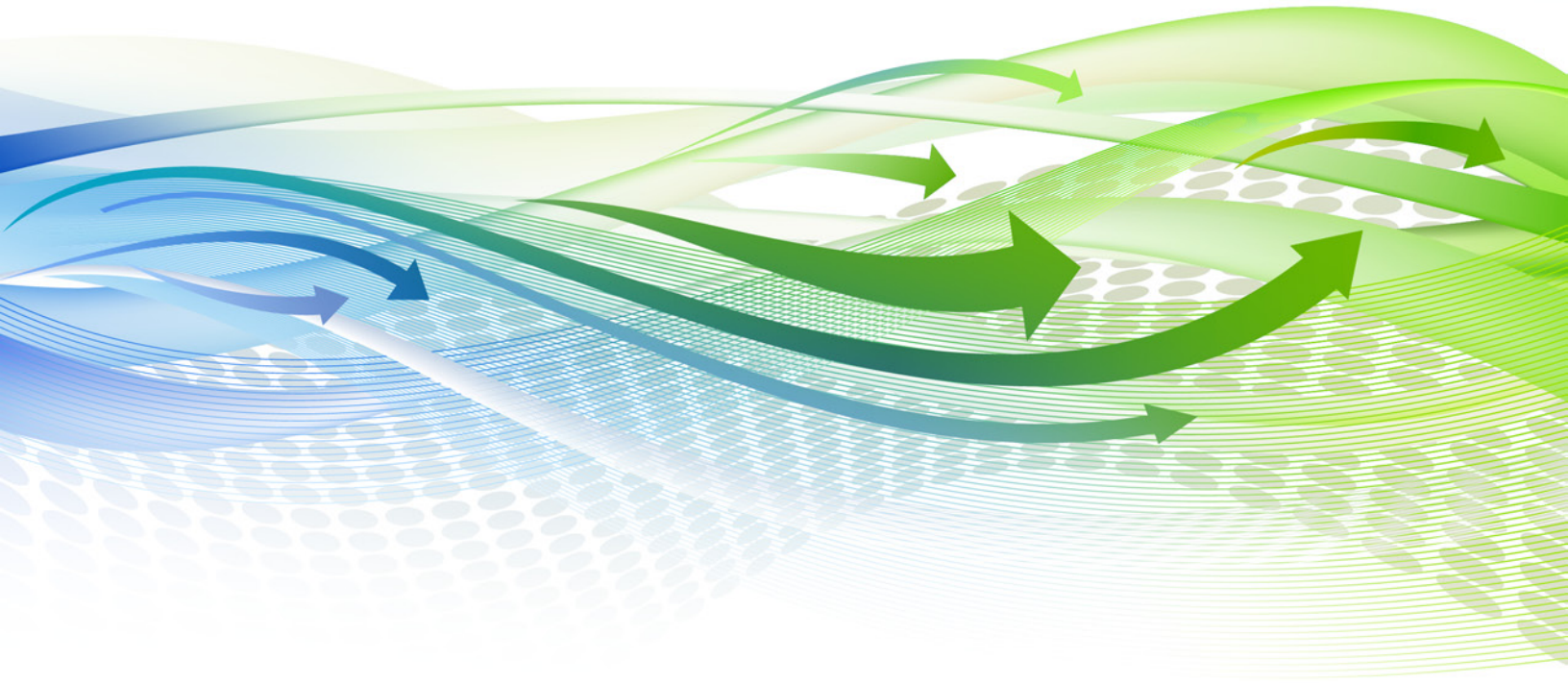
WHITEPAPER

CREATING AN ALIGNED SYSTEM

TO DEVELOP GREAT TEACHERS WITHIN THE FEDERAL RACE TO THE TOP INITIATIVE



Peggy Schooling, Ed.D. • Michael Toth • **Robert Marzano, Ph.D.**

CREATING AN ALIGNED SYSTEM

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INTRODUCTION

Research has shown that effective teachers are a dominant factor in student learning and are key to student success. Marzano (2009) has noted that a teacher who is classified as "most effective" (i.e., at the 98th percentile in terms of his or her pedagogical skill) will be expected to produce student achievement that is 54 percentile points higher than the achievement produced by a teacher who is classified as "least effective" (i.e., at the 2nd percentile in terms of his or her pedagogical skill). Race to the Top defines an effective teacher as one who is able to use instructional strategies in order to achieve student learning results (effective teacher = student achievement). Since principals do not directly instruct students, an effective principal is one who establishes the conditions in his or her school to systematically develop teacher effectiveness (effective principal = effective teachers). Yet, in many schools, teacher effectiveness often goes unrecognized and poor performance is not addressed (Weisberg, Sexton, Mulhern & Keeling, 2009).

In *The Widget Effect*, Weisberg, et al, (2009) reinforced that schools generally fail to recognize and identify the variations in teacher performance and to align teacher needs with student learning needs through effective professional development focused on student