning organizations and fostering the development of communities of learning. They are vigorous promoters of professional development, they nurture the growth of communities of professional practice, and they shape school organizations to adhere to the principles of community (Murphy et al., 2007, p. 187)

Encouraging professional growth (e.g., conferences, embedded professional learning) and providing opportunities to influence enhances the "the professionalization of teaching" as a career and can truly empower teachers (Marks & Printy, 2003; Wahlstrom & Seashore Louis, 2008). In addition, by creating formal leadership structures such as a leadership team, staff members will grow and develop in their roles, and the principal will be able to share leadership tasks among them (Hallinger & Murphy, 2013). Leadership teams often consist of lead teachers, instructional coaches, and assistant principals; because of the wide range of experiences within these groups, the delegation and distribution of tasks should be conducted according to their areas of expertise (Spillane, 2005). In addition, a principal does not have expertise in every area of his or her instructional responsibility, particularly when it comes to secondary content areas. Principals should share or distribute leadership to those with content area expertise and should partner with the leadership team to oversee their work (Hallinger & Murphy, 2013).

3. Improve instruction.

Effective principals focus on improving instruction, prevent teacher isolation, and connect with teachers

(Portin et al., 2009). Principals should strive to be the instructional or learning-focused leader in their building and should strive to spend at least half of their time working directly with teachers to improve instruction (Blase, Blase, & Phillips, 2010). Freeing up time for administrators to be more directly involved in improving day-to-day instruction and connecting with teachers through empowering leadership teams appears to be part of the reason that shared leadership improves student performance. Horng, Klasik, and Loeb (2009) report that in high- versus low-performing schools, as rated by state accountability systems, principals spent significantly less time on administrative tasks and more time on day-to-day instructional tasks. In order to be effective instructional leaders – by visiting classrooms, contributing to curriculum development, and coaching teachers – the principal must step away from more managerial responsibilities (Murphy et al., 2007; Hallinger & Murphy, 2013). The leadership team can find ways to free up additional principal time for instruction-related work by delegating some operational tasks (e.g., scheduling, reports, ordering and handling materials) to other staff (Wilhelm, 2015).

Principals also track teacher success and monitor curriculum and classroom instruction regularly in the classroom through formal and informal evaluations, classroom visits, observation sessions, and informal conversations (Louis et al., 2010). They compile reports that provide individual teacher feedback, as well as aggregate staff strength areas and areas in need of improvement without revealing individual teacher identities. This data can be used to connect individual teachers, small groups, and/or schoolwide staff with appropriate professional learning opportunities (Redding, 2007). Effective principals also provide feedback continually rather than waiting for end-of-year evaluations (Mendels, 2012). They provide direct and immediate feedback to both veteran and novice teachers to help improve their teaching by making frequent and spontaneous observations of classroom instruction (Seashore-Louis et al., 2010). Hull (2012) summarized research which showed that good principals provide further support to improve instruction by 1) emphasizing the value of research-based strategies and applying them to suit their school's context; 2) encouraging teacher collaboration; and 3) providing more time for teacher planning.

4. **Create a climate hospitable to education.**

In order for teachers and students to focus on learning, the principal must establish a setting that is safe and orderly, as well as a community that is responsive and supportive of students (Goldring, Porter, Murphy, Elliott, & Cravens, 2007). In addition, teachers must feel that they are part of a culture that values good instruction. When teachers rank their schools as having a strong instructional climate, they also tend to rank their principals as having established an atmosphere of caring and trust. In addition, they are more likely than faculty at other schools to find the principals' motives and intentions to be good (Louis et al., 2010). Without a community focus on issues that matter, teachers tend to be pessimistic and feel undervalued (Knapp et al., 2010). In order to build such a community, principals should focus on respect for every member of the school community; a positive, blame-free, solution-oriented, professional environment; and the inclusion of all staff and students in a variety of activities (Portin et al., 2009). This positive community should include the principal acknowledging and celebrating individual, team, and school successes (Parsons & Beauchamp, 2012).

5. **Manage people, data, and processes to foster school improvement.**

Principals must be good managers, getting the jobs of a school accomplished with the available resources. Effective principals hire selectively and weed out those who are not strong contributors. They also maximize the strengths of effective teachers by providing plenty of opportunities for them to demonstrate leadership and share their strategies with other teachers (Scherer, 2007). Groups of teacher leaders can supply a variety of professional knowledge needed for sustained school improvement and provide nonthreatening support and advice to novice teachers (Franklin, 2012).

Effective principals utilize data to diagnose and illustrate problems, as well as to understand the underlying causes of those problems (Louis et al., 2010). Once causes of challenges are understood, good principals drive solutions by setting goals, getting the faculty on board, encouraging students and teachers, communicating with families, and monitoring results (Porter et al., 2008). These principal efforts should occur within a "culture of candor," with all stakeholders given opportunities to voice their constructive observations and recommendations (Murphy, 2007). Finally, principals must understand

that change is a process and often does not happen quickly; they must have patience, but determination, and model this for the rest of the team (The Wallace Foundation, 2013).

Indicators to Support the Effective Practice
The principal makes sure everyone understands their role in continuously elevating professional practice.
The principal develops the leadership capacity of others in the school.
The principal models and communicates the expectation of improved student learning through commitment, discipline, and careful implementation of effective practices.
The principal participates actively with the school's teams.
The principal keeps a focus on instructional improvement and student learning outcomes.
The principal monitors curriculum and classroom instruction regularly.
The principal spends at least 50% of his/her time working directly with teachers to improve instruction, including classroom observations.
The principal compiles reports from classroom observations, showing aggregate areas of strength and areas that need improvement without revealing the identity of individual teachers.
The principal celebrates individual, team, and school successes, especially related to student learning outcomes.
The principal offers frequent opportunities for staff and parents to voice constructive critique of the school's progress and suggestions for improvement.
The principal plans opportunities for teachers to share their strengths with other teachers.

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Core Function: School Leadership and Decision Making

Effective Practice

Align classroom observations with professional development

Overview: Classroom observations conducted by principals, colleagues, and teachers themselves are an important data source in determining teacher strengths and areas in which they need professional development. Observation instruments must reflect research-based instructional practices, and all teachers need shared understanding and common language for these practices, as well as plenty of time for reflection and dialogue about how they can improve. Principals and peer observers will likely need training in how to conduct observations, as well as how to link data to professional learning and/or collegial support structures. Teachers must also self-assess their instruction; the process of creating video-recorded lessons can serve as a reflective tool to deepen teachers' analysis of their instruction and encourage them to share and seek feedback from colleagues to improve practice.

Evaluate Your Practice: Do your teachers develop individual professional development plans, and are classroom observations used to inform the plans? What process is used for obtaining observations, reflecting on and discussing the results, and formalizing plans for professional development? Do observation tools reflect research-based teaching, and are teachers and observers using a common language to describe these processes? Are principals and peer evaluators provided with training in how to conduct classroom observations and help teachers link results to professional development? Are teacher self-assessments included within individual professional development plans, and is self-assessment linked to opportunities to share results and seek suggestions from colleagues? How does the principal encourage an atmosphere of de-privatization by encouraging teachers to observe each other's teaching, share practices, and engage in collaborative discussion on improving instruction?

Introduction

Using data collected with validated observational tools anchors feedback in teachers' practice along dimensions of teaching that are meaningful and has been shown to improve student achievement (Steinberg & Sartain, 2015; Taylor & Tyler, 2012). Data from these observations can be used to develop individualized professional development plans that address teachers' instructional need areas. Danielson (2011) suggests that classroom observations that facilitate teacher improvement require: 1) a consistent definition of good teaching; 2) a shared understanding of this definition so that observers and teachers have a common language; 3) skilled evaluators/observers (principals, peer coaches, etc.) who are capable of recognizing the components of effective teaching; and 4) plenty of opportunity for reflection and dialogue that also helps the teacher refine their practice through professional learning. Principal and peer observations and teachers' self-observations provide multiple lenses through which to assess teachers' use of effective instructional practices and provide a picture of teacher strengths and weaknesses. A discussion of best practices to align classroom observation data with teachers' professional development plans follows.

How can principals and peers conduct observations that facilitate teachers' professional learning?

Systematic classroom observations by principals and peers that yield evidence of research-based practices in the classroom are a tool to link evaluation information to both schoolwide and teacher-specific professional learning needs (Redding, 2007). It is important to note, however, that multiple measures of teacher effectiveness are necessary including classroom observations, student learning growth, portfolios, student surveys, and work samples in order to ensure a comprehensive and accurate portrayal of teacher strengths and weaknesses (Goe, Biggers, & Croft, 2012; Hill & Herlihy, 2011). Classroom observations by administrators and colleagues provide an important piece of the puzzle by producing valuable data on teachers' performance within an aligned teacher evaluation/professional

growth system. These observations should be undertaken within an atmosphere of trust; teachers should know that they are valued members of the school community and that observations are intended to improve teaching and learning (Stuhlman, Hamre, Downer, & Pianta, n.d.). Any observation measures selected should directly and explicitly align with good teaching and teaching standards, include protocols and processes that make sense to teachers, allow teachers to participate in or co-construct the evaluation, allow ample opportunity to discuss results with other colleagues, and align with professional development opportunities (Goe et al., 2012). Observers and evaluators should receive ongoing training to effectively implement observation systems, and training to interpret results and make professional development recommendations should be included within this training (Goe, 2013; Goe et. al., 2012; Hill & Herlihy, 2011).

Most teacher evaluation systems incorporate some type of post-observation meeting between observer and teacher to discuss the evaluation. DeMonte (2013) suggests that post-observation conferences should serve as a launching point for specific and sequenced improvement rather than a simple summation of the teachers' instruction:

> A teacher, for example, might be told by an evaluator who has just observed his or her instruction that the teacher seemed to have trouble formulating questions in whole-class discussions that will prompt student thinking. (The ability to frame effective questions for students is an area of teaching practice on Charlotte Danielson's Framework for Teaching, and is one of the most commonly used observation rubrics.) To assist a teacher in the above example, the evaluator could direct the teacher to view video clips that show exemplary questioning techniques in a classroom. Or the evaluator could suggest that the teacher participate in some collaborative work with a master teacher who is helping design lessons featuring questioning with others in the school or district. (p. 11)

Unfortunately research on post-observation conferences generally has revealed that evaluators often are not providing teachers with the type of feedback that leads to instructional improvement. For example, studies in Chicago and Tennessee and showed that principals often dominated post-observation conferences and provided little or no depth or instruction-specific feedback, and the observation may have been treated more as a compliance activity rather than an opportunity to help teachers learn about their practice (DeMonte, 2013). In order to provide more appropriate, personalized and robust professional learning opportunities, Demonte (2013) suggests that teacher observation/evaluation systems should include the following components:

- Ensure that teachers and evaluators have a shared understanding about the evaluation rubric prior to assessment and observation, including instructional practices included in the rubric and how they will be viewed and assessed; pre-observation meetings can clarify lesson goals and rubrics being used by the evaluator (Redding, 2007). This shared understanding is a necessary first step towards sparking conversations about improving teaching and learning.
- Administrators and/or peer evaluators should be provided with professional development in how to provide the kind of feedback that teachers need and deserve in order to improve their teaching.
- Form groups of teachers based on data to collaborate together to improve particular skills and/or content. Collegial learning and coaching can deepen the mutual respect of team members and strengthen professional knowledge (Academic Development Institute, 2012).
- Provide evaluators with knowledge about the types of professional learning opportunities available so that they can have these resources accessible in post-observation conferences. For example, districts or states can establish research-based lists of opportunities or video libraries of exemplary teaching practices paired with materials to help teachers improve their instruction.

How can teachers use self-assessment of their teaching in order to facilitate their professional learning?

Aligned teacher evaluation and professional learning systems should include teachers' self-assessment of their instructional effectiveness (Danielson, 2011; Hattie, 2009). Researchers at the Education Policy Research Center at Harvard University are currently piloting an alternative approach to traditional classroom observations for teacher evaluation. In lieu of in-person observations conducted by an evaluator, teachers are allowed to submit their own video-recorded lessons for evalu-

ation purposes as part of the Best Foot Forward (BFF) program. This study involves treatment group teachers using digital video to record and upload to a website self-selected lessons for observer review (including administrators and external content experts) followed by one-on-one discussions of the lessons between teachers and reviewers; control group teachers continue to use in-person classroom observations (Kane, Gehlbach, Greenberg, Quinn, & Thal, 2015). The researchers have concluded that BFF provided several advantages:

> In sum, giving teachers control of the video collection and submission process improved several dimensions of the classroom observation process. It boosted teachers' perception of fairness, reduced teacher defensiveness during post-observation conferences, led to greater self-criticism by teachers and allowed administrators to shift observation duties to quieter times of the day or week. Moreover, granting teachers the opportunity to self-select videos changed teacher rankings only slightly; the submitted lessons from the best teachers were still better than the submitted lessons from struggling teachers. (p. 4)

Video-based teacher self-evaluation has also been used successfully for teachers in Head Start programs (Wright, Ellis, & Baxter, 2012). An additional study by the researchers above found that the BFF program led to "instructional de-privatization." Teachers in the BFF program were more likely to share video lessons with colleagues, and administrators were more likely to broker mentoring relationships and peer support among teachers (Quinn, Kane, Greenberg, & Thal, 2015). This de-privatization has been shown in other research to improve instruction; for example, the extent to which teachers engage in collaborative discussion and seek instructional advice from colleagues has been shown to predict changes to teacher practices (Parise & Spillane, 2010; Sun, Wilhelm, Larson, & Frank, 2014; Supovitz, Sirinides, & May, 2010). The principal can serve a key role in de-privatizing instruction by "establishing cooperative work structures, or by encouraging individual teachers to share resources and techniques, coach less expert peers, and observe other teachers' instruction (Quinn, et al., 2015, p. 4).

Indicators to Support the Effective Practice
All teachers improve their practice by responding to the principal's observations relative to indicators of effective teaching and classroom management.
All teachers improve their practice by responding to observations by peers relative to indicators of effective teaching and classroom management.
All teachers improve their practice by assessing themselves relative to indicators of effective teaching and classroom management.
All teachers develop individual professional development plans based on classroom observations and self-assessments.

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Core Function: Curriculum and Instruction

Effective Practice

Engage Instructional Teams in developing standards-aligned units of instruction

Overview: Instructional Teams must collaborate to develop standards-aligned instructional units. These standards-aligned units of instruction should include learning objectives and their criteria for mastery, pre- and post-tests to assess student mastery, well-designed learning activities aligned to learning objectives, and corresponding materials that are easily accessible to be shared with colleagues.

Evaluate Your Practice: Do Instructional Teams develop and refine instructional units that are standards-aligned? Do standards-aligned units of instruction include objectives and criteria for mastery? Do unit plans include both pre- and post-tests to gauge student mastery, and are results used to adjust instruction as necessary? Do units of instruction include a variety of differentiated learning activities for each unit objective? Are materials developed, well-organized, and readily shared among teachers?

Introduction

Teaching has long been seen as an individualized practice, with educators acting autonomously within their own classrooms. Darling-Hammond, Wei, Andree, Richardson, and Orphanos (2009) refer to this as an "egg crate model of instruction," alluding to the very separate and independent nature of instructional practice. Recent meta-analyses (e.g., Hattie, 2012) have led researchers to advocate the development of Instructional Teams that regularly collaborate to solve learning dilemmas, examine impact of curricula and teaching on students, and cooperatively plan and critique lessons, objectives, and success criteria. Instructional Teams work to "build the curriculum from learning standards, curriculum guides, and a variety of resources [and] organize the curriculum into unit plans that guide instruction for all students and for each student" (Redding, 2007, p. 95). With the adoption, in many states, of the Common Core Standards, this task becomes once again one of prime importance. Instructional Teams, typically consisting of teachers of the same grade level, subject, or a cluster of grades, work together as a professional learning community to share the roles and responsibilities required to develop effective units of instruction. It is important to include special education teachers on Instructional Teams to allow for the development of standards-aligned individualized education programs (IEPs). IEPs that are standards-aligned lead to higher student expectations and increased exposure to subject matter with focused instruction to meet challenging goals, as well as increased collaboration between special and general education teachers (McLaughlin, Nolet, Rhim, & Henderson, 1999). English Language Learner (ELL) personnel should also be included on Instructional Teams to develop standards-aligned curricula to address students' linguistic needs (Rance-Roney, 2009).

Plans for each standards-aligned unit of instruction, which typically involve three to six weeks of academic work within a given subject area or grade level, are developed by Instructional Teams and shared with all teachers that teach the corresponding unit. Aligning unit plans with standards serves as a check on guide/text/test congruence, and also provides teachers with an organizational structure for their own planning (Glatthorn, 1995). These standards-aligned units of instruction must include standards-based objectives and criteria for mastery, pre-post tests to assess student mastery, learning activities aligned to objectives, and corresponding materials for these activities that are well-organized and easily accessible by teachers. Relevant research that addresses ways that Instructional Teams can effectively develop standards-aligned instructional units is summarized below.

How can Instructional Teams effectively collaborate to develop standards-aligned units of instruction?

Include standards-based objectives and their criteria for mastery. Instructional Teams should develop unit plans that assure that students master standards-based objectives and also provide opportunities for enhanced learning. The Instructional Team must first review the standards to which they will align objectives, assessment items, and curriculum (Crawford, 2012). They should then engage in a process of:

- Prioritizing: Identify the most critical learning standards for the grade level or course from among the full set of relevant standards;
- Unpacking: Identify the explicit and implicit domain skills for those learning standards at the grade and course level; and
- Powering: Identify the essential skills from among the domain skills (Marzano, Yanoski, Hoegh, & Simms, 2013).

Once Instructional Teams have worked through the standards and defined performances and skills that correspond with the standards, they can define instructional objectives for each instructional unit. This process consists of

1. Writing end-of-year learning targets (or objectives) that describe the performances students should be able to demonstrate by the end of the year; these are the performances that every teacher will focus on for the year;
2. Vertically articulating the learning targets with the grade level and course level above and below the assigned grade level to ensure continuity between the grades and courses and sufficient coverage of the domains;
3. Finalize the end-of-year learning targets and make any necessary adjustments based on the vertical articulation;
4. Attach a mastery criterion to each learning objective that describes the level of performance a student must achieve in order to meet the objective; and
5. Divide the end-of-year targets into quarterly learning expectations and scaffold them so that they are sequenced appropriately. The sequencing should reflect skill hierarchies from simplest to most complex, in a manner that ensures learners will meet the end-of-year learning objectives (Crawford, 2012).

These instructional objectives should then be shared with all members of the school community and become the focus of curriculum, instruction, and assessment; they also provide all school community members with a common set of learning expectations across grade levels and schools within a district (Crawford, 2014).

Include pre-/post-tests to assess student mastery of standards-based objectives. After the learning objectives have been defined, Instructional Teams should determine how to evaluate whether or not the objectives have been achieved. A unit test is an assessment device, aligned with each standards-based objective covered in the unit and administered to all students before and after the unit of instruction (or smaller part of the unit). Unit tests are constructed to give teachers a good idea of a student's level of mastery of the objectives without taking a great deal of time to administer and may range from pencil and paper tests to oral questioning or other systematic means for assessing mastery (Redding, 2007). Teachers benefit from knowing each student's beginning mastery so that assignments can be differentiated for groups and individual students. After the lesson or unit, a post-test shows what has been gained by each student and signals the need for reteaching and informing the next lesson or unit.

Include specific learning activities aligned to objectives. Contrary to popular belief, design of the curriculum and learning activities should come after defining the learning objectives and their associated assessments (Wiggins & McTighe, 1998). By understanding from the outset where the learner needs to end up, teachers have a blueprint to help guide their development of the lessons, ensuring that they contain what needs to be taught. Learning activities should be carefully aligned with the objectives included in the unit plan to provide a variety of ways for a student to achieve mastery as evidenced in both the successful completion of the activities and correct responses on the unit post-test. Instructional Teams should develop differentiated learning activities for each objective that can be assigned to students based on their pre-test results and their progress during the unit (Redding, 2007). Learning activities (e.g., independent work, small group work, computer-based instruction, homework assignments) can be differentiated for lagging students, students on track, and early learners who

need enhanced assignments. An Instructional Team's unit plans should include a description of each leveled and differentiated learning activity, the standards-based objectives associated with it, and criteria for mastery.

Develop materials for standards-aligned learning activities and share with colleagues as well as ensure materials are well organized and easily accessible by all teachers. Instructional Teams must work together to co-design standards-aligned units of instruction and collaboratively develop or identify high quality instructional materials for each learning activity to support student attainment of learning objectives. Wenger (2000) argues that Instructional Teams, or communities of practice, should have a "shared repertoire of communal resources—language, routines, sensibilities, artifacts, tools, etc." (p. 229). In schools these resources are largely derived from the work of an Instructional Team. Helping to align school-wide instructional practices across the school and to the relevant learning standards not only leads to greater consistency in the quality of instruction that students are receiving, but it can also encourage collective creativity and innovation in teaching (Wenger, 2000). Having a bank of shared resources also reduces duplicative efforts from teachers who would typically have to create their own materials (Crow & Pounder, 2000).

Classroom organization benefits both teachers and students. Well-organized instructional materials help teachers maximize instructional time and help students make clear and smooth transitions and learn more efficiently and effectively (Marzano, 2011). Likewise, Charlotte Danielson's Framework for Teaching stresses organization and management of materials and supplies as a component of effective professional practice (The Danielson Group, 2013). Marking and organizing the learning activities by subject, grade level, unit, and objective makes it easier for teachers to differentiate and provide the appropriate activity for students. Materials may be stored in a central place for all teachers to make use of them at the time they are needed.

Indicator to Support the Effective Practice
Instructional Teams develop standards-aligned units of instruction for each subject and grade level.
Units of instruction include standards-based objectives and criteria for mastery.
Units of instruction include pre-/post-tests to assess student mastery of standards-based objectives.
Units of instruction include specific learning activities aligned to objectives.
Instructional Teams develop materials for their standards-aligned learning activities and share the materials among themselves.
Materials for standards-aligned learning activities are well-organized, labeled, and stored for convenient use by teachers.

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Core Function: Curriculum, Assessment, and Instruction Planning

Effective Practice

Engage Instructional Teams in assessing and monitoring student mastery

Overview: Instructional Teams should take an active role in assessing and monitoring student mastery of standards-aligned learning objectives. Formative assessment approaches include administration of a pre-test to provide teachers and students with diagnostic information on what students already know so that instruction within units can address student learning needs appropriately. Post-tests reveal the degree of student mastery of learning objectives following instruction, and results can be used to guide reteaching if necessary. Instructional Teams may want to calculate effect sizes to gauge instructional impact on groups of students and determine why some groups perform better than others, as well as compare student progress to their achievement.

Evaluate Your Practice: Do your Instructional Teams systematically develop and administer formative assessments to be used at the beginning and end of lessons or units? Do teachers use the data to differentiate instruction? Do the teams use the information to modify units of instruction and share the most successful teaching strategies? Would determining effect sizes for some instructional units add valuable information to guide your Instructional Teams?

Introduction

Teaching has long been seen as an individualized practice, with educators acting autonomously within their own classrooms. Darling-Hammond, Wei, Andree, Richardson, and Orphanos (2009) refer to this as an "egg crate model of instruction," alluding to the very separate and independent nature of instructional practice. Recent meta-analyses (e.g., Hattie, 2012) have led researchers to advocate the development of Instructional Teams that regularly collaborate to solve learning dilemmas, examine impact of curricula and teaching on students, and cooperatively plan and critique lessons, objectives, and success criteria. Instructional Teams work to "build the curriculum from learning standards, curriculum guides, and a variety of resources [and] organize the curriculum into unit plans that guide instruction for all students and for each student" (Redding, 2007, p. 95). It is important to include special education teachers on Instructional Teams to allow for the development of standards-aligned individualized education programs (IEPs). IEPs that are standards-aligned lead to higher student expectations and increased exposure to subject matter with focused instruction to meet challenging goals, as well as increased collaboration between special and general education teachers (McLaughlin, Nolet, Rhim, & Henderson, 1999). English Language Learner (ELL) personnel should also be included on Instructional Teams to develop standards-aligned curricula to address students' linguistic needs (Rance-Roney, 2009).

Plans for each standards-aligned unit of instruction, which typically involve three to six weeks of academic work within a given subject area or grade level, are developed by Instructional Teams and shared with all teachers that teach the corresponding unit. Pre- and post-tests are methods of formative assessment that help teachers determine student mastery of objectives prior to the introduction of units or lessons and determine their mastery at the end of the unit or lesson. These tests enable the teacher to adjust his or her approach in teaching the lesson or unit and differentiate assignments and supports for each student and/or modify instructional approach as needed. Relevant research that addresses ways that Instructional Teams can effectively monitor and assess student mastery of standards-aligned objectives is described below.

How can Instructional Teams effectively use formative assessment approaches to assess and monitor student mastery?

Assessing and monitoring student mastery of learning objectives requires that Instructional Teams systematically use formative assessment methods. Black, Harrison, Lee, Marshall, and Wiliam (2004) provide a working definition of "assessment for learning," as opposed to assessment for accountability purposes:

> Assessment for learning is any assessment for which the first priority in its design and practice is to serve the purpose of promoting students' learning. It thus differs from assessment designed primarily to serve the purposes of accountability, or of ranking, or of certifying competence. An assessment activity can help learning if it provides information that teachers and their students can use as feedback in assessing themselves and one another and in modifying the teaching and learning activities in which they are engaged. Such assessment becomes 'formative assessment' when the evidence is actually used to adapt the teaching work to meet learning needs. (p. 10)

Feedback within formative assessment provides information to teachers and students on the gap between a student's current level of understanding and the desired learning objective. This feedback should also help students clarify learning goals and their progress towards these goals, as well as steps they need to take to reach those goals (Hattie & Timperley, 2007). Research addressing the effectiveness of formative assessment approaches on student learning generally shows at least moderate positive effect sizes across most studies, with stronger results obtained for formative assessment strategies learned within professional development initiatives and for computer-aided formative assessment (Hanover Research, 2014; Kingston & Nash, 2012; Rich, Harrington, Kim, & West, 2008; Wiliam, Lee, Harrison, & Black, 2004). Making students aware of learning objectives and assessment criteria for mastery of these objectives can also improve learning outcomes for students (Hanover Research, 2014).

Giving a pre-test to students is a critical part of the formative assessment process because it informs the teacher about each student's level of understanding of the concept(s) about to be taught. Some students will need to catch up or be "red-flagged" for attention. Other students are primed and ready for the new information. Still other students may already have a firm grasp of the information about to be taught and need something extra to provide challenge. This information is all captured in a simple pre-test that the Instructional Team uses as data in order to make these decisions. Pre-tests are for diagnostic purposes only and should not be graded (Carnegie Mellon, n.d). Instructional Teams should "set the stage" for students with disabilities or English Language Learners (ELLs) by explicitly explaining the purposes of the pre-test (not for a grade, but to help the teacher determine what students already know so that he/she can plan accordingly) because these students often differ from their classmates in the way they respond to testing/assessment situations (Ainsworth, 2011). Because Instructional Teams have worked together to plan their units of instruction, they also have prepared leveled lessons and materials to address varying student performance on the pre-test so that each student's needs are met.

The post-test then becomes the measure of how well the instruction was able to close the gap between what the student knew prior to the lesson and where the teacher wanted the student to be at the end of instruction. The post-test should use the same questions as the pre-test, and feedback from the post-test should be given to the student as quickly as possible. Instructional Teams can use the results of the post-test to shape how they re-teach the lesson for those who did not understand the first time around, or if this is a large number of students, perhaps reexamine how the unit was taught overall. Carefully constructed unit plans that include pre- and post-tests assure that students master standards-based objectives as well as provide opportunities for enhanced learning (Redding, 2007).

How can teachers and Instructional Teams further evaluate the impact of instruction on student mastery?

Instructional Teams may want to explore the use of effect sizes to help them determine the impact of their instruction on students. Effect sizes can be calculated by taking the difference between two mean scores (e.g., Unit 1 post-test mean class score—pre-test mean class score) and then dividing this figure by the average spread of student scores (i.e., average standard deviation). Effect size is a measure of student progress, not a measure of student achievement; effect sizes describe how much students have improved, not how they performed relative to other students in the class (Killian, 2016). Small

sample sizes (e.g., fewer than 30 students) may limit the accuracy of effect sizes, and thus this technique should be used primarily with larger groups of students (Hattie, 2012). Instructional Teams may want to use effect sizes to answer questions such as:

- "How well is what we're doing working for different groups of students each year and why?"
- "What possible reasons could there be for some students or groups of students progressing more or less?" and
- "How does student progress compare with their achievement levels?" (LaPointe, 2014)

Indicators to Support the Effective Practice
Units of instruction include pre-/post-tests to assess student mastery of standards-based objectives.
Unit pre-tests and post-tests are administered to all students in the grade level and subject covered by the unit of instruction.
Unit pre-test and post-test results are reviewed by the Instructional Team.
Teachers individualize instruction based on pre-test results to provide support for some students and enhanced learning opportunities for others.
All teachers reteach based on post-test results.

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Core Function: Curriculum and Instruction

Effective Practice: Assess student learning frequently

Overview: Frequently assessing student learning contributes positively to student performance outcomes. Frequent formative assessment provides regular information on whether students are learning as expected, and can allow teachers to adjust their teaching as necessary and provide differentiated instruction based on student learning needs. Benchmark assessments should be used at least three times per year to provide timely information to Instructional Teams on whether standards-aligned learning objectives are being met so that instruction can be modified as necessary. Data-based decision making requires easy access to a variety of student data, as well as professional development on how to analyze and use data and sufficient time for teachers to work collaboratively to use data to guide their instructional practice. Schools can create their own data systems or seek funding for more complex systems that better meet their needs.

Evaluate Your Practice: Does your school administer at least three benchmark assessments annually? Do all your teachers include frequent assessment of students' mastery in order to provide feedback to students and to adjust their instruction? How will leadership know that instructional decisions and differentiation are made based on relevant data? How quickly are test results provided to teachers? Have staff received adequate professional development to engage in data-driven instruction? What is the procedure for Instructional Teams to review assessment results and make immediate adjustments in instructional plans?

Introduction

Assessment is the process of testing (written, verbal, or by examination of work) to see what a student knows and can do and patterns of strength and weakness in what a group of students knows and can do (Walberg, 2007). Assessment within schools includes: 1) diagnostic-prescriptive assessments, such as unit pre- and post-tests, used by teachers and teams; 2) embedded assessments that are part of learning activities by which the teacher determines mastery of learning objectives; 3) periodic assessments, such as those provided by the district or school to gauge student mastery of standards-based objectives at several points throughout the school year (often called benchmark tests); and 4) annual assessments such as state standards assessments and standardized achievement tests (Redding, 2007). Danielson (2013) argues all of these forms of assessment are essential and that good teaching requires both assessment of learning (to ensure teachers and other stakeholders know that students are learning as intended) and assessment for learning (teachers incorporating assessments directly into the instructional process in order to modify or adapt instruction as needed to ensure student learning, often known as formative assessment).

Frequent assessment of student learning within schools has been shown to contribute to positive student outcomes across a variety of studies (e.g., Bangert-Drowns, Kulik, & Kulik, 1991; Hanover Research, 2014; Hattie & Timperley, 2007). School practices that facilitate frequent assessment of student learning are described below.

How often should schools and teachers assess students' progress towards mastery of standards-based objectives?

At the classroom level. Teachers use assessments continually within the classroom, ranging from informal (e.g., a show of hands to see how many can correctly answer a teacher question, or exit tickets to determine what students know and what they still need to learn), to more formal approaches such as frequent quizzes to review the previous day's learning and unit pre- and post-tests that measure progress towards learning objectives. These activities, often referred to as formative assessment, provide evidence of student learning that allows the teacher to adapt the

teaching work to meet student needs (Black, Harrison, Lee, Marshall, & Wiliam, 2004). Feedback of this sort has a powerful influence on achievement (Hattie, 2009) and should serve to both inform students and to give feedback to teachers "as to what students know, what they understand, where they make errors, when they have misconceptions, when they are not engaged" (p. 173). As teachers derive ongoing feedback from assessments they can modify their teaching as necessary and provide students with feedback so that they are able to self-regulate their learning and become motivated to engage in further learning (Hattie, 2012). Frequent assessment gives the teacher the information needed to differentiate instruction for each student or group of students. As Tomlinson (2009) describes:

> Plans for differentiation stem from a teacher's ongoing collection of information that details each student's proximity to specified and essential knowledge, understanding, and skill that form curricular frameworks. A teacher who sees the central goals of teaching as ensuring that each student understands, applies, and transfers key content, uses pre-assessment and formative assessment as a sort of daily GPS to know how to steer instruction for individual students, small groups of students, and the class as a whole to achieve that goal. Formative assessment thus becomes a primary vehicle to guide teacher reflection on individual learners and to move them away from thinking only about "the class" as the unit of instruction. (p. 256)

At the school level. High achieving schools often use periodic benchmark assessments (at least three times per year) to track student progress and make adjustments as necessary (Olson, 2005). These assessments may be provided by testing companies or locally developed by teachers and schools. Herman, Osmundson, and Dietel (2010) describe the role of benchmark assessments within a balanced assessment system:

> While annual state assessments provide a general indicator of how students are doing relative to annual learning standards, and while formative assessment is embedded in ongoing classroom instruction to inform immediate teaching and learning goals, benchmark assessments occupy a middle position strategically located and administered outside daily classroom use but inside the school and/or district curriculum. Often uniform in timing and content across classrooms and schools, benchmark assessment results can be aggregated at the classroom, grade, school, and district levels to school and district decision-makers, as well as to teachers. This interim indication of how well students are learning can fuel action, where needed, and accelerate progress towards annual goals. (p. 2)

Some critics claim that when used within a high-stakes testing environment, benchmark assessments may contribute to "teaching to the test." Proponents of these assessments argue, however, that when used appropriately, they can provide specific feedback on academic areas where students need the most assistance (Coffey, 2009). When considering the use of benchmark assessment, schools should ensure that these assessments are well aligned with curriculum standards and provide teachers with frequent and timely information to guide their instruction. Timely information is crucial because the further away the time of assessment, the less relevant the results become (e.g., if students perform poorly on a benchmark assessment in September, receiving the results in December is too late to impact lesson planning and design (Doubet & Hockett, 2015). Schools should also assess the validity of benchmark assessments and provide adequate resources, including professional development and the necessary time for instructional planning to incorporate results (Herman et al., 2010).

How can schools ensure that teachers can easily access the student data they need to help guide instructional practice?

Schools must ensure that teachers and Instructional Teams have easy access to student data in order to allow for data-based decision making that informs instructional planning in a timely manner. Substantive use of data can improve the efficacy of school improvement teams and can improve the culture of professionalism within a school (Wayman & Stringfield, 2003). However, Wayman and Stringfield also point out that schools may be data-rich but information-poor if staff members cannot access the information they need to make data-driven instructional and school climate decisions. Often, the only data that teachers and instructional leaders can easily access are the scores that their students received on standardized tests, which typically provide little information to guide daily decision making in the classroom and school (Halverson, Grigg, Prichett, & Thomas, 2006; Means, Padilla, DeBarger, & Bakia, 2009; Wayman & Cho, 2008). While summative information on student learning is essential to guide instructional practice, many other types

of information are required, including guidance information (student placement and behavioral records), student demographics, classroom grades, master schedule and calendar information, curricular information, and technological capacity (Halverson et al., 2006). In addition to limited access, many teachers lack the skills needed to retrieve, analyze, and apply the data to instruction; with support and training of both teachers and administrators, staff will be more amenable to data-driven practice and will better see the value in using data to guide their work (Wayman & Cho, 2008). The support includes allotting sufficient time for teachers to work together in analyzing and understanding their students' data (Means et al., 2009). Other barriers to data integration and usage include failure to link databases together, poorly aligned information systems, and technological constraints (Herzog, Davis & Legters, 2012; Wayman & Cho, 2008).

Ideally, the systems created and managed by districts would meet all needs at the school level, but with competing priorities, the systems created by the district are more likely tailored to their own higher-level needs (Halverson et al., 2006; Heppen & Therriault, 2009). Most individual schools lack the time, expertise, or financial resources to create or purchase an integrated data warehouse for all of their data streams. However, there are ways to work around these limitations. Even without a database in the traditional sense, schools can create structures that will allow them to begin merging and tracking their data (Heppen & Therriault, 2009). For example, some schools have used Microsoft Excel, which often requires manual data entry and upkeep but is found on most computers and has easily accessible training resources. Spreadsheets created in Excel can be shared through a number of programs such as Google Drive or Dropbox, to ensure that all team members have access to the same data (Heppen & Therriault, 2009; Herzog et al., 2012). Schools teams should set schedules for updating data so that all members have access to the most current data in a timely manner, especially after assessments are given (Means et al., 2009; Herzog et al., 2012). Schools requiring more complex data systems can fund the purchase of a commercial system through federal funds such as Title I. Schools must consider privacy of student data, in accordance with the Family Educational Rights and Privacy Act (FERPA), and ensure that documents are password protected and only accessible by staff that need the information (Herzog et al., 2012).

Indicators to Support the Effective Practice
The school assesses each student at least 3 times each year to determine progress toward standards-based objectives.
The school provides all teachers timely reports of results from standardized and objectives-based assessments.
The school maintains a central database that includes each student's test scores, placement information, demographic information, attendance, behavior indicators, and other variables useful to teachers.
All teachers assess student progress frequently using a variety of evaluation methods and maintain a record of the results.

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Core Function: Classroom Instruction

Effective Practice: Deliver sound instruction in a variety of modes

Overview: Sound instructional practice requires the use of research-based strategies at every stage of lesson implementation. Teachers should develop weekly lesson plans that are standards-aligned, and instructional units should include objectives-based pre- and post-tests. Teachers should keep records of students' mastery of learning objectives and develop individualized instructional plans to differentiate instruction. When introducing lessons, teachers should review the previous lesson, clearly convey the lesson's topic and objectives, stimulate interest, and use modeling and other strategies to build connections to prior knowledge. To effectively present lessons, teachers should proceed in small steps at a rapid pace while explaining content directly and thoroughly, maintain eye contact with students and vary vocal expression, and use prompting and cueing to keep students engaged. After the lesson teachers should re-teach as necessary, summarize key concepts, and review with questions that encourage automaticity with content as well as high-level questions to encourage elaboration and deepen student thinking. Teachers should foster students' ability to paraphrase, summarize, and relate to lesson content, as well as check their own comprehension, and offer plenty of appropriate praise. Teachers must actively move around the classroom, interacting instructionally, managerially, and socially with students as they work in small groups or independently. Computer programs offer ways for students to reinforce and extend their learning and provide teachers with learning data, but teachers must ensure that these tools align with learning standards and include plenty of other forms of student assessment within their instruction.

