



Product Research & Documentation

Master Instructional Strategies Flip Chart

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Individuals with Disabilities Education Act of 2004 (IDEA), and the *2015 Every Student Succeeds Act* (ESSA) (Mandlawitz, 2016) advocate the use of multi-tiered interventions and instruction based on defensible research. Both the ESSA and the IDEA focus on the quality of instruction received by students in the general education setting and hold campuses accountable for results. This legislation serves as a stimulus for the development of the Master Instructional Strategies Flip Chart. Researchers stress the importance of accountability and assessment due to the increased focus in the legislation. Ernst, Miller, Robinson and Tilly (2005) note how critical it is that appropriate evaluative measures and intervention practices be in place for students who are not performing at the expected standard.

The Master Instructional Strategies Flip Chart is a teacher tool to augment teaching and learning by identifying effective instructional strategies. This teacher resource serves schools in planning high-quality core instruction as well as planning small-group instruction that supports students who are struggling academically or behaviorally.

There are several reasons for a campus to apply the strategies and/or interventions in this flip chart. This educational tool serves as a resource to assist teachers as they serve struggling learners. Integrating these strategies and sound practices into the educational environment enables teachers to ensure high-quality instruction and intensified intervention in classrooms at any level. Perhaps referrals to special education can be reduced or become more accurate when classroom instruction is designed with such practices delivered on a consistent basis.

The content of the Master Instructional Strategies Flip Chart offers a multitude of intervention strategies that can be readily implemented with identified students who are not achieving due to spe-

cific academic and/or behavior concerns. Other strategies are designed to effectively teach for any student, no matter what the subject might be. A campus identifies the specific area of need and selects an intervention or a strategy that is deemed appropriate. Support for teaching and learning is offered through this product so no student waits until failure to receive appropriate instruction and intervention.

Classroom management is improved when procedures become routines. Routines give structure to the instructional environment. Achievement increases when a positive productive learning environment exists. Behavioral interventions are essential for providing support to students whose academic learning is disruptive for the student and those around the student. Interventions are needed to establish a learning climate for students to cease their inappropriate behaviors so success in school is attained. Studies show that when students know exactly what is expected of them in specific situations, behaviors tend to be appropriate. Reed (1993) found behavior problems decreased 40% due to students being taught the desired expectations. Students should be taught each situation in a formal manner with modeling, role-playing, and repetitive practice.

Research indicates that students respond better to positive consequences than negative. Sidman (1998) reports a study that revealed 1,000,000 students dropped out of school each year. For the most part, this statistic seems to be due to a coercive learning environment. Further research shows 90% or more of appropriate behaviors are not recognized by teachers due to the attention teachers appear to place on misbehavior. Some research found that appropriate behavior was recognized more than negative. It appears both situations exist but the important point is to create a non-coercive learning environment. Other

researchers, such as Heward et.al. (1995) and Binder (1996) report that high-response opportunities occur in classrooms where the risk of failure and risk of criticism is not an issue. Students must feel it is safe to be involved, and this type of environment seems to keep behavior problems to a minimum. Pigford (1995) states that maintenance of a failure-free environment is essential to helping students increase academic success.

Teaching takes time, and managing classroom time is a challenge. Time management is a part of most aspects of the instructional day. Effective use of school time begins with efficient classroom organization and management. Teachers have to find ways to increase time to maintain the focus on instruction. According to Blasé (1982), teachers complained about having to cope with student disregard for classroom and school rules. This disregard resulted in student misbehavior, which interfered with the teaching process and student performance. Cotton (1990), in a synthesis of 57 research studies, noted that over half of classroom time is spent in activities other than those of instruction. The greatest part of the loss of classroom instructional time is attributed to discipline problems. Brophy (1996) in his review of research on the implication of teaching for low-achieving students, concluded that the key to achievement gain was maximizing the time teachers actively engaged the students no matter if they were in a regular or special education classroom. A time management section was developed for the *Master Instructional Strategies Teacher Flip Chart* to promote efficient use of the minutes and hours of each day. Time management strategies help teachers plan quality instruction and help students stay on task and work productively.