learning. Additionally, novice teachers who require more intensive development do not always receive the help they need or are granted tenure in absence of data that substantiates student learning (Weisberg, et al, 2009). Teaching is indeed complex and currently there are few interactive learning and evaluation systems that capture this complexity. Even in districts that are actively promoting the use of data, school staff provided relatively few examples of teachers using data to diagnose areas in which they could improve the way they teach (USDE, 2010).

The $4.35 billion Race to the Top federal initiative is a unique opportunity for districts and states to engage in significant reform to address teacher and principal effectiveness. Race to the Top requires participating states and local education agencies (LEAs) to develop a human capital strategy that:

- Informs the recruiting, selecting, hiring and induction processes
- Evaluates the effectiveness of teachers and principals using multiple measures with growth in student achievement as a significant factor
- Informs effective and targeted professional development and coaching
- Assesses the quality of teacher and principal preparation programs
- Supports decisions regarding teacher and principal compensation, tenure and dismissal of ineffective teachers and principals

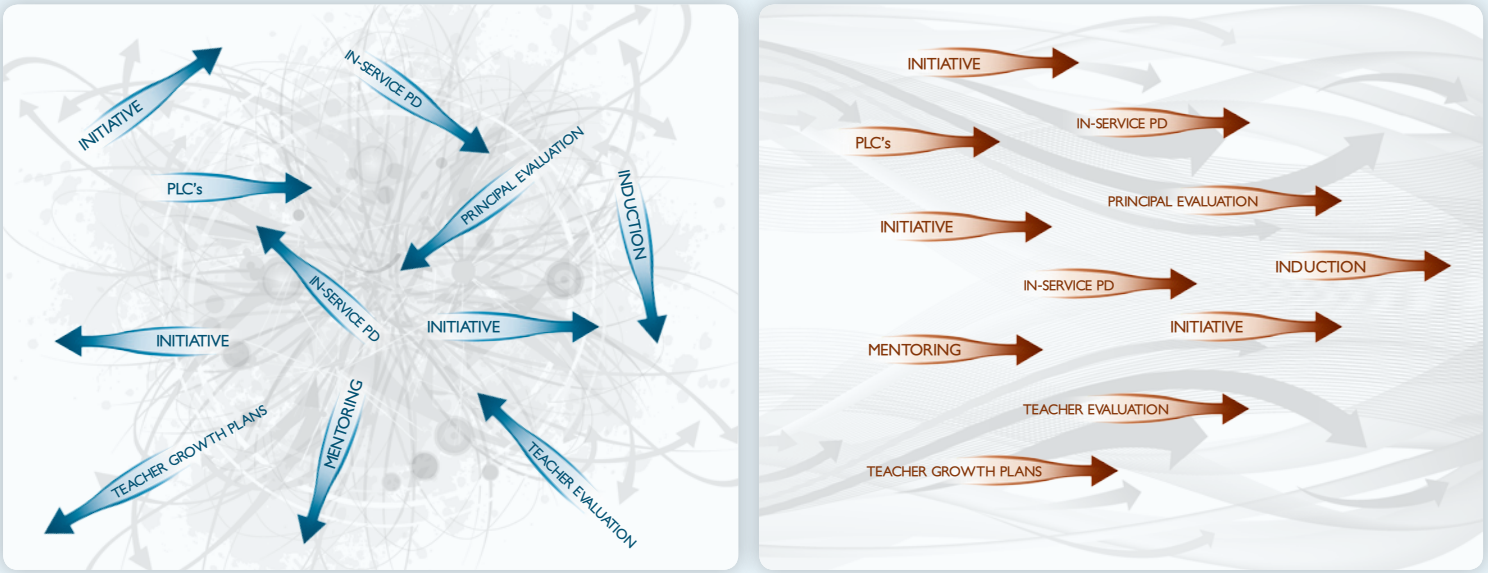
It would not be unreasonable to assume that themes from Race to the Top are a harbinger of the reauthorization of the Elementary and Secondary Education Act. Therefore, the policy implications for performance measures linked to gains in student achievement have broad implications.