Evaluate Your Practice: Do teachers use a document that aligns standards, curriculum and assessments when planning weekly lessons? Do these lessons include objectives-based pre- and post-tests? Do teachers keep a record of students' mastery of objectives and develop instructional plans individualized for each student's learning needs? When introducing lessons, do teachers review the previous lesson, clearly state the lesson's topic and objectives, stimulate student interest, and use modeling and demonstration to link new material with previous learning and students' prior knowledge? Do observations of teachers' lessons reflect progression in small steps, a thorough explanation of content with plenty of prompting and cueing, plenty of eye contact, and variety of vocal expressions? Do all teachers re-teach when necessary? Do teachers use questions for both drill and practice recitations and for encouraging deeper cognition and higher-level thinking? Do teachers require students to paraphrase, summarize, and relate core content and check their own comprehension? What is the expectation for teachers to incorporate peer interactions within classrooms? Do teachers actively circulate around classrooms, checking student learning and engagement and practicing effective classroom management? Do many teachers need professional development to enhance their classroom management skills? Do most teachers interact in positive ways with students by praising them appropriately, and exhibiting interest, caring, and concern? Do teachers have a protocol for evaluating the degree to which computer programs are standards-aligned? Do teachers use a wide variety of classroom assessments in addition to those provided by computer programs?

Introduction

Research on effective classroom instruction can be found within the fields of cognitive science (i.e., how the brain acquires and uses information), the instructional practices of master teachers (i.e., teachers whose students exhibit high levels of learning and growth), and the cognitive supports that help students learn complex tasks (e.g., teachers' use of think-aloud and modeling strategies; Rosenshine, 2012). While these types of research may differ from

one another, all three recommend sound instructional strategies that supplement and complement each other at each stage of the lesson delivery process (Rosenshine, 2012). A comprehensive instructional delivery process includes lesson preparation, introducing and presenting a whole-class lesson, summarizing and confirming understanding, and providing for student-directed small group and independent work, including computer-based instruction where appropriate (Redding, 2006). This brief will summarize research related to the delivery of sound instruction through multiple modes to maximize student engagement and learning.

How can teachers effectively plan and prepare for instruction?

Recent meta-analyses have led researchers to advocate the creation of Instructional Teams that regularly collaborate to solve learning dilemmas, examine impact of curricula and teaching on students, and cooperatively plan and critique lessons, objectives, and success criteria (e.g., Hattie, 2012). Teachers and Instructional Teams should be guided in their planning by a document that clearly aligns standards, curriculum, instruction, and assessment; often a district provides this document in order to keep all schools in the district focused in the same direction, but in some cases schools may need to develop their own (District Administration, 2004; Redding, 2006). Instructional Teams should work to "build the curriculum from learning standards, curriculum guides, and a variety of resources [and] organize the curriculum into unit plans that guide instruction for all students and for each student" (Redding, 2007, p. 95). Plans for each standards-aligned unit of instruction, which typically involve three to six weeks of academic work within a given subject area or grade level, are developed by Instructional Teams and shared with all teachers that teach the corresponding unit (Hattie, 2012). Once unit planning has taken place, then teachers can either together or individually develop lesson plans based on each unit of instruction; in some cases districts or schools can provide lesson plan templates to ensure quality and standardization (Redding, 2006).

Part of the planning process must include careful and regular incorporation of formative assessments to determine student mastery of learning objectives; formative assessment has been shown to have strong positive effect sizes on student learning across most studies (Hanover Research, 2014; Kingston & Nash, 2012; Rich, Harrington, Kim, & West, 2008; Wiliam, Lee, Harrison, & Black, 2004). Teachers should develop objectives-based pre- and post-tests as a key method of formative assessment to determine student mastery of objectives prior to the introduction of units or lessons and to determine their learning at the end of the unit or lesson (Redding, 2007). Pre-tests inform the teacher about each student's level of understanding of the concepts in the upcoming lesson, allowing the teacher to subsequently differentiate assignments and supports as needed (Tomlinson et al., 2003). Teachers and Instructional Teams should plan differentiated learning activities that are leveled and aligned with standards and objectives to provide a menu of options for individual students (Redding, 2007). Post-tests given at the end of the unit or lesson then provide a measure of how well the instruction closed the gap between what students knew prior to the lesson and where the teacher wanted students to be at the end of instruction. Instructional Teams can use the results of the post-test to shape how they re-teach the lesson for those who did not understand the first time around, or if this is a large number of students, perhaps reexamine how the unit was taught overall. Teachers must closely monitor students' mastery of learning objectives and keep explicit and easily accessible daily records to be able to compare student progress to the rate of improvement necessary to meet annual learning goals (Safer & Fleischman, 2005).

How can teachers most effectively implement teacher-directed instruction?

Direct instruction, in which the teacher uses explicit whole-class teaching techniques to teach a skill or set of skills, has been consistently shown through research to be an effective teacher-directed instructional method (Borman, Hewes, Overman, & Brown, 2003; Hattie, 2012; Rosenshine, 2012). Teachers must lead students through the learning process by carefully and thoroughly introducing and presenting the lesson in ways that stimulate student engagement and then summarizing key concepts learned and confirming that students have effectively met learning objectives (Marzano & Pickering, 2010; Redding, 2006). However, equally important is the teacher's capacity to interact with students in positive ways that facilitate their understanding, self-regulated learning, and interactions with peers (Marzano, 2011). Each of these components of effective teacher-led instruction is described below.

Introducing the Lesson. Prior to introducing a new lesson, research shows that a brief review of the important concepts from the previous lesson and any associated homework consistently benefits student learning (Marzano, 2007; Redding, 2006; Rosenshine, 2012). Good teachers use student questioning to review the previous lesson and build a bridge to connect the new material, while also checking to determine if any re-teaching is necessary (Redding, 2006). Teachers should spend time reviewing material that requires overlearning, providing practice time beyond the level of initial mastery for newly acquired skills so that they become automatic (Rosenshine, 2012). Effective teachers also explain the lesson's topic, theme, and learning objectives clearly and concisely to students so that they understand learning expectations; teacher clarity is an important component of effective instruction with large positive effect sizes (Hattie, 2012). To encourage student engagement and stimulate interest, good teachers link the lesson's topic to students' prior knowledge and interests (Danielson, 2013). Using cues to activate prior knowledge, providing guiding questions to stimulate interest and engagement, and use of advanced organizers (e.g., visual graphics or stories that highlight lesson content) are effective strategies for previewing the upcoming lesson (Marzano & Pickering 2010; Redding, 2007).

Presenting the Lesson. Teachers must explain lessons directly, thoroughly, and with clarity, while developing students' conceptual understanding through scaffolding and connections to students' interests (Danielson, 2013). Effective teachers present lessons at a rapid pace, but also proceed in small manageable steps with practice after each major step (McLeod, Fisher, & Hoover, 2003; Rosenshine, 2012). Teachers must be skilled at creating a structured lesson that includes properly paced presentation with manageable amounts of content that can build student engagement and enhance learning. Well-orchestrated transitions between learning activities help avoid reduced time on task and decreases in attention, thus increasing the likelihood of sustained student engagement (Marzano & Pickering, 2010). Teachers must also make regular use of cueing and prompting. Cues provide students with hints about what is important during the lesson and what to focus their efforts on; prompts are stronger hints for a specific student response (Walberg, 2007). Teachers must provide ample wait time for students to respond in order for cueing and prompting to be effective. Student engagement can be further sustained by teachers maintaining eye contact with students, scanning the classroom as they speak, freely moving around, and encouraging all students to participate in class discussions (Marzano, 2014). In addition, good teachers speak with expression and use a variety of vocal tones, varying the pace, volume, pitch, and modulation to convey the teacher's enthusiasm and build interest in the lesson (Redding, 2006).

Summarizing and Confirming Understanding. Effective teachers frequently pause to summarize material for students and to confirm that they are mastering learning objectives. Research shows that re-teaching is a powerful strategy to ensure all students are mastering content (Marzano, 2010). Re-teaching can occur both during instruction as the teacher continually monitors student understanding through questioning and then re-teaching as necessary, as well as after instruction when assessing mastery during review, with the teacher working more closely with students who need further instruction while other students engage in other instructional activities (e.g., enrichment). Effective teachers make frequent use of classroom questioning, assessing student understanding through drilling and recitation and increasing the likelihood of automaticity as students build their foundational knowledge (Rosenshine, 2012; Walsh & Sattes, 2017). Teachers must go beyond acknowledging a correct answer or addressing an incorrect response, following up with additional questions to extend student thinking, understand what they know, and diagnose what they do not understand (Chin, 2007). These probing questions that ask for more information in response to a student response or comment can facilitate deeper engagement and higher-level learning (Peterson & Taylor, 2012); follow-up questions posed to the rest of the class can help them evaluate their peer's answer and reasoning and help them elaborate on the concept (Rosenshine, 2012; Smart & Marshall, 2013).

Effective teachers plan their questions in advance as they develop lessons (Manouchehri & Lapp, 2003) but are flexible enough to allow questioning to flow purposefully from student responses to continually bring the conversation to higher levels of cognitive demand (Chin, 2006; Smart & Marshall, 2013). Finally, teachers must provide closure to lessons by reviewing, clarifying, and reinforcing the key points and bringing them together to form a coherent picture, eliminating confusion and frustration on the part of students (Hattie, 2012). Effec-

tive teachers also place some of the onus for this process on students themselves. Research shows that students' sense of agency within the learning process can be built by rephrasing, elaborating, and summarizing new material themselves so that is stored in long-term memory (Rosenshine, 2012). Teacher modeling of these strategies through think-alouds and teacher-led examples can support students in independent or collaborative practice (Rosenshine, 2012).

Interacting With Students. Teachers interact with students as they respond to questions that occur during recitations and classroom discussion. Open-ended questions encourage students to think and share in a more elaborate way, rather than simply responding to questions with one right answer, in which case they may feel pressured or uncomfortable if they do not know the correct answer (Heritage & Heritage, 2012; Peterson & Taylor, 2012). Open-ended questions provide the teacher with insight into students' thinking about the content and how well they can extend what they are learning to other contexts (Chin, 2006). These questions allow teachers to see where groups of students may be struggling and to provide re-teaching if necessary (Rosenshine, 2012). Teachers must prepare open-ended questions carefully in advance to ensure alignment with instructional goals and desired student outcomes (Manouchehri & Lapp, 2003). Other effective practices include repeating student responses to questions as a means of validation before asking follow-up questions (Chin, 2006) and asking follow-up questions even when students give correct responses to push students towards higher levels of thinking as they justify or rationalize their answers (Smart & Marshall, 2013). Redirecting student responses by posing additional questions that ask students to clarify, refine, or elaborate on their responses also allows peers to compare and contrast ideas or evaluate others' responses. Redirection is also useful for incorrect answers; instead of a teacher correcting students' responses, the teacher can instead encourage students and to think about alternatives or justify their reasoning in a neutral, non-judgmental setting (Chin, 2006; Van Zee, Iwasyk, Kurose, Simpson, & Wild, 2000).

Teachers also create positive classroom environments by establishing positive relationships with students and providing for plenty of opportunity for peer interactions that stimulate learning and social development. Teachers who show interest in their students' lives, advocate for and never give up on them, and act in a friendly manner establish the positive relationships that are important for effective instruction (Marzano, 2011). Offering praise to students can be a powerful motivator if it describes specific noteworthy behavior, refers to effort and accomplishment rather than ability (Dweck, 2010), and matches students' preference for praise (private vs. in front of the whole class; Wright, 2014). Providing opportunities for peer interaction can include having students share their thoughts or responses with a set partner, facilitating student study groups, or encouraging peer tutoring (Rosenshine, 2012). More structured approaches involve students working collaboratively within small groups (e.g., project-based learning team); teachers may need to identify and assign roles within groups to give students a sense of purpose and value and to keep all students focused and motivated (Peterson & Taylor, 2012). Working with peers also provides further opportunity for students to monitor their understanding of content and develop important metacognitive skills. For example, reciprocal teaching, in which students are given the responsibility to become the "teacher" to a peer or small group of peers, requires them to thoroughly understand and coherently organize material in order to explain it to their peers; this approach has proven to be an effective classroom strategy (Hattie, 2012). In reciprocal teaching, students learn planning, structuring, and self-management by assuming the executive control normally exercised by teachers (Walberg, 2007); however, students need expert scaffolding and modeling by adults as they move from spectator to performer (Rosenshine & Meister, 1994).

How can teachers facilitate student-directed small groups and independent work?

To provide sound instruction within an optimum learning culture, teachers need to be able to effectively organize whole class, small group, and individual instruction. Teachers must be aware of what is happening in all areas of the classroom at all times and consistently reinforce classroom rules and procedures to maximize the time students spend engaged in lessons (Redding, 2007). Redding (2007) notes that "classroom management is evidenced in the teacher's 'withitness,' the learner's accountability for learning, the clear procedures in the

classroom, and the way the teacher mixes whole class instruction, small group instruction, and individual instruction" (p. 108). Teacher "withitness" manifests itself in multitasking, classroom awareness, alertness, intuition, and confidence in ways that project a powerful image that the teacher is in control of the learning environment (Pressman, 2011). When students are working in small groups or individually, the teacher must be able to move throughout the classroom and instructionally manage students by ensuring that all students are engaged, checking work, explaining instructions or learning content, asking and soliciting questions, and providing feedback (Redding, 2007). Teachers must also interact managerially with students, reinforcing rules and procedures; effective classroom management is strongly linked to teacher effectiveness (Hattie, 2012). Effective teachers also regularly interact with students socially; social interaction is a strong correlate of academic learning because it increases the opportunity for teachers to build a bond of connection with each student, increasing their sense of belonging within the classroom (Redding, 2007; Wang, Haertel, & Walberg, 1993). Teachers should establish daily contact with each student and show concern by expressing interest in their lives outside of school, thus providing a comfort zone for teacher-student communication (Parett & Budge, 2012).

What should teachers consider when using computer-based instruction?

There are a wide variety of digital tools available to promote learning; however, there is wide variation in the degree to which digital tools such as computer games and other computer-assisted learning programs are aligned with state, national, and content standards (Brysch, Huynh, & Scholz, 2012). The onus is often on the teacher to determine how digital tools such as games are related to content knowledge and curriculum requirements before embedding them within their lessons, causing a significant drain on teachers' time (Brysch et al., 2012). In addition, sometimes even software advertised as being aligned to state standards can in reality be overly focused on a narrow range of standards to the exclusion of others (Schenke, Rutherford, & Farkus, 2014). Professional development must address how computer programs and other technologies are connected to the curriculum and aligned standards, as well as provide an opportunity for teachers to practice with the platforms and receive coaching, support, and further training during the school year (Purcell, Heaps, Buchanan, & Friedrich, 2013).

Computer-based learning programs typically incorporate assessment to measure student mastery of material efficiently and effectively (Glowa & Goodell, 2016; Wolf, 2010); however, computer programs do not provide a complete and accurate picture of what students have learned and should not substitute for teachers' assessment of student learning (Redding, 2014). The current state of computer-based assessment within the classroom is much more likely to be focused on assessment of learning (summative assessment), rather than assessment for learning (formative assessment; Hewson, 2012; Pachler, Daly, Mor, & Mellar, 2010). Teachers must supplement mastery data provided by computer programs with other forms of assessment in order to ensure they have a complete picture of student learning.

Indicators to Support the Effective Practice
Delivery sound instruction in a variety of modes: Preparation
All teachers are guided by a document that aligns standards, curriculum, instruction, and assessment.
All teachers develop weekly lesson plans based on aligned units of instruction.
All teachers use objectives-based pre-tests and post-tests.
All teachers individualize instructional plans in response to individual student performance on pre-tests and other methods of assessment to provide support for some students and enhanced learning opportunities for others.
All teachers maintain a record of each student's mastery of specific learning objectives.

Indicators to Support the Effective Practice
Deliver sound instruction in a variety of modes: Teacher-Directed Instruction (Whole Class or Small Group)/Introducing the Lesson All teachers review the previous lesson. All teachers clearly state the lesson's topic, theme, and objectives. All teachers stimulate interest in the topics. All teachers use modeling, demonstration, and graphics.
Deliver sound instruction in a variety of modes: Teacher-Directed Instruction (Whole Class or Small Group)/Presenting the Lesson All teachers proceed in small steps at a rapid pace. All teachers explain directly and thoroughly. All teachers maintain eye contact. All teachers speak with expression and use a variety of vocal tones. All teachers use prompting/cueing.
Deliver sound instruction in a variety of modes: Teacher-Directed Instruction (Whole Class or Small Group)/Summarizing and Confirming Mastery All teachers re-teach when necessary. All teachers review with drilling/class recitation. All teachers review with questioning. All teachers summarize key concepts.

Indicators to Support the Effective Practice
Deliver sound instruction in a variety of modes: Teacher-Directed Instruction (Whole Class or Small Group)/Interacting with Students All teachers re-teach following questioning. All teachers use open-ended questioning and encourage elaboration. All teachers re-direct student questions. All teachers encourage peer interaction. All teachers encourage students to paraphrase, summarize, and relate. All teachers encourage students to check their own comprehension. All teachers verbally praise students.
Deliver sound instruction in a variety of modes: Student Directed Small Group and Independent Work All teachers travel to all areas in which students are working. All teachers meet with students to facilitate mastery of objectives. All teachers encourage students to help each other with their work. All teachers interact instructionally with students (explaining, checking, giving feedback). All teachers interact managerially with students (reinforcing rules, procedures). All teachers interact socially with students (noticing and attending to an ill student, asking about the weekend, inquiring about the family).
Deliver sound instruction in a variety of modes: Computer-based Instruction All teachers have documentation of the computer program's alignment with standards-based objectives. All teachers assess student mastery in ways other than those provided by the computer program.

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Core Function: Classroom Instruction

Effective Practice: Maintain sound classroom management

Overview: Research suggests that a well-managed classroom is essential for effective instruction and student achievement. Sound classroom management includes the capacity to teach and reinforce clear classroom rules and procedures, effectively manage transitions between activities and maximize instructional time through use of effective wait time activities, and maintain a well-organized classroom. Effective teachers also use a variety of instructional modes to engage all learners and reduce the off-task behavior that can lead to behavior problems and loss of instructional time. For example, teachers should build a sense of urgency and engagement by assigning concise and time-dependent learning tasks in which students know they will be accountable to share their work publicly with peers, and ensuring that even reticent or shy students are encouraged to contribute when sharing work.

Evaluate Your Practice: Do all teachers explicitly teach, model, and reinforce preventive behaviors that result in safe and positive learning environments? Are rules and procedures displayed visually throughout the school, particularly in classrooms with younger children? How does the school determine whether teachers consistently enforce classroom rules and procedures? Has the school provided professional development to help teachers effectively manage their classrooms? What do classroom observation data say about teachers' capacity to provide transitions that maintain engagement and instructional time? Do teachers convey instructions and behavioral expectations for students during transitions? Do all teachers maintain well-organized learning environments with easily accessible instructional materials? Have all teachers established a repertoire of engaging and instructionally relevant wait time activities? What evidence is available regarding teachers' capacity to maximize instruction time and limit off-task behavior? Do teachers' lesson plans include a variety of instructional modes to encourage engagement and on-task behavior? What do observation data reveal about teachers' ability to enhance motivation and on-task behavior for all students (even those who may be shy or not engaged for other reasons)? What professional learning may help teachers enhance their ability to build student engagement?

Introduction

Classroom management has been defined as "actions taken to create and maintain a learning environment conducive to successful instruction (arranging the physical environment, establishing rules and procedures, maintaining students' attention to lessons and engagement in activities)" (Brophy, 2006, p. 17). Effective teachers organize their learning environments and use classroom management approaches that maximize student engagement (Redding, 2007). Meta-analysis research consistently shows that effective teaching and learning require a well-managed classroom (Durlak, Weissburg, Dymnicki, Taylor, & Schellinger, 2011; Jones & Jones, 2012; Korpershoek, Harms, de Boer, van Kuijk, & Doolaard, 2016; Marzano, Marzano, & Pickering, 2003). Hattie's effect size research synthesizing the research of thousands of studies also demonstrates that classroom management and decreasing disruptive behavior are likely to have a positive impact on student achievement (Hattie, 2017). Preventive classroom management strategies (e.g., teachers negotiating clear rules with students and decreasing opportunities for off-task behavior) have generally been shown as more effective than reactive strategies (e.g., punishment) (Marzano, et al., 2003). This brief will review preventive classroom management strategies that can help teachers foster a positive learning environment and enhance student engagement.

How can teachers use classroom management practices that prevent behavior problems and foster a positive learning environment?

Teaching and reinforcing classroom rules. Research shows that implementing and reinforcing clearly defined classroom rules is associated with positive behavior within the classroom and school (Kern & Clemens, 2007; Sugai & Horner, 2002). A What Works Clearinghouse (WWC) research report provides recommendations for reducing behavior problems in elementary classrooms, including providing a learning environment with classroom rules and procedures that inhibit problem behaviors (Epstein, Atkins, Cullinan, Kutash, & Weaver, 2008). Epstein, et al (2008) recommend that teachers "actively teach expectations for appropriate student behavior and corresponding classroom routines to students at the beginning of the year and revisit them regularly, showing students clearly what to do and what not to do" (p. 24). Effective teachers convey these expectations daily through explicitly teaching strategies, modeling desired behaviors, and developing positive relationships with students (Epstein, et al., 2008; Sugai & Horner, 2002). Classroom rules and procedures should address student behavior in a variety of situations, such as arriving/leaving the classroom, turning in work, requesting teacher help, transitioning to new activities or settings, and working independently and in small groups (Epstein, et al., 2008).

Classroom rules and procedures should be displayed visually, with pictures of desired behaviors enlarged and posted in the classroom, particularly for younger students (Epstein, et al., 2008). Elementary students need frequent practicing of behavioral expectations, particularly at the beginning of the school year, and whenever new expectations arise or frequent behavioral lapses occur (Sugai & Horner 2002). Older children may also need a review of rules and procedures, especially following vacations. Time invested in explicitly teaching and reinforcing classroom rules and procedures and reviewing them throughout the year enhances the chances that students develop ownership of a positive classroom environment (Epstein, et al., 2008).

Using effective wait-time, transition and classroom organizational strategies. Teachers need to be prepared to manage lesson pacing and student engagement by "thinking two steps ahead" to ensure smooth transitions and avoid behavior problems and loss of instructional time (Alber (2012). Well-orchestrated transitions between learning activities are quick with clear beginnings and endings, and help avoid reduced time on task and decreases in attention, thus increasing the likelihood of sustained student engagement (Finley, 2017; Marzano & Pickering, 2010). Examples of classroom transitions include entering/exiting the classroom for recess or lunch, moving from group to individual work, and putting away materials and preparing for the next task. Teachers must plan out the steps in each classroom transition, and communicate instructions and behavioral expectations to students. McIntosh, et al (2004) suggest that teachers provide a rationale for why the transition is happening, explain and demonstrate what the expected behavior looks like, give students opportunities for practice, provide feedback, and reteach behaviors as necessary. Students' behavior during transitions also benefits from teachers' use of pre-corrections, or quick pre-transition reminders of expected behaviors (e.g., right before asking students to line up, the teacher asks "How far apart should you be when you line up?") (McIntosh, et al., 2004).

Well-organized student learning materials can also facilitate transitions and appropriate "wait-time" activities can increase instructional engagement (ADI, 2011; Stronge, 2007). To maintain and organize learning materials, teachers are recommended to consider whether materials are clean and in good working order with all parts present, easily accessible if children use them independently and inaccessible if they do not, sorted and stored in bins or boxes on shelves (color coding helps), kept near the place where they are used, and clearly labeled with words, graphics or both (Responsive Classroom, 2016). As Stronge (2007) states, "…in the effective classroom there is a place for everything and everything is in its place." When students are waiting for teacher assistance or waiting for the next step for some other reason (e.g., finishing work early), they should be provided with curriculum-related activities to maintain on-task behavior and reinforce and/or extend learning. Wait time activities should not involve busy-work but should address learning objectives, and be student selected and/or individually targeted to meet students' learning needs if possible (ADI, 2011). Pappalardo (2014) suggests that when students finish work early or otherwise are waiting for a classroom transition, they should be asked to 1) check and work on unfinished work/projects; and if work is complete then 2) write (students

continue with work in progress); 2) read (independent reading or reading workshop); or 3) sketch (preferably curriculum-related). Using a daily schedule of wait time activities (e.g., Mondays are always writing then reading, Wednesdays are sketching then reading) helps prevent students from always engaging in the same type of waiting activity (Pappalardo, 2014).

Use a variety of instructional modes to engage all students. Engaging all students within a classroom can be challenging; off-task behavior has been shown to be the largest factor that reduces instructional time and increases disruptions within the classroom (Florida Education Association, n.d.; Godwin, Almeda, Petroccia, Baker, & Fisher, 2013). Teachers must be skilled at using a variety of instructional modes to incorporate well-structured lessons that include properly paced lesson presentation with manageable amounts of content that can build student engagement and enhance learning (Marzano & Pickering, 2010; Walberg, 2007). Effectively used direct instruction can accelerate student achievement considerably (Hattie, 2012; 2017); direct instruction involves the use of a variety of modes to include whole-class, teacher-directed instruction (typically occurring first), followed by teacher- or student-directed small group work, independent and/or computer-based work, and homework (Redding, 2007). The second phase of instruction is differentiated to meet the needs of students; the key is to plan in advance using student learning data to determine which instructional mode will best meet the needs of each individual learner (Redding, 2007). Teachers should take care not to overly rely on one instructional mode. For example, several studies of elementary student engagement suggest that overreliance on whole-group instruction in which students work individually at their desk, and seatwork in which students work on their own can result in lack of student engagement (Florida Education Association, n.d.; Godwin, et al., 2013).

Teachers can encourage on-task behavior by building a sense of urgency for learning tasks. For example, assigning a manageable chunk of work that students will be accountable for in a short and precise amount of time can build student concern for the learning task so that they stay focused and on-task (Ferlazzo, 2014). To build engagement of all learners, Ferlazzo (2014) conveys the suggestions of one successful educator:

> [Teachers should] work to establish a classroom culture in which it is understood that, with every task they perform, students know there is a strong possibility that they will have to share out their results in front of their peers. When calling on students to share out, avoid calling on the hand raisers, and make it a point to regularly call on students you think are at risk of not being engaged with the lesson. Along with the use of time, knowing that their work will be made public is another factor that raises the students' level of concern.

To enhance motivation and on-task behavior, teachers are also recommended to maintain an energetic pace and "mix things up" by occasionally altering the instructional mode (e.g., occasionally rotating partners for small-group work and changing students' mode of response) (Ferlazzo, 2014; Marzano & Pickering, 2010).

Indicators to Support the Effective Practice
All teachers provide students with curriculum-related activities for use when the student is waiting for assistance from the teacher.
Transitions between instructional modes are brief and orderly.
All teachers use a variety of instructional modes (whole-class, teacher-directed groups, student-directed groups, independent work, computer-based, and homework).
All teachers maintain well-organized student learning materials in the classroom.
All teachers display classroom rules and procedures in the classroom.
All teachers reinforce classroom rules and procedures by positively teaching them.
All teachers conduct an occasional "behavior check."
All teachers engage all students (e.g., encourage silent students to participate).

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Core Function: Classroom Instruction

Effective Practice: Use sound homework practices and communicate with parents

Overview: Sound instructional practice includes regular use of effective homework practices to reinforce and extend learning, and teacher-parent communication that fosters parents' understanding of their child's academic progress. To be effective, homework should be purposeful and engaging where possible to build student interest, assigned in the appropriate amounts and at the appropriate level of difficulty, and promote parent involvement when possible. Teachers should be aware of their students' home environment and potential barriers to completing homework, and help students develop the metacognitive skills necessary to work independently. Teachers must systematically inform parents of their children's progress towards mastery of objectives and standards, and provide ways for parents to access, understand, and take action based on their child's progress data. Teachers should also record all communications with parents for record-keeping and accountability purposes.

Evaluate Your Practice: Does your school have a consistent and age-appropriate homework policy implemented by all teachers? Have parents received training or information on how to support their child's successful homework completion? Do all teachers teach the metacognitive skills that build students' self-regulation so that they can complete homework assignments independently? What school support structures are in place that help struggling students complete their homework? What, if any, expectations are set regarding teachers' assignment of interactive homework? How do teachers record students' progress toward standards-based objectives? Is this information reported to parents and if so, in what manner and how often? Does the school provide parent training to help with understanding their child's progress data? Is there a common format and schedule for reporting across the school? Is the information discussed at parent-teacher conferences? How does the school connect families with resources based on their child's academic progress? Does the school require all teachers to use a method of documentation of their communications with parents?

Introduction

Classroom instruction can be reinforced and complemented by assigning homework that reinforces and extends student learning, and teacher-parent communication that builds parents' capacity to support their child's learning at home. Homework, when implemented effectively, can serve as an important point of connection between the school and the home; parents must understand both what is expected of their child and their role in monitoring and supporting their child's completion of homework (Redding, 2007). Positive two-way communication between home and school, which involves listening as well as informing, sets the stage for developing a relationship built on trust and respect (Byrk & Schneider, 2003; Hiatt-Michael, 2010). Effective teachers regularly communicate with parents to keep them up to date on their child's progress, and assign homework that reinforces classroom learning and regularly involves parent-child interaction around what is learned in school. This brief will summarize research related to the use of sound homework practices and teachers' use of effective communication with parents regarding their child's progress.

How can homework be used to effectively reinforce, complement, and extend classroom learning?

Research has demonstrated that homework, when used effectively, generally contributes to positive student achievement, study habit and skills, time management, self-regulation, self-efficacy, and stronger school-parent connections (Bembenutty, 2011; Carr, 2013; Cooper, 1989; Cooper, Robinson, & Patell, 2006; Hattie, 2017; Marzano & Pickering,

2007; Xu, 2009). Stronger effects are seen at the middle and high school level (grades 7-12) than at the elementary level, in which students see few benefits, particularly at the youngest ages (Cooper, 1989; Cooper, et al., 2006; Marzano & Pickering, 2007). It is important to note that some researchers have pointed to the potential pitfalls of homework, such as decreased family time, poor performance resulting from too much homework, and the fact that students' ability to complete homework may depend on factors outside of their control (Cooper, et al., 2006; Fernández-Alonso, Suárez-Álvarez, & Muñiz, 2015; OECD, 2014). However, appropriately assigned regular homework (4 or more days a week) can avoid these issues, while positively impacting student learning. Research-based guidelines for effective use of homework (see Marzano & Pickering, 2007) include:

- **Ensuring that homework is purposeful rather than assigned as a matter of routine:** Homework should be used to elicit feedback about students' comprehension (Redding, 2000), and students should leave class understanding why the homework is important for them academically (Xu, 2011). If possible time should be allotted at the end of class for students to begin homework and receive teacher feedback (Darling-Hammond & Ifill-Lynch, 2006). Connecting homework assignments to student interests and providing choices within these assignments can personalize learning and promote student ownership of the learning process (Xu, 2011). Teachers can also make homework engaging and authentic through approaches such as project-based learning, in which students are deeply involved and responsible for homework that contributes meaningfully to a group effort (Darling-Hammond & Ifill-Lynch, 2006). Homework is more effective when it is promptly graded and discussed by teachers in class, and returned promptly to students (Redding, 2000; 2006).
- **Assigning homework at the appropriate level of difficulty and monitoring the amount given:** Students should feel competent in completing homework, and assignments should be differentiated so that students do not get discouraged when they are too difficult, or face boredom when they are too easy (Carr, 2013). Homework is more effective for older students, and the "ten-minute" rule (ten minutes of homework per grade level, per night) is generally recommended (Redding, 2000; Cooper, et al., 2006; Cooper, 2010 as cited in Terada, 2015). Students should be taught, through teacher modeling and scaffolding, the necessary metacognitive skills such as goal setting, selecting appropriate learning strategies, progress monitoring, and self-evaluation, so that they can self-regulate their independent learning outside the classroom (Xu, 2009; Bembenutty, 2011). For example, teachers can model for students how to use planners for time management and also reinforce students' use within the classroom (Carr, 2013).
- **Involving parents in appropriate ways:** Parents should provide support for homework by creating an environment conducive to learning (e.g., providing a specific time/place for homework and a distraction-free environment) (Redding, 2000, 2006). Interactive homework, in which parents receive clear guidelines on their expected roles and ask questions that can help their child summarize, clarify, or extend what they have learned, has been shown to enhance the effectiveness of homework (Van Voorhis, 2003, 2011a, 2011b). Interactive homework should not require the parent to teach content, but should include engaging assignments that stimulate student interest and are appealing to parents whose children are excited to share their learning with them. Examples include parent-child science experiments, sharing ideas and getting parent feedback on written work, and surveys and interviews of parents' experiences and memories (Van Voorhis, 2010).

Teachers should consider that many students face barriers and inequities when completing homework, such as lack of technology at home or lack of supervision due to parents working multiple jobs; extending time for completion can convey the message that all students are held accountable for a high quality of work, rather than a compliance message of "just get it done" (Carr, 2013).

How can teachers communicate effectively with parents regarding their children's progress?

Research has demonstrated that schools can improve their students' learning by engaging parents in ways that directly relate to their children's academic progress; sustained family engagement in students' learning is associated with higher achievement, better grades, increased motivation, and college enrollment (Weiss, Buffard, Bridgall, & Gordon, 2009). Schools at all levels should make parents aware of benchmarks and learning standards mastered by their child, from early childhood through

the school years to allow them to track their child's progress and stay on track for graduation and college/career readiness (Weiss & Lopez, 2011). Teachers and schools can share progress data effectively by promoting the following (see Weiss & Lopez, 2011):

1. **Access:** Timely and relevant data on academic progress and performance, attendance and behavior can be shared through teacher-parent conferences, and in many cases through electronic sources. However, schools should be aware of families' internet/computer access, and provide supports as necessary (e.g., extending computer lab hours or working with community partners to set up computer kiosks).
2. **Understanding:** Understanding student data requires time and regular training. Schools should help parents understand educational terminology and student data within a standards-based framework by providing face-to-face training. This training can include developing parent knowledge about what their child should be able to know and do for each of the skill areas being assessed. Parent-teacher conferences can serve as the setting to share student progress data. For example, Academic Parent-Teacher Teams involve teachers explaining standards, goals, and aggregate classroom progress for reading and math to parents in a group setting, along with sharing individual student data for each parent to allow for easy interpretation (Paredes, 2010, 2011).
3. **Action:** Data shared should be actionable; once they understand their child's data, parents need clear guidance and resources to allow them to take action to help their child overcome challenges and further enhance their strengths. Teachers and schools can provide parents with recommended home activities and link them with community resources (e.g., museums and after-school programs), for example, that can foster their child's progress towards learning objectives and standards.

Communication with parents about their child's progress should be child-centered, constructive, clear and concrete (avoid educational lingo and acronyms), and continuous (Mart, Dusenbury, & Weissburg, 2011). Teachers should keep records of their communications with parents, for purposes of accountability and for record-keeping to ensure that they are aware of the frequency and nature of contacts they have with parents of each student. Communication documentation logs can protect teachers in case of conflict with parents, and provide data to help the teacher develop more effective communication strategies and prepare for IEP team meetings (e.g., see: Webster, 2017). Increasingly digital technology (e.g., apps such as Remind, email, etc.) can allow teachers to seamlessly communicate with parents, while simultaneously providing records and documentation of teacher-parent communications (Knutson, 2016).

Indicators to Support the Effective Practice
All teachers maintain a file of communication with parents.
All teachers regularly assign homework (4 or more days a week).
All teachers check, mark, and return homework.
All teachers systematically report to parents the student's mastery of specific standards-based objectives.
All teachers regularly make "interactive" assignments that encourage parent-child interaction relative to school learning.

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Core Function: Classroom Instruction

Effective Practice: Provide a tiered system of instructional and behavioral supports and interventions

Overview: Tiered systems of instructional and behavioral supports and interventions in the form of RtI and MTSS have been shown to positively impact student achievement; however, the degree of impact is dependent on the extent to which these systems are implemented with fidelity. Data from screening assessments must be valid and reliable, and schools must process this data regularly to determine patterns of performance across grades and classrooms to guide improvements to core instruction. Students needing additional supports are placed into higher intervention tiers that involve intensifying and/or tailoring instruction to meet their needs. All service providers must coordinate services and resources across tiers to ensure continuity and positive outcomes. Documentation of data and processes within tiered systems is essential for fidelity to implementation and must be ongoing and carried from year to year. Schools should assess the degree to which tiered interventions are implemented by regularly observing classroom instruction and reviewing lesson plans and student work. School leaders must develop an infrastructure to facilitate collaborative instructional teams' capacity to review student data and make instructional decisions, and regular and ongoing training and support are essential.

Evaluate Your Practice: How often does your school use a screening tool to monitor student performance across the school year? How are data reviewed to determine areas in need of improvement within core instruction (e.g., areas in which fewer than 80% are achieving standards/benchmarks)? Is there an instructional team charged with determining appropriate cut scores or benchmarks for each level? Has this team identified a process for assignment to different tiers and determined how students will be reevaluated throughout the year and moved up and down tiers as needed? Are scores and standards explicitly linked to intervention systems? Are all service providers aligning their resources and services and working together to coordinate instruction across all tiers? How are RtI/MTSS processes and data documented, and is the documentation ongoing and carried across school years? How does the school determine the degree to which RtI/MTSS is implemented with fidelity? Is time and opportunity created to allow teachers to frequently collaborate around instructional data? What professional development is provided to help teams interpret and use this data? Have all relevant staff members received training to build their capacity to implement RtI/MTSS? How frequently do teams meet to monitor student progress and make instructional decisions?

