

*Virginia Department of Education  
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# **The Research Base for the Uniform Performance Standards for Teachers**

*(Reference document to the Guidelines for Uniform Performance  
Standards and Evaluation Criteria for Teachers)*



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## INTRODUCTION

The purpose of this document is to provide the research base for the performance standards set forth in the *Guidelines for Uniform Performance Standards and Evaluation Criteria for Teachers*. The Board of Education is required to establish performance standards and evaluation criteria for teachers, principals, and superintendents to serve as guidelines for school divisions to use in implementing educator evaluation systems. The *Code of Virginia* requires (1) that teacher evaluations be consistent with the **performance objectives (standards)** set forth in the Board of Education's *Guidelines for Uniform Performance Standards and Evaluation Criteria for Teachers, Administrators, and Superintendents* and (2) that school boards' procedures for evaluating instructional personnel address student academic progress.

Section 22.1-253.13:5 (Standard 5. Quality of classroom instruction and educational leadership) of the *Code of Virginia* states, in part, the following:

- ...B. Consistent with the finding that leadership is essential for the advancement of public education in the Commonwealth, teacher, administrator, and superintendent evaluations shall be consistent with the performance objectives included in the *Guidelines for Uniform Performance Standards and Evaluation Criteria for Teachers, Administrators, and Superintendents*. Teacher evaluations shall include regular observation and evidence that instruction is aligned with the school's curriculum. Evaluations shall include identification of areas of individual strengths and weaknesses and recommendations for appropriate professional activities....

Section 22.1-295 (Employment of teachers) states, in part, the following:

- ...C. School boards shall develop a procedure for use by division superintendents and principals in evaluating instructional personnel that is appropriate to the tasks performed and addresses, among other things, **student academic progress** [emphasis added] and the skills and knowledge of instructional personnel, including, but not limited to, instructional methodology, classroom management, and subject matter knowledge.

The *Guidelines for Uniform Performance Standards and Evaluation Criteria for Teachers* set forth seven performance standards for all Virginia teachers. Pursuant to state law, teacher evaluations must be consistent with the performance standards (objectives) included in this document.

The performance standards are used to collect and present data to document performance that is based on well-defined job expectations. The guidelines provide a balance between structure and flexibility and define common purposes and expectations, thereby guiding effective instructional practice. The performance standards also provide flexibility, encouraging creativity and individual teacher initiative. The goal is to support the continuous growth and development of each teacher by monitoring, analyzing, and applying pertinent data compiled within a system of meaningful feedback.

## Purposes

The primary purposes of the teacher performance standards in the *Guidelines for Uniform Performance Standards and Performance Criteria for Teachers* are to:

- optimize student learning and growth;
- improve the quality of instruction by ensuring accountability for classroom performance and teacher effectiveness;
- contribute to the successful achievement of the goals and objectives defined in the vision, mission, and goals of Virginia schools;
- provide a basis for instructional improvement through productive teacher performance appraisal and professional growth;
- implement a performance evaluation system that promotes collaboration between the teacher and the evaluator; and
- promote self-growth, instructional effectiveness, and improvement of overall job performance.

The performance standards for teachers include the following distinguishing characteristics:

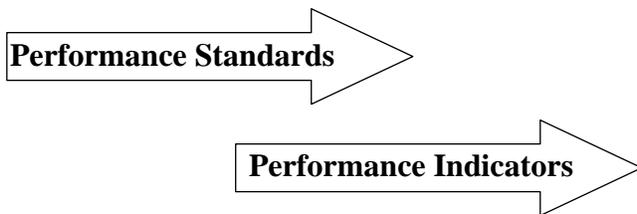
- a focus on the relationship between professional performance and improved learner academic achievement;
- sample performance indicators for each of the teacher performance standards;
- a system for documenting teacher performance based on multiple data sources; and
- a procedure for conducting performance reviews that stresses accountability, promotes professional improvement, and increases the involvement of teachers in the evaluation process.