The implications of brain research (Caine and Caine, 1997; Sylwester, 1995) suggest teachers can promote thinking and learning. Brain-based learning provides some direction for teachers who desire to make purposeful, informed, instructional decisions. Learning how the environment impacts teaching and learning is paramount

to successful learning. Integrating brain research into instructional practice appears to have value.

Strategies suggested reinforce the major brain research findings (Caine and Caine, 1997; Jensen, 1998). Implications for application within the classroom include the following:

- Learning takes time;
- Connect new knowledge to prior learning and real-world contexts;
- Create an atmosphere for vocabulary instruction that is relaxed and free of threats, yet challenges the mind;
- Offer immediate feedback when students are learning new information to stimulate and support students. Trillions of unconnected neurons are in the brains of babies. These neurons must be connected to other neurons to result in a better functioning brain. When students are emotionally stimulated and supported in their learning, more brain connections are formed;
- Utilize multiple forms of higher level thinking questions to increase comprehension;
- Employ more than the traditional forms of teaching and testing to engage student learning;
- Incorporate varied teaching techniques to invite learners to respond using visual, tactile, emotional and auditory preferences; and
- Active engagement with the use of multi-sensory instruction appears to create the optimal learning setting (Stahl and Fairbanks, 1986).

Studies involving multi-sensory teaching experiences show that students achieve more gains in learning than when taught with either a visual or an auditory approach (Farkas, 2003; Maal, 2004). Research about the brain, including multiple intelligences and learning styles, helps teachers create a brain-compatible learning environment in classrooms. Knowledge of how the brain learns helps improve teaching practices. The brain-compatible instructional strategies, recommended by the Mentoring Minds Teacher



Resources team, equip teachers with knowledge on how to teach and how students learn.

The learning styles section in the flip chart establishes a foundation from which to provide interventions or strategies for addressing individual needs. Teachers must make critical decisions in determining which interventions or strategies are most beneficial in delivering instruction to close learning gaps in a timely manner. In order to provide high-quality instruction, educators must understand how students learn. Knowing the students' preferences for learning helps to solidify the appropriate manner for successful implementation. Instruction and interventions which match students' strengths to targeted deficit areas appear to show favorable results in student performance.

Blackmore (1996) noted teachers must recognize there are different ways to learn, they must know their learners, and they must capitalize on the diversity of students to promote high standards in classroom performance. Educators have recognized for a long time that some students prefer a particular way to learn. Knowing this information helps teachers plan for small group and individualized instruction. Students who have knowledge of their own learning styles can better understand themselves in regards to strengths and weaknesses. Sadler-Smith (2001) reported this understanding helps students to monitor and choose strategies that support their learning. This knowledge might improve self-confidence when students acknowledge their lack of learning might not be due to an inadequacy. Adey, Fairbrother, and William (1999) note that self-knowledge of how one learns is an advantage.

Students are apt to get more from a learning experience when they understand and use their styles of learning. Sarasin (1998) suggests using the lesser-preferred styles of learning to help strengthen the scope of students' learning and to

keep them in touch with how the real world functions. Pallapu (2007) found significant differences in a study of visual and verbal learners. The results appear to indicate that learning styles do affect learning and that improvement and learning increase if instruction accommodates the needs of learners. Dunn and Dunn (1998; 1992) stress how important it is for teachers to work differently with different learners if learners are to perform their best. They emphasize that instruction is what increases achievement. Dunn and Dunn also note the importance of educators receiving professional development on learning styles and its application.