Introduction

Schools should provide a tiered system of instructional and behavioral supports to meet the learning needs of all learners. The Response to Intervention (RtI) approach was developed to address the needs of struggling learners and is defined by the National Center on Response to Intervention as follows:

> Response to intervention integrates assessment and intervention within a multi-level prevention system to maximize student achievement and reduce behavioral problems. With RtI, schools use data to identify students at risk for poor learning outcomes, monitor student progress, provide evidence-based interventions and adjust the intensity or nature of those interventions depending on a student's responsiveness, and identify students with learning disabilities or other disabilities. (as cited in Bernhardt & Hébert, 2017, p. 1)

Upon initial screening, students are divided into tiers (or levels) and given the proper level of instructional support: tier 1 represents high-quality evidence-based core instruction and/or social/behavioral programming provided to all students, tier 2 interventions are added to target support for students at risk of failure in specific academic/behavior areas (most often provided in the general classroom and in small groups), and tier 3 interventions supplement

instruction for students with significant risk identified through screening or who fail to make progress with tier 2 support (Bernhardt & Hébert, 2017; Sugai, n.d.). When students fail to make progress even after extended tier 3 supports, they may be referred for special education (Powers, et al., 2008; Hoover & Love, 2011; Gamm, et al., 2012). While many schools will have most (80%) students succeeding with core instruction alone (tier 1), schools with large numbers of at-risk learners are likely to have fewer (20%) fall into this category. A broader term, multi-tiered systems of support (MTSS) has also been used more recently to address the needs of all learners (not just those struggling); however, frequently the terms are used interchangeably (Gamm, et al., 2012; Kansas Multi-Tier System of Support, 2010). RtI and MTSS shift the focus away from deficit views of children towards how instructional quality can be enhanced to meet their needs; as a result unnecessary referrals of racial and linguistic minority students for special education services may be reduced (Bernhardt & Hébert, 2017; Duffy, n.d.; Hoover & Love, 2011; Powers, Hagans, & Busse, 2008). RtI has been used primarily at the elementary and middle school levels, with little research reported on its implementation at the high school level (Bartholomew & DeJong, 2017; Duffy, n.d.; Fuchs, Fuchs, & Compton, 2010).

The research base generally provides strong support for the use of tiered instructional and behavioral systems; elementary studies of the impact of RtI on reading and math show strong effects for many of the components of RtI (e.g., see IES practice guides on RtI for reading and math by Gersten, et al., 2009). Hattie's (2017) most recent meta-analysis research yields powerful effect sizes for RtI (1.29), with the potential to considerably accelerate student achievement. A recent national evaluation, however, found that RtI had limited or negative impact, particularly for students on the upper end of tier 2 (see Balu, et al., 2015). Researchers have subsequently pointed to the need to examine the degree to which many of the interventions in the study were implemented with fidelity in schools (Fuchs & Fuchs, 2017; Gersten, Jayanthi, & Dimino, 2017). Problems with successful implementation of RtI and MTSS models have been noted in other research, leading many to advocate that schools measure the degree to which these models are implemented with fidelity so that improvements can be made where necessary (e.g., Ruffini, Lindsay, McInerney, Waite, & Miskell, 2016). This brief will review research that addresses best practice for schools implementing tiered instructional and behavioral intervention systems of supports that benefit all students' learning needs.

What are the components of an effective tiered system of instructional and behavioral supports and interventions?

Valid and reliable screening processes for academics and behavior. Schools must use universal screening and progress monitoring assessments to identify students who need strategic and intensive interventions (Bernhardt & Hébert, 2017). These brief academic assessments should provide data by student, class, grade, and school (Bernhardt & Hébert, 2017; VanDerHeyden, 2013). Screening measures should produce reliable and valid scores that represent mastery of key objectives and/or forecast future learning outcomes, and should be administered regularly (often three times per year), and efficiently (e.g., requiring no more than 45 minutes of class time within a single day) (VanDerHeyden, 2013). These universal screening data also provide an "aerial view" of patterns of performance within the school for each school-wide subject area (e.g., reading and math), and for each grade and classroom. If the vast majority of students is struggling, for example, within a particular grade level and subject area, this signals the need for further review of core instruction (tier 1) and possibly targeted professional development (Duffy, n.d.; VanDerHeyden, 2013).

School teams must develop a process to distinguish students at risk for poor academic performance or behavior from those not at risk (Bernhardt & Hébert, 2017; Kansas State Department of Education, 2013). Once screening data are collected (both academic and behavioral), learning outcomes or objectives must be developed; these outcomes or objectives may be expressed in terms of cut scores, benchmarks, decision rules, or guidelines for how students will move across the intervention tiers. School teams must choose research-based instruction/intervention practices that are linked to each level of intervention, and put systems and supports in place for the implementation phase (Sugai & Horner, 2009). It is critical that schools align scores and standards to their systems of proven interventions; for example, instead of a student simply being identified as below grade level and put at risk for special education identification, RtI or MTSS immediately assigns that student to a corresponding level of intervention (Gamm, et al., 2012). Student placements are fluid as teams assess how they do or not

respond to different intervention levels (Kansas State Department of Education, 2013).

Implementation and documentation of evidence-based instruction aligned with individual student needs across all tiers. Instructional quality within the general education classroom (tier 1) is a primary focus when implementing tiered systems; learning difficulties may often arise from poor core instruction, leading to misidentification for special education services (Hoover & Love, 2011; Kansas State Department of Education, 2013). Using the "aerial view" of screening data described earlier can help educators target where general education improvements are necessary (VanDerHeyden, 2013). The success of tiered interventions relies on educators knowing which evidence-based strategies and materials to use and how to adjust them when they do not meet student needs, as well as ensuring consistently high implementation in each classroom (Duffy, n.d.; Hoover & Love, 2011; Stuart & Rinaldi, 2009). Higher tiers of support should represent means of intensifying and tailoring core instruction to support students with additional needs; for example, students might have additional time, meet more frequently, or work in smaller groups as they receive more intensive supports (Fuchs & Fuchs, 2006). Tiered instructional systems also require that all service providers (special education and general education) align their resources and practices to prevent struggling students from receiving different instructional approaches from their teachers in each tier, causing confusion and poor progress (Chard, 2012). It is critical that special educators and general educators collaborate to understand and coordinate the instruction occurring within the other tiers to maximize students' learning outcomes (Hoover & Love, 2011).

As stated previously, research shows that many schools struggle with implementing RtI and MTSS intervention systems effectively (Ruffini, et al., 2016). MTSS and RtI are complex systems, and lack of organization and collaboration can inhibit implementation and result in poor student outcomes (Chard, 2012). Thorough documentation of how interventions are selected and assigned and the degree to which they are implemented with fidelity, is essential in order to make the effective data-based decisions required within MTSS and RtI systems (Bernhardt & Hébert, 2017). Data from screening tools must be documented at a variety of levels (schoolwide, grade level, classroom, and individual student) so that instructional teams can analyze results and determine student progress between testing dates (Fuchs & Fuchs, 2006). Teams must also document the benchmarks or cut scores they identify to guide student placement and the corresponding instructional strategies and support needed (Stuart & Rinaldi, 2009). Documentation should always be an ongoing process rather than an event; documenting an entire school year's worth of tier 2/3 interventions at one time suggests weak fidelity of implementation. Documentation forms should be carried from one year to the next to help with evaluation of implementation outcomes, and to help teams and teachers begin instruction and intervention at the appropriate levels each year (Bernhardt & Hébert, 2017).

To monitor the fidelity and integrity of implementation of RtI/MTSS, schools can collect several kinds of data. Direct observation by teacher peers, the RtI/MTSS team, coaches, or administrators of intervention activities in each classroom can help determine whether interventions are being implemented effectively; these observation data should not be used for evaluation purposes (Bernhardt & Hébert, 2017). Teachers can also be asked to self-report their use of intervention activities using checklists; however, these data can be unreliable and should be paired with other types of data. Reviewing lesson plans and work samples in collaborative groups can be valuable for professional learning, and in some cases established teams can conduct these reviews and provide careful documentation of results. Schools are also recommended to consult the curricular materials and instruction/intervention approaches used within the school; purchased materials often include fidelity checklists or observation forms to allow schools to assess implementation (Bernhardt & Hébert, 2017).

Collaborative instructional teams implement data-based progress monitoring and decision-making. RtI and MTSS are prevention-oriented models that include all students and staff within the school to ensure the accuracy of data interpretation, intervention placement, and instructional effectiveness. Schools must create an infrastructure for instructional teams to collaboratively review and use data to inform their instructional decisions (Dulaney, Hallam, & Wall, 2013; Prewett, Mellard, Deshler, & Stern, 2012). These instructional teams also provide an opportunity for professional development and support, and may operate as professional learning

communities. These teams must receive regular and ongoing training and support, as they meet regularly to review student data and adjust the placement of students into intervention tiers as progress is made (Duffy, n.d.; Stuart & Rinali, 2009; Prewett, et al., 2012). One study demonstrated that districts implementing tiered intervention systems with fidelity provided weekly half days for students or additional professional learning days for teachers to allow sufficient time for this critical process (Dulaney, et al., 2013). All relevant staff should be included in intervention training and team meetings; this inclusion both emphasizes the teamwork necessary for implementation and provides opportunities to create shared practices and materials appropriate for each tier (Donavan & Shepherd, 2013).

Collaborative instructional teams must consider data from multiple sources, such as progress monitoring/screening, behavioral data, and formative assessments to form a complete picture of each student's performance (Prewett, et al., 2012). These collaborative teams can then consider trends across grade levels, classes, and students and identify issues that can be addressed through adjustment to instructional techniques or strategies within tier 1, learning these new intervention strategies/techniques together in a collective way (Donovan & Shepherd, 2013; Kansas State Department of Education, 2013). For students who do not respond to large-scale instructional changes, school teams then determine the tiers and types of intervention that would best meet their needs. Teams must establish and continually review benchmarks, cut scores, or guidelines to determine which students need additional supports, and then group them by similar levels of need or particular skill area where they require support (Stuart & Rinaldi, 2009). Instructional teams are responsible for assessing the impact of interventions provided, and move students up and down the hierarchy of interventions as they experience success or challenges. These teams must also consider timelines for reasonable implementation and skill building when determining how frequently to monitor student progress; for example, tier 3 interventions may require more frequent monitoring and subsequent review than interventions at tier 1 (Kansas State Department of Education, 2013).

Indicators to Support the Effective Practice

The school implements a reliable and valid system-wide screening process for academics and behavior that includes the assessment of all students multiple times per year and establishes decision rules to determine those students in need of targeted intervention.

The school implements a tiered instructional system that allows teachers to deliver evidence-based instruction aligned with the individual needs of students across all tiers.

The school's tiered instructional system includes documentation that describes what interventions are provided and how interventions are selected and assigned to students and how fidelity will be monitored.

The school implements a system-wide monitoring process that utilizes collaborative instructional teams who meet regularly to review student data from screening, progress monitoring, and outcome assessment to identify next steps for instruction for students across all tiers.

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Resources

For an RtI implementation guide and other useful resources, see:

Bernhardt, V. L., & Hébert, C. L. (2017). *Response to intervention and continuous school improvement: How to design, implement, monitor, and evaluate a schoolwide prevention system* (2nd ed.). New York, NY: Routledge.

Core Function: **Personalized Learning: Digital Learning**

Effective Practice

Using appropriate technological tools and programs to enhance student learning

Overview: Digital tools and programs are changing and evolving constantly. Teachers can personalize student learning by using appropriate digital tools and standards-aligned online curricula, as well as blended learning approaches and digital portfolios to capture student learning; however, job-embedded and sustained professional development is essential. School leaders and technology teams must evaluate broadband access, device availability, and device use policies when weighing the selection of digital learning tools, and they must ensure that online learning programs generate student data that is accessible and actionable. School leaders and peer mentors observing technology use and blended teaching must adjust protocols to reflect the changing teacher role in these classrooms. All stakeholders within the school community need training and support to use technological tools and programs effectively.

Evaluate Your Practice: Does your school have an instructional technology team and if so, are all stakeholder groups represented? What level of broadband access is available in the school and in students' homes, and is it sufficient to take advantage of multiple digital tools? Does your school have a stated device use policy? What steps may be necessary to allow for one-to-one device access for your students? What observation protocols are used to look for teachers' use of online and/or blended learning practices? Are online learning programs standards-aligned, and do they produce personalized student data that are easily accessible and used to guide subsequent learning? Are teachers proficient with a variety of digital tools, actively using blended and/or online learning practices, and contributing resources to online communities of practice? Do students use digital portfolios to capture their skills, interests, and growth over time? Is teacher technology professional development personalized, sustained, and job-embedded? Do all stakeholders (including parents) participate in appropriate technology training?

Introduction

Learner-centered or personalized learning refers to "tailoring learning for each student's strengths, needs, and interests—including enabling student voice and choice in what, how, when, and where they learn—to provide flexibility and supports to ensure mastery of the highest standards possible" (Patrick, Kennedy, & Powell, 2013, p. 4). The student is actively involved with the teacher in co-constructing their individualized learning pathway, and the location, time, and pace of learning may vary from student to student (Redding, 2016). Technology makes personalized learning approaches possible at scale and can assist in all areas of teaching and learning, including student data and assessment, curriculum selection and alignment to standards, and instruction and learning (Redding, 2014; Wolf, 2010). A good deal of research evidence has supported the use of technologies to increase student achievement (e.g., Tamin, Bernard, Borokhovski, Abrami, & Schmid, 2011). Recent preliminary research also suggests that personalized learning practices that incorporate technology and online curricula, when implemented with fidelity, may result in positive and large student achievement gains, particularly for students behind academically (Greaves, Hayes, Wilson, Bielniak, & Peterson, 2012; Pane, Steiner, Baird, & Hamilton, 2015).

Digital tools and programs can play a key role in improving instruction and learning; however, schools need leadership and decision making that allows for the selection of appropriate tools and programs, monitoring implementation, and assessing effectiveness for student learning. Classroom instruction that personalizes student learning requires teachers who can appropriately select digital tools and standards-aligned online curricula and who are inspired professionals that contribute teaching ideas and content to online learning catalogs. All stakeholders within the school community will need training and ongoing support in using digital tools and programs in order to maxi-

mize the potential benefits of digital technologies for student learning. This brief provides a review of best practices in these areas.

What leadership and decision making is necessary for the selection, implementation, and assessment of the effectiveness of digital tools and programs?

Schools must match their digital learning needs with appropriate devices and programs that promote learning for all students through a comprehensive digital infrastructure (Grant & Basye, 2014; Thigpen, 2014). Strong leadership capable of developing this infrastructure along with a shared vision of all community members is required in order for technology to truly transform learning (U.S. Department of Education, 2016). School leaders must organize instructional technology teams in which teachers (and others where appropriate, e.g., media specialists, students, parents, etc.) are tasked with selecting digital tools; this process can help increase the effectiveness of implementation as well as ensure crucial teacher, student and parent buy-in (Grant & Basye, 2014; Overbay, Mollette, & Vasu, 2011).

Considerations for selection of digital technologies. School leaders and instructional technology teams selecting digital tools must consider a variety of factors, including broadband access, device availability, device use policies, and the capacity of online programs to capture and report accessible and actionable student data. It is critical that teachers and students have fast and reliable Internet access in order to use a wide range of digital tools, including learning and content management systems, video streaming, social networks, cloud capabilities, and online communication and videoconferencing tools (Thigpen, 2014). Approximately one-quarter of schools still lack sufficient broadband to take advantage of modern digital tools to promote learning (Education Superhighway, 2015); similarly, many homes lack high speed connectivity, leaving many children, particularly those in low-income, non-white and rural communities, without the capacity to use digital tools for homework and school projects (Thigpen, 2014). While recent federal initiatives have addressed broadband inequities and narrowed the gap in access, many schools still need to consider both school and home broadband access when selecting digital technologies to ensure that they will be usable in both settings.

School leaders must also consider how many digital devices to purchase and policies for their use. Recent literature suggests that a one-to-one ratio of devices to students combined with effective implementation is likely ideal for improving student outcomes. For example, a recent meta-analysis of research on one-to-one laptop programs found these programs, when well-integrated with curricula and with plenty of professional development for teachers, led to increased achievement, enhanced student engagement and enthusiasm, and more student-centered and project-based instruction (Zheng, Warschauer, Lin, & Chang, 2016). However, schools must consider whether there is sufficient funding to pay for devices, enough bandwidth to support all students using their devices simultaneously, and how to distribute and manage so many devices (Herold, 2016). Some schools have implemented "bring your own device" (BYOD) policies to allow and encourage students to use their personal digital devices for learning at school. Schools implementing BYOD policies need strong leadership and substantial planning in order to avoid potential pitfalls that can arise with these policies. Some examples include inequity (some students' families may not be able to afford a device for their children), student distractions that can inhibit learning, lack of security features to secure student data, and students using a range of different devices with different capabilities, which can cause an instructional burden for teachers (U.S. Department of Education, 2016).

Monitoring implementation of digital technologies and programs and their impact on learning. School leaders must work with experienced peer mentors to assess and guide online or blended teaching practices (or hybrid approaches combining both elements along with traditional, direct instruction) in order to successfully implement personalized learning practices within their schools (Horn, 2015). The rapid pace of technological change requires teachers using these approaches continually learn and innovate within their work with students (Powell, Rabbitt, & Kennedy, 2014). Teachers implementing online or blended approaches may shift from primarily being conveyors of knowledge to coaches or mentors that encourage student ownership of their learning. Digital learning can also allow teachers to focus on encouraging critical thinking and application of knowledge, since digital content can successfully address the foundational levels of Bloom's taxonomy, such as memorization (Powell, et al., 2014). Therefore, in order to assess the classroom

implementation of these approaches, school leaders and experienced peer mentors must utilize tools and techniques that appropriately capture key teacher behaviors that are reflective of sound instructional blended or online teaching (see Education Elements, 2014 for an example of a rubric to measure these behaviors). School leaders will likely need to rethink walk-through tools and better align them to identify effective blended teaching practices (TNTP, 2014a). An additional priority is measuring "off-stage" teacher activities to capture data on collaboration, data analysis, and planning (TNTP, 2014b). For example school leaders can observe teachers as they examine formative data gathered from online assessments, and determine their proficiency in both understanding and acting on the assessment data to enhance student learning.

School leaders should also ensure that online learning programs used by the school generate student data that reveals program use, student performance, and progress. Online learning programs used within personalized learning systems should provide easily accessible student data to the student and his/her teacher (and often parents); this data then drives instruction as the student masters goals and achieves standards (Glowa & Goodell, 2016). Some schools and districts have developed online *personalized learning plans* that consist of daily actionable goals, action steps, and competencies. Students develop these plans in partnership with their teachers and document how they will meet established goals. These plans can contain assessment data and are used to document academic growth; they also may allow teachers (and school leadership) to capture data on non-academic skills and competencies (Educause, 2016). Data or learning dashboards provide a single place that "integrates information from assessments, learning tools, educator observations, and other sources to provide compelling, comprehensive visual representations of student progress in real-time" (U.S. Department of Education, 2016). These dashboards can provide data in easily accessible formats tailored to various stakeholders (e.g., students, parents, etc.); they can also suggest resources to help students continue their learning and provide early detection of students who are struggling and may be at risk for failure or drop-out.

How can teachers use digital tools and online curricula to enhance their instructional practice?

Select appropriate digital tools. There are an ever-increasing variety of digital tools available to teachers and schools to enhance classroom instruction and learning. Prior to making a decision to use a digital tool to teach a lesson, teachers must first consider the learning goals, activities, and formative and summative assessments that will make up the lesson; the selection of digital tools should follow naturally from other instructional planning decisions rather than serving as the *focus* of instruction (Hobgood & Ormsby, 2011; Leimbach, 2015). Koehler and Mishra (2009) provide a widely used framework of technology integration, TPACK (Technological Pedagogical Content Knowledge), which suggests that effective technology integration occurs when teachers carefully consider the interplay between the content (subject matter), pedagogy (teaching methods), and technology. Reflecting on all three domains together "results in a lesson in which all the component parts are aligned to support the learning goals and outcomes of the instructional plan" (Hobgood & Ormsby, 2011, p. 2).

Ensure online curricula used are standards-aligned with measurable goals. Online curricula and technologies must be aligned with national, state, or local standards, with clearly stated and measureable goals that describe what students will be able to know or do at the end of instruction (Worthen & Patrick, 2015). Many online curriculum providers are heeding the call for transparency as to how their materials align with standards and improve learning outcomes. For example, Khan Academy and the NROC (Network Resources Open College & Career) programs are open educational resources that link all online lessons/curricula with Common Core State Standards (CCSS) and provide students with learning dashboards that identify gaps and show progress towards standards and learning goals (Watson & Murin, 2014). Rubrics are now available to assist educators with selecting online curricula that are standards-aligned and demonstrate positive impacts on student learning. For example, Achieve's EQuIP Project provides rubrics that ask teachers to consider the extent to which the lesson or curriculum unit "elicits direct, observable evidence of the degree to which a student can independently demonstrate the major targeted grade-level CCSS standards" (Achieve, 2016). Training modules provide teachers and professional learning communities with the skills needed for using the rubrics.

Contribute to online learning content catalogs. International Society for Technology in Education (ISTE) standards suggest that teachers should be able to design and develop digital learning experiences and assessments by "incorporating contemporary tools and resources to maximize content learning in context" (ISTE Standards, 2008). These online learning content sites provide a digital space for teachers (and others) to upload, organize, and access educational content, and they allow teachers to create, edit, and publish digital materials such as lesson plans, teaching videos, teaching suggestions, and other multimedia content. These sites offer the opportunity for increased collaboration among teachers and allow teachers to tailor learning content to meet their students' needs. Online learning content is often organized around professional communities of practice; for example, ISTE's arts and technology network helps educators make explicit connections between art and technology, with members sharing resources, ideas, and lesson plan examples (ISTE, n.d.). When teachers are expected to create, refine, and update their own curricular resources, their role shifts from manager to more of a pedagogical professional (Tonks, Weston, Wiley, & Barbour, 2013).

Use online or blended learning approaches and digital portfolios to provide personalized learning. Blended learning is defined as "a formal education program in which a student learns at least in part through online learning, with some element of student control over time, place, path, and/or pace… the modalities along each student's learning path within a course or subject are connected to provide an integrated learning experience" (Christensen, Horn, & Staker, 2013, p. 10). It is critical to note, however, that technology and data do not substitute for the student's relationship to the teacher and other students within blended learning environments; rather, technology serves as a tool to enhance already proven effective pedagogy (Redding, 2014). Blended learning combines "the effectiveness and socialization of the classroom with the technology-enhanced active learning possibility of the online environment" (Dziuban, Harman, & Moskal, 2004). Completion of activities, readings, and assessments happens in the online environment, while face-to-face time is preserved for discussion and collaboration between teachers and students and between students and their peers. K-12 blended learning research is limited (Sparks, 2015); however, some evidence suggests that students with access to blended learning models may outperform those experiencing only one type of instruction (Bakia, Shear, Toyama, & Lasseter, 2012; Means, Toyama, Murphy, & Baki, 2013; Means, Toyama, Murphy, Bakia, & Jones, 2010; Pane, Griffin, McCaffrey, & Karam, 2014; Pane, Steiner, Baird, & Hamilton, 2015). It is essential that teachers are properly trained and supported in order to successfully function in their new roles (Horn & Staker, 2015); identifying a small core group of teachers to begin blended learning implementation prior to whole-school adoption can allow for adequate support for these teachers and encourage them to serve in support roles as the program expands (Darrow, Friend, & Powell, 2013).

Digital portfolios are purposeful collections of work, captured by electronic means, which serve as an exhibit of individual efforts, progress, and achievements and thereby offer additional opportunities for personalized learning (Cramer, 2009). They are used as part of ongoing assessment of learner progress in one or more subject areas, but can also create an authentic and public way for students to demonstrate mastery of basic media skills (Cramer, 2009; Weidner, 1998). Digital portfolios offer several advantages over paper-based approaches, including high rates of active student participation in selecting the media to capture events, enhanced creativity, heightened student interest, motivation and responsibility for learning, and easier access to materials by assessors (Athanases, 1994; Buschmann, 1993; Newhouse, 2015; Vizyak, 1994). Teachers must decide in advance what they wish students to demonstrate within their digital portfolio; in addition, expectations must be clear to both students and assessors, with explicitly defined learning objectives serving as a guide (Stobart & Eggan, 2012).

How should professional development be structured to maximize the benefits of digital tools and programs?

Implementing a sophisticated technology program that includes online tools and curricula as well as learning and student management systems requires stakeholder buy-in and will be most effective if *all* stakeholders participate in appropriate training in how the various tools can best be used to meet their needs (Moeller & Reitzes, 2011). Technology professional learning should be personalized for teachers and should be ongoing, job-embedded, and relevant to their instructional needs (Schifter, 2016; U.S. Department of Education, 2016).

Leaders should "learn alongside teachers and staff members, ensuring that professional learning activities are supported by technology resources and tools, time for collaboration, and appropriate incentives" (U.S. Department of Education, 2016, p. 42). Traditional professional development with technology tools has primarily focused on how to use these tools within current teaching and learning models rather than on helping teachers use technology in transformative ways that change their roles and pedagogical practices and impact the way students are learning within the classroom (Blanchard, LePrevost, Tolin, & Gutierrez, 2016). Teacher technology-enhanced professional development should be sustained (longer than one year), embedded in content, matched with stated objectives, and allow for teachers to reflect on and refine their pedagogical approaches (Gerard, Varma, Corliss, & Linn, 2011). Additionally, working with multiple teachers from the same school helps provide a supportive structure for technology integration (Gerard, Bowyer, & Linn, 2010). In order to increase access for teachers and provide transparency to stakeholders, district administrators may want to consider creating a "digital hub" to contain all worthwhile professional development materials (Cooper, 2015).

Parents also benefit from training and support to learn relevant aspects of a school's technology program; this can translate into stronger parent engagement and thus higher levels of student engagement (The Children's Partnership, 2010; U.S. Department of Education, 2016). Parent training may also be particularly valuable as schools adopt the use of new learning and student management systems. Learning management systems allow users to avoid signing in and out of multiple applications and provide a centralized place for teachers to post learning resources and personalize student learning, as well as promote more student-oriented social and collaborative learning experiences (Remis, 2015). When these systems are introduced within schools, administrators, teachers, support staff, students, and parents should participate in organized and ongoing training customized to their needs in order to maximize the benefits of these systems.

Indicators to Support the Effective Practice
Administrators, teachers, staff, students, parents, and other stakeholders participate in an organized training and support system incorporating program methodologies (including the use of online tools and curricula) and the proper use of the learning management and student management systems.
Instructional teams determine which digital learning tools (hardware) are appropriate based on device availability, Internet and broadband access, and device use policies (such as "bring your own device").
School leaders and peer mentors regularly observe and measure instances of online, hybrid, or blended teaching to ensure instruction is implemented fully and with fidelity.
Online programs generate accessible and actionable student data about their use, performance, and progress.
All teachers use appropriate technological tools to enhance instruction.
All teachers use online curricula with content, assignments, and activities clearly aligned to identified standards (state or national).
All teachers use online curricula whose goals are measureable and clearly state what students will know or do at the end of instruction.
All teachers regularly add new content and teaching suggestions to the online learning content catalog.
All teachers use online, hybrid, or blended learning as a part of a larger pedagogical approach that combines the effective socialization opportunities within the classroom with the enhanced learning opportunities available in online instruction.
All teachers enable students to place selected work into a digital portfolio that is updated throughout the student's school experiences and provides a picture of interests, skills, competencies, and growth over time.

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Core Function: Personalized Learning

Effective Practice

Blended learning: Mix traditional classroom instruction with online delivery of instruction and content, granting the student a degree of control over time, place, pace, and/or path

Overview: Blended learning combines online learning with face-to-face classroom instruction to allow for personalized and student-centered learning. Teachers' roles will shift away from traditional practices towards providing individualized support as learning designers, mentors, and facilitators. Teachers will require ongoing training and support to implement blended learning, and teachers should be encouraged to work in teams, specializing in various roles. While technology provides personalized learning at scale, it cannot substitute for relationships or socialization; blended learning approaches afford both. Students within blended learning programs can also use digital portfolio technology to represent their learning and provide documentation of their interests, skills, competencies and growth over time.

Evaluate your Practice: What is blended learning and how is it implemented within K-12 education? What is the teacher's role within blended learning environments, and what kinds of training and support are needed for effective implementation? How can technology be used to maximize personalized learning within blended learning instructional settings?

What is blended learning and how is it implemented within K-12 education?

Learner-centered or personalized learning refers to "a teacher's relationships with students and their families and the use of multiple instructional modes to scaffold each student's learning and enhance the student's personal competencies" (Twyman & Redding, 2015, p. 3). The student is actively involved with the teacher in co-constructing their individualized learning pathway, and the location, time, and pace of learning may vary from student to student (Redding, 2016). Blended learning is defined as "a formal education program in which a student learns at least in part through online learning, with some element of student control over time, place, path, and/or pace, and at least in part at a supervised brick-and-mortar location away from home… the modalities along each student's learning path within a course or subject are connected to provide an integrated learning experience" (Christensen, Horn, & Staker, 2013, p. 10). Blended learning is designed to be a "delivery mechanism" for personalized learning (Patrick, Kennedy, & Powell, 2013). While a good deal of research evidence has supported the use of technologies and online instruction to increase student achievement (e.g., Tamin, Bernard, Borokhovski, Abrami, & Schmid, 2011), K-12 blended learning research is limited (Sparks, 2015). However, some evidence suggests that students with access to blended learning models may outperform those experiencing only one type of instruction (Bakia, Shear, Toyama, & Lasseter, 2012; Means, Toyama, Murphy, Bakia, & Jones, 2010; Means, Toyama, Murphy, & Bakia, 2013; Pane, Griffin, McCaffrey, & Karam, 2014; Pane, Steiner, Baird, & Hamilton, 2015).

Through their research on blended learning schools and programs, researchers at the Christensen Institute have identified four blended learning models that are most prevalent within K-12 schools: 1) **rotation models**, in which students rotate among learning modalities (e.g., online learning, whole-group class discussion, projects, small-group instruction) on either a fixed schedule or at the teacher's discretion; 2) **flex models**, in which online learning at the brick-and-mortar campus is the core vehicle for student learning, and students progress along an individualized, custom, and fluid schedule among learning modalities; 3) **a-la-carte models**, in which students take a course entirely

online that is designed to support and/or complement learning experiences at the brick-and-mortar school; and 4) **enriched virtual models**, in which students are required to have face-to-face learning experiences with their teacher but complete their remaining classwork remotely (Clayton Christensen institute, n.d.). Rotation models are more widely used, particularly at the elementary level, and offer the benefits of allowing teachers to work with smaller student groups, making differentiated instruction more cost-effective and efficient (Christensen et al., 2013; Staker, 2014). The Flex, A-La-Carte, and Enriched Virtual Models involve more dramatic changes to traditional school models; these models are more often used at the middle and high school levels, where students presumably may be more capable of self-regulated online learning (Means et al., 2013). They may enable students to better learn at their own pace, engage with teachers more effectively, and recover more dropouts by removing traditional classroom barriers; they also can allow more students to take electives, foreign language, and advanced placement classes which may not be available in their brick-and-mortar school (Staker, 2014).

What is the teacher's role within blended learning environments, and what kinds of training and support are needed for effective implementation?

Blended learning is about the instructional shift towards personalized, student-centered learning rather than the technology in and of itself; educators must reconsider their roles and build students' self-regulated learning in order to foster the student agency and responsibility that is critical for blended learning to be successful (Murphy et al., 2014; Powell et al., 2015). Teachers' roles shift from more traditional curricular and administrative tasks to working with data and providing more individualized support to students (Ames, 2012). Blended learning requires teachers to become "learning designers, mentors, facilitators, tutors, evaluators, and counselors to reach each student in ways never before possible" (Horn & Staker, 2015, p. 11).

It is essential that teachers are properly trained and supported in order to successfully function in their new roles (Horn & Staker, 2015). Horn and Staker recommend that the following training and support be provided for effective blended learning: 1) extend the reach of great teachers by enabling the use of digital technology (e.g., have these teachers lead professional development or online classes); 2) assign teachers specialized responsibilities (e.g., content experts develop curriculum, data experts); 3) allow teachers to teach in teams; 4) award micro-credentials for skills mastery; and 5) grant authority to blended learning teams. In addition, identifying a small core group of teachers to begin blended learning implementation prior to whole-school adoption allows these teachers to be more easily supported as the program unfolds (Darrow, Friend, & Powell, 2013). Instructional teams must also consider common potential implementation barriers such as insufficient connectivity/broadband; providing for a site-based blended learning coordinator/manager may help address these issues (Darrow et al., 2013; Murphy et al., 2014).

How can technology be used to maximize personalized learning within blended learning instructional settings?

Blended learning is the strategic integration of in-person and virtual learning to personalize instruction (The New Teacher Project, 2014). Differentiating instruction for every child is difficult, if not impossible, without the assistance of technology. Technology and online learning adjust automatically to the level of each individual learner and "…provide a simple way for students to take different paths towards a common destination" (Horn & Staker, 2015, p. 10). It is critical to note, however, that technology and data do not substitute for the student's relationship to the teacher and other students within blended learning environments; rather, technology serves as a tool to enhance already proven effective pedagogy (Redding, 2014). Blended learning is a pedagogical approach that combines "the effectiveness and socialization of the classroom with the technology-enhanced active learning possibility of the online environment" (Dziuban, Harman, & Moskal, 2004). Completion of activities, readings, and assessments happens in the online environment, while face-to-face time is preserved for discussion and collaboration between teachers and students and between students and their peers. Not only does this "blended" arrangement produce positive student learning outcomes, but students report appreciation for the more effective face-to-face time and flexibility for learning that blended learning offers (U.S. Department of Education, 2010; Riley et al., 2014). In addition, technology offers the opportunity for students to connect, socialize, and learn from students all over the world who may share their interests and who they would not have encountered without the use of technology (Wellman & Gulia, 1999; Wellmanet al., 1996).

Digital portfolios offer additional opportunities for personalized learning within blended instructional environments. Digital portfolios are purposeful collections of work, captured by electronic means, which serve as an exhibit of individual efforts, progress, and achievements (Cramer, 2009). They are used as part of ongoing assessment of learner progress in one or more subject areas, but can also create an authentic and public way for students to demonstrate mastery of basic media skills (Cramer, 2009; Weidner, 1998). Digital portfolios offer several advantages over paper-based approaches, including high rates of active student participation in selecting the media to capture events; enhanced creativity; heightened student interest; motivation and responsibility for learning; and easier access to materials by assessors (Athanases, 1994; Buschmann, 1993; Newhouse, 2015; Vizyak, 1994). Teachers must decide in advance what they wish students to demonstrate within their digital portfolio; in addition, expectations must be clear to both students and assessors, with explicitly defined learning objectives serving as a guide (Stobart & Eggan, 2012).

Indicators to Support the Effective Practice
All teachers receive initial and ongoing training and support in effective use of blended learning methods.
Instructional teams determine which blended learning model is appropriate for the school or individual classroom.
All teachers build students' ability to learn in contexts other than school.
All teachers connect students' out of school learning with the school learning.
Hardware, web browser, and software requirements are specified to students and parents before the use of online instruction outside of school.
All teachers employing blended learning methods make sure that technology and data enhance relationships but do not pretend to substitute for them.
Instructional teams and teachers use fine-grained data to design for each student a learning path tailored to that student's prior learning, personal interests, and aspirations.

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Core Function: Personalized Learning

Effective Practice Cognitive Competency: Intentionally address students' accessible background knowledge to facilitate new learning

Overview: Cognitive competency involves building students' prior knowledge to better allow for mastery of learning materials. Research-based practices to foster students' cognitive competency include regularly reviewing materials and concepts (particularly those which will be used for subsequent learning), using effective classroom questioning (to include both lower and higher-level questions, appropriate wait time, and Socratic questioning), and plenty of direct and explicit vocabulary instruction.

Evaluate your Practice: How can teachers help students build their background knowledge through effective review/ recitation strategies in order to facilitate new learning? How can teachers help students build their knowledge by promoting their vocabulary development in order to facilitate new learning?

Introduction

Learner-centered or personalized learning refers to "a teacher's relationships with students and their families and the use of multiple instructional modes to scaffold each student's learning and enhance the student's personal competencies" (Twyman & Redding, 2015, p. 3). The student is actively involved with the teacher in co-constructing their individualized learning pathway, and the location, time, and pace of learning may vary from student to student (Redding, 2016). Cognitive competency, one of four personal competencies within recent personalized learning frameworks, refers to "prior knowledge that facilitates new learning" (Redding, 2014, p. 4). Building students' knowledge through effective classroom recitation practices and intentionally fostering students' vocabulary development are two key ways that teachers can help students build their prior knowledge, setting the stage for enhanced cognitive competency and improved learning.

How can teachers help students build their background knowledge through effective review/ recitation strategies in order to facilitate new learning?

Teachers can foster the building of students' knowledge and cognitive competency through research-based practices that include effective review and teacher questioning strategies.

Regular Review of Previously Learned Material. This practice is critical to helping students expand their knowledge base and foster new learning (Rosenshine, 1986) and is particularly essential for material that will be used for subsequent learning. These concepts and skills should be developed continually over time, with students engaged in distributed practice (Marzano, 2004). Important content should also be revisited "in incrementally deeper and broader steps until the end of the course or grade to ensure deep and lasting learning" (Rogers, 2013, p. 61). When re-teaching is necessary, it should involve the use of different materials and examples than those used for initial instruction; re-teaching of priority lesson content should continue until students demonstrate they have learned it (Cotton, 1995). Digital learning instructional activities that include review and reinforcement components can provide individualization and personalization to allow for students to develop mastery of course materials.

Use of Effective Classroom Questioning Techniques. Effective learning and achievement requires student engagement, with plenty of opportunities to respond to instruction (Harbour, Evanovich, Sweigart, & Hughes, 2015). Skillful questioning using both lower-cognitive (fact and recall) and higher-cognitive (open-ended and interpretive/evaluative) questions facilitates students' acquisition of conceptual knowledge and, ideally, can lead to deeper learning

(Chin, 2007; Gall, 1984; Harbour, et al., 2015). Some research has suggested that higher-cognitive questions contribute to higher student achievement (Redfield & Rousseau, 1981); teachers should ask a majority of these types of questions when teaching students above the primary grades (Cotton, 1995). Teachers should also ensure that both faster and slower learners have opportunities to respond to higher-level questions (Slavin, 1994).

Teacher questioning should allow for generous amounts of "wait time" or "think time;" at least three seconds for lower-cognitive questions and more for higher-cognitive ones (Ciardiello, 1986; Slavin, 1994; Stahl, 1994). When students give incorrect or incomplete answers, teachers should probe for understanding and help them produce correct or better answers (Slavin, 1994). During whole-group questioning, teachers should reiterate, or "re-voice" student responses to their questions, in order to both affirm student responses and make their ideas available to the whole class as common knowledge (Chin, 2007). Teacher questioning within inquiry-based classrooms, which allow students to construct their own meanings (rather than solely relying on teacher provided information), share thoughts and ideas, and guide discussions, can lead to greater cognitive engagement and learning (Chin, 2006; Smart & Marshall, 2013). Questioning techniques such as Socratic questioning, which involve teachers facilitating guided discussions by responding to student comments and questions with deeper, probing questions to further develop student understanding of subject matter, can encourage students to self-evaluate their responses, leading them to reflect on and improve the accuracy and depth of their understanding (Chin, 2006).