## Defining Teacher Performance Standards

Clearly defined professional responsibilities constitute the foundation of the uniform performance standards for teachers. A fair and comprehensive evaluation system provides sufficient detail and accuracy so that both teachers and evaluators (i.e., principal, supervisor) reasonably understand the job expectations.

The term *site administrator* will be used for principals and supervisors. Additionally, a site administrator may designate an administrator to collect information on employee job performance. The site administrator remains informed of the assessment process and is responsible for the summative evaluation of the teachers.

The expectations for professional performance are defined using a two-tiered approach.



### *Performance Standards*

Performance standards refer to the major duties performed by the teacher. For all teachers, there are seven performance standards.

<b>Performance Standard 1: Professional Knowledge</b>
<i>The teacher demonstrates an understanding of the curriculum, subject content, and the developmental needs of students by providing relevant learning experiences.</i>
<b>Performance Standard 2: Instructional Planning</b>
<i>The teacher plans using the Virginia Standards of Learning, the school's curriculum, effective strategies, resources, and data to meet the needs of all students.</i>
<b>Performance Standard 3: Instructional Delivery</b>
<i>The teacher effectively engages students in learning by using a variety of instructional strategies in order to meet individual learning needs.</i>
<b>Performance Standard 4: Assessment of and for Student Learning</b>
<i>The teacher systematically gathers, analyzes, and uses all relevant data to measure student academic progress, guide instructional content and delivery methods, and provide timely feedback to both students and parents throughout the school year.</i>
<b>Performance Standard 5: Learning Environment</b>
<i>The teacher uses resources, routines, and procedures to provide a respectful, positive, safe, student-centered environment that is conducive to learning.</i>

**Performance Standard 6: Professionalism**

*The teacher maintains a commitment to professional ethics, communicates effectively, and takes responsibility for and participates in professional growth that results in enhanced student learning.*

**Performance Standard 7: Student Academic Progress**

*The work of the teacher results in acceptable, measurable, and appropriate student academic progress.*

**Performance Indicators**

Performance indicators included in this document were developed to provide examples of observable, tangible behaviors (see Part 2). That is, the performance indicators are *examples* of the types of performance that will occur if a teaching standard is being met successfully. The list of performance indicators is not exhaustive. ***Further, all teachers are not expected to demonstrate each performance indicator.***

Both teachers and evaluators should consult the sample performance indicators for clarification of what constitutes a specific performance standard. As an illustration, performance indicators for the *Instructional Delivery* standard are listed in Figure 1 below.

*Figure 1: Sample of Performance Standard and Indicators*

**Performance Standard 3: Instructional Delivery**

*The teacher effectively engages students in learning by using a variety of instructional strategies in order to meet individual learning needs.*

**Sample Performance Indicators**

*Examples of teacher work conducted in the performance of the standard may include, but are not limited to:*

- 3.1 Engages and maintains students in active learning.
- 3.2 Builds upon students' existing knowledge and skills.
- 3.3 Differentiates instruction to meet the students' needs.
- 3.4 Reinforces learning goals consistently throughout lessons.
- 3.5 Uses a variety of effective instructional strategies and resources.
- 3.6 Uses instructional technology to enhance student learning.
- 3.7 Communicates clearly and checks for understanding.

The performance indicators are provided to help teachers and their evaluators clarify job expectations. As mentioned previously, all performance indicators may not be applicable to a particular work assignment. ***Performance ratings are NOT made at the performance indicator level, but at the performance standard level.***

# PART 1: PERFORMANCE STANDARDS

Teachers are evaluated on the performance standards using the performance appraisal rubrics at the bottom of each page in this section. The performance indicators are provided as samples of activities that address each standard.

