
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 (Rosenhine, 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 (Rosenhine, 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 (Rosenhine, 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 dur-

ing 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
<p>Delivery sound instruction in a variety of modes:</p> <p>Preparation</p> <p>All teachers are guided by a document that aligns standards, curriculum, instruction, and assessment.</p> <p>All teachers develop weekly lesson plans based on aligned units of instruction.</p> <p>All teachers use objectives-based pre-tests and post-tests.</p> <p>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.</p> <p>All teachers maintain a record of each student’s mastery of specific learning objectives.</p>

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

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

Indicators to Support the Effective Practice

Maintain sound classroom management

All teachers provide students with curriculum-related activities for use when the student is waiting for assistance from the teacher.

All teachers use a variety of instructional modes (whole-class, teacher-directed groups, student-directed groups, independent work, computer-based, and homework).

Transitions between instructional modes are brief and orderly.

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).

Use sound homework practices and communicate with parents

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 include comments on checked homework.

All teachers count homework toward the student’s report card grade.

All teachers systematically report to parents the student’s mastery of specific standards-based objectives.

Indicators to Support the Effective Practice

Provide a tiered system of instructional and behavioral supports and interventions

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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