Race to the Top focuses on the "what" but leaves the "how" up to states and LEAs in collaboration with their various stakeholders. Fortunately, we know a great deal about the "how" of effective teaching from 40 years of research. We have an enormous opportunity to translate this research into classroom practice using a robust framework that illustrates the major components of effective teaching and how they interact within the classroom to positively impact student learning. One concern is that well-intentioned state departments of education and school districts will enhance conventional models that have no track record of improving teacher effectiveness or formalize narrow, overly simplistic, and even ineffective approaches to increasing teacher effectiveness.

We recommend that states and districts adopt a comprehensive performance evaluation and professional learning system that 1) accurately reflects the complexity of the teaching/learning process 2) uses robust real-time data to fairly and credibly differentiate teachers based on their effectiveness in promoting student learning, and 3) provides targeted, aligned, and differentiated professional development to help teachers collaborate, communicate, and reflect in ways that improve their instruction over time.

"Overall effectiveness in teaching must be defined in terms of the one indisputable criterion for success – **student learning.**"

- DR. ROBERT MARZANO



MISALIGNED SYSTEM
No Common Language or Model of Instruction

ALIGNED SYSTEM
Common Language or Model of Instruction

FIGURE 1 | Misaligned vs. Aligned Systems

THE CRITICAL IMPORTANCE OF A COMMON LANGUAGE/MODEL OF INSTRUCTION

A common language/model of instruction provides a framework for a way to talk about instruction that is shared by everyone in the state, educational service agency region, and at the district or school level. Principals and teachers use a common language of instruction to converse about effective teaching, give and receive feedback, collect and act upon data to monitor growth regarding the reasoned use of the strategies identified in the framework, and align professional development needs against the framework.

While the focus on teacher effectiveness must be centered on improving student learning, a complex evaluation system must focus on improving the expertise of the teacher across an entire system and provide clear mechanisms for teachers to improve their instruction. A well-articulated knowledge base is a prerequisite for developing expertise in any systematic way (Marzano, 2009). Marzano (2009) notes that while there have been many attempts to identify the knowledge base regarding effective pedagogy, few have identified the characteristics of expert performance. The challenge, therefore, is to first develop a viable tool for fostering expertise in teaching and to classify it in a way that identifies the context or situations in which specific strategies should be used (Marzano, 2009). The second critical strategy is to provide opportunities for deliberate practice within a comprehensive professional learning system in which there are clear and focused tasks, clear criteria for success, and motivation to improve within the context of mentoring and professional development (Marzano, 2009).