Teachers are evaluated on the performance standards using the following performance appraisal rubrics:

## **Performance Standard 1: Professional Knowledge**

*The teacher demonstrates an understanding of the curriculum, subject content, and the developmental needs of students by providing relevant learning experiences.*

### **Sample Performance Indicators**

*Examples of teacher work conducted in the performance of the standard may include, but are not limited to:*

- 1.1 Effectively addresses appropriate curriculum standards.
- 1.2 Integrates key content elements and facilitates students' use of higher level thinking skills in instruction.
- 1.3 Demonstrates an ability to link present content with past and future learning experiences, other subject areas, and real-world experiences and applications.
- 1.4 Demonstrates an accurate knowledge of the subject matter.
- 1.5 Demonstrates skills relevant to the subject area(s) taught.
- 1.6 Bases instruction on goals that reflect high expectations and an understanding of the subject.
- 1.7 Demonstrates an understanding of the intellectual, social, emotional, and physical development of the age group.
- 1.8 Communicates clearly and checks for understanding.

### **Performance Appraisal Rubric**

<b>Exemplary*</b>	<b>Proficient</b> <i>Proficient is the expected level of performance.</i>	<b>Developing/Needs Improvement</b>	<b>Unacceptable</b>
In addition to meeting the standard, the teacher consistently demonstrates extensive knowledge of the subject matter and continually enriches the curriculum.	<b>The teacher demonstrates an understanding of the curriculum, subject content, and the developmental needs of students by providing relevant learning experiences.</b>	The teacher inconsistently demonstrates understanding of the curriculum, content, and student development or lacks fluidity in using the knowledge in practice.	The teacher bases instruction on material that is inaccurate or out-of-date and/or inadequately addresses the developmental needs of students.

*\*Teachers who are exemplary often serve as role models and/or teacher leaders.*

## **Performance Standard 2: Instructional Planning**

*The teacher plans using the Virginia Standards of Learning, the school's curriculum, effective strategies, resources, and data to meet the needs of all students.*

### **Sample Performance Indicators**

*Examples of teacher work conducted in the performance of the standard may include, but are not limited to:*

- 2.1 Uses student learning data to guide planning.
- 2.2 Plans time realistically for pacing, content mastery, and transitions.
- 2.3 Plans for differentiated instruction.
- 2.4 Aligns lesson objectives to the school's curriculum and student learning needs.
- 2.5 Develops appropriate long- and short-range plans, and adapts plans when needed.

### **Performance Appraisal Rubric**

<b>Exemplary*</b>	<b>Proficient</b> <i>Proficient is the expected level of performance.</i>	<b>Developing/Needs Improvement</b>	<b>Unacceptable</b>
In addition to meeting the standard, the teacher actively seeks and uses alternative data and resources and consistently differentiates plans to meet the needs of all students.	<b>The teacher plans using the Virginia Standards of Learning, the school's curriculum, effective strategies, resources, and data to meet the needs of all students.</b>	The teacher inconsistently uses the school's curriculum, effective strategies, resources, and data in planning to meet the needs of all students.	The teacher does not plan, or plans without adequately using the school's curriculum, effective strategies, resources, and data.

*\*Teachers who are exemplary often serve as role models and/or teacher leaders.*

### **Performance Standard 3: Instructional Delivery**

*The teacher effectively engages students in learning by using a variety of instructional strategies in order to meet individual learning needs.*

#### **Sample Performance Indicators**

*Examples of teacher work conducted in the performance of the standard may include, but are not limited to:*

- 3.1 Engages and maintains students in active learning.
- 3.2 Builds upon students' existing knowledge and skills.
- 3.3 Differentiates instruction to meet the students' needs.
- 3.4 Reinforces learning goals consistently throughout the lesson.
- 3.5 Uses a variety of effective instructional strategies and resources.
- 3.6 Uses instructional technology to enhance student learning.
- 3.7 Communicates clearly and checks for understanding.

#### **Performance Appraisal Rubric**

<b>Exemplary*</b>	<b>Proficient</b> <i>Proficient is the expected level of performance.</i>	<b>Developing/Needs Improvement</b>	<b>Unacceptable</b>
In addition to meeting the standard, the teacher optimizes students' opportunity to learn by engaging them in higher order thinking and/or enhanced performance skills.	<b>The teacher effectively engages students in learning by using a variety of instructional strategies in order to meet individual learning needs.</b>	The teacher inconsistently uses instructional strategies that meet individual learning needs.	The teacher's instruction inadequately addresses students' learning needs.