The theory of multiple intelligences (MI) was developed by Howard Gardner. Originally, Gardner (1983) stated that all individuals possess seven independent intelligences. Gardner (1999) has now added an eighth intelligence, the naturalist intelligence. Together, these intelligences enable people to solve problems or participate in learning experiences with different levels of skill. The intelligences are: linguistic, logical-mathematical, musical, spatial, bodily-kinesthetic, interpersonal, intrapersonal, and naturalist. MI has been interpreted and adapted in many different schools and in many different ways. Initial findings suggest that MI helps schools in several ways. MI offers a vocabulary for teachers to use in discussing children's strengths and in developing curriculum. Teachers are encouraged to collaborate in teams which combine their own strengths with those of colleagues. MI gives schools the impetus to develop rich and varied educational experiences for children from diverse backgrounds. Armstrong (1993) provides MI implication strategies to optimize learning. Campbell, Campbell, and Dickinson (2004) stress the importance of encouraging students to explore and use all the intelligences. Educators are likely to serve a small percentage of students when they only use a single intelligence. Gardner shared that the use

of MI enhances the learning process. Strategies delineated in the Master Instructional Strategies Flip Chart guide teachers in developing or exercising all of the intelligences within classrooms.

Another section included within the Master Instructional Strategies Flip Chart is accommodation strategies. Students take in information in a variety of ways and they must be able to communicate that knowledge. Accommodations are changes in how students access information and demonstrate learning. Changes or adjustments to classroom instruction ensure students have equal access to the curriculum and have the opportunity to be successful (IDEA, 2004). Accommodations offer a way for students to show what they have learned. Meaningful access to the curriculum involves a multifaceted approach. Research reveals appropriate instructional accommodations (Elliott and Thurlow, 2000) and a variety of instructional approaches must be used (Kame'enui and Carnine, 1998). Joyce (1990) accents the importance of having knowledgeable personnel. For students to be successful, school personnel must have the skills, the knowledge, and the attitude to effectively carry out their responsibilities toward teaching and learning. The strategies in the Master Instructional Strategies Flip Chart provide a knowledge base for educators. Murnane and Levy (1996) advocate that all students, including those with disabilities, should have access to curriculum and instruction that allow them to acquire the knowledge and skills to achieve success in the 21st century.

Accommodations must be based upon the individual needs of each student as there is no prescribed set of appropriate accommodations for all (Rogan and Havir, 1993). Justification and documentation should be cited for each student's accommodations. Selected accommodations need to be aligned with and become a consistent part of daily instruction. An accommodation cannot be used for the first time during the assessment of a student. Rather, accommodations on state assessments should be those provided to students on a regular basis during classroom

instruction. However, an accommodation may be appropriately used for instruction but may not be an allowable one for state assessments (Thompson, Morse, Sharpe, & Hall, 2005). Mentoring Minds recommends that educators become familiar with allowable assessment accommodations for their individual state.

Universal Design for Learning (UDL) must also be considered when helping provide equitable learning for all. ESSA (Samuels, 2016) requires states and schools to include the UDL strategy in their plans for improving instruction. In this flip chart, the UDL panel address multiple ways for teachers to present instruction and content as well as numerous ways for students to engage in lessons and demonstrate their knowledge and understanding.

The section on effective instructional strategies contains evidence-based strategies essential to any classroom environment that places student success as the driving force for teaching and learning. These practices are identified as: feedback, cooperative grouping, games/simulations, homework and practice, questions, and organizers. Strategies for each of the areas are described. Evidence indicates that when teachers incorporate these strategies into instruction, teaching and learning improve.

Several findings surfaced regarding homework and student practice of skills. Homework should match the appropriate instructional level of the student and provide practice on previously introduced skills (Rademacher, Deshler, Schumacher, & Lenz, 1998; Rosenberg, 1989). Newell and Rosenbloom (1981) and Anderson (1995) advocate that students must receive focused practice to achieve mastery of skills. Healy (1990) notes that it is recommended that students practice only a few skills at a time at a deeper level. Complicated tasks should be broken into smaller segments with built-in practice time, states Marzano, Pickering, and Pollock (2001).