Schools and districts often struggle with defining effective teaching within the context of multiple and competing approaches to teaching and learning while also creating challenging curriculum and robust assessment systems amidst differing philosophies, unclear performance measures, and fragmented professional development. Unfortunately, teachers bear a disproportionate burden within misaligned systems, hindering their growth and effectiveness in working with their students. Current approaches to monitoring classroom instruction, such as walkthroughs, typically use narrow checklists that do not reflect the complexity

of the teaching and learning process. Teachers are rarely provided immediate and specific feedback to improve their teaching, which is not always aligned with teacher evaluation or support processes. Given what we know from research, a **common language/model of instruction must:**

- Accurately reflect the complexity and sophistication of the teaching/learning process
- Identify the key strategies revealed by research for effective teaching
- Go beyond a narrow list of "high yield" strategies
- Identify which research-based strategies are appropriate for different types of lessons or lesson segments
- Include rubrics or scales with clearly defined continuums of implementation and evidences sufficient to impact student learning
- Allow for flexibility for districts to adapt and adopt the model to reflect local needs and priorities yet retain the common language

As shared understanding is developed based upon a common language of instruction, the next critical process is for teachers to engage in deliberate practice using the common language of instruction. Citing the work of Ericsson and his colleagues (Ericsson & Charness, 1994; Ericsson, Krampe, & Tesch-Romer, 1993; Ericsson & Smith, 1991), Hattie (2009) notes that the key difference between novices and experts is that experts engage in deliberate practice or relevant practice activities at appropriate levels of challenge, focused on improving particular aspects of their teaching. Deliberate practice is a mindset that requires teachers to precisely attend to what they are doing in the classroom in order to identify what is working and what isn't, and determine why students are learning or not learning. While there are quite possibly hundreds of possible teaching moves that teachers make on a daily basis, teachers can identify "thin slices" of teaching behaviors, derived from a common language of instruction, to focus on a specific area for improvement.

A major component of deliberate practice also involves clear and frequent feedback against a common language of instruction to enable teachers to make real-time adjustments in their teaching. Rubrics or scales aligned to the common language provide a viable means for teachers and supervisors to both celebrate, reward, and replicate effective teaching as well as provide a clear path for improvement. Feedback, then, can come from various forms of self-assessment, mentor, peer, and supervisor feedback using a common language with scales or rubrics.

ROBUST DATA

As states and districts design and develop solutions for determining teacher effectiveness that are inclusive of qualitative and quantitative sources of academic student achievement data, we propose that a major challenge will be balancing the use of leading indicators and lagging indicators to inform their decisions. We suggest that leading indicators related to teaching and learning can be defined as measurable factors of teacher behavior in the area of pedagogy that signal change and may be predictive of the future performance of student achievement trends and patterns. Leading indicators include a teacher's daily practice as noted by self-assessments; peer, mentor, and supervisory observations; formative assessments; and student surveys that provide opportunities to intervene and change practice on an ongoing basis. Lagging indicators can be defined as behaviors that change after an event has occurred. They confirm trends and patterns and have minimal use as a predictive tool. For our purposes, lagging indicators would include what teachers do after achievement scores are received to adjust or change their instructional practices. A robust evaluation system with leading and lagging indicators can provide constructive, specific, and focused feedback for teachers and principals to connect teaching and learning to student achievement.

PROFESSIONAL DEVELOPMENT

Teachers will need professional development as they receive feedback regarding their effectiveness from multiple sources of data such as self-assessments, peer and mentor observations, student surveys, and frequent and regular feedback from walkthroughs, observations, and instructional rounds. This professional development must be targeted, aligned, and differentiated to meet the various needs of teachers.

The National Staff Development Council (2009) challenges teachers and administrators to design a professional development system in such a way that "every educator engages in effective professional learning every day so every student achieves." This challenge urges schools and districts to create ongoing, sustained, and results-driven professional learning experiences for teachers. Designing professional learning in the 21st century subsequently will require different designs that incorporate traditional means of professional development (e.g., workshops and conferences) with 21st century methodologies. Use of popular media (e.g., classroom videos), print and digital resources (e.g., articles and text), online learning, wikis, and virtual learning communities will provide a viable means for schools and districts to provide multilayered, differentiated, and integrated professional learning for teachers. The best professional development experiences for teachers occur when they interact about what worked, what didn't work, and why with a particular set of students INFORMED by evidence collected via observations and student data.