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### **Performance Standard 4: Assessment of and for Student Learning**

*The teacher systematically gathers, analyzes, and uses all relevant data to measure student academic progress, guide instructional content and delivery methods, and provide timely feedback to both students and parents throughout the school year.*

### **Sample Performance Indicators**

*Examples of teacher work conducted in the performance of the standard may include, but are not limited to:*

- 4.1 Uses pre-assessment data to develop expectations for students, to differentiate instruction, and to document learning.
- 4.2 Involves students in setting learning goals and monitoring their own progress.
- 4.3 Uses a variety of assessment strategies and instruments that are valid and appropriate for the content and for the student population.
- 4.4 Aligns student assessment with established curriculum standards and benchmarks.
- 4.5 Uses assessment tools for both formative and summative purposes, and uses grading practices that report final mastery in relationship to content goals and objectives.
- 4.6 Uses assessment tools for both formative and summative purposes to inform, guide, and adjust students' learning.
- 4.7 Gives constructive and frequent feedback to students on their learning.

### **Performance Appraisal Rubric**

<b>Exemplary*</b>	<b>Proficient</b> <i>Proficient is the expected level of performance.</i>	<b>Developing/Needs Improvement</b>	<b>Unacceptable</b>
In addition to meeting the standard, the teacher uses a variety of informal and formal assessments based on intended learning outcomes to assess student learning and teaches students how to monitor their own academic progress.	<b>The teacher systematically gathers, analyzes, and uses all relevant data to measure student academic progress, guide instructional content and delivery methods, and provide timely feedback to both students and parents throughout the school year.</b>	The teacher uses a limited selection of assessment strategies, inconsistently links assessment to intended learning outcomes, and/or does not use assessment to plan/modify instruction.	The teacher uses an inadequate variety of assessment sources, assesses infrequently, does not use baseline or feedback data to make instructional decisions and/or does not report on student academic progress in a timely manner.

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## **Performance Standard 5: Learning Environment**

*The teacher uses resources, routines, and procedures to provide a respectful, positive, safe, student-centered environment that is conducive to learning.*

### **Sample Performance Indicators**

*Examples of teacher work conducted in the performance of the standard may include, but are not limited to:*

- 5.1 Arranges the classroom to maximize learning while providing a safe environment.
- 5.2 Establishes clear expectations, with student input, for classroom rules and procedures early in the school year, and enforces them consistently and fairly.
- 5.3 Maximizes instructional time and minimizes disruptions.
- 5.4 Establishes a climate of trust and teamwork by being fair, caring, respectful, and enthusiastic.
- 5.5 Promotes cultural sensitivity.
- 5.6 Respects students' diversity, including language, culture, race, gender, and special needs.
- 5.7 Actively listens and pays attention to students' needs and responses.
- 5.8 Maximizes instructional learning time by working with students individually as well as in small groups or whole groups.

### **Performance Appraisal Rubric**

<b>Exemplary*</b>	<b>Proficient</b> <i>Proficient is the expected level of performance.</i>	<b>Developing/Needs Improvement</b>	<b>Unacceptable</b>
In addition to meeting the standard, the teacher creates a dynamic learning environment that maximizes learning opportunities and minimizes disruptions within an environment in which students self-monitor behavior.	<b>The teacher uses resources, routines, and procedures to provide a respectful, positive, safe, student-centered environment that is conducive to learning.</b>	The teacher is inconsistent in using resources, routines, and procedures and in providing a respectful, positive, safe, student-centered environment.	The teacher inadequately addresses student behavior, displays a harmful attitude with students, and/or ignores safety standards.