Cooperative learning is regarded as a sound instructional practice. Marzano, Pickering, and Pol-



lock (2001) found a significant effect on learning resulted when teachers grouped students in heterogeneous learning groups a minimum of once a week. Other research validated the use of cooperative learning for achievement, time on task, motivation to learn, and transfer of learning (Cohen, 1994; Johnson and Johnson, 1999).

Games and simulations promote high levels of engagement with immediate feedback and are beneficial to all students. Hood (1997) concluded these experiences can motivate students intrinsically. Edelson (1998) shared that games can stimulate students to learn, assist them in discovering concepts through exploration, and enable them to discover knowledge through exploration. Cooperation, teamwork, and conflict resolution are benefits of activities such as games and simulations, noted Neubecker (2003). Not only do such activities present opportunities for exploration and practice but Dempsey, Rasmussen, and Lucassen (1994) found changes in attitude also surfaced. Marzano, Pickering, & Pollock (2001) shared comprehension increases when students are given the opportunity to visualize and model concepts. Gordin and Pea (1995) stressed that classrooms that set up simulations and utilize modeling lay a strong foundation for the enrichment and extension of learning. Communication, problem solving, and collaboration are other skills students can accrue as a direct result of simulations noted Gredler (1990; 1994).

Studies show that the art of asking questions with an emphasis on higher-level thinking can advance student achievement. Marzano, Pickering, and Pollock (2001) reported how teachers can increase their effectiveness in teaching and learning by using research findings on questioning strategies. An important conclusion showed learning to increase in classrooms where teachers asked questions related to essential content rather than questions teachers believed would

interest students (Alexander, Kulikowich, & Schulze, 1994; Risner, Nicholson, & Webb, 1994). Redfield and Rousseau (1981) reported that knowledge level questions resulted in less learning than higher-level questions that encouraged students to use their analytical thought processes. Fillippone (1998) found that teachers ask lower-level questions more times than not.

Critical thinking is cited as an important issue in education today. Attention is focused on good thinking as an important element of life success (Huitt, 1998; Thomas and Smoot, 1994). “Perhaps most importantly in today’s information age, thinking skills are viewed as crucial for educated persons to cope with a rapidly changing world. Many educators believe that specific knowledge will not be as important to tomorrow’s workers and citizens as the ability to learn and make sense of new information” (Gough, 1991). Teaching students to become skilled thinkers is a goal of education. Students must be able to acquire and process information since the world is changing so quickly. Some studies reported that students exhibit an insufficient level of skill in critical or creative thinking. In his review of research on critical thinking, Norris (1985) surmised that students’ critical thinking abilities are not widespread.

Presseisen (1986) asserts that the basic premise for thinking skills instruction is that students can learn to think better if schools teach them how to think. Adu-Febiri (2002) agrees that thinking can be learned. According to Sousa (2006), students can be assisted in organizing the content of their thinking to facilitate complex reasoning. Sousa supports Bloom’s Taxonomy as an organizational structure that is compatible with the manner in which the brain processes information to promote comprehension. Carr (1990) acknowledges that while it is possible to teach critical thinking and its components as separate skills, they are developed and used best when learned in con-

nection with content knowledge. Solving problems in the real world and making worthwhile decisions is valued in our rapidly changing environment today.

Paul (1985) points out that “thinking is not driven by answers but by questions.” Teachers need to ask questions of students to turn on their intellectual thinking engines. The questions should be asked purposefully to require students to use the thinking skills which the teacher is trying to develop. Students can generate questions from teachers’ questions to get their thinking to move forward. Brain researchers suggest that teachers use a “variety of higher-order questions in a supportive environment to strengthen the brain” (Cardellichio and Field, 1997). Questions to encourage thinking in the classroom are identified for teachers in the Master Instructional Strategies Flip Chart. Bloom, Englehart, Furst, Hill, and Krathwohl (1956) developed a classification of levels of intellectual behavior in learning. Recognizing that there are different levels of thinking behaviors important to learning, Benjamin Bloom and his colleagues developed Bloom’s Taxonomy, a common structure for categorizing test questions and designing instruction. The revised taxonomy level names are also noted in the guide (Anderson, et. al., 2001).