GETTING IT RIGHT

Marzano (Interview, 2008) has suggested that the educational field is lacking a common language/model of instruction to describe effective teaching. Having a comprehensive model in which everybody talks about teaching in the same way communicates a message that "we are serious about good teaching, we talk about teaching in this way, we expect you to think about teaching in this way and to use this model to examine your strengths and weaknesses and create a platform to allow for real reflective practice. In this way, the school or district becomes a place where you get better at teaching."

If a common language/model of instruction is the foundation of a performance evaluation system, then a more sophisticated view of the use of research-based instructional strategies within a robust framework must be considered. Over the last 40 years, Marzano (2007) has identified 41 categories of instructional strategies. *(See Appendix A – 41 Key Strategies Identified by Research for Effective Teaching and Appendix C – Meta-Analytic Synthesis of Studies Conducted at Marzano Research Laboratory on Instructional Strategies.)* Focusing on any one of these areas alone misses the big picture. Effective teachers, by definition, use a complex model of teaching in their heads that varies from novice to expert teachers. This complex model, however, can be organized in elegant and simple ways that fall into segments that occur in the classroom: routines, content, enacted on the spot (see Figure 2).

FIGURE 2 | Fundamental Lesson Segments (Marzano, 2007)

The 41 categories of research-based strategies can be organized into three fundamental lesson segments, allowing teachers and their observers to have a framework for identifying which set of research-based strategies is best used with different types of lessons or lesson segments (see Figure 2). This organization also helps teachers appropriately focus on a "thin slice" of instruction by engaging in deliberate practice with a target strategy. Teachers can select target strategies by using observation feedback and self-assessment data to identify focus areas of improvement. *(See Appendix B — Marzano Suite Tools, pages 6-11)*

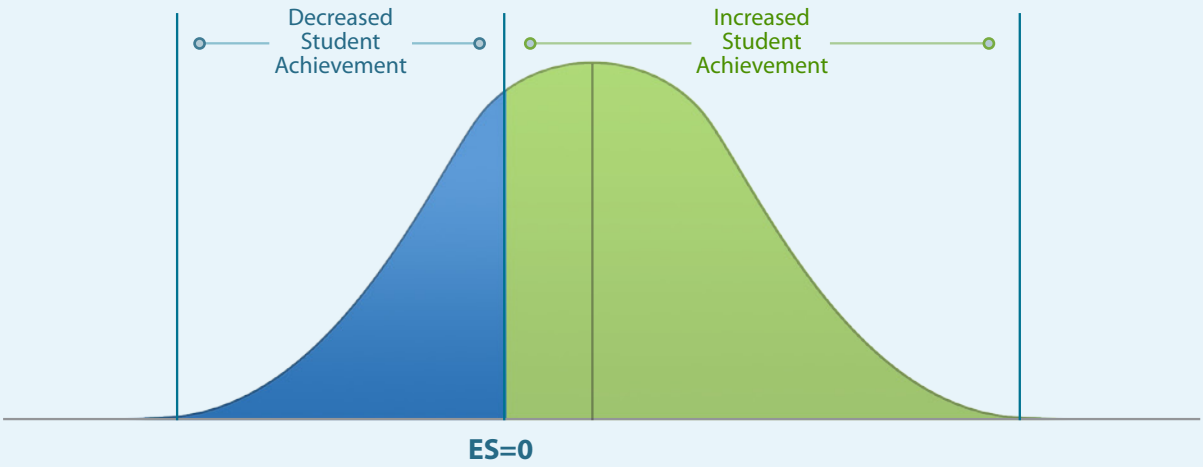


FIGURE 3 | Typical Bell Curve of Student Results

THE IMPORTANCE OF LESSON SEGMENTS IN THE COMMON LANGUAGE/MODEL OF INSTRUCTION

Figure 3 illustrates a typical bell curve distribution of student results from teachers using a research-based strategy. The dark area on the left of the curve represents classrooms where the teacher using the research-based strategy had decreased student achievement in comparison to students in the control group where the strategy was not employed. The ES=0 dividing line between the dark and light areas represents effect size equals zero, meaning the students in the classroom of the teacher employing the strategy did no better or worse than the control group where strategy was not used. The light area to the right shows where teachers were able to generate anywhere from modest to substantial gains in student learning using the strategy.