*\*Teachers who are exemplary often serve as role models and/or teacher leaders.*

## **Performance Standard 6: Professionalism**

*The teacher maintains a commitment to professional ethics, communicates effectively, and takes responsibility for and participates in professional growth that results in enhanced student learning.*

### **Sample Performance Indicators**

*Examples of teacher work conducted in the performance of the standard may include, but are not limited to:*

- 6.1 Collaborates and communicates effectively within the school community to promote students' well-being and success.
- 6.2 Adheres to federal and state laws, school policies and ethical guidelines.
- 6.3 Incorporates learning from professional growth opportunities into instructional practice.
- 6.4 Sets goals for improvement of knowledge and skills.
- 6.5 Engages in activities outside the classroom intended for school and student enhancement.
- 6.6 Works in a collegial and collaborative manner with administrators, other school personnel, and the community.
- 6.7 Builds positive and professional relationships with parents/guardians through frequent and effective communication concerning students' progress.
- 6.8 Serves as a contributing member of the school's professional learning community through collaboration with teaching colleagues.
- 6.9 Demonstrates consistent mastery of standard oral and written English in all communication.

### **Performance Appraisal Rubric**

<b>Exemplary*</b>	<b>Proficient</b> <i>Proficient is the expected level of performance.</i>	<b>Developing/Needs Improvement</b>	<b>Unacceptable</b>
In addition to meeting the standard, the teacher continually engages in high level personal/professional growth and application of skills, and contributes to the development of others and the well-being of the school.	<b>The teacher maintains a commitment to professional ethics, communicates effectively, and takes responsibility for and participates in professional growth that results in enhanced student learning.</b>	The teacher inconsistently practices or attends professional growth opportunities with occasional application in the classroom.	The teacher demonstrates inflexibility, a reluctance and/or disregard toward school policy, and rarely takes advantage of professional growth opportunities.

*\*Teachers who are exemplary often serve as role models and/or teacher leaders.*

**Note: Performance Standard 7-Student Academic Progress:** If a teacher effectively fulfills all previous standards, it is likely that the results of teaching -- as documented in Standard 7 -- would be positive. The Virginia teacher evaluation system includes the documentation of student academic growth as indicated within Standard 7 and recommends that the evidence of progress be reviewed and considered throughout the year.

**Performance Standard 7: Student Academic Progress**

*The work of the teacher results in acceptable, measurable, and appropriate student academic progress.*

**Sample Performance Indicators**

*Examples of teacher work conducted in the performance of the standard may include, but are not limited to:*

- 7.1 Sets acceptable, measurable and appropriate achievement goals for student academic progress based on baseline data.
- 7.2 Documents the progress of each student throughout the year.
- 7.3 Provides evidence that achievement goals have been met, including the state-provided growth measure when available as well as other multiple measures of student growth.
- 7.4 Uses available performance outcome data to continually document and communicate student academic progress and develop interim learning targets.

**Performance Appraisal Rubric**

<b>Exemplary*</b>	<b>Proficient</b> <i>Proficient is the expected level of performance.</i>	<b>Developing/Needs Improvement</b>	<b>Unacceptable</b>
In addition to meeting the standard, the work of the teacher results in a high level of student achievement with all populations of learners.	<b>The work of the teacher results in acceptable, measurable, and appropriate student academic progress.</b>	The work of the teacher results in student academic progress that does not meet the established standard and/or is not achieved with all populations taught by the teacher.	The work of the teacher does not achieve acceptable student academic progress.

*\*Teachers who are exemplary often serve as role models and/or teacher leaders.*

## **PART 2: RESEARCH BASE FOR PERFORMANCE STANDARDS**

### **Performance Standards and Professional Organizations**

The revised *Uniform Performance Standards for Teachers* are aligned with professional organization standards for teacher performance and evaluation. Although there is a high degree of alignment of the uniform performance standards for teachers with the Interstate Teacher Assessment and Support Consortium (INTASC)<sup>1</sup> and the National Board for Professional Teaching Standards (NBPTS) standards, INTASC and NBPTS do not include measures of student academic progress in their standards/core propositions.