How can teachers help students build their knowledge by promoting their vocabulary development in order to facilitate new learning?

Vocabulary has long been recognized as a strong determinant of reading success and is key to helping students expand their accessible knowledge and thus enhance new learning. Young children who enter school with limited vocabulary knowledge are at greater risk for later reading difficulties, particularly with reading comprehension (Catts, Fey, Zhang, & Tomblin, 2001), and vocabulary gaps only grow larger in the early grades (Biemiller & Slomin, 2001). Teaching vocabulary throughout the school years is not just a learning process for those struggling with or learning the English language, but also for all students as they master new content and skills (Sniad, 2016). Features of effective vocabulary instruction include (a) direct, explicit instruction that includes extensive teacher modeling; (b) teacher and material scaffolding that carefully controls the level of task difficulty; and (c) numerous practice opportunities with immediate and specific feedback (Coyne, McCoach, & Kapp, 2007; Vaughn, Gersten, & Chard, 2000). This explicit and direct instruction with plenty of practice with vocabulary should include practices that

- Help students relate new vocabulary to their background knowledge (e.g., through pre-reading vocabulary- building exercises)
- Help students develop elaborated word knowledge (e.g., help students express word meanings in various ways through drawing pictures or creating other non-linguistic representations, creating metaphors and analogies, creating graphic organizers, and using vocabulary learning logs);
- Provide for active student involvement in learning new words (e.g., having students create a visual word wall using pictures that represent various concepts being taught); and
- Help students acquire new vocabulary independently (e.g., teach students what to do when they encounter an unfamiliar word and increase word exposure through supplemental reading). (Carr & Wixson, 1986, as cited in Lent, 2012, pp. 58–59)

Indicators to Support the Effective Practice
The School Community Council ensures that all parents understand the purpose of a standards-aligned curriculum, their own children's progress, and their role in supporting learning at home.
The School Community Council ensures that all volunteers understand cognitive competency and their roles relative to its enhancement in students.
All teachers and teacher teams plan instruction based on the aligned and expanded curriculum that includes rich reading, writing, memorization, and vocabulary development.
All staff conducting co-curricular programs fulfill the purposes of the programs including appropriate elements of the aligned curriculum and other cognitive competency activities.

Indicators to Support the Effective Practice
The school's key documents explain the value of cognitive competency and how it is enhanced through specific roles and relationships.
The school promotes cognitive competency in school rituals and routines, such as morning announcements, awards assemblies, hallway and classroom wall displays, and student competitions.
All teachers reinforce elements of mastered knowledge that can be retained in memory through recitation, review, questioning, and inclusion in subsequent assignments.
All teachers include vocabulary development (general vocabulary and terms specific to the subject) as learning objectives.
All teachers assign rich reading and the application of the reading in written work and discussion.

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Core Function: Personalized Learning

Effective Practice

Metacognitive Competency: Teach and model metacognitive processes and strategies to enhance students' self-management of learning

Overview: Self-management strategies have been demonstrated to improve student learning outcomes and are critical components of personalized learning. These strategies, however, are not learned automatically or just by teachers telling students about them; they must be taught explicitly and modeled by teachers for students. Effective metacognitive processes and strategies include goal setting and planning for strategy use, self-monitoring through self- and peer-checks of learning, as well as documentation of learning strategies used and their effectiveness, and evaluation of learning through formative assessment, self-recording of progress, rubrics, and performance exemplars. The school community can further foster metacognitive competency through professional development for teachers and co-curricular staff and addressing metacognitive competency within school documents and rituals and routines.

Evaluate Your Practice: How can goal setting and planning for strategy use promote students' management of their learning? How can self-monitoring of progress promote students' management of their learning? How can self-evaluation promote students' management of their learning? How can schools provide further support for fostering students' metacognitive competency?

Introduction

Learner-centered or personalized learning refers to "a teacher's relationships with students and their families and the use of multiple instructional modes to scaffold each student's learning and enhance the student's personal competencies" (Twyman & Redding, 2015, p. 3). The student is actively involved with the teacher in co-constructing their individualized learning pathway, and often through technology the location, time, and pace of learning may vary from student to student (Redding, 2016). Metacognitive competency, one of four personal competencies within recent personalized learning frameworks, becomes critical for student success, particularly within personalized learning pedagogies, as students are responsible to some degree for managing their own learning. Metacognition in its simplest sense refers to thinking about one's thinking with the goal of enhancing learning (Wilson & Conyers, 2016). High academic achievers have been shown to have high levels of metacognitive competency (Wang, Haertel, & Walberg, 1993), and metacognitive instruction can help close the gap between high and low achievers (Pellegrino & Hilton, 2012). Metacognitive strategy instruction is particularly imperative given many states' and districts' adoption of Common Core Standards, which require students to be able to use metacognitive learning strategies extensively in order to engage in higher-order processes such as researching and synthesizing information, as well as critically reading and evaluating texts (Conley, 2014).

Research has provided extensive support for explicitly teaching self-regulated learning strategies to students, and meta-analyses have shown consistently positive effects on student performance generally, and in specific domains such as reading, writing, and mathematics (e.g., Dignath & Büttner, 2008; Hattie, Biggs, & Purdie, 1996). Students need to have both metacognitive knowledge (e.g., knowledge about one's self as a learner and knowledge about learning strategies, including when and why to use them) and metacognitive regulation (e.g., monitoring one's cognition, including using planning activities, awareness of task performance, and evaluation of efficacy of strategy use; Lai, 2011; Redding, 2014). Strategy instructional interventions that have a sustained and long-term positive effect on student performance include "teaching students skills such as determining when, why, and how to use learning strategies, how to plan a learning task and establish goals for learning, and explaining the relevance and importance of a task so that they can see the importance of what they are doing (deBoer, Donker-Bergstra, & Kostons, 2013, p. 59-60).

Research also shows that students should be explicitly taught about "driving their brains" (Wilson & Conyers, 2016) via a metacognitive process that includes three stages that may overlap:

1) goal-setting and planning, including how/when/where to use a repertoire of learning strategies;
2) self-monitoring of progress, including self- and peer checks of work and documentation of learning strategies; and
3) self-evaluation of learning and subsequent modification of strategy use as necessary (Redding, 2014).

The remainder of this research practice brief summarizes the research that supports teaching the metacognitive process to improve student outcomes, as well as ways that school communities can further support students' metacognitive competency.

How can goal-setting and planning for strategy use promote students' management of their learning?

Planning strategies are used prior to learning and include activities such as goal setting and pre-planning of resource allocation. Examples include setting a goal, deciding upon the amount of time to spend on an activity, and choosing what to do first (see Allen & Hancock, 2008). Goal setting is critical for enhancing academic performance, and research has demonstrated a clear link between the degree of goal difficulty and performance (Chidester & Grigsby, 1984; Mento, Steel, & Karren, 1987; Tubbs, 1986; Wofford, Goodwin, & Premack,1982; Wood, Mento, & Locke 1987). Achievement is enhanced to the degree that students and teachers set challenging rather than "do your best" goals, relative to the students' present competencies (Chidester & Grigsby, 1984; Guzzo, Hunter & Schmidt, 1983; Jette, & Katzell, 1985; Locke & Latham, 1990; Mento et al., 1987; Tubbs, 1986; Wood et al., 1987). Explicit classroom instruction on how and why goal setting is important has yielded academic gains ranging from 16% to 41% (Marzano, 2007). This explicit instruction may involve teacher modeling of goal setting followed by having students analyze past performance to set new performance goals (Marzano, 2009).

Students need to develop a repertoire of learning strategies to facilitate their learning across content areas. Learning strategies may include note-taking, organization and representation of content, self-questioning, memorization, and test preparation (see Dunlosky, Rawson, Marsh, Nathan, & Willingham, 2013 for a recent review of strategy effectiveness). Learning strategies must be explicitly taught, and teacher modeling of strategies is key (Pressley & Harris, 1990). For example, teachers can model diagramming (e.g., concept maps, t-charts, flow charts, etc.) as a learning strategy to demonstrate understanding and then scaffold the strategy to students with plenty of guided practice and opportunity for independent application (Ellis, Denton, & Bond, 2014). Pressley and Harris (2006) further recommend that teachers model 1) why the strategy is used by providing specific reasons for the strategy selection, 2) how the strategy is used by providing explicit instruction absent of ambiguity, and 3) what strategies to select in specific situations by selecting the appropriate strategy to match the situation. Research also shows that metacognitive learning strategies should be integrated into subject matter rather than taught in isolation in order to increase the chances that students will transfer their new learning across other settings (Pellegrino & Hilton, 2012; White & Fredericksen, 1998).

How can self-monitoring of progress promote students' management of their learning?

Self-monitoring involves the capacity for students to track their thoughts and behaviors during the learning process (Wilson & Conyers, 2016). Self-monitoring interventions have been shown to improve academic performance (e.g., Wood, Murdock, & Cronin, 2002) and have a positive feedback effect, with students seeking to raise their goals based on observed outcomes (Zimmerman, 1990). There are typically two primary components used in a self-monitoring intervention: self-observation, where a student learns to identify and monitor a specific strategy, and self-recording, in which the student records some aspect of that strategy, such as whether or not it is occurring or the outcome associated with that strategy (Amato-Zech, Hoff, & Doepke, 2006). Children need to be shown explicitly how to self-monitor and taught how to attribute learning outcomes to strategy use (Ghatala, Levin, Pressley, & Goodwin, 1986). Self-monitoring interventions also tend to be more effective when reinforcement for self-monitoring is provided to the students (Otero & Haut, 2015).

Peer checks provide another avenue for building students' self-regulation skills. Engaging in evaluative and corrective activity on peers' work has been shown to improve students' management of their own work (Lindemann, 1982; Sadler, 1989); explaining their deci-

sions to others helps students to be more aware of their own performance. Sadler (1989) suggests that engaging in evaluative and corrective activity on other students' work has the advantages that: (a) the work is of the same type and addressed to the same task as their own; (b) students encounter a wide range of solutions to creative, design, and procedural problems, and exposure expands their own repertoire of solutions; (c) other students' attempts cover a wide spectrum of mistakes for students to observe; and (d) the use of other students' work in a cooperative environment assists in achieving some objectivity, in that students are less defensive of, and less committed emotionally to other students' work than to their own. Students need to be shown explicitly how to complete evaluations of peers' work, and reinforcement for the evaluation should be provided.

Dunlosky et al, (2013) concluded in their study of learning strategies that students tend to cling to familiar practices rather than learn new techniques that might be more effective. A teacher's role, then, is to teach effective practices as well as guide students to which practices are most effective for their own self-regulation. As part of evaluating the performance of themselves and others, students should document which learning strategies were more effective than others in improving learning outcomes. Only when training provides practice in attributing changes in performance to strategies, in order to select the more effective strategy, are children able to use that information to guide their strategy choices in a subsequent learning task (Ghatala et al., 1986).

Students should be taught that self-monitoring of performance is valuable in school and in life in general. Wilson and Conyers (2016) suggest that teachers should 1) emphasize that self-monitoring should cover a lesson's content, and students should continually question their knowledge and consider the strategies and skills they are using for learning; 2) build in regular opportunities for students to "check in" on their learning during a lesson through individual or whole-group questioning; and, 3) frequently assign students to work in pairs or small groups, reminding them they can and should learn from each other and that explaining and discussing lesson content enhances memory and learning.

How can self-evaluation promote students' management of their learning?

Teachers can further build their students' metacognitive competency by teaching strategies for students to determine their own mastery of learning tasks. Self-recording of performance can provide students with systematic, often visual, data regarding their performance, which they collect themselves. For example, self-graphing of performance can provide learners with visual clarification of learning objectives and how well they have understood what they need to learn and what they need to do to achieve their goals (Kasper-Ferguson & Moxley, 2002). Teaching students how to use instructional rubrics, which are standards-referenced tools that provide students with detailed information about what is expected of their work, have also proven successful with a wide range of students (Andrade, 2000; Andrade & Boulay, 2003). Providing exemplars of performance can further assist students with managing their learning, as they make explicit what is required and define a valid standard against which students can compare their work (Orsmond, Merry, & Reiling, 2002). Finally, formative assessment (low-stakes testing that provides information to teachers about how to tailor instruction to meet students' needs) also helps students recognize the gaps between their current progress and their targeted goals. These comparisons help students determine whether current modes of engagement should continue as is, or if some type of change is necessary (Nicol & Macfarlane-Dick, 2006).

How can schools provide further support for fostering students' metacognitive competency?

Metacognitive instruction is not commonly observed, and teachers often have limited knowledge about metacognition and how it can be enhanced (Wilson & Conyers, 2014). Wilson and Conyers argue that "without support for teaching about metacognition at the policy level, teachers may feel too pressed for time to fit this instruction into the already packed school day" (p. 2). School and district improvement plans may need to include targeted professional development that provides teachers with this knowledge and how they can teach and reinforce metacognition and students' ability to manage their own learning. This type of professional development has been used successfully within several areas, including science inquiry programs (Seraphin, Philippoff, Kaupp, & Vallin, 2012), formative assessment

within middle school math classrooms (Dempsey, Beesley, Fazendeiro Clark, & Tweed, 2016) and elementary students' formative self-assessments of their learning using rubrics (Zubrzycki, 2015). Deeper learning within domains may require metacognitive instruction embedded within content to help students "think like a historian or an engineer" for example (Graesser, 2015; Muijset al., 2014), suggesting that this instruction should be strategically incorporated into teacher planning within professional learning communities.

Lesson plans for teachers and relevant planning documents for co-curricular programming can serve to provide documentation of a school-wide commitment to building and enhancing students' metacognitive competency (Twyman & Redding, 2015). Similarly other key school documents such as school improvement plans and parent literature about school programming can incorporate goals and objectives centered on enhancing students' metacognitive competency. These documents should reflect the value the school places on metacognitive competency and how teachers and other staff contribute to efforts to ensure that students develop these critical skills. Co-curricular staff, including, for example, afterschool educators and others working within youth-serving organizations, can also benefit from training to incorporate metacognitive strategies into their programming for students.

In addition, metacognitive competency should be recognized within a school's routines and rituals and its importance made visible within hallways and classrooms so that students, staff, and parents realize its value to learning and future success. Morning announcements and student awards can highlight metacognitive achievements by students (e.g., mastery of learning strategies); in addition, school rituals such as having students write letters to future students with reflections on their learning and advice at the end of courses can address metacognitive competency (Costa & Kallick, 2008). Metacognitive competency can also be reinforced through technology-aided resources, such as digital (online) portfolios or badges that allow students to document and display their progression through learning tasks and accomplishments (Redding, 2014).

Indicators to Support the Effective Practice
The School Community Council ensures that all parents understand metacognitive competency, learning strategies, and ways they can support their children's self-management of learning at home.
The School Community Council ensures that all volunteers understand metacognitive competency and their roles relative to its enhancement in students.
All teachers and teacher teams plan instruction based on the aligned and expanded curriculum that includes objectives for student management of their learning.
All staff conducting co-curricular programs fulfill the purposes of the programs including appropriate elements of student management of learning
The school's key documents explain the value of metacognitive competency and how it is enhanced through specific roles and relationships.
The school promotes metacognitive competency in school rituals and routines, such as morning announcements, awards assemblies, hallway and classroom wall displays, and student competencies.
All teachers teach and model the metacognitive process (goals, strategies, monitoring, and modification) and specific learning strategies and techniques.
All teachers include self-checks, peer-checks, and documentation of learning strategies as part of assignment completion.
All teachers teach methods of logic, synthesis, evaluation, and divergent thinking.
All teachers build students' metacognitive skills by teaching learning strategies and their appropriate application.
All teachers build students' metacognitive skills by providing students with processes for determining their own mastery of learning tasks.
All teachers build students' ability to use a variety of learning tools.

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Core Function: Personalized Learning

Effective Practice

Motivational Competency: Promote a growth mindset, stretch students' interests, and connect learning to student aspirations to enhance students' engagement and persistence with learning

Overview: Student engagement and persistence are important to academic achievement and can be impacted by teacher practices in the classroom. Promoting a growth mindset, granting students choice in or control over their learning activities and strategies, stretching the interests of students, and connecting their progress towards their aspirations through personalization and student questioning can help build students' motivational competency. Student data can be used to personalize learning experiences based on their prior knowledge, interest in topics, and aspirations and goals. The focus on motivational competency should be school-wide and reflected in teacher and co-curricular staff lesson planning, school documents and rituals, and built into intentional communications with families.

Evaluate Your Practice: How can promoting a growth mindset encourage student engagement and persistence with learning? How can increasing students' choice encourage their engagement and persistence with learning? How can building students' interest in topics increase their motivation for learning tasks? How can teachers use data to design learning paths tailored to students' prior learning, interests, and aspirations? How can schools provide further support for fostering students' motivational competency?

Introduction

Learner-centered or personalized learning refers to "a teacher's relationships with students and their families and the use of multiple instructional modes to scaffold each student's learning and enhance the student's personal competencies" (Twyman & Redding, 2015, p. 3). The student is actively involved with the teacher in co-constructing their individualized learning pathway and often through technology the location, time, and pace of learning may vary from student to student (Redding, 2016). Motivational competency, one of four personal competencies within recent personalized learning frameworks, is critical for student success. Motivational competency refers to student engagement and persistence towards learning goals that is required for learning (Redding, 2016). Student motivation is considered a dynamic, multifaceted phenomenon (Eccles, Wigfield, & Schiefele, 1998; Graham & Weiner, 1996; Seifert, 2004). Different motivational theories and constructs have been put forward to try to understand how and why students are motivated for academic achievement (e.g., Pintrich, 2003) because proper motivation can promote and sustain that academic achievement (Mega, Ronconi, & De Beni, 2013). Several methods are known to help build students' motivational competency; a summary of these "best practices" is provided below.

How can promoting a growth mindset encourage student engagement and persistence with learning?

If students believe that their own academic abilities can improve over time (i.e., they have a "growth mindset"), they are more likely to respond to initial obstacles by remaining involved, trying new strategies, and using all the resources at their disposal for learning (Dweck, 2010). A substantial body of evidence indicates that students' academic and lifelong success is a function of both their actual achievement and their attitudes, or mindsets, about achievement (Borghans, Duckworth, Heckman, & Ter Weel, 2008). To promote a growth mindset, teachers should focus praise on learners' work product or effort, rather than on their innate ability (e.g., "You are so smart in math!"). Behavior-specific praise provides detailed feedback to students about their competence and problem-solving strategies so that they may adjust their behavior in the future, and praise for effort leads to increased effort and student attribution of their success to their use of strategies (Mueller & Dweck, 1998).

Learners with a growth mindset tend to set more challenging goals, develop more adaptive strategies for learning, persist longer, and ultimately perform better (Locke & Latham, 2002; Sitzmann & Ely, 2011; Zimmerman, 2002). In addition, students with a growth mindset are more likely to focus on a mastery goal orientation, responding to academic challenges with sustained effort; mastery-focused classrooms have been shown to benefit motivation and improve learning outcomes (Meece, Anderman, & Anderman, 2006). Teachers of mastery-oriented classrooms should provide 1) appropriate learner tasks and enough time for students to complete tasks at their own pace; 2) opportunities for active student participation in decision-making related to instruction and classroom rules; 3) meaningful and specific feedback to students; and 4) opportunities for student collaborative group work where self-monitoring and self-evaluation are encouraged (Lüftnegger, van de Schoot, Schober, Finsterwald, & Spiel, 2014). Explicitly teaching self-regulation strategies, such as goal-setting, strategy use, self-monitoring, and modification of approach, also positively impacts learning and achievement (e.g., Dignath & Büttner, 2008; Hattie, Biggs, & Purdie, 1996).

How can increasing students' choice encourage their engagement and persistence with learning?

Giving students choice in, or control over their learning activities and/or learning materials, helps promote student-directed learning. Often touted as allowing students to "take responsibility for their learning" (Checkley, 1995), proponents of student-directed learning believe that this practice increases student motivation, learning, and engagement (Gambrell, 1996; Malone & Lepper, 1987). A meta-analysis of 41 studies revealed a strong link between providing students with choices and their intrinsic motivation, task performance, and their willingness to accept increasingly challenging tasks (Patall, Cooper, & Robinson, 2008, as cited in Goodwin, 2010). Too many choices, however, produced diminishing returns (e.g., giving more than five options was less effective than giving three to five). Research shows that fewer choices should be offered to less experienced/younger students, while older/more advanced students can be offered more options, with transitions to more choices occurring gradually (Guthrie, Wigfield, & Perencevich, 2004, as cited in Goodwin, 2010). Incorporating project-based learning into the classroom is one way to help promote student choice and student-directed learning. Project-based learning (PBL) has been linked to a variety of positive learning outcomes, including achievement, content knowledge, attitudes, motivation, and critical thinking skills (Condliffe, 2016; Kokotsaki, Menzie, & Wiggins 2016). Students can provide input as to their roles on teams, tasks, resources, questions, and final products; however, teachers in many cases may need to provide "driving questions" to help structure projects (Condliffe, 2016).

When appropriate, students can be given an element of choice or control over their use of learning strategies. However, strategy use does not emerge organically without direct instruction, so students cannot be expected to make choices about the application of learning strategies unless they have been taught how to do so. In order to learn how to choose from among problem-solving strategies, students need to see evidence that the strategies they are learning really do lead to improved performance (see Pressley, Levin, & Ghatala, 1984, 1988; Pressley, Ross, Levin, & Ghatala, 1984). Teacher modeling of strategies is key to teaching those strategies (Pressley & Harris, 1990). This instruction must include not only the strategies themselves, but also how to choose the most effective strategies to solve problems. Pressley and Harris (2006) recommend that teachers model: 1) why the strategy is used, by providing specific reasons for the strategy selection; 2) how the strategy is used, by providing explicit instruction absent of ambiguity; and 3) what strategies to select in specific situations, by selecting the appropriate strategy to match the situation.

How can building students' interest in topics increase their motivation for learning tasks?

Building students' curiosity about and interest in a range of topics increases their motivation. Students who are interested "or see a connection between academic tasks and their own future goals…are more likely to expend persistent effort and exhibit academic behaviors that support school success" (Farrington et al., 2012). The teacher's challenge then is to nurture that same persistence and engagement with a topic or task for areas in which the student has not shown prior interest or of which he/she does not have prior knowledge. The relationship formed between the teacher and the student and their family allows the teacher to both know the student's interests and aspirations and build from those interests/aspirations into other topics or studies. A

teacher with her "relational suasion" (Redding, 2014, p. 7) can motivate a student to tackle even a formerly unpleasant or undesired task because the student now has an internal motivation to not only please the teacher, but also to gain new mastery for herself.

Teaching students to ask questions is one of the best ways to help them build that curiosity and inquisitiveness. While teachers often ask students if they have questions, they rarely teach them how to ask questions to pursue possible new areas of interest related to a topic. Like any skill, asking questions can be taught and practiced, and with the 21st century emphasis on self-directed learning, this skill is increasingly important (Rothstein & Santana, 2011). The QFT (Question Formulation Technique) is a research proven method of teaching this skill. Briefly, this technique involves the teacher providing a question focus followed by student generation of questions (both closed and open-ended), student improvement of questions, student prioritization of questions, a research activity (with student input), and finally reflection on what was learned (for a complete description see Rothstein & Santana, 2014). Classroom studies (e.g., Elves, 2012) show positive academic benefits for this technique, and Rothstein and Santana (2014) argue that it promotes student voice, critical thinking (both divergent and convergent), and metacognition.

How can teachers use data to design learning paths tailored to students' prior learning, interests, and aspirations?

Data-based decision-making focuses on ongoing monitoring of student outcomes to provide an evidence base for continued use of an intervention (VanDerHeyden & Havey, 2013) and can result in improvements in student achievement (Campbell & Levin, 2009; Cawelti & Protheroe, 2001; Lai, McNaughton, Amituanai-Tola, Turner, & Hsiao, 2009; Carlson, Borman, & Robinson, 2011) and increased student motivation for academic tasks (Eliot & Harackiewicz, 1994). The data that are collected in the course of daily instructional practice can be examined to evaluate the impact of different practices and interventions on student performance. The data that are generated allow teachers to customize individual learners' curriculum paths, personalizing their learning experience. A variety of personalization techniques may be included, such as targeted scaffolding (based on a student's prior knowledge), the inclusion of topics of interest to individual learners (including those in which interest has been generated due to teaching students to ask questions), and the setting of individual student learning goals based on their personal aspirations.

How can schools provide further support for fostering students' motivational competency?

Teachers must intentionally build the enhancement of students' motivational competency into their instructional planning. To best enhance motivational competency, Redding (2014) recommends that all teachers and instructional teams incorporate their strategies for enhancing student motivation into their lesson planning process. By purposefully planning out ways to spark student interest, promote a growth mindset, and create a sense of value for the topic, these behaviors will become more embedded into the instruction and culture of the school and consequently, will foster habits of student engagement and persistence (Redding, 2014). Staff involved with co-curricular programming (e.g., afterschool or summer programming) can similarly be encouraged to adapt their programming in order to build and reinforce students' motivational competency and thus encourage their engagement. These programs should be encouraged to connect learning experiences to real life, offer collaborative activities, and develop positive relationships to increase student interest and engagement (Beckett et al., 2009).

Parents can also be partners in fostering their student's growth mindset and are a critical lever for instilling values about certain tasks and processes in schooling, both of which lead to motivation. Motivational competency should be embedded into key communications and school documents, explaining what it is and how it is addressed throughout the school day and year, as well as the parent's role in promoting it (Redding, 2006, 2016). Incorporating motivational competency into school routines and rituals, such as morning announcements, student showcases, and morning meetings, can further help to embed the competency into the overall culture and value system of the school (Educator Competencies, 2015; Redding, 2014a).

Indicators to Support the Effective Practice
The School Community Council ensures that all parents understand motivational competency (a growth mindset, the value of mastery, and connecting learning tasks with students' personal aspirations) and how they can enhance motivational competency at home.
The School Community Council ensures that all volunteers understand motivational competency and their roles relative to its enhancement in students.
All teachers and teacher teams plan instruction with a curriculum guide that includes methods to enhance student motivation to learn.
All staff conducting co-curricular programs fulfill the purposes of the programs including appropriate elements of student motivation to learn.
The school's key documents explain the value of motivational competency and how it is enhanced through specific roles and relationships.
The school promotes motivational competency in school rituals and routines, such as morning announcements, awards assemblies, hallway and classroom wall displays, and student competitions.
All teachers promote a growth mindset by attributing learning success to effort and self-regulation and insist upon (and reward) persistence to mastery.
All teachers encourage self-direction by giving students choice in the selection of topics and the application of learning strategies.
All teachers help students articulate their personal aspirations and connect their learning to the pursuit of these aspirations.
All teachers stretch students' interests to find value in new topics and connect learning tasks to students' personal aspirations.
All teachers differentiate assignments to provide the right balance of challenge and attainability for each student.

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Core Function: Personalized Learning

Effective Practice

Social/Emotional Competency: Provide instruction, modeling, classroom norms, and caring attention that promotes students' social/emotional competency

Overview: Social/emotional competencies include self-awareness, self-management, social awareness, responsible decision-making, and relationship skills; these competencies are important for academic success. Educators can help promote these competencies by explicitly teaching, modeling, and facilitating competencies; establishing classroom norms centered around the competencies; being attentive to students' emotional states and managing their emotions; and using cooperative learning to foster these skills. Professional development in how to address students' social/emotional competency is critical for teachers and any other staff or other adults working with students. Social/emotional competency should be explicitly addressed within curriculum guides, key school documents, and school rituals and routines.

Evaluate Your Practice: How are students' social/emotional competencies developed within your school and in individual classrooms? Have members of the school community received training in how to build students' social/emotional competencies? How do school documents, other communications, and routines and rituals reflect or address your students' social/emotional competencies?

What are social/emotional competencies, and how do they impact student learning?

Learner-centered or personalized learning refers to "a teacher's relationships with students and their families and the use of multiple instructional modes to scaffold each student's learning and enhance the student's personal competencies" (Twyman & Redding, 2015, p. 3). The student is actively involved with the teacher in co-constructing their individualized learning pathway, and the location, time, and pace of learning may vary from student to student (Redding, 2016). Social/emotional competency, one of four personal competencies within recent personalized learning frameworks, fosters a level of concern and respect for oneself and others, and strengthening skills of self-management and productive decision-making (Carreker & Boulware-Gooden, 2015; Educator Competencies, 2015; Redding, 2016). Specifically, social/emotional learning (SEL) helps students use their "sense of self-worth, regard for others, and emotional understanding and management to set positive goals and make responsible decisions" (Carreker & Boulware-Gooden, 2015, p. 2). The Collaborative for Academic, Social, and Emotional Learning (Weissberg & Cascarino, 2013), has developed a framework that identifies five social/emotional competency clusters as critical for young people's success. The behaviors that characterize these competency clusters are:

- Self-awareness—the ability to identify one's emotions and how they influence behavior;
- Self-management—the ability to calm oneself down when upset, to set goals and work toward them, and to manage and control emotions;
- Social awareness—the ability to recognize what is appropriate in certain settings and empathize with others;
- Responsible decision making—the ability to make decisions that take into account social standards, consequences, and context; and
- Relationship skills—the ability to communicate well, to listen and respond appropriately, and to negotiate conflict.

Social/emotional competencies can be taught and developed in every type of school and in students of diverse backgrounds and ages, and research suggests that academic achievement, motivation, behavior, and peer relations improve when social/emotional competencies are taught (Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011; Mart, Dusenbury, & Weissberg, 2011). Students who set high academic goals, have self-discipline, self-motivate,

manage stress and organize their approach to work learn more and get better grades (Duckworth & Seligman, 2005; Elliot & Dweck, 2005). Research has shown that students who have had training in social/emotional competency are better students, better citizens, and better employees later in life, with reduced rates of negative or risky behaviors and disciplinary issues (CASEL, 2015; Weissberg & Cascarino, 2013).

How can teachers promote social/emotional competencies?

Students develop personal competencies in part through instruction, but also "through the modeling, encouragement, and caring exhibited by teachers and other people they respect" (Redding, 2014a, p. 7). A teacher's "relational suasion" refers to their capacity to influence their students' learning, motivation, and metacognitive and social/emotional competencies through their personal knowledge of and interaction with students and their families (Redding, 2013). Using their relational suasion, teachers can

1. Systematically teach, model, and facilitate the competency behaviors described above, in ways that allow students to apply them as part of their daily repertoires (Weissberg & Cascarino, 2013); evidence-based programs that enhance social/emotional competency should also be adopted (e.g., see CASEL, 2015).
2. Establish classroom norms. Classroom norms are specific expectations that teachers establish for students' behavior. They are ways of behaving that are established by the teacher and that define the culture of the classroom. Establishing norms in the classroom is part of what brings students together as a single group, developing the interconnections between individuals. This process is one of the most important influences on academic achievement (Schmuck & Schmuck, 1992). Together, teachers and students should establish and define classroom norms (Finley, 2014).
3. Be attentive to students' emotional states and guide students in managing their emotions. Teachers may need training in trauma-informed approaches that target social/emotional development and problem solving in order to build resilience and hope for the future, particularly for students living in high stress environments (Anderson, Blitz, & Saastamoinen, 2015; Baum, Rotter, Reidler, & Brom, 2009). Teachers also must be well informed about what supports and services are available (e.g., multi-tiered support systems, positive behavioral interventions, and wraparound services) and how best to connect at-risk students to appropriate prevention and intervention services in a timely manner.
4. Use cooperative learning methods that encourage questioning, seeking help from peers, and offering help to peers. Cooperative learning methods involve students working together in small groups to help each other learn academic content (Slavin, 2015). Effectively working in these groups requires some student mastery of relationship skills (e.g., active listening/communicating, negotiating conflict constructively, asking for help, etc.; Weissberg, Durlak, Domitrovich, & Gullotta, 2015). Teachers must first enlist a variety of ideas by enabling learners to ask questions of one another and the teacher (Sharan, 2015); these opportunities build students' confidence in the value of their opinions and ideas and set the stage for successful cooperative learning (see Sharan, 2015 for further description of cooperative learning methods).

How can students' social/emotional competency be further enhanced within the school community?

Schools must implement the building of students' social/emotional competency on a school-wide basis; research suggests that lack of student interest is correlated with less of a school-wide emphasis on social and emotional learning (Bridgeland, Bruce, & Hariharan, 2013). States and districts can prioritize this emphasis through policy and inclusion of social/emotional competencies within learning standards and guidelines. Teachers must also explicitly address social/emotional competency within their curriculum guides and lesson planning. By purposefully planning out ways to help students manage their emotions, build relationships with others, set goals for themselves, and make responsible decisions, these behaviors will become more embedded into the instruction and culture of the school. However, many teachers report little or no preparation for teaching and supporting the development of social/emotional competencies (Bridgeland et al., 2013); therefore, professional development in promoting social/emotional competency within both the classroom and when working with families is imperative. Where appropriate, social/emotional competency training should be extended to all school staff as well co-curricular staff (e.g., after-school and summer programs),

parents, and school volunteers in order to ensure that everyone within the school community strives to build students' competencies (Redding, 2016).

Social/emotional competencies should also be reflected within key school documents and communications. These documents may include the school's mission statement, compact with parents, school improvement plans, staff employment manuals, and student handbook. Documents should clearly describe how social/emotional competency is promoted in the school and should be posted on the school's website and used as a planning guide for supportive school rituals and routines (Redding, 2014b). Technology can further be used to recognize and celebrate social/emotional competency through social media networks and in-school chat groups and can communicate anti-bullying guidelines for both face-to-face and virtual interactions (Redding, 2014b).

Indicators to Support the Effective Practice
The School Community Council ensures that all parents understand social/emotional competency and their role in enhancing their children's growth in (1) understanding and managing emotions, (2) setting and achieving positive goals, (3) feeling and showing empathy for others, (4) establishing and maintaining positive relationships, and (5) making responsible decisions.
The School Community Council ensures that all volunteers understand social/emotional competency and their roles relative to its enhancement in students.
All teachers and teacher teams plan instruction with a curriculum guide that includes objectives for social/ emotional competency.
All staff conducting co-curricular programs fulfill the purposes of the programs including appropriate elements of social/emotional competency.
The school selects, implements, and evaluates evidenced-based programs that enhance social/ emotional competency.
The school's key documents explain the value of social/ emotional competency and how it is enhanced through specific roles and relationships.
The school promotes social/ emotional competency in school rituals and routines, such as morning announcements, awards assemblies, hallway and classroom wall displays, and student competitions.

Indicators to Support the Effective Practice
All teachers teach and reinforce positive social skills, self-respect, relationships, and responsibility for the consequences of decisions and actions.
All teachers establish classroom norms for personal responsibility, cooperation, and concern for others.
All teachers are attentive to students' emotional states, guide students in managing their emotions, and arrange for supports and interventions when necessary.
All teachers use cooperative learning methods and encourage questioning, seeking help from others, and offering help to others.

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Core Function: Family Engagement in a School Community

Effective Practice

Explain and communicate the purpose and practices of the school community

Overview: Schools can improve student learning by engaging with families around their purposes and practices by viewing parents as partners in their children's education, nurturing parents to provide leadership in school decision-making, and providing clear, consistent, and frequent communication. The school's key documents such as a parent involvement policy and/or school-family compact specify school and parent expectations and highlight ways that the school can partner with parents to promote student learning. Schools should also communicate with parents by establishing well-defined homework and class visitation policies, garnering parent input where appropriate. Teachers and school staff may need professional development centered on effective communication with families and ways to cultivate school-family partnerships.

Evaluate Your Practice: How can schools foster communication by involving families in decision-making around the purposes and practices of the school? What are other effective ways the school can communicate the purposes and practices of the school to parents and families?

Introduction

A substantial amount of research has documented the influential role of the family in student learning and educational attainment (e.g., De Fraja, Oliveira, & Zanchi, 2010; Dufur & Troutman, 2013); family involvement in school may benefit low income and minority students the most (Henderson & Mapp, 2002). Research has also demonstrated that schools can improve their students' learning by engaging parents in ways that directly relate to their children's academic progress, maintaining a consistent message of what is expected of parents, and reaching parents directly, personally, and with a trusting approach (Epstein, 1995; Henderson & Mapp, 2002; Patrikakou, Weissberg, Redding, & Walberg, 2005; Redding, 2000; Redding, Langdon, Meyer, & Sheley, 2004). Effective parent engagement must be comprehensive in nature, with the school consistently interfacing with parents at many points, in many venues, over the course of the schooling years (Swap, 1993). This is vital for all students at all grade levels, in all settings (urban to rural), and even more so for those with disabilities and English language learners (CII, 2011).

Communication with families is a key component of effective family engagement, and schools must explain the purposes and practices of the school, while also engaging families to seek their input and build trust and a sense of common purpose. Effective research-based practices in these areas are described below.

How can schools foster communication by involving families in decision-making around the purposes and practices of the school?

Schools must see families as partners who have a voice in school affairs, including decisions about budgets, school programs and personnel, changes in curriculum and instruction, and student behavior (Henderson, Mapp, Johnson, & Davies, 2007). Seeking parent input within a School Leadership or School Improvement Team by including parents can serve to increase and enhance the quality of communication and influence both individual families and the school's operation itself. According to Redding and colleagues, "the cumulative effects of more frequent and higher quality interactions among teachers and parents are a greater reservoir of trust and respect, increased social capital for children, and a school community more supportive of each child's school success" (Redding et al., 2004, p. 6). Representation on a School Leadership Team may be individual parents/family members of currently enrolled students or may be representatives from a School Community Council or similar school-based team with a majority

of members being parents, along with teachers, administrators, and community representatives. For example, a School Community Council can look at the connections between the school and the families it serves and make recommendations for strengthening the School Improvement Plan's emphasis on family-school connections (ADI, 2011).

Research has shown that shared leadership with parents can boost school improvement efforts (Redding & Sheley, 2005). Henderson and Redding (2011) suggest that parents or other family members can be nurtured as leaders to allow them to contribute in the areas of school decision-making (e.g., curricular and co-curricular programming), organization (e.g., planning school events and organizing a broad parent organization), engagement (e.g., convening groups of parents in homes to meet with teachers), educating (e.g., planning/providing volunteer training), and advocating/connecting (e.g., advocating for the school with community and political leaders). Parents and families engaged in these leadership roles acquire skills, confidence, and increased self-efficacy; higher levels of parents' self-efficacy is linked to children's higher school achievement (Shumow & Lomax, 2001, as cited in Henderson & Redding, 2011).

What are other effective ways the school can communicate the purposes and practices of the school community to parents and families?