This begs the question, why the variation? How can the use of a research-based strategy vary from depressing student learning to generating substantial gains? There are several factors that can have a dramatic effect on the probability of raising student achievement with the use of research-based strategies. First, not all strategies are appropriate for all types of lessons. Certain strategies are more effective within different types of lessons. Second, each strategy has varying levels of implementation. If a teacher is using a strategy at a low level (incorrectly or with errors), the strategy most likely will not have the desired effect on student learning.

We propose Dr. Marzano's Art and Science of Teaching Observation and Feedback Protocol powered by iObservation for consideration as a robust, research-based common language/model of instruction. It is the only one of which we are aware that identifies which research-based strategies are appropriate for different types of lessons or segments within a lesson. *(See Appendix B: Marzano Suite Tools, page 7)* As Figures 2 and 3 illustrate, for teachers to improve their instructional effectiveness, it is critical that they know when to use certain strategies with different types of lessons or lesson segments.

DR. ROBERT MARZANO'S SOLUTIONS

To help states, districts, schools, and education service agencies create aligned systems around a comprehensive and robust common language of instruction in order to systematically develop the effectiveness of their teachers, we are pleased to introduce the **Marzano Suite Connecting Teacher Growth to Student Achievement powered by iObservation**.

The Marzano Suite is comprised of the Art and Science of Teaching Observation and Feedback Protocol as the research-based common language/model of instruction with aligned professional development programs and a powerful data system for establishing the link between use of instructional strategies and the corresponding gains in student learning.

The Marzano Suite provides the Observation and Feedback Protocol, teacher and principal professional development programs, and data system for districts, schools, educational service agencies, and states to establish a robust research-based language/model of instruction and align a system of supports from teacher preparation and induction through development into an expert teacher, all with supporting data. With the Marzano Suite, districts and schools can rigorously align walkthroughs, observations, teacher evaluations, and induction and professional development programs to create a coherent system for supervising and supporting effective teaching in every classroom.

DR. MARZANO'S COMMON LANGUAGE/MODEL OF INSTRUCTION

Dr. Marzano's Art and Science of Teaching Observation and Feedback Protocol powered by iObservation:

- Provides a comprehensive and robust research-based common language/model of instruction for effective teaching that accurately reflects the complexity and sophistication of the teaching/learning process (*See Appendix C - Meta-Analytic Synthesis of Studies Conducted at Marzano Research Laboratory on Instructional Strategies*)
- Identifies **41 key instructional competencies** revealed by research for effective teaching organized into a framework based on the Art and Science of Teaching
- Identifies the **appropriate strategies** for **different types** of lessons or lesson segments to maximize student learning
- Includes **rubrics** with clearly defined continuums of implementation and evidences sufficient to impact student learning to facilitate consistent, accurate, and meaningful feedback
- **Monitors** and supports implementation of research-based strategies into classroom instruction
- Offers flexibility for district **customization** to align with current focus or initiatives
- **Provides multilayered, integrated, and aligned professional development** using differentiated learning through workshops, online learning, classroom videos, and virtual learning communities
- Uses **evidence-based professional learning** in which teachers take the research and apply it in the classroom setting through deliberate practice and gather evidence about whether certain strategy works in a particular classroom with a particular set of students
- **Aligns Professional Learning Communities** — Teachers are able to review data on instruction and discuss the reasoned use of instructional strategies within the framework in order to increase student achievement
- **Aligns New Teacher Induction Programs** — New teachers develop an understanding of the common language/model of instruction while mentors provide feedback based on the framework and both the mentor and new teacher monitor growth in use of strategies within the model
- **Provides Consistency of Data** — Real-time data collection to measure progress in improved teaching across classrooms, schools, and districts supported by scales and rubrics