### **Research Base for Performance Standard 1: Professional Knowledge**

*The teacher demonstrates an understanding of the curriculum, subject content, and the developmental needs of students by providing relevant learning experiences.*

Classroom teaching is a complex activity that is cognitively demanding. Essential teacher knowledge includes content knowledge, pedagogical knowledge, curricular knowledge, knowledge of learners, and knowledge of culture and educational purposes at large.

Content knowledge, the disciplinary understanding of the subject taught, exerts a significant influence on a teacher's classroom behavior. Various studies suggest that teachers with stronger content knowledge are more likely to use practices that can help students construct and internalize knowledge, such as:

- Asking higher-level questions;
- Encouraging students to explore alternative explanations;
- Involving students in more inquiry-based learning;
- Allowing more student-directed activities; and
- Engaging students in the lessons.<sup>2</sup>

Effective teaching resides not simply in the knowledge a teacher has accrued, but also in how this knowledge is translated into student learning in classrooms.<sup>3</sup> For instance, teachers highly proficient in mathematics or writing will help others learn mathematics or writing only if they are able to use their own knowledge to enact learning activities that are appropriate to students. Therefore, a teacher's subject matter knowledge and pedagogical knowledge are complementary and interdependent. These two knowledge categories were synthesized by what Shulman called "pedagogical content knowledge," which he defined as "the blending of content and pedagogy into an understanding of how particular topics, problems, or issues are organized, represented, and adapted to the diverse interests and abilities of learners, and presented for instruction."<sup>4</sup>

Studies that examined the effects of teachers' subject matter knowledge and/or pedagogical knowledge on students' academic achievement often used simple survey questions, teachers' college course-taking, and majors to measure teacher knowledge. Figure 2 provides a brief summary of selected key studies that examine the association between teacher knowledge and student learning.

*Figure 2. Key references for effects of teacher subject matter knowledge and pedagogical knowledge*

<b>Study</b>	<b>Knowledge Base Examined</b>	<b>Measured By</b>	<b>Grade Level</b>	<b>Subjects</b>	<b>Findings</b>
Hill, Rowan, & Ball <sup>5</sup>	Content knowledge	Survey	Elementary	Mathematics	Teachers' mathematical knowledge significantly contributes to student mathematics learning, after controlling for other key student- and teacher-related characteristics.
Rowan, Chiang & Miller <sup>6</sup>	Content knowledge	Survey and college major	High school	Mathematics	Students whose teachers answered the mathematics quiz item correctly achieved more in mathematics than did those whose teachers answered the question wrong.  Students whose teachers majored in mathematics at the undergraduate and/or graduate level achieved more than those whose teachers did not, although the effect was quite small, $SD=.015$ .
Goldhaber & Brewer <sup>7</sup>	Content knowledge	College major	High school	Mathematics	Students learn more from teachers with majors in mathematics than students whose teachers had majors in nonmathematics subjects.
Monk <sup>8</sup>	Content knowledge and pedagogical knowledge	College coursework	High school	Mathematics and science	The amount of college-level mathematics or science courses taken by teachers had a positive effect on student learning gains. The effects of pedagogical coursework are more stable over time than the effects of subject matter preparation.

A research synthesis by Rice concluded that coursework in both pedagogy and content area has a positive impact on student achievement in middle and high school education, primarily for mathematics.<sup>9</sup> Pedagogical coursework seems to contribute to teacher effectiveness at both elementary and secondary levels, but the importance of content coursework appears to be more

salient at the secondary level. More fine-grained instruments need to be developed to measure teacher job-related knowledge and its effects on student achievement.<sup>10</sup>

The professional knowledge of effective teachers reaches beyond merely the knowledge of subject matter (content knowledge) and instructional strategies (pedagogical knowledge); indeed, professional knowledge also encompasses an understanding of students and environmental contexts.<sup>11</sup> Effective teachers often use their knowledge of their students -- for instance, knowledge of students' learning ability, prior achievement, cultural background, and personal interests -- to decide what and how to teach. Based on this expansive knowledge, teachers can anticipate the conceptions, misconceptions, and possible difficulties their students are likely to encounter while learning particular content.