A school's key documents must be developed and shared regularly with parents and families in order to ensure effective home-school communication around the purposes and practices of the school community. An ongoing conversation between parents and teachers around key documents and events connecting the home and school builds reciprocal trust and a sense of common purpose. Parents should receive "practical, jargon-free guidance on ways to maintain supportive verbal interaction with their children, establish a quiet place for study at home, encourage good reading and study habits, and model and support respectful and responsible behaviors" (CII, 2011, p. 185). The school should also provide culturally and linguistically appropriate opportunities for parents to meet one another and share norms, standards and parenting concerns and successes. Teachers and staff should receive professional development to build their capacity to work with all families; this professional development should promote a strengths-based (rather than deficit-based) view of families (CII, 2011).

Key school documents that provide communication and promote family engagement may include a parent involvement policy and a school-family compact. Parent involvement policies should be written with the assistance of parents and should establish expectations for parental involvement, coordinate with early childhood program's parent involvement strategies, and identify and attempt to eliminate barriers to greater participation and more effective involvement. An effective parent involvement policy must focus on improving student achievement and should include a vision statement developed with and for families, highlighting the importance of the family-school partnerships (Henderson et al., 2007; Westmoreland, Rosenberg, Lopez, & Weiss, 2009). Moles and Fage (2011) suggest "parents should organize around a shared vision such as increasing the number of children ready for college or providing a quality education for all children, rather than around interests that often compete and divide parents" (p. 9). In addition, family engagement should be interwoven through a school's instructional program, planning/management, and other aspects of schooling so that the school serves as a place of connection for students and their families (Moles & Fage, 2011).

The school-family compact serves as a clear written agreement between parents and teachers about how they should work together and is required for Title I schools under the Every Student Succeeds Act (ESAA). Best practices indicate that a compact should focus on learning, including ways that parents can support their child's learning at home and opportunities for parents to communicate with the school to increase these supports (ADI, 2011; Henderson, Carson, Avallone, & Whipple, 2011; Henderson, et al., 2007). It is also essential that the compact explicitly outline the means by which parents, school staff, and students will share responsibility for improving student achievement, how the school and parents will build and develop a partnership to help achieve state standards, and a description of parent-teacher communications (Henderson, 2015).

Schools can also communicate the purposes and practices of the school through homework and classroom visit policies. Homework is a primary point of interface between the school and the home, and parents are best able to support the school's purposes for homework when they understand what is expected of students and their role in monitoring their children's homework. Con-

sistency from teacher to teacher and across grade levels and subjects, established by a homework policy, contributes to teachers,' parents,' and students' understanding of the school's purposes for homework and also reinforces students' formation of independent study habits (Redding, 2006). Studies on homework that included an interactive element requiring children to talk with someone at home about the assignment have shown a variety of significant, positive outcomes, including improved study skills, increased parent involvement, and better teacher attitudes (Bennett-Conroy, 2012; Epstein, Simon, & Salinas, 1997; Van Voorhis, 2003). Classroom visit plans should balance the need to minimize disruptions or interference with student learning, maximize safety, and create a welcoming and transparent environment for families; parents should be involved in creating these policies and plans (ADI, 2011; Henderson et al., 2007). These policies should specify whether advance notice is required and how parents should arrange the visit, and the role of the parent/teacher during the visit. Clear and frequent communication and consistent implementation of these policies are necessary and help establish a welcoming environment for families and encourage true partnerships focused on student learning (Henderson et al., 2007; Redding, 2006; Redding et al., 2011).

Indicators to Support the Effective Practice
Parent representatives advise the School Leadership Team on matters related to family-school relations.
The school has a written statement of purpose for its Parent-Teacher Organization.
A School Community Council (SCC) consisting of the principal, parent facilitator, social worker or counselor, teachers, and parents oversees family-school relationships and helps parents to be better equipped to support their student's learning at home.
A majority of the members of the School Community Council (SCC) are parents of currently enrolled students and are not also employees of the school.
The School Community Council (SCC) meets twice a month and keeps an agenda and minutes of the meetings.
The school's Compact outlines the responsibilities (expectations) of teachers, parents, and students.
The school's Compact includes responsibilities (expectations) that communicate what parents can do to support their students' learning at home (curriculum of the home).
The school's Parent Involvement Policy includes a vision statement about the importance of family-school partnership in a school community.
The school's Mission Statement is distinct, clear, focuesd on student learning, and includes the important role of the family.
The school's Homework Guidelines require homework at all grade levels.
The school's Homework Guidelines show the minimum amount of daily study time by grade level.
The school's Homework Guidelines stress the importance of checking, marking, and promptly returning homework.
The school's Homework Guidelines make homework a part of the student's report card grade.
The Student Report Card provides parents an opportunity to report on the student's home-based studying and reading habits.
The Student Report Card includes the student's progress toward learning standards.
Classroom Visist Procedures are clear, constructive, welcoming, and available for visitors in the office.
The school's Parent Involvement Policy, Compact, and Classroom Visit Procedures encourage parents to visit classrooms.
The school celebrates its accomplishments.
The school recognizes the individual accomplishments of teachers.
The school recognizes the accomplishments of teams (e.g., teacher teams, School Community Council (SCC), and parent-teacher organization).
The school's key documents (Parent Involvement Policy, Mission Statement, Compact, Homework Guidelines, and Classroom Visit Procedures) are included in the school improvement plan and other official documents.
Teachers are familiar with the curriculum of the home (what parents can do at home to support their children's learning) and discuss it with them.

Indicators to Support the Effective Practice
The school uses Open House as an opportunity to convey to parents that what goes on at home impacts student's academic performance.
The "ongoing conversation" between teachers and parents is candid, supportive, and flows in both directions.
Teachers use emails to provide parents with practical guidance to maintain regular and supportive verbal interactions with their children.
Teachers use email to communicate with parents about student progress.
Teachers use phone calls to provide parents with practical guidance to maintain regular and supportive verbal interactions with their children.
Teachres use telephone calls to communicate with parents about student progress.
Teachers use postcards and notes to parent to share student accomplishments.
The school has a web-based student information system to inform parents of student progress and updates information weekly.
The school regularly communicates with parents about its expectations of them and the importance of the curriculum of the home (what parents can do at home to support their children's learning).
The school provides parents and other visitors a friendly document that outlines the ground rules for visits to the school and classrooms.
The school's website has a parent section that includes information on how parents may post items.
The school's newsletter includes articles by parents, information on home support of learning, announcements of parent activities, and provides procedures on how parents may submit items.
The school has a bulletin board near the front entrance that includes information on home support for learning, announcements, parent activities, and provides procedures on how parents may post information.

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Core Function: Family Engagement in a School Community

Effective Practice: Provide two-way, school-home communication linked to learning

Overview: Schools must regularly communicate with families about their expectations and the importance of the "curriculum of the home." This communication must be an ongoing, two-way conversation that is candid and supportive about student learning. Teachers can communicate to parents how they can promote their children's learning at home through home reading/language activities, appropriate studying techniques, and interactive homework that involves parent input and engagement. Teachers and school staff will likely need professional development in order to promote culturally appropriate two-way communication. Frequent and ongoing substantive communication with families is essential and is made easier with electronic resources such as email, school management systems, and informative school websites.

Evaluate Your Practice: How can schools effectively communicate the importance of the curriculum of the home to families? What are other ways schools can facilitate two-way communication with families?

Introduction

Positive two-way communication between home and school, which involves listening as well as informing, sets the stage for developing a relationship built on trust and respect (Byrk & Schneider, 2003; Hiatt-Michael, 2010). Unfortunately, many parents complain that they rarely hear from their child's school unless there is a problem with behavior or student grades (NEA, 2008). Meta-analyses suggest that educators who consistently show love and respect for students and their families, hold high expectations of students, and communicate frequently and effectively will be successful (Jeynes, 2010). Overloaded teachers and busy parents may face a variety of barriers to beneficial communication, but wise school leaders will establish a healthy climate and find ways to promote ongoing, candid, supportive, bidirectional communication (Epstein & Salinas, 1992, as cited in NEA, 2008; Redding, 2006).

Two-way school-home communication that is linked to student learning is a key component of effective family engagement, and schools must have candid and supportive ongoing conversations with families about how they can support their student's learning outside the school day.[1] Effective research-based practices in these areas are described below.

How can schools effectively communicate the importance of the curriculum of the home to families?

A substantial amount of research has documented the influential role of the family in student learning and educational attainment (e.g., De Fraja, Oliveira, & Zanchi, 2010; Dufur, Parcel, & Troutman, 2013); family involvement in school may benefit low income and minority students the most (Henderson & Mapp, 2002). Research has also demonstrated that schools can improve their students' learning by engaging parents in ways that directly relate to their children's academic progress, maintaining a consistent message of what is expected of parents, and reaching parents directly, personally, and with a trusting approach (Epstein, 1995; Henderson & Mapp, 2002; Patrikakou, Weissberg, Redding, & Walberg, 2005; Redding, 2000; Redding, Langdon, Meyer, & Sheley, 2004). Effective parent engagement must be comprehensive in nature, with the school consistently interfacing with parents at many points, in many venues, over the course of the schooling years (Swap, 1993). This is vital for all students at all grade levels, in all settings (urban to rural), and even more so for those with disabilities and English language learners (CII, 2011).

[1] Recent passage of the Every Student Succeeds Act (ESSA) requires each district to reserve at least 1% of its Title I funds to carry out parent and family engagement activities, with priority given to "high need" schools (Leadership Conference Education Fund, 2016).

The "curriculum of the home"—the bundle of attitudes, habits, knowledge and skills that children acquire through their relationship with their family and that facilitates their school learning—is more predictive of academic learning than the family's socioeconomic status (Marzano, Pickering, & Pollock, 2001; Redding, 2000, 2006). Walberg (2007) notes "cooperative efforts by parents and educators to modify alterable academic stimulating conditions in the home have had beneficial effects on learning for both older and younger students" (p. 96). When teachers reach out to parents by meeting face to face with them at the beginning of the year, send weekly materials on how to help their children at home, and telephone routinely with news about their children, math and reading performance can improve substantially (Westat & Policy Studies Associates, 2002, as cited in Henderson, Mapp, Johnson, & Davies, 2007; Kraft & Dougherty, 2013). Interactive homework (homework assignments that require help from family members), especially when coupled with teacher outreach and invitations for two-way communication, can be especially effective in bridging home and school with powerful, positive outcomes for students. For example, the TIPS (Teachers Involve Parents in Schoolwork) program increased students' grades and homework completion, as well as parent involvement (Van Voorheis, 2003, 2011a, 2011b; Bennett-Conroy, 2012). Teachers can help their students' family members to be aware of what they can do outside of school to encourage their student's academic success at each age and grade level (Caspe, Lopez, & Wolos, 2006/2007; Kreider, Caspe, Kennedy, & Weiss, 2007; Walberg, 2007).

What are other ways schools can facilitate two-way communication with families?

It is important to note that schools must recognize that parents of all ethnicities and socioeconomic levels do value education (Henderson & Mapp, 2002), but many face barriers, such as language differences, a lack of familiarity or prior negative experiences with the U.S. educational system, a desire to not interfere with how teachers do their jobs, and outside stressors (Vera et al., 2012). A unifying thread in many success stories is "the philosophy of working in collaboration with parents as opposed to a more paternalistic approach where parents are told what to do" (Vera et al., 2012, p. 198). Teacher training can bring awareness of the deficit view many hold toward parents of poverty, language difference, or low education by showing how to recognize and build on families' strengths and funds of knowledge (Chen, Kyle, & McIntyre, 2008; Moll & Gonzalez, 2004). Learning about families' funds of knowledge can in turn provide culturally relevant prompts to encourage verbal interaction between parents and students.

Teacher training is even more essential when the teacher and the students' families have different home cultures, with some teachers holding a deficit view of low-income families and others simply unaware of ways that these families and communities can contribute to children's education (Shumow & Harris, 2000). Something as basic as eye contact can easily be misinterpreted by those from different cultures—school personnel born and raised in the U. S. expect to have eye contact during conversation as a basic sign of attention and respect from the listener. However, for many people in other cultures, the opposite is true—looking away or down shows respect and deference to the speaker (Kugler, 2012). As Ferguson (2008) states, "When school staff have a better understanding of their students' home cultures, families' parenting practices, home contexts, home crises, or significant family and community events, they can develop processes and strategies to bridge school-based and home-based activities and increase support for student learning" (p. 14).

Two-way communication, which involves the importance of listening as well as informing, has been successfully targeted within professional development programs that involved training teachers to use active listening and other communication skills used by counselors (e.g., Symeou, Roussounidou, & Michaelides, 2012). Professional development is enhanced by opportunities for teacher practice and reflection; giving teachers time to consider ways they can connect their teaching to what they learn from their students' families can maximize the benefits of the training (Kyle, McIntyre, Miller, & Moore, 2005). In addition, it is imperative that administrators and school boards also participate in preservice and ongoing professional development on the importance of and strategies for cultivating positive home–school relationships (Dotger & Bennett, 2010; Hiatt-Michael, 2006, 2010; Sheldon & Sanders, 2009).

Teachers and other educators should regularly share information and create opportunities for families to communicate their insights, concerns, and hopes for their

children; such attention to affective as well as academic concerns can build trust between the school and home. Communication should be child-centered, constructive, clear and concrete (avoid educational lingo and acronyms), and continuous (Mart, Dusenbury, & Weissburg, 2011). The school should also provide culturally and linguistically appropriate opportunities for parents to meet one another and share norms, standards, and parenting concerns and successes. Another way to enhance two-way communication between schools and families involves providing class meeting times to discuss curriculum and learning rather than focusing exclusively on classroom "nuts and bolts" such as behavior rules or supply lists. For example, teachers can discuss their approach to teaching and encourage parent discussion of ways they can foster their children's learning at home. Teachers can also ask parents around midyear what they think is going well with their child's learning and if they have problems or concerns; teachers can then compare this information to their own classroom experiences with the child (Henderson et al., 2007).

Finally, information technology in education can be helpful in bridging the communication gap that frequently becomes more challenging as students progress into the upper grades. Parents can initiate and maintain contact with the school outside of normal school hours via email, and can access information on their child's grades, attendance, and behavior by logging into student management programs. School websites can provide easy access to these electronic reporting systems through a link on the school's main webpage. School websites also provide a convenient and effective way of keeping communication flowing between parents and the school by housing useful information such as calendars, teacher contact information, homework, and club and organizational information. Parent resource sections of the website can post tips for parents on helping their child succeed, provide links to parent resource websites, allow for the download of school forms, and request volunteer helpers. These resources can remove barriers to two-way communication between schools and families by allowing easy and efficient ways to connect with one another to promote student learning and success (ADI, 2011).

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Core Function: Family Engagement in a School Community

Effective Practice: Educate parents to support their children's learning and teachers to work with parents

Overview: Schools can improve student learning by ensuring that teachers are equipped with necessary skills to work with parents and by providing parents with tools to support their children's learning. Schools can provide guidance and support to parents by encouraging family reading activities, ways to support their children's studying, and interactive homework activities. Schools can also encourage and collaborate with parents in their efforts to sustain positive verbal interactions with their children and to model responsibility and respect. Successful initiatives are those that elicit parent input and provide two-way child-centered, regular, clear, and constructive communication. Teachers often lack training in working with families to support student learning; professional development that is hands-on with opportunity for reflection is essential for teachers and other school personnel to enhance school–family partnerships.

Evaluate Your Practice: How can schools provide guidance and support to help parents foster and support their children's learning? How can professional development help teachers collaborate with parents to foster and support their children's learning?

Introduction

The "curriculum of the home"—the bundle of attitudes, habits, knowledge, and skills that children acquire through their relationship with their family and that facilitates their school learning—is more predictive of academic learning than the family's socioeconomic status (Marzano, Pickering, & Pollock, 2001; Redding, 2000, 2006). Walberg (2007) notes "cooperative efforts by parents and educators to modify alterable academically stimulating conditions in the home have had beneficial effects on learning for both older and younger students" (p. 96). When teachers reach out to parents by meeting face to face with them at the beginning of the year, send weekly materials on how to help their children at home, and telephone routinely with news about their children, math and reading performance can improve substantially (Westat & Policy Studies Associates, 2002, as cited in Henderson, Mapp, Johnson, & Davies, 2007; Kraft & Dougherty, 2013). Teachers can help their students' family members to be aware of what they can do outside of school to encourage their student's academic success at each age and grade level (Caspe, Lopez, & Wolos, 2006/2007; Kreider, Caspe, Kennedy, & Weiss, 2007; Walberg, 2007).

Schools can provide guidance to families to support their children's learning in a variety of ways; however, educators and other school staff must have professional development addressing the most effective ways to work with families to promote learning. Effective research-based practices in these areas are described below.

How can schools provide guidance and support to help parents foster and support their children's learning?

Guidance to help parents support their children's learning at home. Walberg (2011) argues that "even small improvements in the amount and quality of academically constructive hours outside school are likely to have more than moderate learning effects while contributing little or nothing to schools' costs" (p. 70). Parents can encourage their children's academic success through home activities that link to their children's curriculum in school. For example, programs that equip parents with new abilities to nurture their children's language skills have resulted in positive and enduring reading outcomes (St. Clair, Jackson, & Zweiback, 2012). Redding (2000) has concluded that school/teacher efforts to encourage family reading activities result in both improved reading skills and interest in reading. Reading School–Home Links, available in archived form through the U.S. Department of Education, provide an example of

student assignments that require parent–child interaction, link to school learning, and simultaneously educate parents about school learning (ADI, 2011; Jeynes, 2013; Redding, 2006). Schools should also encourage parents to both establish a quiet and distraction-free studying/reading place for their children and enforce a consistent studying routine and schedule based on their child's age and academic requirements (ADI, 2011; Redding, 2000, 2006). Interactive homework (homework assignments that require help from family members), especially when coupled with teacher outreach and invitations for two-way communication, can be especially effective in bridging home and school with powerful, positive outcomes for students. For example, the TIPS (Teachers Involve Parents in Schoolwork) program increased students' grades and homework completion, as well as parent involvement (Van Voorhis, 2003, 2011a, 2011b; Bennett-Conroy, 2012).

Guidance to help parents model/encourage responsibility and respect and sustain positive verbal interactions with their children. Several meta-analyses have shown that the most highly correlated components of parent involvement are also subtle—high expectations, loving and effective communication, and a parental style that is both supportive and provides structure (Jeynes, 2011a, 2011b). Research has also shown that low-income families tend to speak with, encourage, and read to their children less frequently than wealthier families (Hart & Risley, 1995; Walberg, 2011). Teachers should recognize that parents of all ethnicities and socioeconomic levels do value education (Henderson & Mapp, 2002), but many face barriers, such as language differences, a lack of familiarity or prior negative experiences with the U.S. educational system, a desire to not interfere with how teachers do their jobs, and outside stressors (Vera et al., 2012). A unifying thread in many success stories is "the philosophy of working in collaboration with parents as opposed to a more paternalistic approach where parents are told what to do" (Vera et al., 2012, p. 198). Teacher training can bring awareness of the deficit view many hold toward parents of poverty, language difference, or low education by showing how to recognize and build on families' strengths and funds of knowledge (Chen, Kyle, & McIntyre, 2008; Moll & Gonzalez, 2004). Learning about families' funds of knowledge can provide culturally relevant prompts to encourage verbal interaction between parents and students. Interactive homework (described above) can also support positive parent–child interactions and increase student engagement.

Family members will benefit from receiving practical, jargon-free guidance on ways to maintain supportive verbal interaction with their children and promote healthy development at home (CII, 2011); this support has been shown to have a significant, positive and sustained effect on youth development (Durlak et al., 2007). Guidance should be carefully worded; offering a workshop or tip sheet on "parenting" may insult families (Henderson et al., 2007). Instead, schools should offer suggestions for maximizing learning outside of the school day, but also seek parent input on topics of interest and offer resources accordingly. O'Donnell, Kirkner, and Meyer-Adams (2008) found that involvement of low-income parents may be highly dependent upon personal outreach efforts and relationship building; therefore parents promoting parenting classes and then leading other parents in multi-session groups may appeal to them.

Developing social/emotional skills such as taking responsibility for one's actions and showing respect for others cannot be accomplished in isolation, either at home or at school. These skills must be modeled, practiced, and reinforced across multiple contexts (Mart, Dusenbury, & Weissburg, 2011). Teachers and other educators should regularly share information and create opportunities for families to communicate their insights, concerns, and hopes for their children; such attention to affective as well as academic concerns can build trust between the school and home. Communication should be child-centered, constructive, clear, and concrete (avoid educational lingo and acronyms), and continuous (Mart et al., 2011). Schools implementing character education programs that emphasize respect and responsibility should include families in their efforts in order to increase their chances for success. Parents should be represented on character education committees, and special efforts should be made to reach out to parents who may not feel they are a part of the school community (Lickona, Schaps, & Lewis, 2007).

How can professional development help teachers collaborate with parents to foster and support their children's learning?

While most teachers agree that family involvement in important for student learning, most report receiving

little or no preparation for working with parents and enter the profession unaware of how to develop excellent school–family partnerships (Bartels & Eskow, 2010; Patte, 2011). Teachers and school leaders need both preservice training and ongoing professional development, including practice in engaging with a variety of family contexts, to develop the necessary skills to foster effective school–home partnerships. Teachers may incorrectly assume parents know how to help their children, and they may express surprise that parents find school personnel threatening; therefore it is critical to understand what teachers believe in order to design effective professional development (Shumow & Harris, 2000). Teacher training is even more essential when the teacher and the students' families have different home cultures, with some teachers holding a deficit view of low-income families and others simply unaware of ways that these families and communities can contribute to children's education (Shumow & Harris, 2000). As Ferguson (2008) states, "When school staff have a better understanding of their students' home cultures, families' parenting practices, home contexts, home crises, or significant family and community events, they can develop processes and strategies to bridge school-based and home-based activities and increase support for student learning" (p. 14).

Positive communication sets the stage for developing a relationship built on trust and respect, including beneficial home–school relationships (Bartels & Eskow, 2010; Bryk & Schneider, 2003). Two-way communication, which involves the importance of listening as well as informing, has been successfully targeted within professional development programs that involved training teachers to use active listening and other communication skills used by counselors (e.g., Symeou, Roussounidou, & Michaelides, 2012). Professional development is enhanced by opportunities for teacher practice and reflection; giving teachers time to consider ways they can connect their teaching to what they learn from their students' families can maximize the benefits of the training (Kyle, McIntyre, Miller, & Moore, 2005). Hands-on, interactive professional development should be followed by brief refresher trainings throughout the school year and focus group discussions on implementation (Cavey, 1998). In addition, it is imperative that administrators and school boards also participate in preservice and ongoing professional development on the importance of and strategies for cultivating positive home–school relationships (Dotger & Bennett, 2010; Hiatt-Michael, 2006, 2010; Sheldon & Sanders, 2009).

Indicators to Support the Effective Practice
The school provides parents with practical guidance to maintain regular and supportive verbal interactions with their children.
All-school events (e.g., Family–School nights) include parent-child interactive activities.
Teachers regularly make "interactive" assignments that encourage parent-child interaction relative to school learning.
The school provides a Family Resource Library that includes materials with information about parenting and parents' roles in children's education.
The school encourages parents to volunteer and provides orientation and training for them.
The school provides intergenerational associations in which parents or community volunteers assist in the classroom.
Parent education programs include some multi-session group experiences with specific agendas.
Parent education programs are led by trained parent leaders.
The school offers parent education programs focused on building skills relative to the curriculum of the home (what parents can do at home to support their children's learning).
The school provides parents with practical guidance to establish a quiet place for children's studying at home and consistent discipline for studying at home.
The school provides parents with practical guidance to encourage their children's regular reading habits at home.
The school provides parents with practical guidance to model and encourage respectful and responsible behaviors.
The school provides parents with practical guidance on learning standards.
Professional development programs for teachers include assistance in working effectively with parents.

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Core Function: Preschool/Early Learning

Effective Practice Provide children with quality early learning opportunities

Overview: High quality early educational experiences have been shown to significantly improve educational outcomes for children, particularly those from disadvantaged backgrounds. Pre-K and early grade teachers need specialized training to support children's development, and many experts are recommending that teachers from both levels receive joint training and engage in collaborative planning. Schools need to be aware of the incoming educational experiences of their kindergarten students to better understand their needs so that teachers can plan instruction accordingly. Curriculum and instructional plans should align with early learning standards, and cross-grade instructional planning can help students with key transitions between grade levels. High quality early learning opportunities should address all domains of development, and teachers should engage in regular, two-way communication with families that focuses on ways families and schools can work together as a team to promote children's learning.

Evaluate Your Practice: What types of training/education do pre-K through Grade 3 teachers need to effectively promote young children's development? What types of educational practices can provide young children with high quality learning opportunities?

Introduction

Participation in high-quality pre-kindergarten (pre-K) programs can improve academic, behavioral, social–emotional, and cognitive outcomes for children with varying backgrounds, including those growing up within economically disadvantaged environments (e.g., Andrews, Jargowsky, & Kuhne, 2012; Barnett, 2008; Camilli et al., 2010; Karoly & Bigelow, 2005; Reynolds et al., 2007). Research has shown that attending a high-quality preschool can improve future test scores and attendance and can reduce grade-level retention and special education placements for children who may be at risk for academic challenges in elementary school (Andrews et al., 2012; Barnett, 2008; Reynolds, 1993; Reynolds et al., 2007). Long-term benefits of attending a high-quality pre-K program include higher rates of high school graduation, increased likelihood of attending college, and greater lifetime earnings (Heckman, Moon, Pinto, Savelyev, & Yavitz, 2010; Karoly, Kilburn, & Cannon, 2005; Reynolds & Ou, 2011; Reynolds & Temple, 2008). However, some research has also determined that some of these benefits for children may not persist into 3rd grade (e.g., Bogard & Takanishi, 2005; Li et al., 2012; Lipsey, Farran, & Hofer, 2015; Puma et al., 2012). Without additional and continuous supports as children progress through the elementary grades, the benefits of high quality early learning experiences may not be sustained sufficiently to help children at risk for poorer academic outcomes meet learning challenges. This brief summarizes the existing research which addresses the necessary training of pre-K and other early child educators and the types of programs and practices that are effective in promoting early childhood development that sets the stage for children's future academic success.

What types of training/education do pre-K through Grade 3 teachers need to effectively promote young children's development?

Specialized training in early childhood education or child development is an important component of quality early education (Barnett, Carolan, Fitzgerald, & Squires, 2012). The National Association for the Education of Young Children (NAEYC) defines early childhood as birth through age eight (NAEYC, 2009). Early childhood training is essential for all teachers working with children within this age range in order to understand their developmental needs and provide continuous supports as they progress through the early elementary grades (U.S. Department of Education, 2016). Young children's learning and development clearly depend on the educational qualifications of their teach-

ers. Research reveals that specialized training in early childhood development is linked with improved classroom quality and academic and social child outcomes (Barnett, 2003; Pianta, 1997); in addition, teachers with specialized training are better able to support children's healthy development and their school readiness (Bueno & Darling-Hammond, 2010). This research has led the NAEYC to recommend that all early childhood teachers have specialized training in early childhood education or child development so that they are aware of the unique needs and learning trajectories of young children (Hyson, 2003). This specialized training should result in teachers who have a strong identification and involvement in the field of early childhood education, are aware of and uphold ethical guidelines and professional standards, engage in continuous collaborative learning to inform practice, and are capable of advocating for children and the profession (NAEYC, 2009). Many policy experts are also recommending that pre-K and K-3 teachers receive joint teacher preparation and engage in collaborative planning wherever possible (e.g., Shore, 2009).

What types of educational practices can provide young children with high quality learning opportunities?

Schools identify children's early learning experiences prior to school entry. While federal policies require the collection of data about children's early learning experiences (Early Childhood Data Collaborative, 2013), these data are often not compiled at the school level, giving educators an incomplete picture about children's early learning prior to school entry. It is important for principals and teachers to know about students' early learning experiences prior to school entry, including whether, what types, and the extent of experiences in pre-K and other formal early learning settings (Bornfreund & Severns, 2010). A number of national experts recommend the creation and use of a unique child identifier—a single non-duplicated number that is assigned to and remains with a child throughout participation in early learning programs and services and across key databases (Data Quality Campaign, 2006). This unique identifier allows stakeholders to obtain a complete picture of the formal services and early learning opportunities the child has accessed across systems. Further, the Early Childhood Data Collaborative (2011) advocates linking early childhood data with K-12 and other key data systems to better understand relationships among early learning opportunities and later outcomes. These linked systems can provide two-way communication between early childhood education programs and K-12 programs so that early childhood education programs can determine how children progress once they exit these programs, and K-12 programs can tailor instruction to meet individual children's needs when they arrive at school (Early Childhood Data Collaborative, 2011). These linked systems can also provide coordination of services with other providers and help with referrals to other programs.

Schools and pre-K instructional teams design curriculum and instructional plans to align with the state's early learning standards. Across states and in many districts, separate standards govern early childhood programs serving children under age five and children attending early elementary school (Snow, 2012). Almost all studies and policy articles, however, advocate for the alignment of standards, curriculum, instruction, assessments, and environments across pre-K to Grades K-3 as a successful approach for providing effective education to students in the early years (U.S. Department of Education, 2016). Most policy experts call for both vertical (across grade levels) and horizontal (within grade levels) alignment of standards, curriculum, and assessment. For example, many states that have adopted Common Core State Standards have chosen to also align their early learning standards with these standards (Guernsey, Bornfreund, McCann, & Williams, 2014).

Examples of alignment across grades include Montgomery County Maryland, which created a P-12 curriculum framework, and supported alignment by developing instructional guides for all grade levels which included sample lesson plans that aligned with the curriculum framework and state standards (Marietta, 2010). Some researchers have noted that many children experience discontinuities as they progress from preschool through 3rd grade, particularly when transitioning from preschool to kindergarten, including a reduction in free-choice time and more whole-group instruction (New, Palsha, & Ritchie, 2009). FirstSchool, an initiative to promote public school efforts to become more responsive to the needs of an increasingly younger and more diverse population, provides an example of a P-3 model that utilizes a curriculum framework to stress the continuity of student learning goals and professional learning communities that emphasize cross-grade instructional planning (New et al., 2009). In fact, the policy literature "suggests that prekindergarten and K-3 teachers should receive

joint teacher preparation and engage collaboratively in planning" (U.S. Department of Education, 2016, p. 11).

Schools and pre-K instructional teams use activities that stimulate child development in all domains. Young children's development occurs across multiple domains (Payton et al., 2008), and early learning opportunities that support the whole child lay the foundation for successful learning throughout that child's life. Scott-Little, Kagan, and Frelow (2006) summarize research on the importance of early learning environments that support each of the five domains of development: 1) physical development (e.g., large gross motor and small fine motor skills); 2) social/emotional development (e.g., emotional support and secure relationships); 3) approaches to learning (e.g., ways children become engaged in learning through curiosity, creativity, independence, cooperativeness, and persistence); 4) language and literacy (e.g., communicating effectively and having emergent literacy experiences); and 5) cognitive development (e.g., cognition and general knowledge that result from participating in a rich learning setting with skilled and appropriate adult intervention). Daily stimulation in each of these domains is critical because "young children's development is strongly interconnected, with positive outcomes in one area relying on development in other domains" (NAEYC & NAECS-SDE, 2002).

Schools and pre-K instructional teams meet with families regularly to engage in two-way communication regarding children's development outside the classroom. Research shows that family engagement and involvement provides a number of benefits for young children academically and socially, including literacy and math skills (Henderson & Mapp, 2002; Van Voorhis, Maier, Epstein, & Lloyd, 2013). Van Voorhis et al. (2013) examined nearly 100 family involvement studies and concluded that when given direction, families from diverse backgrounds can become more involved with their children's learning at home and at school, and this increased engagement can lead to both academic and social improvements. For teachers, families' knowledge of a child's development outside the classroom, their home experiences, and their community engagements is valuable to provide a whole picture of the child and to inform instruction with that child inside the classroom (Head Start National Center on Parent, Family, & Community Engagement, 2014). To effectively engage the families of their students, teachers need to both create a welcoming environment and consider the linguistic and cultural backgrounds of these families (Halgunseth & Peterson, 2009). Scheduling regular in person meetings (minimum of two per year) and maintaining ongoing two-way communication are critical so that teachers and parents can form partnerships that foster children's classroom success (Steen, 2011).

Indicators to Support the Effective Practice
The school has a system in place for determining the nature and extent of early learning opportunities each student has accessed prior to school entry.
All pre-K teachers have specialized education in early childhood education or child development.
Pre-K Instructional Teams design the curriculum to be aligned with the state early learning standards and align instructional plans to the curriculum.
All pre-K teachers ensure that all students are involved in activities each day that are designed to stimulate development in all domains: social/emotional, physical, approaches to learning, language, and cognitive development.
All pre-K teachers meet with family members (parents or guardians) formally at least two times a year to engage in two-way communication regarding students' cognitive, social/emotional, and physical development outside the classroom.

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Core Function: High School Leadership and Decision Making

Effective Practice: Make decisions to assist students based on data

Overview: Longitudinal data systems allow educators to capture key data that can help them make decisions on how to best support students and increase the likelihood that they will graduate and be prepared for college and/or career. Effective longitudinal tracking systems allow educators to monitor student progress and intervene with students who are not on track for graduation, as well as provide a gauge of the effectiveness of their instructional or intervention programs during high school and beyond. Early warning systems that include attendance, behavior, and course performance (at a minimum) and provide frequent, real-time data can serve to identify students at risk for dropping out so that appropriate interventions can be implemented. Leadership teams using these systems must meet frequently and communicate results to teachers so that instructional approaches can be adjusted if necessary; a second group of adults comprised of community partners can provide further supports for students at risk for dropping out.

Evaluate Your Practice: How can leadership teams effectively monitor student data using longitudinal data systems in order to make decisions that support student success? How can early warning systems prevent students from dropping out? How can leadership teams effectively use early warning systems to prevent students from dropping out?

Introduction

Longitudinal data systems allow schools to capture key information on their success in preparing students for college and career, as well as provide early warning data on students at risk of dropping out so that appropriate assistance can be initiated. This often resembles a tracking system or process that collects and analyzes data points such as transfer, dropout, graduation rates, attendance, tardiness, and post high school movements of graduates. This brief describes methods of tracking student longitudinal data and discusses how early warning data systems can be used to intervene with students who may be at risk for dropping out.

How can leadership teams effectively monitor student data using longitudinal data systems in order to make decisions that support student success?

The existing literature on secondary school phenomena is rich with information about why students transfer, drop out, or pursue postsecondary education. However, there is less information available about how schools can effectively track these student status changes and what impact this tracking could have. Therefore, examples of organizations or school systems that have found ways to monitor these student indicators and outcomes provide information on potential options for schools to emulate.

Consortium on Chicago School Research—On Track Indicator. The Chicago Public Schools, in partnership with the Consortium on Chicago Schools Research, use a data tool called the On Track Indicator, which helps schools determine which students are completing the milestones needed to be on track for graduation in their ninth grade year. By tracking the course performance and credit accumulation of students in a purposeful way, schools are able to provide interventions in a timely manner to try to reduce future dropout rates and improve student outcomes (Allensworth & Easton, 2005). Research has shown this tool to be effective in both increasing the percentage of on-track students in 9th grade and improving both graduation rates and academic outcomes for these students (Roderick, Kelley-Kemple, Johnson, & Beechum, 2014).

New Visions for Public Schools—School Snapshot and Ninth Grade Tracker. New Visions for Public Schools created a tool called School Snapshot, which aggregates data for schools so that teams can determine which students are on

track for graduation and college readiness. The indicators they highlight include attendance, grade point average, a metric for college readiness, course accumulation, and passage rates on state exams. With this aggregated data, schools are able to diagnose which students are on or off track to graduate, as well as which students are on track for college. Knowing how critical the ninth grade year is to high school outcomes, New Visions has a separate Ninth Grade Tracker that is shared with parents and used to determine as soon as possible when a student needs additional supports (Fairchildet al., 2011; Carrano, 2013).

Naviance – Alumni Tracker. Naviance is a software system for high schools that tracks the high school experience, college application process, and academic outcomes for students. This system allows access for students, parents, and school staff, and it keeps track of everything from course history, assessments, and grades to college application activities (Bloom & Kissane, 2011). A partnership with the National Student Clearinghouse now allows schools using Naviance to also track postsecondary outcomes for alumni. Through this comprehensive system, schools are able to find out how their graduates fared in college, including how far they have progressed and what degrees they earned (Spackey 2013). Some school districts have reported case study data that show increases in graduation rates for minority populations, as well as increases in the percentages of students applying to college since implementing the Naviance program (Burns, 2016; Herbert, 2012; Hobsons, Inc., 2016).

Schools can use the systems described above or their own systems to closely monitor their students' inputs and outcomes to better understand the population they serve, as well as the effectiveness of the programs they are providing. These data should be shared among key stakeholders both in and outside of the school to determine which interventions are working as intended to help students be prepared for college and career experiences. It is important to note that leadership team members or others working with student data to monitor progress will likely need professional development on ways to work with this data effectively in order to impact student performance and school improvement (Data Quality Campaign, 2009).

How can early warning systems prevent students from dropping out?

Dropping out of high school has significant consequences to individuals, communities, and the nation. Individuals who drop out of high school have more difficulty finding jobs than those with higher levels of education (Amos, 2009), costing them millions of dollars in lost income over their lifetimes. Young adults, ages 16-24, who are high school dropouts have a particularly hard time, generating lower earnings and higher incarceration rates than their graduate peers (Sum, Khatiwada, McLaughlin, & Palma, 2009). Dropouts also tend not to participate in the civic lives of their communities, with much lower rates of volunteering, voting, and other indicators of civic health (Bruce, Bridgeland, Fox, & Balfanz, 2011). The U.S. economy loses billions of dollars in revenue from a lack of productive workers and increased social services.

A student's decision to drop out of high school does not arise suddenly, but rather slowly, through a process of disengagement, over a period of years. Warning signs of dropping out are apparent well before students actually leave school, signaling trouble for some as early as the elementary or initial middle grades. Research has converged around three categories of academic data that have been shown to be the most powerful predictors of whether or not a student will drop out in the future. These data points have become known as the "ABC's" – attendance or absenteeism, behavior problems, and course performance or failure (Mac Iver & Mac Iver, 2009; Bruce et al., 2011). The ABC's present an opportunity for schools to monitor student progress early and intervene to help students get on track to graduation. Research shows that most students at risk of falling off track could graduate if they were provided with the appropriate supports early enough and those supports were sustained (Bruce et al., 2011).