- **Aligns Preparation Programs** — Teacher preparation programs can align their curriculums and measure their candidates' progress in acquiring knowledge and skills in relation to the common language of instruction. Principal preparation programs can align their curriculums and measure their candidates' progress in understanding, assessing, and supporting teachers use of research-based strategies
- **Aligns Growth and Evaluation Systems** — Teacher growth and evaluation systems can be aligned to ensure coherent and systematic development of pedagogy sufficient to increase student achievement. Principal growth and evaluation systems can be aligned to ensure the creation of conditions and supports sufficient for teachers to measurably increase their effectiveness every year

DR. MARZANO'S SUITE FOR CONNECTING TEACHER GROWTH TO STUDENT ACHIEVEMENT POWERED BY iOBSERVATION INCLUDES:

Marzano Art and Science of Teaching Observation and Feedback Protocol — protocol for supervising and supporting the implementation of research-based instructional strategies across classrooms within a common language/model of instruction

Leaders of Learning Program — Six workshops that prepare instructional leaders to supervise and support the development of effective teachers in every classroom using the common language/model of instruction

Program to Support Effective Teaching — Online and in-person professional development designed to systematically build the knowledge and skills of teachers to improve their instruction as evidenced by student achievement gains; graduate education track is available for teachers to earn Dr. Marzano's Master of Science in Education: Major in the Art and Science of Teaching

Library of Online Resources — Videos and other on-demand professional development resources to support teachers in their assessed areas of need within the common language/model of instruction

Certifications for Teachers — Two national recognitions for educators: Certified in the Art and Science of Teaching, for achieving high levels of implementation of the research-based strategies within the common language/model of instruction, and Certified as an Expert Teacher, as a true performance certification where candidates must exhibit the ability to generate substantial gains in student achievement with their pedagogy.

(See Appendix B - Marzano Suite Tools)

iOBSERVATION

iObservation is the real-time data and instructional improvement system that monitors the implementation and effectiveness of the common language/model of instruction across schools and classrooms. iObservation provides districts and schools with a system to:

- Collect, monitor, and analyze **data** to support the implementation and adoption of Dr. Marzano's common language/model of instruction through walkthroughs, observations, instructional rounds, teacher self-assessment, and evaluations
- Engage **teachers** in the process — teachers participate directly in assessing their classroom practice against the common language/model of instruction
- Have teachers create **growth plans,** track their progress, and access aligned professional development resources
- Collect and analyze **student gain** data from every student for every teacher
- **Differentiate** professional development based on the assessed needs of each teacher

CREATING AN ALIGNED SYSTEM WITH DR. MARZANO'S SUITE

The Marzano Suite provides states, regional educational service agencies, districts, and schools the professional development programs and tools to implement Dr. Marzano's research-based common language/model of instruction and to align:

- Teacher evaluation
- New teacher induction programs
- In-service professional development programs
- Instructional coaching
- Graduate education

An aligned system provides the supports for teachers to systematically improve their instructional effectiveness.

To learn more or request a demonstration, visit **www.iObservation.com/MarzanoSuite** or call **(877) 411-7114**.

AUTHORS

Robert J. Marzano, PhD, is cofounder and CEO of Marzano Research Laboratory in Englewood, Colorado. A leading researcher in education, he is a speaker, trainer, and author of more than 30 books and 150 articles on topics such as instruction, assessment, writing and implementing standards, cognition, effective leadership, and school intervention. His books include *Designing & Teaching Learning Goals & Objectives*, *District Leadership That Works*, *Designing & Assessing Educational Objectives*, *Making Standards Useful in the Classroom*, and *The Art and Science of Teaching*.

His practical translations of the most current research and theory into classroom strategies are internationally known and widely practiced by both teachers and administrators. He received a bachelor's degree from Iona College in New York, a master's degree from Seattle University, and a doctorate from the University of Washington.