Wait-time should be acknowledged before and after asking a question. Usually teachers give less than one second for students to respond to a question and the results are short responses or no response at all. Student-to-student interaction and quality of responses increase when wait-time is addressed, noted Fowler (1975). Rowe (1974) studied the effect of questions used by teachers on elementary students. Results showed three to five seconds of wait-time led to increases in student responses, student confidence, evidence supporting the response, and student conversation. This finding is consistent at the middle and high school levels when wait-time is allowed after asking a question. A recommendation is to allow five seconds of wait-time. Students must be informed that this time is their think-time and time

should also be adjusted to the cognitive level of the questions.

Organizers prepare students for learning, develop and reinforce concepts, and help clarify misunderstandings. Many researchers support the use of organizers for reading skills and vocabulary development (Brookbank Grover, Kullberg, & Strawser, 1999; Moore & Readence, 1984). Graphic organizers allow students to use graphics, symbols, and words to present a visual display to structure learning before and during a lesson. Paivio (1986) stated students can understand information and learn more when a variety of modes are used to present content.

Another effective instructional practice noted in the Master Instructional Strategies Flip Chart is feedback. When feedback denotes where and why students have made errors, it seems significant increases in student learning result (Lysakowski & Walberg, 1981; Tennenbaum & Goldring, 1989; Walberg, 1999). One of the most important practices used to improve student achievement is student feedback, according to Hattie (1992). Walberg (1999) also reported that the level of achievement varies depending on the type of teacher feedback a student receives. Marzano, Pickering, and Pollock (2001) promote that students remain involved on a task until the standard is reached if achievement is to be enhanced. An emphasis on timely feedback appears to affect the degree of value for learning, noted Bangert-Downs, Kulik, Kulik, and Morgan (1991).

Research on vocabulary substantiates the necessity of providing systematic vocabulary instruction due to the following conclusions: a relationship exists between vocabulary and achievement; comprehension improves when students have a direct connection between the word and word meaning; some vocabulary is specific to the content of a subject and must be taught in context; and fluent use of vocabulary is vital to student achievement. The ability of students to achieve in content areas is dependent upon language



(Buxton, 1998; Lee & Fradd, 1998). Science and math require specialized vocabulary. Mastering content-specific vocabulary can be a challenge for all students, especially when there are some everyday words with different meanings in the math and science disciplines (Carlson, 2000). No one can depend on the assumption that students will learn the necessary vocabulary by chance. All students need and benefit from direct vocabulary instruction (Gunning, 2003; Vacca, Vacca, Cove, Burkey, Lenhart, and McKeon, 2003). The values of providing a systematic approach to teaching content vocabulary are many.

Students have to understand vocabulary to understand the academic content they encounter in school. Stahl and Fairbanks (1986) revealed that when specific vocabulary from academic subject areas is selected as the focus of instruction, the result was a 33% increase in vocabulary comprehension. Therefore, it appears that when students are taught specific content vocabulary in each subject area at each grade level, they have an excellent opportunity to acquire the academic background knowledge they need to understand the subject area content. Teaching content vocabulary using a systematic approach appears to be a powerful tool for student success (Marzano & Pickering, 2005). Furthermore, research firmly documents that academic background knowledge has an effect on academic achievement. Any intervention for the achievement of students should identify increasing students' content vocabulary knowledge through direct instruction as a leading priority (Marzano, 2004). Word-learning strategies include learning how to use reference aids. Word-learning strategies are important for English learners and native English speakers, as reported by Carlo, August, and Snow (2005).