Early Warning Indicator and Intervention Systems (EWS) are part of the data-driven, outcomes-focused, high-impact education movement (Bruce et al., 2011). The purpose of these systems is to enable all students both to stay on track to graduate and to prepare for college and career. Using these systems increases educators' ability to identify, through analyzing data, those students who are falling behind far enough in advance to provide appropriate interventions. These systems "grew out of a simple premise that disengagement from school is a

gradual process and that students show identifiable indicators that they are on the path to dropping out" (Bruce et al., 2011. p. 2.). Research over the past 15 years has shown that EWS that measure attendance, behavior, and course performance indicators are better predictors of student outcomes than demographics or test scores (Neild, Balfanz, & Herzog, 2007; Pinkus, 2008).

To supplement traditional EWS, Porter, Balu, Gunton, Pestronk, and Cohen (2016) recommend using data systems that allow for frequent, real-time, student data updates. They assert that because high school students often can move from being on track to off-track for graduation in a matter of weeks, indicator analysis alone may not provide a complete picture to guide school leaders' actions. Approaches that capitalize on high-frequency data updates and treat risk for dropping out as a continuous measure can add more value. These iterative models tell school leaders, for each student at a point in time, the likelihood of graduation and of meeting milestones required for graduation (e.g., advancing to the next grade, passing a course). These iterative frameworks allow models to be updated constantly as contextual factors change or new information becomes available and can be used to answer evaluation questions that address school initiatives.

How can leadership teams effectively use early warning systems to prevent students from dropping out?

There is no "one size fits all" formula for how schools should construct their systems of data, collaboration, and intervention; it is critical for team members to have input on how the processes will work to fit the needs of their own environments. However, implementation of an EWS should begin prior to the start of the school year, with time spent gaining staff buy-in and enriching their understanding through professional development. This early collaboration allows leadership teams to parse through processes, roles, responsibilities, and questions before the school year begins (Herzog, Davis, & Legters, 2012). During the school year, the leadership team needs to meet frequently, at least twice a month, to review the data on students and their progress (Mac Iver & Mac Iver, 2009). The data must be shared with classroom teachers as well, but too much data can be overwhelming (Bruce et al., 2011). Some schools and districts have found that organizing the data though specialized lists, data dashboards, or color coding can help teams sort large data sets of at-risk students to quickly hone in on individual students' barriers or struggles. As stated above, data should be consistently accurate and current, with focus lists of targeted students being dynamic and open to change as new needs arise or progress is made (Herzog et. al., 2012). Educators may need help in using early–warning data to improve student achievement and outcomes, and outside support organizations such as higher education institutions or nonprofits may provide assistance. Additionally, finding time to collaborate with colleagues to analyze data may be challenging; schools must allocate sufficient time for teachers to meet, discuss, and reflect on data in order to make informed instructional decisions (PInkus, 2008).

An EWS presumes that there is also an existing system of tiered interventions at the school, in which the first tier has established a strong foundation for all students; for example, attendance and behavior policies or 9th grade transition activities should serve as "preventive" strategies (Pinkus, 2008). The second tier, "group strategies," should focus on the 10–20% of students who may need additional supports beyond the school-wide approaches. The final tier of "individual strategies" are for the 5–10% of students whose needs are so extensive that they need one on one supports, such as tutoring or counseling (Mac Iver & Mac Iver, 2009; Pinkus, 2008).

Mac Iver and Mac Iver (2009) recommend compiling a second team of adults, made up of partner organizations, community members, and social service professionals, to provide services to targeted students. Teams are encouraged to leverage all available resources, such as community partnerships, to surround students with support; some of these adults should be "near peers," who are close in age to the students and can be positive role models for them. Schools forming these relationships should take care to adhere to the privacy rights guaranteed to students and their families by the Family Educational Rights and Privacy Act (FERPA; Bruce et al., 2011).

Indicators to Support the Effective Practice
The Leadership Team monitors rates of student transfer, dropout, graduation, and post-high school outcomes (e.g., student enrollment in college, students in careers) using a longitudinal data system.
The Leadership Team implements, monitors, and analyzes results from an early warning system at the school level using indicators (e.g., attendance, academic, behavior monitoring) to identify students at risk for dropping out of high school.

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Core Function: High School Leadership and Decision Making

Effective Practice: Distribute management duties

Overview: Distributed leadership involves sharing management duties with all members of a school's staff and contributes positively to student achievement. This type of leadership is important because it contributes to the entire group's accountability for success and frees up administrator time to be more closely involved in practices that improve student performance and teacher success. Shared leadership also allows staff to grow within their roles as they take on additional responsibilities for student success.

Evaluate Your Practice: Why should principals distribute leadership and management duties within their schools? How can principals effectively distribute these management duties?

Introduction

While it may have once been expected that principals would handle all of their schools' leadership tasks, it is no longer possible for one person to lead a school entirely on his or her own, given the ever growing burden placed on schools (Von Frank, 2011). All of the different types of responsibilities on a principal's desk (e.g., finance, operations, instruction, discipline, etc.) are simply too much for one person to manage alone (Robinson, Lloyd, & Rowe, 2008). The principal must work to establish the vision for the school and then ensure that staff members are in the best roles to maximize their own knowledge and skills, as well as ensure that the necessary resources are available to implement the vision (Murphy, Elliott, Goldring, & Porter, 2007). This practice brief highlights research that addresses how a principal can effectively distribute management duties so that he/she can serve as an instructional leader and positively impact student achievement.

Why should principals distribute leadership and management duties within their schools?

Distributed leadership in schools involves sharing responsibility on all administrative levels, working through teams, and engendering collective responsibility for student outcomes (Ritchie & Woods, 2007). Leaders of all kinds of organizations, including schools, need to depend on others to accomplish the group's purpose and need to encourage the development of leadership across the organization (see Gardner, 1990; Kouzes & Posner, 2008; Yukl, 2009). Distributed leadership has been demonstrated to improve student performance. According to Walhstrom, Seashore Louis, Leithwood, and Anderson (2010), the more principals are willing to share leadership responsibilities and provide all stakeholders with greater influence on decisions, the better students perform on math and reading tests. Further, principals need not be concerned that they will lose influence as others gain influence. Although "higher-performing schools awarded greater influence to most stakeholders…little changed in these schools' overall hierarchical structures" (Walhstrom et al., 2010, p.8). Finally, when principals and teachers share responsibility, teachers' working relationships with each other are also better, which impacts student achievement positively (Walhstrom et al., 2010).

How can principals effectively distribute these management duties?

Freeing up time for administrators to be more directly involved in day-to-day instruction and organization management appears to be part of the reason that distributed management responsibilities improve student performance. Horng, Klasik, and Loeb (2009) report that in high- versus low-performing schools, as rated by state accountability systems, principals spent significantly less time on administrative tasks and more time on day-to-day instructional tasks. In order to be effective instructional leaders—by visiting classrooms, contributing to curriculum development,

and coaching teachers—the principal must step away from more managerial responsibilities (Hallinger & Murphy, 2013; Murphy et al., 2007). These non-instructional areas of work are still critical for the school to operate efficiently; though they can and often must be delegated, they are still a means to achieving the end goals outlined in a school's vision.

By creating formal leadership structures, such as a leadership team, staff members will grow and develop in their roles, and the principal will be able to share leadership tasks among them (Hallinger & Murphy, 2013). Leadership teams often consist of lead teachers, instructional coaches, and assistant principals; because of the wide range of experiences within these groups, the delegation and distribution of tasks should be conducted according to their areas of expertise (Spillane, 2005). In addition, a principal does not have expertise in every area of his or her instructional responsibility, particularly when it comes to secondary content areas. Principals should share or distribute leadership to those with content area expertise and should partner with the leadership team to oversee their work (Hallinger & Murphy, 2013).

While it is ultimately the principal's job to lead the school, manage daily operations, and model how to live the school's vision (Murphy et al., 2007), leadership teams create an environment of mutual accountability for student achievement, so that a principal is not solely responsible (Von Frank, 2011). Distributing leadership in this way allows everyone to bear responsibility in the school's goals around teaching and learning of students. As Robinson et al. (2008) concluded, the more closely tied a principal is to the work in the classrooms, and the more he or she is able to develop and empower the staff, the better student outcomes will be.

Indicators to Support the Effective Practice
The traditional roles of the principal and other administrators (e.g., management, discipline, security) are distributed to allow adequate time for administrative attention to instruction and student supports.

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Core Function: High School/Opportunity to Learn

Effective Practice: Ensure content mastery and graduation

Overview: High schools can provide several systems of support to ensure student content mastery and prevent dropouts. Early warning systems that include attendance, behavior, and course performance (at a minimum) and provide frequent, real-time data can serve to identify students at risk for dropping out so that appropriate interventions can be implemented. Highs schools must also provide a system of tiered interventions that differentiate intervention and provide increasingly intensive strategies depending on student needs. Tutoring programs, particularly those that offer peer-learning and cross-age tutoring, can benefit at-risk students, as can co-curricular programs. Extended learning opportunities that increase instructional time for at-risk students (e.g., afterschool programs) have proven effective, as have content and credit recovery programs, particularly those used within blended learning contexts.

Evaluate Your Practice: What early warning system does your school use, and how efficiently are data used to support students? What tutoring options are available to at-risk students, and what is their level of effectiveness? What co-curricular opportunities are available to students, and what is the level of participation? What extended learning opportunities are available, and how are they aligned with learning content? What process does your school use to offer credit recovery options to students at-risk for dropping out? Can blended learning provide a cost-effective mechanism for credit recovery?

Introduction

Dropping out of high school has significant consequences to individuals, communities, and the nation. Individuals who drop out of high school have more difficulty finding jobs than those with higher levels of education (Amos, 2009), costing them millions of dollars in lost income over their lifetimes. Young adults, ages 16-24, who are high school dropouts have a particularly hard time, generating lower earnings and higher incarceration rates than their graduate peers (Sum, Khatiwada, McLaughlin, & Palma, 2009). Dropouts also tend not to participate in the civic lives of their communities, with much lower rates of volunteering, voting, and other indicators of civic health (Bruce, Bridgeland, Fox, & Balfanz, 2011). The U.S. economy loses billions of dollars in revenue from a lack of productive workers and increased social services.

A student's decision to drop out of high school does not arise suddenly, but rather slowly, through a process of disengagement, over a period of years. Warning signs of dropping out are apparent well before students actually leave school, signaling trouble for some as early as the elementary or initial middle grades. Research has converged around three categories of academic data that have been shown to be the most powerful predictors of whether or not a student will drop out in the future. These data points have become known as the "ABC's" – attendance or absenteeism, behavior problems, and course performance or failure (Bruce et al., 2011; Mac Iver & Mac Iver, 2009). The ABC's present an opportunity for schools to monitor student progress early and intervene to help students get on track to graduation. Research shows that most students at risk of falling off track could graduate if they were provided with the appropriate supports early enough and those supports were sustained (Bruce et al., 2011).

High schools can provide several systems of support to ensure that students master the core content and graduate on time with their peers. Early warning systems, academic supports such as tutoring and tiered interventions, extended learning time initiatives, and content/credit recovery courses have been shown to be effective in supporting student success and high school completion.

What supports can high schools provide to ensure content mastery and graduation?

Early Warning Systems. Early Warning Indicator and Intervention Systems (EWS) are part of the data-driven, outcomes-focused, high-impact education movement (Bruce et al., 2011). The purpose of these systems is to enable all students both to stay on track to graduate and to prepare for college and career. Using these systems increases educators' ability to identify, through analyzing data, those students who are falling behind far enough in advance to provide appropriate interventions. These systems "grew out of a simple premise that disengagement from school is a gradual process and that students show identifiable indicators that they are on the path to dropping out" (Bruce et al., 2011, p. 2). Research over the past 15 years has shown that EWS that measure attendance, behavior, and course performance indicators are better predictors of student outcomes than demographics or test scores (Neild, Balfanz, & Herzog, 2007; Pinkus, 2008). Chicago Public Schools uses an EWS called the On Track Indicator, which helps schools determine which students in their 9th grade year are completing the milestones needed to be on track for graduation. By tracking the course performance and credit accumulation of students in a purposeful way, schools are able to provide interventions in a timely manner to try to reduce future dropout rates and improve student outcomes (Allensworth & Easton, 2005). Research has shown this tool to be effective in both increasing the percentage of on-track students in 9th grade and improving both graduation rates and academic outcomes for these students (Roderick, Kelley-Kemple, Johnson, & Beechum, 2014). It is important to note that leadership team members or others working with student data to monitor progress will likely need professional development on ways to work with this data effectively in order to impact student performance and school improvement (Data Quality Campaign, 2009).

Tiered Interventions. An EWS presumes that there is also an existing system of tiered interventions at the school, in which the first tier has established a strong foundation for all students; for example, attendance and behavior policies or ninth grade transition activities should serve as "preventive" strategies (Center for Equity & Excellence in Education, 2012; Pinkus 2008). The second tier, "group strategies," should focus on the 10–20% of students who may need additional supports beyond the schoolwide approaches. The final tier of "individual strategies" are for the 5–10% of students whose needs are so extensive that they need one on one supports, such as tutoring or counseling (Mac Iver & Mac Iver, 2009; Pinkus, 2008).

Tutoring and Co-Curricular Learning Opportunities. Tutoring can be implemented as part of an academic afterschool program, as part of a mentoring program, or as a supplement for supporting a particular subject area of classroom instruction (Fluke, O'Connor, Hoff, & Peterson, 2014). Tutoring programs, especially peer tutoring, have been shown to positively impact performance, particularly for at-risk students (Bowman-Perrott, et al., 2013; Lauer et al., 2006; Scruggs, Mastropieri, & Mashak, 2012). Peer tutoring programs should be monitored and include heterogenous grouping (Lauer et al., 2006). At-risk students have also been shown to benefit from being tutors within cross-aged tutoring programs (Gausted, 1992; Giesieke, Cartledge, & Gardner, 1993; Robinson, Schofield, & Steers-Wentzell, 2005; Supik, 1991). Cross-age tutoring programs should not involve too large of an age or grade gap between tutor and tutee; the optimal age range for tutors is two to four years older than tutees (Robinson et al., 2005).

Student participation in co-curricular programming, which has been referred to as "extra-classroom energy in action" (Lawson & Lawson, 2013) has consistently been linked to positive developmental benefits, including higher grades, motivation, and school completion (Arcaira, Vile, & Reisner, 2010; Bohnert, Fredericks, & Randall, 2010; Feldman & Matjasko, 2005), as well as self-esteem (Kort-Butler & Hagewen, 2011) and civic involvement in terms of voting and volunteering beyond high school (Hart & Donnelly, 2007). Co-curricular programming may foster school connectedness and may be especially beneficial for at-risk students who may lack resources for participation outside of school (Marchetti, Wilson & Dunham, 2016; Massoni, 2011).

Extended Learning Opportunities. Extended learning (ELO) programs are those that provide additional instructional time to at-risk students beyond what their on-track peers receive. ELO programs can be structured in a variety of ways and may occur during the school day or after school and on the weekends. According to Chait, Muller, Goldware, and Housman (2007), many experts recommend focusing on ninth graders, which is

a key transition year for preventing dropouts. EL programs have been shown to increase academic achievement, student engagement, and attendance (American Youth Policy Forum, 2006; Council of Chief State School Officers, 2006; Silva, 2007). These programs have the potential to help close the achievement gap, increasing achievement, particularly, for low performing and high poverty students (Chait et al., 2007). Several approaches to EL programs include the following:

- Shadow classes provide an extra class period focusing on a particular subject. They immediately follow the regular class for that subject, but provide additional, individualized support to work toward mastery of concepts.
- Afterschool programs that offer student enrichment experiences in areas such as service learning, vocational activities, and recreation increase student engagement (Afterschool Alliance, 2009). The inclusion of arts in these programs have been found to increase at-risk students' grades, improve their self-esteem, and help them develop more positive relationships and behaviors (Charmaraman & Hall, 2011).
- Block scheduling increases the time spent in core courses and decreases the time spent changing classes by making class periods longer. The increase in class time provides more time for activities and hands-on projects and allows teachers to differentiate instruction more thoroughly.
- Catch-up courses are designed to prepare students for college preparatory courses by assisting them in catching up on their grade level work; they are not intended to recover missed credits. Semester-long catch-up courses in reading and math have been shown to increase the number of students passing standards-based classes (Quint, 2006).
- Summer programs, as the name suggests, take place during the summer and provide a bridge between school years. Summer programs that are highly structured, provide individual and small group instruction, and focus on reading and math skills have been shown to be effective in helping at-risk students stay on track (or catch up) academically (CCSSO, 2006).

Beckett, et al., (2009) recommend that ELO programs strive to 1) ensure connection with what and how learning happens during the school day; 2) adapt to meet the needs, preferences, and attendance habits of students and parents to maximize engagement; 3) provide students with highly trained instructors and opportunities for one-on-one or small group support; 4) use real-life examples, collaborative activities, and positive relationships to increase engagement and interest; and 5) evaluate the program through ongoing data collection and summative assessments.

Content and Credit Recovery Programs. Content and credit recovery (CCR) programs are those that allow students to pass and receive credit for a course that was previously failed, thus helping them meet grade level standards and stay on track to graduate on time (Chait, et al., 2007; Watson & Gemin, 2008). Schools are frequently turning to online credit recovery options as a cost-effective way to address dropout prevention while dealing with increases in demand and decreases in funding (Picciano, Seaman, Shea, & Swan, 2012; Trotter, 2008). Many schools have credit-retrieval "labs," where students are scheduled to go during the school day—or in some cases, afterschool, at night, during the summer, or on weekends—to work on online versions of the courses they did not pass (Trotter, 2008; Watson & Gemin, 2009). CCR programs offered within blended learning models, in which an in-person teacher can identify student needs and differentiate instruction, provide the opportunity for students to feel success through individualized online content and in-person support (Dessoff, 2009).

Indicators to Support the Effective Practice
The school provides all students with academic supports (e.g., tutoring, co-curricular activities, tiered interventions) to keep them on track for graduation.
The school provides all students extended learning opportunities (e.g., summer bridge programs, afterschool and supplemental educational services, Saturday academies, enrichment programs) to keep them on track for graduation.
The school provides all students with opportunities for content and creidt recovery that are integrated into the regular school day to keep them on track for graduation.

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Core Function: High School/Opportunity to Learn

Effective Practice: Prepare students for postsecondary options

Overview: High schools must provide key programming to prepare students for college and/or career. They must offer rigorous coursework, convey the expectation that all students can be successful, and provide the appropriate level of support to ensure their success. Rigorous academic preparation may include access to AP courses and/or IB, early college, and dual enrollment programs. Predictive data allow schools to provide early interventions and supports such as tutoring, maximizing out-of-school time, and mentoring. Information and programming for college and career readiness is particularly critical for low-income, minority, and first-generation college students who often lack the "social capital" to participate in effective decision-making within the college preparation process. All students need career guidance and support, and comprehensive programs such as work-based learning and career academies allow students to experience various work environments and vocational settings while also completing college preparatory coursework to ensure they are well prepared for whatever future they choose.

Evaluate Your Practice: What process does your school use to offer dual credit, AP, and IB classes, and how is equitable access for all students ensured? What process does your school use to provide early interventions in academic and supplemental supports for all students challenged by rigorous college readiness curricula? What supports does your school need from the LEA to implement these supportive structures? How does your school help students without significant social capital (e.g., first generation college students) navigate the college-going experience? What does your school do to provide students with hands on opportunities to investigate a variety of careers and occupations? How can your school build outside career and occupation connections for students? What protocols does your school have to assist students in choosing and applying to their best match colleges and universities?

Introduction

While high school graduation and college-going rates have increased over the past 10 years, significant gaps still exist between minority and majority students and between students living in lower versus higher income communities (Strauss, 2016). High schools must provide supportive programs and structures to ensure that students are capable of successfully transitioning from the high school setting into college and/or a productive career after graduation. Initiatives that help encourage and provide resources for students to pursue postsecondary education or careers are particularly essential in high-poverty communities where many students lack these resources and connections. Students need opportunities to take rigorous coursework, learn about college and career options, and have support throughout the process in order to make decisions that are appropriate for them. As many students, especially in disadvantaged communities, are the first in their families to attend college, schools cannot assume that they inherently have this information or know-how. Therefore, schools need to provide supplemental services, experiences, and opportunities for students to help them be ready for the college or career that best suits them.

How can high schools provide academic rigor, support, and guidance to prepare students for a variety of postsecondary options?

In order to enhance college/career readiness, schools must have high expectations for *all* students to achieve, provide opportunities to purse higher-level coursework, and have in place supports for students so that they can succeed (Adelman, 2006). In some schools a culture shift must occur to aim to provide a college preparatory experience for students. Messaging and opportunities around the new norms and values of the school must be available to all students and shared with parents, and all staff must internalize these norms and work to help each student have the

opportunity to go to college (Schneider, 2006). In addition, rigorous coursework and appropriate supports and guidance are essential to ensuring students are college and/or career ready.

Opportunities and support for rigorous coursework. Research shows that enrollment in advanced coursework increases the likelihood of attending college (Coca, Johnson, & Kelley-Kemple, 2011; Kelley-Kemple, Proger, & Roderick, 2011). Unfortunately, low-income students are typically not steered towards taking these courses, leading to lower rates of college attendance and completion (Darling-Hammond, 2010). Removing the "opportunity gap" and increasing access to rigorous coursework for low-income or high poverty students is therefore an essential task of educators. *Advanced Placement* (AP) is a program of individual college-level courses that can, depending on students' exam scores and requirements of postsecondary institutions, substitute for college credits. *International Baccalaureate* (IB) programs provide a holistic experience of academic rigor and personal growth to juniors and seniors (Kyburg, Hertberg-Davis, & Callahan, 2007; Mayer, 2008). IB programs require significant teacher training and integrated courses in six subject areas that lead to special diplomas for graduating students (Burris, Wiley, Weiner, & Murphy, 2008). A large study of the IB program in Chicago revealed that students participating were significantly more likely to attend and persist in college and to report that they were well prepared to succeed and excel in their coursework (Coca et al., 2011). AP and IB courses can contribute to disrupting high-end achievement gaps; however, students from disadvantaged and rural communities are often missing out (Gagnon & Mattingly, 2015; Theokas & Saaris, 2013). Educators should remove any unnecessary barriers to enrollment, increase student awareness of the courses and their importance, and ensure high expectations for enrollment of traditionally underrepresented student groups (Theokas & Saaras, 2013).

High schools can also increase students' access to rigorous courses by offering *Dual Enrollment* programs. Dual Enrollment programs allow high school students to take courses at a local community college and earn college credit. These programs provide students with more rigorous or discipline-focused course options that may not be available at their high schools, especially for those who are interested in vocational or technical programming (Bailey, Hughes, & Karp, 2002). Dual enrollment programs have been associated with positive outcomes such as high school graduation and college enrollment rates, college grade point averages, and progress toward college completion (Karp, Calcagno, Hughes, Jeong & Bailey, 2007). Early college programs, which typically serve high-needs populations, allow students to pursue college credit during high school, usually at no cost to their families. Some research has shown that early college students outperform their peers in high school graduation and postsecondary enrollment rates (Berger, Turk-Bicakci, Garet, Knudson, & Hoshen, 2014). *Online courses* can allow students to take courses (e.g., AP courses) that they might not otherwise be able to access, either because of lack of in-person availability or time. Online courses can be accessed "anytime, anywhere," allowing students to work at their own pace and from any location. These courses can provide personalized learning experiences for students and enhance their engagement and academic performance (Patrick, Kennedy, & Powell, 2013).

Initial data on students entering the school is essential to understanding students' contexts and backgrounds prior to placing them in their first high school classes. Predictive analytics systems that determine college readiness using student information (such as course rigor and academic performance) enable teachers to develop early interventions that target specific student needs (Education Commission of the States, 2014). High schools must also use this performance data to help provide the proper scaffolding or system of academic supports for students to succeed in rigorous courses (Mayer, 2008; Tierney et al., 2009). High schools should not expect all students to earn college credits or attain IB diplomas but should provide exposure to this coursework and the supports needed for them to do well (Mayer, 2008). These supports include peer or staff tutoring, which have been shown to be cost- and time-effective interventions (Mayer, 2008; Tierney, et al., 2009). Maximizing out-of-school time—such as afterschool, Saturdays, or summer—for this purpose can be especially helpful for students who need extra time and exposure to the material they are struggling to master (Mayer, 2008). These academic supports should be supplemented by social supports, including adult mentoring programs such as AVID (Advancement Via Individual Determination) that provide cultural capital to low-income students to encourage college-going behaviors (Bernhardt, 2013; Black et al., 2008; Peabody, 2012). Additional supports include smaller learning com-

munities and peer advisory groups that allow students to bond with their peers and with trusted staff advisors and instructors (Bangser, 2008; Schneider, 2006).

Support and guidance for college/career pathways. Students need supportive and informative networks as they plan their transition out of high school. There is a significant "social capital gap" between students who have access to critical information and support on how to prepare and effectively participate in college/career decision-making and those who do not (Roderick, Nagaoka, Coca, & Moeller, 2008). Low-income, minority, and potential first-generation college students are most often lacking information about college and career planning (Bell, Rowan-Kenyon, & Perna, 2009). *All* students should have access to individualized college and career counseling, standardized test preparation, college visits and college fairs, and support in completing applications and financial aid forms (Schneider, 2006). Bell et al. (2009) found that as students progress through high school, their reliance on families for information about college decreases, and the school becomes the primary source of information; therefore, trusting relationships with school personnel are critical for college and career readiness. Programs that increase access to college advising have been shown to increase college matriculation and receipt of scholarships (Bettinger et al., 2010). In addition, mentoring/advising programs such as Talent Search that provide close-age peer advisors have been shown to positively affect graduation rates and postsecondary enrollment (Cahalan, et al., 2004). Further support for college preparation can be provided for students financially. Recent "college promise" programs that connect high-poverty schools with local community colleges encourage students to strive towards postsecondary education by providing financial incentives ranging from savings accounts to free two-year tuition (U.S. Department of Education, 2016).

High school students need information, experiences, and skills that will help them navigate the start of their careers in a directed and purposeful way. All students need access to these purposeful career development efforts, regardless of future plans, abilities or disabilities, gender, and ethnicity, and to have their individual needs considered and met (Haimson & Deke, 2003). Typical career development activities include job shadowing, group worksite tours, employer presentations, career counseling, and career interest inventories. More comprehensive programs include:

Work-based Learning (WBL) provides vocational or technical experience in work settings. About 72% of U.S. high schools provide WBL opportunities for students (NCES, 2011). WBL has been found to help students apply and extend classroom learning, increase motivation and understanding, explore careers, and develop critical understanding of the work environment (Brown, 2003; Kenny, Walsh-Blair, Blustein, Bempechat, & Seltzer, 2010). High school students who participate in WBL activities achieve at the four-year postsecondary level as well as or better than students who do not participate in these activities (Swail & Kampits, 2004).

Career academies provide a systematic way to connect students with vocational knowledge and work experiences. Career academies are typically "schools within schools," where students work with a team of teachers around a common vocational theme (e.g., healthcare, technology occupations). The school forms partnerships with businesses and other organizations within the community who provide employees who work in these areas to serve as mentors, guest speakers, and internship providers (Stern, Dayton, & Raby, 2010). Coursework is designed to promote college readiness and ensure that students earn the credits they need to graduate and attend college, and academic rigor is equally important to the vocational experiences provided. Research has shown that career academy students had higher rates of on-time graduation, attendance, and engagement, aswell as lower dropout rates, when compared with similar peers not in an academy (Kemple & Snipes, 2000; Stern et al., 2010). To provide implementation support for schools implementing career academies, the Exploring Career and College Options (ECCO) program provides students with a more structured series of seminars around their college and career visits to help them establish connections to program components. ECCO was found to greatly boost the capacity of schools to provide the non-academic resources that have been found to be most influential for students' future paths (Visher, Altuna, & Safran, 2013).

Indicators to Support the Effective Practice
The school provides all students with opportunities to enroll in and master rigorous coursework for college and career readiness.
The school provides all students with academic supports (e.g., supplemental interventions) when needed to enable them to succeed in rigorous courses designed for college and career readiness
The school provides all students with supports and guidance to prepare them for college and careers (e.g., career awareness activities, career exploration, college visits, advising).
All teachers integrate college and career guidance and supports relevant to their subject areas into their taught curricula.
The school routinely provides all students with information and experience in a variety of career pathways

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Core Function: High School/Opportunity to Learn

Effective Practice: Extend learning opportunities for students

Overview: Research demonstrates that students benefit from a wide array of opportunities to extend their learning beyond the classroom. Student participation in extracurricular activities (e.g., athletics, student council, arts, academic clubs) has been shown to positively impact academic performance, motivation, and engagement, and may be even more critical for low-income students who may lack resources to participate outside of school. Students also benefit from service- and work-based learning opportunities, provided they are tied to what is learned in the classroom and students are guided to reflect on their experiences. Dual enrollment and access to online courses can afford students a chance to take courses they might not otherwise have access to, thus personalizing their learning and increasing academic engagement and performance.

Evaluate Your Practice: How does your school require and/or encourage participation in extracurricular programs? Is there a broad array of activities available to students, and what is the level of participation at your school? Are there barriers to participation for certain activities, and if so, what steps can be taken to remove them? Who is or will be responsible for capturing and reporting data on extracurricular participation, and how will this data be used to improve programs? What processes will your school use to design, implement, and monitor student service learning projects, and how will teachers be equipped to facilitate these projects? Are service- and work-based learning experiences tied directly to classroom learning, and are students guided to reflect on their experiences? Would students at your school benefit from a career academy approach? What dual enrollment and online learning opportunities are available to students, and what is the participation level of different student subgroups (e.g., at-risk, high-performing)?

Introduction

Building student engagement in high school both within and beyond the classroom can enhance the likelihood of academic success and persistence towards graduation. Educational research has clearly demonstrated that high schools should provide ample opportunities for students to extend their learning beyond the classroom in order to encourage this engagement. These opportunities include those directly connected to school curriculum and learning (e.g., service learning, dual college enrollment, etc.) as well as those that offer a chance for students to try out and refine their skills and interests (e.g., sports, performing and visual arts, clubs, etc.). Learning beyond the classroom can enhance student understanding of the larger community, help them build relationships with adults and find mentorship, grow peer networks, and learn about a particular trade and what the working world is like (Darling-Hammond, Ancess, & Ort, 2002; Eccles, Barber, Stone, & Hunt, 2003). A discussion of the research that supports inclusion of these opportunities and how schools can promote student involvement follows.

How do students benefit from co-curricular programming, and how can schools encourage student participation?

Extracurricular, or co-curricular, activities are voluntary student activities that occur beyond the realm of the normal academic curriculum; however, it is important to note that they are not a diversion, but an extension of good educational programming (National Federation of State High School Associations, n.d.). Student participation in extracurricular programming, which has been referred to as “extra-classroom energy in action” (Lawson & Lawson, 2013), has consistently been linked to positive developmental benefits, including higher grades, motivation, and school completion (Arcaira, Vile, & Reisner, 2010; Bohnert, Fredericks, & Randall, 2010; Feldman & Matjasko, 2005), as well as self-esteem (Kort-Butler & Hagewen, 2011) and civic involvement in terms of voting and volunteering beyond high school

(Hart & Donnelly, 2007). Athletic programs, for example, have been shown to reduce dropout rates by almost 40% (Holloway, 2002), and in-school arts participation and engagement are highly correlated with academic motivation and students' sense of well being (Martin et al., 2013). Students with disabilities who participate in high school extracurricular activities have been shown to be more likely to complete postsecondary degrees (Palmer, William, & Cheatham, 2016). Extracurricular programming may foster school connectedness and may be especially beneficial for low-income students who may lack resources for participation outside of school (Marchetti, Wilson, & Dunham, 2016; Massoni, 2011). These activities are likely to have adult supervision, so they often result in positive adult-student relationships that are less formal than those between teacher and student (Darling, Caldwell, & Smith, 2005).

The rate of student participation in school activities is related to their perception of school climate, as well as school size. In schools with larger student bodies and less positive climates, student participation may be lower (McNeal, 1999). This is partly due to an issue of access, with more students who may be vying for a fixed number of positions on sports teams or roles in a student governing body, thus allowing smaller percentages of students to participate. Schools must provide more opportunities and remove barriers to student engagement and participation, such as minimum GPA or prerequisite expertise (Mahoney & Cairns, 1997). Making a diverse array of clubs and activities available to a wide range of students allows them the opportunity to embed their identities in multiple extracurricular contexts and foster multiple competencies, thus enhancing their adjustment and attachment to school (Barber et al., 2005, as cited in National Federation of State High School Associations, n.d.).

What types of nontraditional opportunities can schools incorporate to extend learning opportunities for students?

In addition to offering students a diverse array of extracurricular offerings as described above, high schools can incorporate educational approaches that are intrinsically tied to the curriculum and that offer students an opportunity to extend their learning within communities, colleges, and work settings. Service learning is a teaching strategy that integrates community service with instruction to enrich learning, teach civic responsibility, and strengthen communities. Service learning is not mere volunteering; it requires the application of academic standards to a project. According to English and Moore (2010), service learning promotes learning through active participation in service experiences, provides structured time for students to reflect about their service experience, provides an opportunity for students to use skills and knowledge in real-life situations, extends learning beyond the classroom and into the community, and fosters a sense of caring for others.

Work-based learning (WBL) provides vocational or technical experience in work settings. About 72% of U.S. high schools provide WBL opportunities for students (NCES, 2011). Compared with other countries, high school students in the U.S. spend less time learning in a work setting (Hoffman, 2011), resulting in relatively few U.S. youth having the applied skills that employers seek (Casner-Lotto & Barrington, 2006). WBL has been found to help students apply and extend classroom learning, increase motivation and understanding, explore careers, and develop critical understanding of the work environment (Brown, 2003; Kenny, Walsh-Blair, Blustein, Bempechat, & Seltzer, 2010). WBL can facilitate work readiness (Halpern, 2006; Phillips, Blustein, Jobin-Davis, & White, 2002), increase job-related skills and knowledge (Halpern, 2006), and increase school attendance and reduce dropout (Hughes, Bailey, & Mechur, 2001). Further, high school students who participate in WBL activities achieve at the four-year postsecondary level as well as or better than students who do not participate in these activities (Swail & Kampits, 2004).

Service and work-based learning allow students to connect outside experiences to the classroom in ways that other activities cannot. They each provide different real-world experiences that can expand student understanding, connect students to possible career paths, and enhance future civic engagement (Darling-Hammond, et al., 2002; Scales, et al., 2006). Both service learning and internship/WBL approaches have been found to be most effective when there is classroom-based preparation prior to the real-world experience and guided reflection during and after the experience (Kemple & Snipes, 2000; Scales et al., 2006). Focusing on student processing of the experiences as much as the experiences themselves is critical for educators to maximize their students' experiences and reap potential benefits.

Career academies provide a systematic way to connect students with vocational knowledge and work experi-

ences. Career academies are typically "schools within schools," where students work with a team of teachers around a common vocational theme (e.g., healthcare, technology occupations). The school forms partnerships with businesses and other organizations within the community who provide employees who work in these areas to serve as mentors, guest speakers, and internship providers (Stern, Dayton, & Raby, 2010). Coursework is designed to promote college readiness and ensure that students earn the credits they need to graduate and attend college, and academic rigor is equally important to the vocational experiences provided. Research has shown that career academy students had higher rates of on-time graduation, attendance, and engagement, as well as lower dropout rates, when compared with similar peers not in an academy (Kemple & Snipes, 2000; Stern, et al., 2010).

High schools can also extend learning opportunities to students by offering dual enrollment programs. Dual Enrollment programs allow high school students to take courses at a local community college and earn college credit. These programs provide students with more rigorous or discipline-focused course options that may not be available at their high schools, especially for those who are interested in vocational or technical programming (Bailey, Hughes, & Karp, 2002). Dual enrollment programs have been shown to be associated with positive outcomes such as high school graduation and college enrollment rates, college grade point averages, and progress toward college completion (Karp, Calcagno, Hughes, Jeong, & Bailey, 2007). Similarly, online learning can allow students to take courses that they might not otherwise be able to access, either because of lack of in-person availability or time. Online courses can be accessed "anytime, anywhere," allowing students to work at their own pace and from any location. These courses can provide personalized learning experiences for students and enhance their engagement and academic performance (Patrick, Kennedy, & Powell, 2013).

Indicators to Support the Effective Practice
The school expects all students to participate in activities to develop skills outside of the classroom (e.g., service learning, athletics, enrichment, internships).

Indicators to Support the Effective Practice
The school provides all students with opportunities to learn through nontraditional educational settings (e.g., virtual courses, dual enrollment, service learning, work-based internships).

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Core Function: High School/Opportunity to Learn

Effective Practice: Assist students with transitions

Overview: Supporting students as they transition into high school, and again as they exit into college and/or career, is a critical function of a high school. Smaller, personalized environments, such as those found within 9th grade academies, may afford academically struggling students the chance to catch up with their peers and can reduce their sense of isolation and anonymity. Data tracking systems can ensure early identification of these students in order to target initiatives; schools must also strive to build their capacity to ensure that 9th grade students have experienced and effective teachers. As they transition out of high school, high-needs students in particular are likely to need mentoring/advising, and in many cases financial assistance, to ensure they are well-informed and prepared to pay for postsecondary education. High schools also need to track what happens to their graduates and share that information with stakeholders so that programming can be evaluated and improved upon for future cohorts.

Evaluate Your Practice: What type of strategies does your school use to provide a supportive entry process for all students new to your setting? What outreach has your school done to build connections with feeder schools to support incoming students? How do you build staff capacity to assist students with the transition process? How are students supported as they get ready to exit your school in terms of assistance with planning for college and/or career? How does your school help students without significant social capital (e.g., first generation college students) navigate the college-going experience? How will students be tracked to determine postsecondary outcomes, and who is responsible for collecting and reviewing data to determine what the school does well and where improvements are needed? How are data shared with key education stakeholders?

Introduction

While high school graduation and college-going rates have increased over the past 10 years, significant gaps still exist between minority and majority students and between students living in lower versus higher income communities (Strauss, 2016). Students may struggle when moving to ninth grade as they encounter increasing academic expectations and increasing anonymity within a larger student population. High schools must provide supportive programs and structures to ensure that students are capable of both successfully transitioning from middle school to the high school setting and effectively moving on into college and/or a productive career after graduation. 9th grade transition programs and initiatives that help encourage and provide resources for students to pursue postsecondary education or careers are particularly essential in high-poverty communities where many students lack these resources and connections. Stakeholders must be informed about the success of schools' transition programs through effective tracking of college and career placements and graduates' experiences within these settings. Relevant literature is summarized to capture best practices within each of these areas.