Margaret (Peggy) Schooling, Ed.D., is Director of Curriculum and Instruction and Professional Development Services for Learning Sciences International and iObservation in York, Pennsylvania. Dr. Schooling holds a doctoral degree and Superintendent's Letter of Eligibility from Immaculata University. She has 30 years experience as an educator, having worked in a variety of public and private settings with diverse student populations from birth through high school. Dr. Schooling has served as classroom teacher, speech pathologist, staff developer, elementary assistant principal, elementary principal, central office administrator, and educational consultant. Her responsibilities and expertise include systems change efforts, curriculum and instruction, design and evaluation of professional development, federal programs, early childhood, and K-12 literacy. She has been active with the Pennsylvania Department of Education as a member of the Governor's Early Learning Task Force and has served as a grant reviewer. Dr. Schooling contributed to and authored several professional publications and video productions. She serves as Adjunct Graduate Professor at Alvernia College and Immaculata University and presents at local, state, and national conferences.

Michael Toth is the founder and Chief Executive Officer of Learning Sciences International and iObservation, located in York, Pennsylvania. Formerly the president of the National Center for the Profession of Teaching and a university faculty member and director of research and development grants, Mr. Toth transformed his university research and development team into a company that is focused on leadership and teacher professional development and instructional effectiveness correlated to student achievement gains. Mr. Toth is actively involved in research and development, public presentations, and advises education leaders on issues of leadership and teacher effectiveness.

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VIDEO RESOURCES

Dr. Marzano Addresses the Critical Need for a Robust Model of Instruction

In this video, Dr. Robert Marzano defines a robust and comprehensive model of instruction and suggests how districts can integrate his Art and Science of Teaching Observation and Feedback Protocol into their own existing models.
Website | www.iObservation.com/MarzanoSuite/videos

Dr. Marzano Explains the Need to Align Walkthroughs, Teacher Evaluations and Professional Development

Dr. Marzano explains the most critical error hindering districts from their efforts to enhance teaching and learning: misaligned classroom walkthrough, teacher evaluation, and professional development. He recommends establishing a common language or model of instruction using the Art and Science of Teaching Observation and Feedback Protocol in iObservation to connect walkthroughs, evaluations, and professional development systems.
Website | www.iObservation.com/MarzanoSuite/videos

Dr. Marzano Describes 3 Phases in the Development of a District System that Supports Effective Teaching in Every Classroom

Dr. Marzano Discusses the Marzano Art & Science of Teaching Observation and Feedback Protocol in iObservation. Dr. Marzano recommends phases in which districts can engage to support teachers to incrementally improve their teaching each year as it relates to student achievement.
Website | www.iObservation.com/MarzanoSuite/videos

Dr. Marzano Explains the Power of a Common Language of Instruction

Dr. Robert Marzano explains why a common language or model of instruction is the foundation for improving teaching and learning.
Website | www.iObservation.com/MarzanoSuite/videos

APPENDIX A

41 KEY STRATEGIES IDENTIFIED BY RESEARCH FOR EFFECTIVE TEACHING

www.iObservation.com/files/WP_CAS_AppendixA.pdf

APPENDIX B

MARZANO SUITE TOOLS

www.iObservation.com/files/WP_CAS_AppendixB.pdf

APPENDIX C

META-ANALYTIC SYNTHESIS OF STUDIES CONDUCTED AT MARZANO RESEARCH LABORATORY ON INSTRUCTIONAL STRATEGIES

www.iObservation.com/files/WP_CAS_AppendixC.pdf

Marzano Research Laboratory (MRL) is a joint venture between Solution Tree and Dr. Robert Marzano. In service to educators, the company synthesizes Dr. Marzano's scope of educational research, world-renowned for its breadth and depth, into accessible components teachers and principals can use for concrete gains in student learning.

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Learning Sciences International (LSI), provider of iObservation, is a leader in developing state and school district data hubs and interactive learning systems for teacher and leadership effectiveness linked to student gains. LSI is pleased to partner with Marzano Research Laboratory to develop Dr. Robert Marzano's Suite Connecting Teacher Growth to Student Achievement, powered by iObservation.

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