Many writers support the value of students writing about vocabulary (Azzolino, 1990; Chapman, 1996; Dougherty, 1996; Mayer & Hillman, 1996). Rubenstein and Thompson (2002) declared that

open-ended writing prompts allow teachers to analyze a student's thoughts about vocabulary and adjust instruction to accommodate any student misunderstandings about vocabulary meaning. Research concludes that when students work on activities at higher levels of thinking, combined with a variety in teaching strategies, retention and comprehension improve. The findings concluded from the literature led to the identification of numerous strategies for vocabulary instruction in the Master Instructional Strategies Flip Chart.

The need for higher quality assessments is well established. Studies show teachers spend as much as one-third to one-half of their time involved in assessment-related activities (Stiggins & Conklin, 1992). For instruction to be effective, classroom assessments must reflect quality. Assessment strategies provide measures to make an evaluative judgment of students' levels of competencies in given areas. This judgment determines the educational needs of students and offers direction to the teacher in planning effective instruction. Assessments should be both informal and formal. These varied assessments should be utilized before, during, and after instruction.

The information derived from assessments is a powerful tool to monitor the development of student understanding, to revise instruction, and to provide reflection for learners. It is noted that effective teachers utilize assessment tasks as quality learning experiences (NRC, 1996). Assessment feedback supplies the learner with self-assessment information, but it also enhances motivation which is crucial to achievement. Learning improves with consistent feedback (Heath & Glen, 2005; Linnenbrink & Pintrich, 2002; Pintrich & Schunk, 2002).

Rubrics provide students with established informative criteria for success by clarifying the desired learning outcomes for students. Crooks

(1988) shared that criterion-referenced feedback provides the guidance for improving student understanding. Self-assessment and reflection are important due to the feedback students can ascertain for themselves. Effective learning appears to result from students who provide their own feedback by monitoring their work against preset criteria presented to them in advance of the work task or assignment (Trammel, Schloss, & Alper, 1994; Wiggins, 1993).

Differentiation is a classroom practice that engages all learners by addressing their interests, their learning profiles, and their readiness levels. Differentiated instruction occurs in the curriculum, in lessons, and in assessments. Tomlinson (2001) and Roberts and Inman (2007) share that differentiation addresses variance in content, process, and product. Tomlinson states that this approach is “responsive” teaching rather than planning instruction that reflects “one-size-fits-all” students. Differentiation is delivered to help all students, no matter what age, learn efficiently as possible (Tomlinson, 2003a). Improved achievement is promoted when teachers are attentive to students’ preferences of learning. Tomlinson (2003) reports that student motivation and student attention to tasks increase when the topics of study reflect personal interests of students.

Roberts and Inman (2007) reveal that planning is meaningful and purposeful. Instructional options are not offered merely to provide students with choices in learning modalities or studies of interests. Teachers must intentionally offer choices in content, activities, assessments, products, and group formats that match the learning experience directly to the learner. As a result, student motivation increases. Student behavior can often improve when choices are allowed. Strategies for differentiating instruction are noted in the Master Instructional Strategies Flip Chart. Implementation of differentiation is not easy and teacher support through training opportunities and coaching is recommended. This practice is a valuable one to help campuses reach and sustain high standards within all classrooms.

Federal laws, ESSA and IDEA direct schools to focus on helping all students learn by addressing academic and/or behavioral concerns earlier. Both laws declare the importance of high quality, evidence-based instruction interventions. Both hold schools accountable for the progress of all students in meeting grade level standards. The Teacher Resources Product Development Team considered the directives from both laws, the literature on effective strategies, and findings from studies on the areas cited in the Master Instructional Strategies Flip Chart to determine the included strategies.

Intervention strategies can be used within the Response to Intervention (RTI) or the Multi-Tiered System of Supports (MTSS) approach used by a campus. The number coding following each strategy provides the user with an easy means for documentation purposes. A notable value of the flip chart is to build or extend the background knowledge of teachers on strategies that research has identified as important to effective instruction. In conclusion, the Master Instructional Strategies Flip Chart provides significant insight on what instruction looks like that engages students and leads them to be successful in learning.

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