Transitioning from Middle School to High School. Student success in the first year of high school often determines later success, and more students fail ninth grade than any other grade (Williams & Richman, 2007). Many students are held back in ninth grade (the ninth grade "bulge") and drop out by the 10th grade (Nield, 2009; Wheelock & Miao, 2005). As many as 40% of students fail to get promoted from 9th to 10th grade on time, and fewer than 20% of those students recover from failure and go on to graduate (Kemple, Herlihy, & Smith, 2005). Below are recommended practices to impact learners in the 9th grade (see Herlihy, 2007 for additional details):

1. Establish a data and monitoring system that will both diagnose why students are struggling and be used to hold schools and districts accountable. These systems should be implemented early in students' high school careers

or should identify those whose performance in middle school indicates high risk for school dropout.

2. Address the instructional needs of students who enter high school unprepared for rigorous, college preparatory work. Nationally, only around one-third of eighth-graders scored proficient on the 2015 National Assessment of Educational Progress (NAEP) mathematics and reading tests (The Nation's Report Card, 2015). High schools must ensure that 9th graders attain grade level performance in math and reading.

3. Personalize the learning environment to lower the sense of anonymity and address individual needs. High schools tend to be larger than middle schools, leading to depersonalization (Lee & Smith, 2001). Bridgeland, DiLulio, and Morrison (2006) report that nearly half of young people who left high school without graduating reported being bored or disengaged. A surprising 38% believed that they had "too much freedom" and not enough rules. To help ninth graders avoid getting "lost in the shuffle," interventions designed to personalize instruction and the environment should be explored.

4. Build capacity within the faculty and school leadership in low-performing schools to address diverse student needs. Studies have found that students of color in low-income schools are 3 to 10 times more likely to have unqualified teachers than students in predominantly White schools (Adamson & Darling-Hammond, 2011). There is also evidence that ninth-graders, particularly in low-performing high schools, are more likely to have less experienced and less qualified teachers in their core academic courses than students in upper grades (Neild, 2009). States should consider incentives, such as equalizing pay scales across the state, strengthening teacher education and evaluation standards, offering subsidies for preparation to talented individuals, developing mentoring systems, and establishing strong professional development programs to help alleviate this disparity (see Adamson et al., 2011).

5. Create connections to the community, employers, and institutes of higher education to better engage students and help them see the relevance of their coursework. Many high schools are isolated from other community institutions and have limited contact with students' families. More effort should be made to give students meaningful learning opportunities in the community, including internships and work-study programs.

Research shows that most students at risk of falling off track could graduate if they were provided with the appropriate supports early enough and those supports were sustained (Bruce et al., 2011). Common support structures designed to address recommended practices include summer "bridge" programs, which provide students with remedial or preparatory coursework, experience navigating the school, and a chance to make friends with new peers (Nield, 2009). Ninth grade academies, which physically separate ninth graders from the rest of the student body and provide intensive, engaging transition supports, have been shown to be effective through school models such as those used for Talent Development High Schools (Kemple et al., 2005). These high schools are designed to reduce student isolation and anonymity by providing smaller learning communities with interdisciplinary teams of teachers, mentoring and tutoring, curricula leading to advanced English and mathematics coursework, and parent/community involvement in activities that promote students' college and career readiness (Kemple et al., 2005).

More recently, the Diplomas Now school model has been developed through a partnership with Talent Development High Schools, Communities in Schools, and City Year programs to address the dropout problem within many high-poverty urban communities. This model, implemented nationally, is a data-driven, tiered intervention that is intended to transform middle and high school students' academic experience and provide more targeted intervention of students with "early warning indicators" that place them at risk for dropping out (Corrin, Sepanik, Rosen, & Shane, 2016). This model includes the supports described within Talent Development High Schools, along with instructional/curricular innovations and teacher and administrator coaching and support. Preliminary results suggest positive impacts in terms of reducing the percentages of students with early warning indicators, with stronger impacts seen for middle school students (Corrin et al., 2016).

Transitioning from High School to College/Career. Students need supportive and informative networks as they plan their transition out of high school. There is a

significant "social capital gap" between students who have access to critical information and support on how to prepare and effectively participate in college/career decision-making and those who do not (Roderick, Nagaoka, Coca, & Moeller, 2008). The Education Commission of the States (2014) has identified seven key policy strategies to support successful transitions for graduating high school students who move to post-secondary education and/or careers. They include:

1. Uniform, statewide college- and career-ready definitions make it easier to align what is taught in K-12 with what is expected at the postsecondary level. A common definition allows shared expectations between educators, parents, and students and clarifies the performances that high school students must be able to demonstrate, independently, in order to be successful upon entering college.

2. Consistent, predictable admission and remedial procedures create greater transparency about college readiness expectations. These policies help students find the most appropriate institution to fit their skills and goals.

3. Early college programs, which typically serve high-needs populations, allow students to pursue college credit during high school, usually at no cost to their families. Some research has shown that early college students outperform their peers in high school graduation rates and postsecondary enrollment rates (Berger, Turk-Bicakci, Garet, Knudson, & Hoshen, 2014).

4. College advising and mentoring, when provided in a straightforward and timely way, is critical for students to learn to navigate the K-12 college transition. However, dues to staff shortages, most graduating seniors receive limited college advising (National College Advising Corps, 2014). Programs that increase access to college advising have been shown to increase college matriculation and receipt of scholarships (Bettinger et al., 2010). In addition, mentoring/advising programs such as Talent Search that provide close-age peer advisors have been shown to positively affect graduation rates and postsecondary enrollment (Cahanlan et al., 2004).

5. Predictive analytics systems that determine college readiness using student information (such as course rigor and academic performance) enable teachers to develop early interventions that target specific student needs.

6. Competency-based admissions policies require students to demonstrate mastery or proficiency of subject matter in context. The idea behind "Credit by Demonstrated Mastery" is that students do not earn course credit based on seat time, but rather on proficiency. The proficiency standard remains constant, and the seat time will vary by student, depending on how long it takes them to demonstrate proficiency.

7. Enhanced student profiles with performance data are useful to provide academic and non-academic information about students seeking postsecondary enrollment. Providing diagnostic and descriptive information to colleges enables them to better support their students and increase their likelihood for success.

Financial support programs, in the form of early commitment financial aid programs, have also been used to motivate and engage students as early as elementary school by guaranteeing them financial aid if they complete certain requirements (e.g., keeping a minimum GPA, completing rigorous college prep courses, etc.) throughout their school careers (Blacno, 2005). Recent "college promise" programs that connect high-poverty schools with local community colleges also encourage children to strive towards postsecondary education by providing financial incentives ranging from savings accounts to free two-year tuition to deserving students (U.S. Department of Education, 2016).

Tracking College and Career Experiences. P-16 systems connect the data of P–12 institutions with those from higher education, providing benefits to educators and policymakers at both ends of the educational spectrum. These systems allow educators to not only keep track of students who graduate from their schools, but also to connect their students' postsecondary outcomes with the preparation they received in their K–12 schools. This type of feedback can help schools and districts adjust their practices in order to better prepare their current student cohorts, and higher education benefits from subsequently better-prepared future students (L'Orange & Ewell, 2006). With shared information, there can also be increased collaboration between the higher education and K–12 educational sectors (Bloom & Kissane, 2011).

The National College Access Network (NCAN) suggests that school data points include demographics like race, gender, and first-generation college student status, information on the nature and intensity of services received, and outcome data like postsecondary attendance and/or completion. While some data collection systems are outside the purview of individual schools, there are organizations and vendors that have created systems for schools to use in tracking their own students (Bloom et al., 2011). Many high schools use StudentTracker reports from the National Student Clearinghouse (NSC) to measure how many of their graduates go on to college, where they attend college, and how many persist through to graduation. Naviance, which partners with NSC, allows schools to track their students' college applications and progress and continue tracking students to see where they enroll, how far they have progressed, and what degrees they have earned. Schools can then share this information with stakeholders in their communities and use it to determine which interventions are working to prepare students for college/career and to set goals for future student cohorts (Spackey, 2013).

Indicators to Support the Effective Practice
The school provides freshman students with formal supports as they make the transistion to high school (e.g., summer bridge programs, freshman academies).
The school provides senior students with formal supports as they make the transition out of high school (e.g., college and career planning, job fairs).
The school tracks the postsecondary school placements and experiences of their graduates and reports the results to the school board, faculty, and school community.

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Core Function: District Support for School Success

Effective Practice

Improve the school within a framework of district support.

Overview: Schools in need of improvement need districts that provide a comprehensive framework of support. District and school leadership teams provide a structure for collaborative decision-making, and should be held accountable, with policies and procedures made explicit. District leadership should provide a vision of high expectations for student success developed in partnership with schools and community members, and leaders must signal that they are responsible for achieving district goals. Districts must also provide timely user-friendly data from multiple sources to schools, provide training for teachers and principals in how to use this data to improve instruction, and use district data to set clear goals and achievement targets. Getting the right personnel in high-needs schools requires district policies that select and retain a pool of talented school professionals capable of improving these schools, and wherever possible, principals should be given autonomy to select their staff and make instructional decisions. Districts can also provide support through strategic resource reallocation, intervene early with schools when data show a need, and provide a framework for vertical curriculum alignment to help teachers facilitate grade level transitions.

Evaluate your Practice: Does your district policy specify the team structure for all of your schools? How is your district structured to assist schools in improving? How is the effectiveness of your teams determined? Do all teams prepare agendas and keep minutes, and what is done with these documents? Does your district have a clear vision of what it wants to accomplish, and how is this vision communicated? Are student learning expectations high? How are district leaders held accountable for student learning outcomes, and how is this communicated to stakeholders? How does your district ensure that data provided are useful and timely, and represent a broad variety of indicators? What professional development is provided to ensure that principals and teachers use data effectively? Does your district set annual achievement targets for the district, each school, and each student subgroup? What policies/ procedures are in place to attract and retain the best leaders and teachesr for your high-needs schools? How are resources reallocated to help these schools?

Introduction

In a recent review of what worked within the School Improvement Grant (SIG) program, researchers concluded that effective school turnaround and improvement occurs within four key domains: turnaround leadership, talent development, instructional transformation, and a culture shift towards student learning and effort (Center on School Turnaround, 2017). Further, school improvement requires a systems approach in which a school's actions are complemented by coherent and guided district and state practices (Center on School Turnaround, 2017). Districts must develop frameworks of support that provide these effective practices in order to provide principals and schools with the direction and capacity to improve. The Southern Regional Education Board suggests that districts focus their efforts within a framework of support that includes the following components: 1) team structures; 2) vision and direction; 3) data and technology; 4) personnel; and, 5) improvement support (SREB, 2010). A discussion of each of these areas follows.

Team Structure

Leadership should not reside with one individual; a team approach to planning and decision-making allows for distributed leadership, which is more effective within school and district settings (Marzano, 2003; Pederson, Yager, & Yager, 2010). According to Louis, et al., (2010):

> When principals and teachers share leadership, teachers' working relationships with one another are stronger and student achievement is higher. District support for shared leadership fosters the development of professional com-

munities. Where teachers feel attached to a professional community, they are more likely to use instructional practices that are linked to improved student learning. (p. 282)

Teams at both the district and school levels, when effectively purposed, organized, and supervised, can provide an infrastructure for continuous improvement and improved student learning. For example, when supporting turnaround schools, the district should identify a leader to lead a district team that oversees school initiatives to include principal development and support, school strategy and policy development, and district-wide data analysis (Center on School Turnaround, 2017). District leaders should be held accountable for working collaboratively with principals and their school leadership teams; this can be in part facilitated by a highly effective school board that has developed a strategic framework, mission, goals and practices that hold district and school leadership accountable for owning and solving problems (SREB, 2010). Districts should also create decision-making structures that encourage a culture of teamwork and professional community by including both principals and teachers within district-wide decisions that directly affect their work (Louis, et al., 2010). For example, developing a collaborative budget planning process that gives principals a voice can "improve district efficiency and culture by enabling each principal to articulate his or her school's unique needs within the context of the district strategic plan…[allowing] new and creative ideas to emerge from educators who are most familiar with the problems" (Lynch, 2012, p. 124). Incorporating the community into school decision-making by developing a formal structure of community partners, and involving the community in hiring principals and fundraising are also effective district practices that can foster school improvement (SREB, 2010).

Districts must also lead the way by clearly defining the purposes, expectations, and ways teams will be evaluated. Effective practices include:

- Address district and school team structures and expectations in official district policy, and expect teams to continue to operate even through district and school leadership changes;
- Provide professional development on effective teaming for district and school personnel, as well as adequate time for teams to meet, conduct business, and fulfill district policy expectations;
- Require teams to develop and maintain documentation of meeting agendas, minutes, and work plans and products; and,
- Evaluate district and school administrators on their successful engagement of teams and evidence of their productivity, and systemize regular reporting of this work to the school board (Perlman & Redding, 2011).

Vision and Direction

Districts that are highly supportive of school improvement articulate and communicate to the community both a vision and a set of goals and practices that send a clear message of what district schools are to be about (SREB, 2010). These districts involve the entire community in developing this vision, and elicit principal and teacher-leader input on major district policies, instructional and curricular changes, and district budget decisions such as how professional development monies are to be spent. School boards play an active role in setting vision and direction for school reform by communicating and selling the vision for improvement to the community, talking with community members to gather perspectives and ideas, and using these ideas in collaboration with the superintendent and other district leaders, to refine the improvement plan (Cawelti & Protheroe, 2007). Supportive districts also must ensure that vision and goals reflect high expectations for all groups of students (SREB, 2010). In fact, district leaders that emphasize goals and programming initiatives that target student learning beyond minimum state expectations are likely to work in districts where levels of student learning are high (Louis, et al., 2010). Research on the California Collaborative on District Reform demonstrated that dramatic changes in expectations frequently are necessary in schools where teachers and staff have become accustomed to persistent low student performance, and that these higher expectations must come from district leadership, including the superintendent and school board (Knudson, Shambaugh, & O'Day, 2011).

Districts should also create a culture of trust in which principals trust the central office to provide meaningful support, and make them partners in defining and achieving the goals targeted within the strategic plan (SREB, 2010; Knudson, et al., 2011). This culture of trust will in part be fostered by district leadership assuming responsibility for achieving district and school goals, with superintendents and other district leaders explicitly and pub-

licly signaling their willingness to be held accountable for outcomes (Cawelti & Protheroe, 2007). District leaders and staff should be held accountable for collaborating with principals, their school's leadership teams, and faculty for implementing strategic school improvement plans (SREB, 2010). As districts improve, the superintendent and other district leaders must celebrate individual, team, and district/school successes, in particular those relating to student learning outcomes (The Center on School Turnaround, 2017).

Data and Technology

Data-based decision making has been identified across multiple studies as a key element of school reform; districts that have shown substantial improvement frequently embed data use within improvement efforts, and use it to justify decisions about programs and resources (Cawelti & Protheroe, 2007). Districts must "provide high-quality data that link student achievement to school and classroom practices, and assist schools to use data effectively" (SREB, 2010, p. 32). Principals and leadership teams within schools must have timely access to data, and districts must develop a responsive system that provides users with training in use of the system and the opportunity for frequent and continuous access (SREB, 2010; Knudson, et al., 2011). In fact, data competency is a job requirement for principals, with some districts requiring prospective principal candidates to demonstrate proficiency during job interviews (SREB, 2010) Additional effective practices include:

- **Provide and encourage use of multiple data sources**. While annual state tests provide critical information for school improvement and accountability purposes, leaders in effective turnaround schools expand data to include sources such as benchmark and formative assessments, school climate surveys, school observations, attendance, post-secondary readiness, and teacher participation in professional development (Knudson, et al., 2011). Data dashboards offer a way for districts to examine these sources in a timely manner, as Knudson, et al., describe:

  > Fresno has developed a data dashboard that chronicles the district's performance throughout the school year using indicators like student proficiency rates, EL re-designation rates, attendance rates, and student perceptions of their school. The Cycle of Review that takes place around the dashboard four times per year allows Fresno to address problems without waiting for state test scores that arrive in late summer. Furthermore, the superintendent's evaluation is tied to the dashboard, ensuring accountability at the highest levels for the district's ongoing improvement. (p. 13)

- **Extend data use to the school level**. Data must be readily available at the school level, and principals must have access to data so that they will share ownership and accountability (Bottoms & Fry, 2009; SREB, 2010). Effective districts also build school staff's capacity to use data to improve instruction and student learning. For example, districts can "develop teachers' capacity to use formative assessments of student progress aligned with district expectations for student learning, and to use formative data in devising and implementing interventions during the school year" (Louis, et al., 2010). This practice can help teachers see that data use enables them to improve their teaching practice by working together continuously and collaboratively, rather than simply providing information about learning outcomes (Knudson, et al., 2011).

- **Use data to set clear expectations and achievement targets**. Districts should set short- and long-term achievement targets for the district, individual schools, and student subpopulations (Cawelti & Protheroe, 2007). Short-term targets provide ongoing measures of progress while "loftier" goals (e.g., all students that graduate are ready for college) demonstrate the longer view of what the district is working towards. Goals must be clearly written and measurable, and address school and district challenges using high quality data (SREB, 2010). Student learning goals should also be ambitious and go beyond standardized test proficiency levels (Louis, et al., 2010). These goals must target student subgroups in order to gauge the effectiveness of programs for all students. For example, goals must target EL student performance, and data disaggregated for this group of students should be used to improve programming.

Personnel

Districts must choose strong school leaders and high-performing teachers capable of achieving school reform; hard-to-staff schools which need improvement often find

it hard to attract and retain effective personnel, particularly in rural or urban schools and in areas such as math, science and special education (National Comprehensive Center for Teacher Quality, 2011). These shortages frequently contribute to an inequitable distribution of quality teachers, with students from poor and minority backgrounds having less access to highly qualified and experienced teachers than their peers from low-poverty, non-minority backgrounds (Imazeki & Goe, 2009; Goldhaber, Lavery, & Theobald, 2015). Districts must have policies and procedures in place to identify, select, place, retain and sustain school personnel in order to affect substantial school improvement (The Center on School Turnaround, 2017). NCCTQ (2011) suggests that districts:

1. Identify school/district characteristics that are attractive to teachers and market them for recruitment.
2. Identify schools with teacher recruitment challenges and set goals for quality and quantity, particularly for high-poverty/high minority schools where student may not have equitable access to high-quality teachers.
3. Establish university/community college partnerships that deliver teacher preparation, particularly for recruitment of teachers in high-needs areas (e.g., special education, ELL). For example, California State at Long Beach trains the vast majority of teachers within the local school system, and has worked to align its teacher preparation with expectations and student needs within the district (Knudson, et al., 2011).
4. Establish "grow-your-own" programs to recruit future educators from the pool of current high school students, paraprofessionals, teacher aides, and community members.
5. Provide financial incentives (e.g., salary increases, bonuses, housing assistance, loan repayment, etc.) for educators willing to work in high-needs schools or subject areas (Kowal, Hassel, & Hassel, 2008).
6. Use "information rich" recruitment and hiring processes by creating, for example, a model of selection and placement of teachers and school leaders with turnaround competencies, and ensure that high-needs schools have preferential access to those with these competencies (The Center for School Turnaround, 2017).

Research also shows that principals should be given "defined autonomy" that allows them flexibility in addressing challenges in their own buildings while still being aligned with other district schools (Marzano & Waters, 2009). Districts should give principals the authority to hire their own staff, and provide effective and flexible human resources support (Campbell, DeArmond & Schumwinger, 2004; Sigler & Kashyap, 2008).

Improvement Support

School districts must provide additional supports to enable school improvement and turnaround. Effective practices include:

- Reallocate resources (e.g., time, staff, professional development) regularly, and consider giving the school autonomy and flexibility to make some reallocation decisions; whenever possible leverage community resources to address students needs (Cawelti & Protheroe, 2007; The Center on School Turnaround, 2017).
- Use benchmark and formative data to intervene early when schools aren't making adequate progress; low-performing schools require ongoing monitoring and review of school data by district staff. Timely intervention is not possible when schools wait for state testing data; frequent formative and diagnostic mini-assessments can allow teachers to determine students' mastery and provide appropriate interventions (Cawelti & Protheroe, 2007). Districts should also develop protocols for teachers to assist with "drilling down" on individual student learning needs, and creating instructional plans that are aligned with student needs (The Center on School Turnaround, 2017).
- Allow school leaders reasonable autonomy to adjust curriculum, instruction and schedules in order to help more students be successful (SREB, 2010).
- Provide a framework for vertically aligning the school curriculum from one grade to the next and for transitions (e.g., elementary school to middle school). Teachers must have understanding of what their students were expected to learn during the prior year, and what they are expected to learn in subsequent

years (SREB, 2010; The Center on School Turnaround, 2017).

- Elevate the importance of professional development and continuing education (see Gray, Fry, Bottoms, & O'Neill, 2007; Villani, 2006). Districts should work with instructional leadership teams to provide ongoing professional learning opportunities that refresh, update, and bolster teachers' content knowledge. District staff should also participate with building principals in job-embedded professional learning opportunities centered on research-based effective school turnaround strategies (The Center on School Turnaround, 2017).

Indicators to Support the Effective Practice
The district operates with district-level and school-level Leadership teams.
A team structure for the district and schools is officially incorporated into district policy.
All district and school teams have written statements of purpose and by-laws for their operation.
All district and school teams operate with work plans for the year and specific work products to produce.
All district and school teams prepare agendas for their meetings and keep minutes of their meetings.

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Core Function: District Support for School Success

Effective Practice

Align district improvement processes and supports with a clear district vision and direction

Overview: Schools in need of improvement need districts that provide a comprehensive framework of improvement processes and support. District leaders must develop a unified vision collaboratively with education stakeholders, and ensure that this vision reflects high expectations for all students. The district's school board and superintendent must ensure that all improvement efforts are aligned and directed towards non-negotiable improvement goals, and signal that leaders are accountable for district improvement. The superintendent should be responsible for ensuring that goals are set collaboratively, are non-negotiable, and are aligned with Board goals, while providing research-based strategies and resources to attain these goals. As early school improvement successes are achieved, the superintendent should recognize and celebrate these successes with school stakeholders to build momentum for further improvement.

Evaluate your Practice: Does your district have a clear vision that reflects that all students can be academically successful with proper supports? Are all district stakeholders given a voice in the development of the vision and the direction of improvement efforts? How are improvement plans communicated to stakeholders? Does your school board evaluate school progress and student learning outcomes when discussing contracts with the superintendent? Do your school board and superintendent collaborate effectively and represent a united effort towards improving schools? How do district personnel convey that they are accountable for school progress and student learning outcomes to the school community? Does the superintendent work collaboratively with stakeholders to develop non-negotiable district achievement and instructional goals? Does the superintendent model effective data analysis and continuously monitor schools' progress towards goals? Does the superintendent effectively communicate vision/goals to community stakeholders? Is the message of high expectations for all students consistently and comprehensively communicated? Does the superintendent assume responsibility for improved outcomes, and do principals and district staff believe they operate within a culture of trust with the superintendent? How do the superintendent and district celebrate individual, team and school/district success?

Introduction

In a recent review of what worked within the School Improvement Grant (SIG) program, researchers concluded that effective school turnaround and improvement occurs within four key domains: turnaround leadership, talent development, instructional transformation, and a culture shift towards student learning and effort (Center on School Turnaround, 2017). With the passage of Every Student Succeeds Act, state and local leadership are granted increased autonomy and flexibility for creating effective school improvement practices (Straus & Miller, 2016). Districts must develop frameworks of support that provide these effective practices in order to equip principals and schools with the direction and capacity to improve. The Southern Regional Education Board suggests that districts align their efforts within a framework of support that includes establishing a clear vision and direction for the district (SREB, 2010). The district's leadership, including school boards and the superintendent, must articulate a vision for children's education, and organize support for that vision through shared decision-making, the use of research-based instructional strategies, and changes to personnel as necessary (Education Writer's Association, 2003).

Presenting a Unified District Vision

Districts that are highly supportive of school improvement articulate and communicate to the community both a vision and a set of goals and practices that send a clear message of what district schools are to be about (Education Writers Association, 2003; SREB, 2010). These districts involve the entire community in developing this vision, and

elicit principal and teacher-leader input on major district policies, instructional and curricular changes, and district budget decisions such as how professional development monies are to be spent. Supportive districts also must ensure that vision and goals reflect high expectations for all groups of students (Hanover Research, 2014; SREB, 2010). In fact, district leaders that emphasize goals and programming initiatives that target student learning beyond minimum state expectations are likely to be employed in districts where levels of student learning are high (Louis, et al., 2010; Waters & Marzano, 2006). Research on the California Collaborative on District Reform demonstrated that dramatic changes in expectations frequently are necessary in schools where teachers and staff have become accustomed to persistent low student performance, and that these higher expectations must come from district leadership, including the superintendent and school board (Knudson, Shambaugh, & O'Day, 2011).

School boards play an active role in setting vision and direction for school reform by communicating and selling the vision for improvement to the community, talking with community members to gather input, and using these ideas in collaboration with the superintendent and other district leaders to refine the improvement plan (Cawelti & Protheroe, 2007). A meta-analysis of 27 studies showed districts with higher achievement levels showed clear alignment of board, superintendent, and school efforts in pursuit of, and support for, non-negotiable goals (Waters & Marzano, 2006). Effective school boards "lead as a united team with the superintendent, each from their respective roles, with strong collaboration and mutual trust" (Dervarics & O'Brien, 2011). In fact, it is vital that the school board and superintendent collaborate on long-term planning and strategies that enhance student achievement, and agree that all students are capable of academic success (Hanover Research, 2014). Research has shown that school boards in low-achieving districts frequently viewed students as limited by their surrounding economic/social circumstances, while school boards in higher-achieving districts perceived those circumstances as "challenges" along the path to helping students succeed (Iowa Association of School Boards, 2001; Iowa School Boards Foundation, 2008). Togneri and Anderson (2003) found through case studies of high-achieving districts that effective school boards identified brief vision statements (e.g., "All students will achieve on grade level") and used them in public and staff communications and presentations, while also adopting broad strategic plans that contained specific goals and action steps needed to achieve them.

Assuming Responsibility for Improvement

Districts should also create a culture of trust in which principals trust the central office to provide meaningful support, and make them partners in defining and achieving the goals targeted within the strategic plan (SREB, 2010; Knudson, et al., 2011). This culture of trust will in part be fostered by district leadership assuming responsibility for achieving district and school goals, with superintendents and other district leaders explicitly and publicly signaling their willingness to be held accountable for outcomes (Cawelti & Protheroe, 2007; Dailey, et al., 2005). District leaders and staff should be held accountable for collaborating with principals, their school's leadership teams, and faculty for implementing strategic school improvement plans (SREB, 2010). Similarly, effective school boards are accountability-driven, and spend more of their time on addressing policies that will improve student achievement, rather than on day-to-day operational issues (Devarics & O'Brien, 2011; Togneri & Anderson, 2003).

Superintendent Leadership for Improvement

Superintendents in academically effective school systems are "active instructional managers who take seriously the coordination and control of the core learning mission of schools" (McLeod, Richardson, & Sauers, 2015, p. 105), and superintendents' instructional leadership is key to determining a district's academic success (Kowalski, et al., 2011; Waters & Marzano, 2006). In a comprehensive meta-analysis of superintendent research, Waters and Marzano (2006) found that effective superintendents targeted their efforts towards creating goal-oriented districts by assuming responsibility for the following sound practices:

1. **Collaborative goal setting**: Effective superintendents involve all relevant stakeholders (e.g., principals, teacher-leaders, central office staff, etc.) in creating district goals.

2. **Developing non-negotiable achievement and instruction goals**: Effective superintendents establish achievement goals for all schools and student subgroups and ensure that research-based instructional strategies are implemented to achieve these goals.

3. **Ensuring that the school board's goals are aligned with and support district goals**: Effective superintendents collaborate with their school boards so that board goals do not conflict with district goals and divert attention or key resources away from district goals.

4. **Continuously monitoring progress**: Effective superintendents continually monitor progress towards targeted achievement and instruction goals.

5. **Providing resources (time, money, materials, personnel, etc.)**: Effective superintendents make sure that resources are available to accomplish achievement and instructional goals; in some cases this involves scaling back or eliminating initiatives that are not aligned with these goals.

Assuming responsibility for these processes is essential for creating contexts for rapidly improving schools. Superintendents that emphasize collaborative approaches and building relationships with internal and external stakeholders have been shown to be effective in promoting school improvement (Forner, Bierlein-Palmer, & Reeves, 2012; Kirtman & Fullan, 2016; Thomas, 2016). Effective superintendents also spend time ensuring that staff are instruction-focused by allocating significant time to stimulate, influence and support instructional practices (Kirtman & Fullan, 2016; Kowal, Hassel, & Hassel, 2009; Thomas, 2016). It is important that school improvement results are shared both internally and externally with the public (Hitt & Meyers, 2017); for example, parents and other stakeholders who share details about school reforms in everyday conversations are powerful vehicles for obtaining further stakeholder support and investment (Straus & Miller, 2016).

Superintendents and district leaders can use school reform successes to build momentum and spur progress throughout the district (Herman, et al., 2008; Public Impact, 2007). Celebration of these early successes with all stakeholders (students, families, teachers and leaders), particularly those relating to student learning outcomes, fosters an expectation for further success and creates confidence in the competence of teachers and school leadership (Kowal, et al., 2009; Center on School Turnaround, 2017). Superintendents should also encourage building leaders to regularly celebrate student success through practices such as holding weekly celebrations for students who achieve classroom stretch standards and using data walls to chart progress (Robinson & Buntrock, 2011).

Indicators to Support the Effective Practice
The school board and superintendent present a unified vision for district and school improvement.
The superintendent and other central office staff are accountable for district and staff improvement and student learning outcomes.
The superintendent models and communicates the expectation of improved student learning through commitment, discipline, and careful implementation of sound practices.
The superintendent celebrates individual, team, and district/school successes, especially related to student learning outcomes.

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Core Function: District Support for School Success

Effective Practice

Provide schools with resources, training, and support for technology and data management

Overview: Districts must provide comprehensive frameworks of support that include providing schools with resources, professional development, and support for data management and data-informed decision making. This includes aligning data across multiple levels of the system, encouraging and supporting the use of multiple types of data for instructional decisions, and ensuring that educators engage in professional learning that is collaborative, relevant, and occurs within their school/classroom context. Districts must also use data to set clear expectations and achievement targets, and ensure that analysis of student subgroup data informs the goal-setting process. Data coaches and PLCs are research-based strategies for helping educators analyze data and use it to improve classroom instruction. Data dashboards represent a type of infrastructure that may allow for timely access and easy organization and visualization of multiple types of data that can inform district and school improvement efforts.

Evaluate your Practice: Does the district allocate sufficient resources to help schools use the technology and data management systems provided? How does your district ensure that data provided are useful and timely, and represent a broad variety of indicators? Does your district use data for accountability purposes and for purposes of directly informing instruction and learning? Are data aligned across multiple levels of the system? What professional development is provided to ensure that principals and teachers use data effectively? Is this professional development directly relevant to educators' work, on-site, and involve collaboration as educators are trained? Are data coaches and/or PLCs used to support educator's use of data? Does the district use multiple data sources to inform decision-making, and encourage schools to do the same? Does the district provide and encourage analysis of the type of fine-grained data and formative assessments that can impact daily instruction? How are multiple data sources organized and managed, and communicated to the public? Does your district set annual achievement targets for the district, each school, and each student subgroup, and do these targets strive for equitable outcomes for all student groups? Does the district provide easily accessible disaggregated data to schools? Are both short- and long-term goals established?

Introduction

While the U.S. Department of Education identified data-driven decision making as a "national priority" in 2010, a report that year also concluded that these practices had done little to impact classroom instruction (Means, Padilla, & Gallagher, 2010). The report identified barriers to greater use of data including the perception that data systems were difficult to use and did not provide valuable data, educators' lack of time to use the data system, and conflicts with district policies regarding curriculum coverage and pacing that prevented modifying learning time to match students' needs (Means, et al., 2010). To overcome these barriers, school improvement requires a systems approach in which a school's actions are complemented by coherent and guided district and state practices to allow for effective data-informed decision making (Center on School Turnaround, 2017). The recent passage of the Every Student Succeeds Act (ESSA) provides opportunities for states and districts to develop and support continuous improvement processes that include effective data-informed decision making that guides and sustains school improvement initiatives (Hale, Dunn, Filby, Rice, & Van Houten, 2017). While states must still administer and report annual academic assessments, ESSA promotes a broader definition of school and student success to include indicators on school quality such as school climate and student engagement (National Association of School Psychologists, n.d.). Districts must develop frameworks of support that can assist principals and schools with the direction and capacity to engage in continuous improvement, by providing resources, training and support for educators' use of multiple forms of data and technology for school improvement decision making (Hale, et al., 2017; Southern Regional Education Board, 2010).

The Role of the District

Districts must "provide high-quality data that link student achievement to school and classroom practices, and assist schools to use data effectively" (SREB, 2010, p. 32). While districts have access to an abundance of data and expect educators to use it to inform their practices, educators often lack the skills needed to use data to improve instruction and student outcomes (Ikemoto & Marsh, 2007; Means, Padilla, DeBarger, & Bakia, 2009). Research suggests that school systems are highly influential in supporting schools and educators in their use of data, and alignment of data use across multiple levels of the district is essential to ensure that data use strategies are implemented evenly and with fidelity (Anderson, Leithwood, & Strauss, 2010; Farrell, 2014). Data management technology and systems can increase efficiency and serve accountability purposes, but should also be used as mechanisms to enhance teaching and learning (Murray, 2014). Research suggests, however, that districts often invest more on these systems than they do in subsequently infusing them into the work practices of educators (Cho & Wayman, 2014). School leaders and teachers need resources, training, and support in order to engage in data-informed decision making that enhances student learning (Datnow & Hubbard, 2015; Marsh, Brand, & Huguet, 2015; Marsh & Farrell, 2015; Means, et al., 2009). An overview of research that addresses the practices that districts can use to provide training and support for enhanced data-informed decision making in schools follows.

Use Data to Set Clear Expectations and Achievement Targets

Districts should use data to set short- and long-term achievement targets for the district, individual schools, and student subpopulations (Cawelti & Protheroe, 2007). Short-term targets provide ongoing measures of progress while "loftier" goals (e.g., all students that graduate are ready for college) demonstrate the longer view of what the district is working towards. Goals must be clearly written and measurable, and address school and district challenges using high quality data (SREB, 2010). Student learning goals should also be ambitious and go beyond standardized test proficiency levels (Louis, et al., 2010). State accountability systems often include only overall school performance on indicators (e.g., the number of students graduating from high school who are college/career ready); districts must ensure that a school's overall performance does not mask the performance of traditionally underserved students (Alliance for Excellent Education, 2015). Districts must provide disaggregated data for student subgroups, and goals must target achievement of students in these subgroups in order work towards equitable outcomes for all students (Datnow & Park, 2014). For example, goals must often target the improvement of EL student performance, and data disaggregated for this group of students should be used to improve programming.

Extend Data Access to the School Level

User-friendly data must be readily available at the school level, and principals and teachers must have timely access so that they will share ownership and accountability, and be able to use the data to improve curriculum and instruction (Bottoms & Fry, 2009; Murray, 2014; SREB, 2010; The Center on School Turnaround, 2018). As Murray (2014) notes, "Without the necessary technological infrastructure to store, organize, and display data, analyzing data will likely be a cumbersome and ineffective process" (p. 5). However, even if the infrastructure is in place and data are available, getting educators to use the data to improve instruction is not always guaranteed. Some research has shown that use of data management systems is not related to achievement on standardized or benchmark assessments, with computer logs suggesting relatively low levels of teacher usage (Tyler, 2013; Wayman, Shaw, & Cho, 2017). Simply rolling out a new data system should not signal the end of implementation, but rather must represent the beginning of a process in which educators are supported in considering how, why, and whether a data system should be used in various circumstances (Wayman & Cho, 2014).

The use of new data systems often requires that teachers not only learn to use the new system, but also how to incorporate this system into their teaching and assessment routines. Without appropriate professional learning opportunities, the use of data dashboards and other systems may center solely around compliance rather than as tools to enhance instruction and achievement (Wayman, et al., 2017). Research has suggested that developing school staff's capacity to ask questions about data is a necessary precursor to moving towards mastery of data systems; increasing proficiency with data will then be a likely byproduct of this process (Bowers, Shoho, & Barnett, 2014) (see further discussion below). Increasing and improving data access at the school level should also be coupled with the district granting appro-

priate decision-making authority to school staff as they analyze their data and determine strategies for improvement (Datnow, Park, & Wohlstetter, 2007).

Improve School Staffs' Capacity to Engage in Data-Informed Decision Making

While educators may have access to a variety of data sources, they often lack the knowledge and skills to determine questions, select appropriate measures, analyze results, and develop strategies for improvement (Mandinach & Gummer, 2013). A recent research summary concluded that teachers benefit from data-related professional learning that is collaborative and relevant to their current work, and that takes place within their immediate professional context (Wayman & Jimerson, 2014). Investments are being made to support teacher data use through the use of data/instructional coaches, and using data within PLCs. One case study of six low-performing middle schools that supported teacher data use via literacy coaches, data coaches and data teams/PLCs, found all of these practices were important to mediating teachers' responses to data (Marsh, et al., 2015). The researchers posit that teacher interactions with PLCs and data coaches facilitate deeper levels of change in teacher pedagogy. Another exploratory case study found that teachers working together in groups were able to more accurately comprehend and interpret student data than teachers working alone, and were more enthusiastic about, and interested in, the process of data analysis (Means, Chen, DeBarger, & Padilla, 2011). Other research has demonstrated that teachers working together on data teams were more likely to shift from attributing poor student learning outcomes to external factors (e.g., "I planned and taught the lesson but they didn't learn it because of their family background.") towards a more productive assumption of professional learning and continuous improvement ("You haven't taught the lesson until they've learned.") (Gallimore, Ermeling, Saunders, & Goldenberg, 2009).

Districts are recommended to further build school staff's capacities by developing protocols for teachers to assist with "drilling down" on individual student learning needs, and then creating instructional plans that are aligned with student needs (The Center on School Turnaround, 2018). In addition, districts can "develop teachers' capacity to use formative assessments of student progress aligned with district expectations for student learning, and to use formative data in devising and implementing interventions during the school year" (Louis, et al., 2010). This practice can help teachers see that data use enables them to improve their teaching by working together continuously and collaboratively, rather than simply providing information about learning outcomes (Bowers, et al., 2014; Knudson, et al., 2011).

Provide and Encourage the Use of Multiple Data Sources

Research suggests that school leaders often focus primarily on standardized test results as mechanisms for teacher accountability, rather than analyzing how the data relates to factors influencing learning (Murray, 2014; Wayman & Cho, 2008). While annual state tests provide critical information for school improvement and accountability purposes, leaders in improving schools expand data to include sources such as benchmark and formative assessments, school climate surveys, school observations, attendance, post-secondary readiness, and teacher participation in professional development (Coburn & Turner, 2012; Knudson, et al., 2011; Murray, 2014). Proponents of continuous improvement advocate steering administrators away from relying exclusively or primarily on long-term outcome measures such as standardized test results to determine the effectiveness of school improvement initiatives and whether they should be scaled to other schools and districts (Herold, 2018). Instead, Bryk, Gomez, Grunow, & LeMahieu (2015) advocate implementing improvement strategies more methodically and then using fine-grained data to learn more about the strategies as they are implemented. Herold (2018) describes this approach:

> Ideally… such a process would entail identifying the problem schools want to fix; developing a theory about how to improve it; and then helping the people closest to the problem—usually teachers, principals, and other school staff—to develop measures of day-to-day progress that are aligned to that theory. Technology tools should help schools monitor three things: whether they're actually doing what they set out to do, whether it's making a difference on the measures that educators developed locally, and how such efforts impact the kinds of long-term outcome measures that are typically used now.

Data dashboards also represent an example of a way for districts and schools to examine multiple data sources in a timely and efficient manner and connect relevant student data from these sources (Herman, 2016; Knudson, et al., 2011). Knudson, et al., describe an example of

a district's use of these dashboards:

> Fresno has developed a data dashboard that chronicles the district's performance throughout the school year using indicators like student proficiency rates, EL redesignation rates, attendance rates, and student perceptions of their school. The Cycle of Review that takes place around the dashboard four times per year allows Fresno to address problems without waiting for state test scores that arrive in late summer. Furthermore, the superintendent's evaluation is tied to the dashboard, ensuring accountability at the highest levels for the district's ongoing improvement. (p. 13)

The recent National Technology Education Plan also emphasizes the use of data dashboards at the school level, in the context of enhancing schools' capacity to implement personalized learning. Learning dashboards offer the potential to "integrate information from assessments, learning tools, educator observations, and other sources to provide compelling, comprehensive visual representation of student progress in real time…and… offer recommendations about resources to help students continue their learning progression as well as help identify students who may be a risk of going off track or even dropping out of school" (U.S. Department of Education, 2016, p. 60).

Indicators to Support the Effective Practice
The district provides the technology, training, and support to facilitate the school's data management needs.
The district ensures that key pieces of user-friendly data are available in a timely fashion at the district, school, and classroom levels.
The district sets district, school, and student subgroup achievement targets.

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Core Function: District Support for School Success

Effective Practice

Strategically manage personnel to provide most effective staff where needed most

Overview: Districts must provide comprehensive frameworks of support that include the strategic management of personnel in its schools that are most in need of improvement. Research has demonstrated that offering financial incentives can attract and/or encourage high quality teachers to remain in high-needs schools. Districts must also proactively plan to staff these schools and adopt earlier, aggressive recruitment practices. Information-rich hiring can help districts identify the most qualified candidates, and collaborations with colleges/universities or "grow your own" programs can help ensure a high quality pipeline of teachers and principals to the district. Districts must also work to enhance teacher working conditions by adopting strategies to improve leadership, collegiality, and time for collaboration and planning. Districts must also attend to the needs of effective principals in high needs schools by granting appropriate autonomy and human resource support for hiring and other school-level decisions, and providing professional learning through coaching and/or mentoring.

Evaluate your Practice: What policies/procedures are in place to attract and retain the best leaders and teachers for your high-needs schools? Does the district incorporate incentives to attract highly qualified teachers and principals to these schools? What if any incentives are provided to encourage these staff to remain in struggling schools? What is the timetable for staff recruitment in high-needs schools, and what percentage of staff are considered "late hires" each school year? Are there opportunities for collaboration with local colleges or universities to establish pipelines of high-quality teachers and principals? Does the district strategically use data to identify and hire the most effective staff? How does the district evaluate the working conditions in schools, and what strategies could be used to improve these conditions in high-needs schools so that high quality staff remain? Does the district take proactive steps to ensure that high-quality principals are assigned to its schools in the greatest need of improvement? Does the district grant autonomy to these principals for staff and instructional decision-making as appropriate? What types of professional learning does the district provide for its principals, particularly those working in high-needs communities?

Introduction

In a recent review of what worked within the School Improvement Grant (SIG) program, researchers concluded that effective school turnaround and improvement occurs within four key domains: turnaround leadership, talent development, instructional transformation, and a culture shift towards student learning and effort (Center on School Turnaround, 2017). Further, school improvement requires a systems approach in which a school's actions are complemented by coherent and guided district and state practices (Center on School Turnaround, 2017). Districts must develop frameworks of support that provide these effective practices in order to equip principals and schools with the direction and capacity to improve (Southern Regional Education Board, 2010). One key component of this framework includes managing school personnel strategically so that the most effective staff are placed in schools with the greatest need for improvement.

Research shows that the two strongest school factors that contribute to student outcomes are the role of the teacher and principal (Louis, et al., 2010). The Every Student Succeeds Act (ESSA) requires that every classroom be staffed with an effective teacher, and every school with an effective leader (Fuller, Hollingworth, & Pendola, 2017). Districts must choose strong school leaders and high-performing teachers capable of achieving school reform. Hard-to-staff schools that need improvement often find it difficult to attract and retain effective personnel, particularly in rural or urban high-needs areas and in fields such as math, science and special education (National Comprehensive Center for Teacher Quality (NCCTQ), 2011). These shortages frequently contribute to an inequitable distribution of quality

teachers, with students from poor and minority backgrounds having less access to highly qualified and experienced teachers than their peers from low-poverty, non-minority backgrounds (Imazeki & Goe, 2009; Goldhaber, Lavery, & Theobald, 2015). Districts must have policies and procedures in place to identify, select, place, and retain high-quality school personnel in order to affect substantial school improvement (The Center on School Turnaround, 2017).

Effectively Attracting and Retaining High Quality Staff to Schools in Need of Improvement

School districts play a critical role in ensuring high quality staff are strategically placed in schools with the highest level of need, and research suggests several opportunities for districts to improve their hiring processes (Dee & Goldhaber, 2017). Offering financial incentives may effectively attract high quality teachers to low-performing schools. The Talent Transfer Initiative (TTI) offered a substantial financial incentive ($20,000 across two years) to encourage highly effective teachers within a district to transfer to the lowest performing schools (Glazerman, Protik, Teh, Bruch, & Max, 2013). This initiative was successful at attracting high-performing (based on value-added data) teachers to fill the vacancies in these schools, and had a positive impact on student achievement in math and reading at the elementary, but not middle, school levels. Some studies have also shown that providing bonuses to teachers already teaching in high-poverty or low-achieving schools can lead to reductions in teacher attrition (Clotfelter, Glennie, Ladd, & Vigdor, 2008; Springer, Swain, & Rodriguez, 2016). A study in Washington state also found similar effects for a program that paid teachers holding a National Board for Professional Teaching Standards (NBPTS) certification a $5,000 supplement for teaching in a high-poverty school, in addition to the same supplement teachers regularly received for simply attaining the credential (Cowan & Goldhaber, 2015). It is important that districts provide targeted incentives for teachers with demonstrated positive impacts on student achievement to remain in hard-to-staff schools in order to ensure that these incentive programs are cost-effective (Dee & Goldhaber, 2017).

Many districts fail to be proactive in teacher recruitment and selection, and this failure is often most common in districts educating large numbers of disadvantaged children (DeArmond, Shaw, & Wright, 2009; Dee & Goldhaber, 2017; Liu & Johnson, 2006). This practice can often result in hiring teachers immediately before, or just after, the school year starts. Research demonstrates substantially lower retention of late-hire teachers, and poor achievement outcomes for students taught by teachers hired after the school year starts (Papay & Kraft, 2016). When hiring teachers and principals for schools in the most need of improvement, districts must adopt earlier, aggressive recruiting practices (Dee & Goldhaber, 2017; Liu & Johnson, 2006; NCCTQ, 2011). The NCCTQ (2011) suggests that districts use the following best practices for attracting high quality teachers to high-needs schools:

1. Identify school/district characteristics that are attractive to teachers and market them for recruitment.

2. Identify schools with teacher recruitment challenges and set goals for quality and quantity, particularly for high-poverty/high minority schools where students may not have equitable access to high-quality teachers.

3. Establish university/community college partnerships that deliver teacher preparation, particularly for recruitment of teachers in high-needs areas (e.g., special education, ELL). For example, California State at Long Beach trains the vast majority of teachers within the local school system, and has worked to align its teacher preparation with expectations and student needs within the district (Knudson, Shambaugh, & O'Day, 2011).

4. Establish "grow-your-own" programs to recruit future educators from the pool of current high school students, paraprofessionals, teacher aides, and community members.

5. Provide financial incentives (e.g., salary increases, bonuses, housing assistance, loan repayment, etc.) for educators willing to work in high-needs schools or subject areas (Kowal, Hassel, & Hassel, 2008).

6. Use "information rich" recruitment and hiring processes by creating, for example, a model of selection and placement of teachers and school leaders with turnaround competencies, and ensure that high-needs schools have preferential access to those with these competencies (The Center for School Turnaround, 2017). Data-focused hiring practices in general may further help districts recruit and hire high-quality candidates, and more accu-

rately predict whether a teacher will be effective within a particular school (see Flanagan, 2016).

Providing Supports to Keep High Quality Staff in Schools in Need of Improvement

While efforts to attract high quality staff to high-needs schools have shown promise, districts must also attend to supporting and retaining them in order to avoid higher turnover rates, and overcome challenges to sustained improvement (Allensworth, Ponisciak, & Mazzeo, 2009; Ingersoll & May, 2011). Poor teacher working conditions can contribute substantially to teacher turnover in low-income schools, and in many cases are stronger predictors of turnover than student demographics (Ladd, 2011; Simon & Johnson, 2013). Research shows that teachers entering these schools are committed to teach in underserved communities, but often leave due to poor working conditions that impede their teaching and their students' capacity for learning (Kraft, Papay, Charner-Laird, Johnson, Ng, & Reinhorn, 2012; Johnson, 2006). Important teacher working conditions include school leadership, time for collaboration and planning, and collegiality (Johnson, Kraft, & Papay, 2012; Ladd, 2011). Recent research has demonstrated that districts can enhance teacher working conditions in schools in need of improvement in ways that lead to better teacher retention and achievement (Lawrence, Rallis, & Keller, 2014; Rallis, Keller, Lawrence, & Soto, 2015). For example, a case study of a rapidly improving SIG (School Improvement Grant) school in Maine revealed that rewarding teachers based on their professional learning connected to instruction and student outcomes contributed substantially to the school's change in trajectory. Positive results included high teacher participation and satisfaction with the professional development, improved student achievement, and stronger teacher collegiality and retention patterns (Lawrence, et al., 2014; Rallis, et al., 2015).

The cost of principal turnover is also quite high (School Leaders Network, 2014), and districts must retain effective principals in schools in substantial need of improvement. Research shows that high-needs schools tend to be staffed by less experienced and effective principals, leading to subsequent difficulties in attracting and retaining high-quality teachers (Grissom, 2011; Loeb, Kalogrides, & Béteille, 2012). Retaining effective principals in schools in need of improvement can be a challenge, as research shows that principals are more likely to leave schools with high proportions of low-income and minority students (Rangal, 2018). Studies also show that principals who report lacking autonomy are more likely to leave their position or school (Rangal, 2018), and this lack of autonomy can promote negative outcomes. For example, Donaldson (2013) found that district personnel, rather than principals, were selecting professional development (PD) for teachers, and this process subsequently reduced the PD's efficacy. Principals should be given "defined autonomy" that allows them flexibility in addressing challenges in their own buildings while still being aligned with other district schools (Marzano & Waters, 2009). Principals in high-needs schools likely have less time than those in low-needs schools for teacher recruitment and hiring (Ingle, Rutledge, & Bishop, 2011). Districts should give these principals the authority to hire their own staff, and provide effective and flexible human resources support for hiring processes (Campbell, DeArmond & Schumwinger, 2004; Sigler & Kashyap, 2008). Some evidence also suggests that providing principal PD such as coaching and or mentoring holds promise for improving principal practice and reducing teacher attrition (Lochmiller, 2013; Jacob, Goddard, Kim, Miller, & Goddard, 2015).

Indicators to Support the Effective Practice
The district provides incentives for staff who work effectively in hard-to-staff schools.
The district recruits, trains, supports, and places personnel to competently address the problems of schools in need of improvement.

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Core Function: District Support for School Success

Effective Practice

Strategically target resources and interventions to demonstrated school and student need

Overview: Districts must provide comprehensive frameworks of support that effectively and systematically target resources and interventions to schools that are most in need of improvement. Research has demonstrated that closely monitoring student data and intervening early with struggling schools and students can help reduce the likelihood of the need for more intensive interventions in the future. This data should include frequent, formative assessments and benchmark tests that are used to support improvement rather than as surveillance tools. Districts must also proactively plan to staff struggling schools by shifting staff resources and adopting earlier, aggressive recruitment practices to place high-quality educators in its high-needs schools. Professional development must be job-embedded, collaborative, and aligned with district and school goals, and should include resources to support vertical and horizontal teacher planning. Districts should provide defined autonomy to its struggling schools, increasing this level of autonomy as schools improve.

Evaluate your Practice: How and when does your district review each school's budget, staffing, improvement status, progress, and student outcomes to allocate/reallocate staff, money, and district support? What criteria/data does the district use to make these decisions? Does the district use data primarily for improvement decisions or supervision/accountability? How does the district use data to determine which schools need quick and substantial action by the district? Do all district schools employ a systematic approach to detecting students having academic difficulties? Is the menu of responses or interventions sufficient for the range of academic difficulties students encounter? Are district recruiting and hiring practices implemented early and aggressively to ensure the timely placement of high quality educators in high-needs schools? How does your district select, implement, and evaluate professional development for schools in substantial need of improvement? Do your district administrators participate with educators' professional development where/when appropriate? Are school leaders and their staff granted defined autonomy within the improvement process, and is this autonomy increased as schools improve? How does the district coordinate, implement, and manage improvement processes across schools in need of improvement to ensure the alignment of resources and interventions?

Introduction

In a recent review of what worked within the School Improvement Grant (SIG) program, researchers concluded that effective school turnaround and improvement occurs within four key domains: turnaround leadership, talent development, instructional transformation, and a culture shift towards student learning and effort (The Center on School Turnaround, 2017). Further, school improvement requires a systems approach in which a school's actions are complemented by coherent and guided district and state practices focused on improving student learning (Center on School Turnaround, 2017; Shannon & Bylsma, 2004). Districts must develop frameworks of support that provide these effective practices in order to equip principals and schools with the direction and capacity to improve (Southern Regional Education Board (SREB), 2010). A key component of this framework involves the capacity of the district to target resources and interventions strategically to those schools and students with the greatest need for improvement.

Successful school improvement efforts necessitate active district engagement, and districts are key initiators and supporters of school reform (Kelly, 2016). Research shows that school improvement requires systemic, district-level approaches that are customized to meet the individual needs of each school and student (Knudson, Shambaugh, & O'Day, 2011; Louis, et al., 2010). Effective district leaders partner with school leaders to build capacity within the district for the improvement of teaching and learning (Honig, Copland, Rainey, Lorton, & Newton, 2010). Capacity-

building processes include proactively intervening early with schools and students by leveraging appropriate and targeted resources and expertise, while simultaneously addressing barriers to improvement at the school level (Knudson, et al., 2011); an overview of these effective practices is provided below.

Intervening Early with Schools and Students

Districts need the capacity to effectively use data to support rapid school improvement, and must have in place cohesive and comprehensive user-friendly data management systems that provide timely data on student performance (Kelly, 2016; Zavadasky, 2013). These data should be used primarily in the service of improvement rather than as surveillance tools (Wallace & Alkin, 2008), and districts must empower educators to engage in data informed decision-making at the school level by providing timely data in useable and manageable forms (Shannon & Bylsma, 2004). Districts can use benchmark and formative assessment data to intervene early when schools aren't making adequate progress, and low-performing schools require ongoing monitoring and review of school data by district staff (Zavadasky, 2012, 2013). Timely intervention is not possible when schools wait for state testing data; frequent formative and diagnostic mini-assessments can allow teachers to determine students' mastery and provide appropriate interventions (Cawelti & Protheroe, 2007). Districts should also develop protocols for teachers to assist with "drilling down" on individual student learning needs, and creating instructional plans that are aligned with student needs (The Center on School Turnaround, 2017).

Effective districts also understand how to hire and distribute high-quality school leaders and teachers so that they work in the high-needs schools that need them the most (Kelly, 2016). However, many districts fail to be proactive in teacher recruitment and selection, and this failure is often most common in districts educating large numbers of disadvantaged children (DeArmond, Shaw, & Wright, 2009; Dee & Goldhaber, 2017; Liu & Johnson, 2006). When hiring teachers and principals for schools in the most need of improvement, districts must adopt earlier, aggressive recruiting practices to ensure that high-quality staff are placed in high-needs schools (Dee & Goldhaber, 2017; Liu & Johnson, 2006; NCCTQ, 2011).

Reallocating Resources to Support Improvement

Improved districts "provide, allocate, reallocate, and find resources to ensure quality instruction, [and]… financial as well as human and social capital to support low performers" (Kelly, 2016, p. 38). Resources that districts may choose to direct and redirect may include time, staffing, and professional development (Zavadasky, 2013). Improved districts adopt a systemic approach, in which they align these resources and strategies to confront common challenges or barriers experienced by struggling schools, and develop and/or support solutions to address their needs (Knudson, et al., 2011). It is essential that a district has a wide range of resources and strategies in its toolbox to address each school and students' unique needs, as well as flexible systems to target and in some cases, reallocate these resources and strategies appropriately (Cawelti & Protheroe, 2007; The Center on School Turnaround, 2017; Zavadasky, 2012, 2013). To support all students, districts must ensure that teachers use reliable data from multiple sources to identify students who need remediation or enrichment, and proactively target appropriate interventions or assistance to help them progress and/or stay in school (Kelly, 2016). It is the district's responsibility to support improvement by shifting funds for effective programming and high quality teachers and school leaders to its lowest-performing schools (Shannon & Bylsma, 2004). This will require the close and continuous monitoring of school data to identify problems that can be easily addressed, and intervening quickly to prevent the need for more intensive interventions later on (Zavadasky, 2013).

Improving school districts elevate the importance of professional development as a resource to jumpstart and sustain changes (Gray, Fry, Bottoms, & O'Neill, 2007; Villani, 2006). These districts further ensure that professional development is relevant, research-based, collaborative, job-embedded, and aligned with school and district goals (DuFour, 2014; The Center on School Turnaround, 2017; Zavadasky, 2013). They also routinely evaluate and refine this professional development to ensure that what is learned is implemented with fidelity and effectively helping students attain higher levels of achievement (Kelly, 2016). District staff should also participate alongside building principals in job-embedded professional learning opportunities centered on research-based effective school turnaround strategies to both develop their own skills and signal their support for these initiatives (The Center on School Turnaround, 2017). Districts can also provide a framework for vertically aligning the school curriculum from one grade to

the next and for transitions (e.g., elementary school to middle school), as well as ensure that teachers have time to engage in both vertical and horizontal (e.g., PLCs) collaborative planning (DuFour, 2014; Jones, & Wheeler, 2011; Kelly, 2016). This planning allows teachers to refine their instructional practice by gaining understanding of what their students were expected to learn during the prior year, and what they are expected to learn in subsequent years (Center on School Turnaround, 2017; SREB, 2010).

Districts should also give struggling schools some autonomy over allocation and reallocation decisions, and provide school leaders reasonable control to adjust curriculum, instruction, and schedules in order to help students be successful (Cawelti & Protheroe, 2007; Shannon & Bylsma, 2004; SREB, 2010; The Center on School Turnaround, 2017). Principals should be given "defined autonomy" that allows them flexibility in addressing challenges in their own buildings while still being aligned with other district schools (Marzano & Waters, 2009). A national study concluded that district administrators must shift their work from service delivery that they control, towards assuming responsibility for improvement projects and arranging central office resources to support them (Honig, et al., 2010). Kelly (2016) suggests that districts use a cohort structure to organize their struggling schools, which can "provide alignment across schools that have similar needs and make coordination of oversight, training, and performance management easier to implement and manage" (p. 42). In many cases districts will need to reach outside the central office to leverage community resources to address students' needs (Cawelti & Protheroe, 2007; The Center on School Turnaround, 2017). As individual schools within the district improve, the kinds of support the district provides can shift to become less directive and interventionist (Kelly, 2016).

Indicators to Support the Effective Practice
The district regularly reallocates resources to support school, staff, and instructional improvement.
The district intervenes early when a school is not making adequate progress.
The district works with the school to provide early and intensive intervention for students not making progress.
The district allows school leaders reasonable autonomy to do things differently in order to succeed.

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Core Function: District Support for School Success

Effective Practice: Take the change process into account

Overview: When attempting to improve schools, districts must consider the entire change process and expect that it can take significant time and resources to transform low-performing schools. Leaders may review district-wide improvement strategies in terms of the degree of implementation and their success within each school's context. Districts should select change leaders that possess turnaround competencies to lead low-performing schools, and these leaders should be given autonomy within the school improvement process. Districts can expect resistance to change, and should take steps to reduce this resistance by communicating with, and soliciting input from the community regarding the change. Districts should also ensure that new teaching practices introduced are highly effective, and that teachers are provided with plenty of follow-up and support for their implementation.

Evaluate your Practice: What are your district's improvement strategies and how do you measure their effectiveness for school improvement planning? How frequently do you assess implementation of strategies in individual schools? Do you use turnaround competencies for the identification of principals for low-performing schools? If so, what are the turnaround competencies for leaders in your context? How are principals given autonomy within the school improvement process? How does your district identify school improvement strategies needed for individual schools, and are school community members provided with input? How are professional learning experiences selected to improve teaching? What supports does your district provide to help overcome teacher resistance to change?

Introduction

Districts must consider that schools in need of substantial improvement must often progress through change processes that require substantial organizational transformations that differ from the minor incremental changes needed for already effective schools (Perlman, 2007). In taking the change process into account, districts must 1) evaluate the implementation and effectiveness of already existing district-wide school improvement strategies; 2) ensure that an empowered change agent is chosen to lead each school in need of substantial improvement; and, 3) expect setbacks, obstacles and resistance to substantial improvement. Each of these areas is discussed below.

Examine and Refine Existing District-Wide School Improvement Strategies

District-wide improvement strategies are often useful in ensuring systematic practice across multiple school settings; however, they may vary in effectiveness from school to school and conflict with more productive practices preferred by individual schools. Schools in need of substantial improvement have already in all probability used these district-wide strategies with varying levels of success, and may have invested significant resources into the strategies and thus be reluctant to abandon them even if they have proven ineffective. The district must collect data to determine which strategies are successful in each school's context, and help struggling schools determine whether these strategies should be modified or whether new programming is necessary (Perlman, 2007).

The district must also conduct a thorough assessment of each low-performing school's strengths and weaknesses, and the degree to which they are implementing district-wide improvement strategies. State assessment results signal the need for improvement, but districts and school improvement teams should dig deeper to explore other formative and summative assessments given to students in order to get a comprehensive picture of the school (Perlman, 2007). Additional information that can be reviewed includes attendance and graduation rates (or drop-out rates), college or career readiness rates, and results of staff, parent, and student surveys (Southern Regional Educa-

tion Board, 2010; Hanover Research, 2014). Districts should collect trend data if possible across years to accurately gauge the school's performance, and should include analyses of student subgroups (e.g., special education, EL) to determine which groups are not making adequate yearly progress (Perlman, 2007). In addition the district will need to track the fidelity of implementation of district and/or individual school improvement strategies, to determine if planned processes were actually put in place (Hanover Research, 2014). School staff can review implementation of improvement strategies; this review ideally should occur periodically throughout the year to allow districts to make mid-course adjustments to maximize student outcomes. One district leader describes this process:

> We have a rigorous quarterly review process of our implementation. It's a very structured evaluation during which our instructional leadership team reviews our strategy and action plan, the level of implementation achieved at that point, and any noticeable impact on other factors such as student achievement and school climate. This regular feedback ultimately helps with our goal-setting. (Hanover Research, 2014, p. 21)

Districts can then use the data collected on student performance and strategy implementation fidelity to determine the value of its school improvement strategies, and decide whether they should be continued, expanded, modified, or eliminated.

Place Empowered Change Agents in Schools in Need of Substantial Improvement

Districts must have policies and procedures in place to identify, select, place, retain and sustain school personnel in order to affect substantial school improvement (The Center on School Turnaround, 2017). The research literature shows that schools in need of substantial improvement need leaders (i.e., principals) who are empowered to institute dramatic change within their school context. These principals often possess common traits, beliefs, actions, and competencies that make them better able to lead more dramatic change over a short period of time, such as being open-minded yet pragmatic, and "committed to improvement without blind adherence to a specific program or approaches" (Papa, 2011). They are also highly energetic and resilient, and must often face opposition and pessimism from staff, students and the community about turning around their schools. Their belief systems include a refusal to both accept the status quo of low expectations as inevitable (and communicate this to teachers), and to accept low-performing schools as a fixed and permanent part of public education (Papa, 2011). They maintain a "laser focus" on improving the school's culture and expectations, and communicate a "no excuses" mindset to staff, students and the surrounding community (Yatsko, Lake, Nelson & Bowen, 2012).

Effective turnaround principals must also possess key competencies necessary to rapidly rally support for school improvement from students, staff and the community, and implement new targeted instructional programs to improve achievement. Competencies are defined as thinking, feeling, acting or speaking patterns that cause one to be successful in a job or other role (Steiner & Hassel, 2011). The Darden/Curry Partnership for Leaders in Education uses a model first developed by Public Impact that addresses key competencies that turnaround principals possess and that typically lead to effective turnaround actions and student achievement:

- Focuses on sustainable results: Motivates change with early success and perseverance to overcome obstacles (Gayef, 2014);
- Engages the team: Engages core staff to develop change vision and launch effort; distributes leadership opportunities;
- Impact and influence: Engages reluctant stakeholders by broadly communicating rationale for change;
- Holds people accountable for school performance: Consistently reinforces high expectations and follows through to change course if necessary;
- Commitment to student learning: Alters organizational norms by taking initiative and risks, including shifting staff and resources to deliver results;
- Conceptual thinking: Can communicate complex data clearly for others, and constantly adjusts course based on results and new learning; and,
- Analytical thinking: Can effectively establish data-driven cycles of improvement that lead to effective problem solving (Southern Regional Education Board, 2010).

Use of these competencies can be beneficial for hiring, evaluating, and providing targeted development of turnaround principals (Steiner & Hassel, 2011; The Center on School Turnaround, 2017). For example, some districts are using selection techniques such as a behavioral event interview that is based on the key competencies as part of the selection process. This interview asks candidates to walk through past incidents regarding school leadership and describe and explain what they were thinking, saying and doing, and gives insight on how they will use their competencies on the job (Steiner & Barrett, 2012). The Minneapolis Public School System and others have reported success with using competency models for turnaround principal selection (Steiner & Barrett, 2012). When incorporated as part of a broader evaluation plan, these competencies can yield information as to why a turnaround leader is succeeding or failing, and provide areas that may be targeted for further development (Steiner & Hassel, 2011). Once a powerful school leader is selected, research shows that they should be given "defined autonomy" that allows them flexibility in addressing challenges in their own buildings while still being aligned with other district schools (Marzano & Waters, 2009). Districts should give principals the authority to hire their own staff, and provide effective and flexible human resources support (Campbell, DeArmond & Schumwinger, 2004; Sigler & Kashyap, 2008).

Expect Resistance to Change

Change management is the process of "continually renewing an organization's direction, structure, and capabilities" (Moran & Brightman, 2001, p.111) to meet its changing needs over time. Every organization must build the ability to identify its future needs and manage the changes required to get there (By, 2005), and districts and schools are no different, in this regard, from other kinds of organizations. Rapid school improvement that necessitates major changes will likely encounter setbacks, resistance, and obstacles along the way (Perlman, 2007). For example, parents may object to new curricula, or teachers may be resistant to changing well-ingrained instructional practices. In many cases this teacher resistance is well-justified; for example, many teachers have been exposed to "one and done" professional learning with little to no follow up or support, and many have been used to ever-changing district mandates on new approaches (Guskey, 1999; Knight, 2009). Change leaders seeking school improvement may benefit from the following strategies for decreasing the potential for teacher resistance to change (adapted from Knight, 2009):

1. Ensure that new teaching practices introduced are powerful and proven by education research;
2. Select and monitor the impact of practices using data specific to individual schools and teachers;
3. Provide support for new practices through ongoing quality coaching that includes precise explanations, modeling, and feedback;
4. Balance precise explanations of desired teaching practices with provisional comments that allow and encourage teachers to use their professional judgment to adopt the practices to fit their teaching approach and/or the needs of their students;
5. Provide choices and value the voices of teachers when adopting new teaching practices;
6. Focus professional learning on just a few critically important practices, and work together to ensure successful implementation;
7. Align all professional learning activities (e.g., coaching, PLCs, observations, etc.) to focus on critically important teaching practices; and,
8. Create opportunities to build relational trust between change agents and teachers.

Change leaders can also reduce resistance to change by collaborating with school improvement teams to develop improvement plans and select appropriate strategies for improvement, and involving the whole school community (parents, support staff, students and community members) in the change process by soliciting their input and keeping communication lines open (Perlman, 2007).

Indicators to Support the Effective Practice
The district operates with district-level and school level improvement teams.
The district examines existing school improvement strategies being implemented across the district and determines theri value, expanding, modifying, and culling as evidence suggests.
The district ensures that school improvement initiatives include research-based, field-proven programs, practices, and models.
The district ensures that an empowered change agent (typically the principal) is appointed to head each school that needs rapid improvement.

Indicators to Support the Effective Practice
The district ensures that the change agent (typically the principal) is skilled in motivating staff and the community, communicating clear expectations, and focusing on improved student learning.
The district ensures that the school improvement plans include "quick wins," early successes in improvement.
The district is prepared for setbacks, resistance, and obstacles on the path to substantial improvement.

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Core Function: District Support for School Success

Effective Practice: Clarify district-school expectations

Overview: District leadership is critical to supporting struggling schools, and clarifying expectations for who is responsible and what supports will be provided is imperative to promote school improvement. Districts must ensure close communication and progress monitoring through a well-trained central office liaison assigned to each school to provide structured, real-time support as a facilitator rather than compliance officer. Regular communication of school's progress to the superintendent and school board allows them to detect needs areas early so that resources can be provided appropriately. Districts must balance site-based decision-making with guidance; however giving principals "defined autonomy" to incorporate school changes while still addressing district goals can be an effective practice for low-performing schools. Districts must explicitly communicate to schools that they must use district-approved standards-aligned curricula and participate in district-wide professional development (including non-instructional school staff members); however, they should also be encouraged to also select training to benefit their individual school's needs.

Evaluate your Practice: Does your district have an established reporting process for schools to document their progress, and how are these reports shared with the superintendent and school board? Do school leaders meet regularly with district personnel to review their school's progress? Are liaisons provided to each school and if so, what are their roles in supporting struggling schools? Do your district policy and procedures documents clearly state the scope of decision-making granted to schools, their leaders, and their teams? Does your district provide schools with a standards-aligned curriculum guide, and how is this guide developed and updated? How does your district balance district-wide goals for professional development with school-specific needs? Do your district and school schedules include sufficient time for training of all staff that is focused on ways they can serve as school ambassadors?

Introduction

Districts must consider that schools in need of substantial improvement must often progress through change processes that require substantial organizational transformations that differ from the minor incremental changes needed for already effective schools (Perlman, 2007). District leadership is key to improving student achievement (Waters & Marzano, 2006). To sustain a system of continuous improvement, schools will need extensive district support as well as a thorough understanding of which decisions are to be made at the district level and which are to be made by the school (Redding, 2007). Substantial school improvement requires the district to clarify with schools how they will be monitored to ensure they are on-track to improve, how decision-making will occur, and what district policies and practices will be in place to support schools within the change process. Often this clarification may take place within a letter of understanding between district and school that describes the support for change provided by the district, expectations of frequency of contact and reporting, expectations of decision-making authority, and any required district policies or programs of relevance to the school (Redding, 2007).

Ensuring Close Progress Monitoring and Communication

Low-performing schools require more attention from district staff in the form of resources, support and monitoring, and a tight relationship with district personnel can foster improvement. Partnering each low-performing school with a central office staff member (or members) who is responsible for monitoring the school and responding to its needs within the improvement process redefines the role of central office from one of oversight to support (Cawelti & Protheroe, 2007; Knudson, Shambaugh, & O'Day, 2011). This central office liaison should be specially trained to

assist with school turnaround and should serve as a resource, rather than as a compliance officer (Perlman, 2007). Having a skilled district leader or liaison who can facilitate turnaround schools' navigation of district policies and procedures, monitor and assess implementation fidelity of turnaround initiatives, and provide constructive feedback to school leaders and staff, contributed to positive gains in low-achieving schools in Massachusetts (Lane, Unger, & Rhim, 2013). Lane, Unger, & Souvanna (2014) describe how these district systems to support turnaround have evolved:

"Specifically, districts have reorganized and re-tasked central office staff to work directly with schools, developing systems that allow for monthly and sometimes weekly monitoring of turnaround efforts. An important distinction is that the "monitoring" provided by district leaders is predicated on having a solid relationship with the school principal, to the extent that district/school interactions are supportive and intended to promote professional improvement and growth, rather than focusing solely on monitoring the implementation of a written plan." (p. ii)

These new district structures suggest that this reorganization and repurposing has led to an increased district capacity, in that districts have created systems that can monitor and support low-performing schools as well as disseminate innovative ideas and strategies to other low-performing district schools (Lane, et al., 2014). This increased capacity allows districts to provide customized, targeted, and real-time response to support low-performing schools (Knudson, et al., 2011; The Center on School Turnaround, 2016).

Districts must also establish expectations for frequency of contact and communication with school decision-makers at low-performing schools; communication is key to ensuring that everyone is cognizant of school goals, roles, and expectations so that they can be accountable for progress (Cawelti & Protheroe, 2007). Regularly scheduled meetings (minimum of twice a month) to discuss progress communicates the urgency for change; these meetings may be between the school's leadership team and district liaison, or the liaison and principal (Redding, 2007). More frequent contact may be desirable; in low-achieving schools that were able to exit improvement status in Massachusetts, distract staff worked weekly with schools to monitor, support implementation, and facilitate communication (Lane, et al., 2014).

Superintendents and school boards play a critical role in school improvement, and must be willing and able to publicly recognize schools' challenges, collaboratively develop with key stakeholders reform goals and plans that focus on high student achievement, and build supportive structures for change (Waters & Marzano, 2006; Cawelti & Protheroe, 2007). The superintendent should also receive monthly updates on low-achieving schools' implementation of reforms and progress, and these updates should then be reported to school board members (Redding, 2007). School boards can then work with the superintendent and district leaders to determine where changes are needed; clear communication policies enable the district and board to problem solve quickly and efficiently (Corbett & Morando Rhim, 2016).

Scope of Site-Based Decision-Making Conveyed Through District Policies and Programs

While districts must provide clear expectations for school accountability, they must simultaneously create a balance between district control and school-level flexibility to incorporate change; this flexibility should involve explicit efforts to build and spread leadership skills to school staff (Cawelti & Protheroe, 2007; Knudson, et al., 2011). Districts must establish clear expectations for schools, and determine and communicate the types of decisions schools are authorized to make regarding resource allocations and staff assignments; however, the focus on district goals must be nonnegotiable (Waters & Marzano, 2006). Waters & Marzano found in their meta-analysis on superintendent leadership that effective superintendents provided principals with "defined autonomy." This defined autonomy involved setting nonnegotiable achievement goals for schools but providing school leadership teams with the responsibility and authority for deciding how to meet these challenging goals, and resources to achieve them. Lane et al., (2013) and Lane, et al. (2014) found that providing school leaders with flexibility around staffing, resources, and structuring the school day (e.g., schedules, meeting, common planning time, extended time) was an effective way for districts to build school's capacity for turnaround.

Districts must strike a balance between providing guidance and encouraging site-based decision-making, and this balance will likely vary from school to school depending on need (Cawelti & Protheroe, 2007). However, all districts have expectations that schools use district-

approved curricula and participate in research-based professional developed that targets district goals; these expectations must be clearly stated in agreement documents between the district and schools. Curriculum alignment and mapping should be comprehensive and integrated across grades; for example, cross-district and cross-grade teacher teams can be assigned to align content taught across grades and develop pacing guides. In some cases, districts must shift from site-based curricular decision-making to more centralized direction about what will be taught to ensure uniformity for students who may move between district schools (Cawelti & Protheroe, 2007). Providing "a coherent curriculum that aligns with standards and related training by establishing curriculum and curriculum maps and offering training to support implementation of core curriculum" are key district practices that support school turnaround (Lane, et al., 2013, p. 15).

District-wide professional development initiatives should be linked to district goals for achievement, and should be job-embedded and include components such as in-class coaching, group lesson planning, or groups analysis of student work (Cawelti & Protheroe, 2007). Districts policies that support school improvement include allowing teachers to participate in professional development that advances them as instructional leaders or master teachers, making continued learning part of the teacher contract, and offering incentives and support for schools to provide and evaluate job-embedded professional development opportunities for their teachers (Croft, Coggshall, Dolan, & Powers, 2010). Schools should also be given autonomy and resources to select professional development based on their own particular needs (i.e., based on classroom observations), while still being geared towards district learning goals. Districts should also ensure that principals of persistently struggling schools receive training to help them support improvement efforts (Knudson, et al., 2011). Districts should also plan professional development for non-instructional school staff to ensure a positive and welcoming school climate. For example, district training could include ways to ensure that everyone in the school community serves as a positive school ambassador by providing training on ways to offer a welcoming environment to students and their families (Redding, Murphy, & Sheley, 2011).

Indicators to Support the Effective Practice
The school reports and documents its progress monthly to the superintendent, and the superintendent reports the school's progress to the school board.
The district designates a central office contact person for the school, and that person maintains close communication with the school and an interest in its progress.
District and school decision makers meet at least twice a month to discuss the school's progress.
District policies and procedures clarify the scope of site-based decision making granted a school and are summarizedi n a letter of understanding.
The district provides a cohesive district curriculum guide aligned with state standards or otherwise places curricular expectation on the school.
The district provides the technology, training, and support to facilitate the school's data management needs.
Professional development is built into the school schedule by the district, but the school is allowed discretion in selecting training and consultaiton that fit the requirements of its improvement plan and its evolving needs.
Staff development is built into the schedule for support staff (e.g., aides, clerks, custodians, cooks) as well as classroom teachers.

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