## **Research Base for Performance Standard 2: Instructional Planning**

*The teacher plans using the Virginia Standards of Learning, the school's curriculum, effective strategies, resources, and data to meet the needs of all students.*

### **The Process of Planning**

***What Should Be Taught?*** Effective student learning requires a progressive and coherent set of learning objectives. State/national standards and school district/division curricula can point out the generic domains of subject content to be covered. However, it is the teacher's responsibility in virtually every classroom to delineate the intended outcomes of each lesson and to describe the skills that students should be able to perform after participating in the learning activities.

In deciding what should be taught, expert teachers often utilize prescribed textbooks, but they hardly ever follow traditional plans. In fact, they frequently have a blueprint in their minds that has been formed and re-formed over time. Perhaps because of their expertise gained over time through a constant process of planning-reflection-refining, these expert teachers are much less prone to rely on written, formalized lessons than on their well-formed and fluid mental planning model.<sup>12</sup>

Additionally, as effective teachers consider what to teach, they typically reach beyond prepared materials. For instance, while planning for a lesson in social science, effective teachers use historical fiction, biography, information on the Internet and in magazines, and other nontraditional content sources. Leinhardt found that expert teachers and novice teachers have a different "agenda" for their daily instruction.<sup>13</sup> Agenda is defined as an operational plan that is concise, focused, and descriptive of the intended goals and actions in which the teacher seeks to engage the students during the instructional time. Particularly, Leinhardt noticed that expert teachers conceive a lesson along two dimensions simultaneously:

- 1) the teacher's own actions, thoughts, and habits; and
- 2) the students' thinking and understanding of the content.

Thus, effective teachers not only plan what to teach, but more importantly, they plan for whom they are going to teach. They exert effort to reach beyond their comfort zone of disciplinary thinking and actions to incorporate their students' learning preferences and readiness levels.

***How Should It Be Taught?*** Once the learning objectives are developed, evidence suggests that expert teachers are more competent in translating their instructional plans into actions than non-expert teachers.<sup>14</sup> Additionally, effective teachers follow the predefined plan while remaining open to changes and continuously adjusting their instruction based on student needs. Further, expert teachers anticipate the difficulties students might encounter while learning the content of the lesson. They consider students' thinking in order to assess the success of the lesson plan and then modify their instruction promptly.<sup>15</sup>

Having a lesson plan cannot ensure that the actual lesson will be implemented as what is prescribed. Human behavior, either of the teachers or of the students in the classroom, cannot be predicted accurately as a phenomenon in the hard sciences. As any effective teacher or administrator knows, the classroom is full of ebbs and flows. Consequently, teachers need to tap into their pedagogical and content resources in a fluid and flexible manner in order to proceed smoothly -- and successfully.

***How Should Instruction and Student Learning Be Assessed?*** When the learning objectives are set up, in addition to aligning activities to them, teachers also need to link the assessment plan to the learning objective. Alignment of curriculum, learning activities, and assessment is integral to any instructional design. (This type of alignment is referred to as "Opportunity to Learn.") Before the actual instruction begins, teachers need to decide upon valid and reliable assessment techniques that are available to solicit student learning data and to judge the success of the instructional plan. Additionally, teachers should communicate to their students about what they are expected to achieve and inform them about how they will be assessed after participating in the learning activities.

***Pacing Guides as a Planning Tool.*** Teachers must consider a variety of factors when planning instruction, including how to pace the actual delivery in the classroom. The feasibility of a particular lesson largely depends on student ability and variation, content goals and mandated objectives, time and material resources, and so forth. Many of these factors present teachers with constraints that are beyond their immediate control. For example, there is a prescribed, fixed amount of time each day in which formal instruction may occur. Typically, hours of the day are chunked into units that are dedicated to the study of a certain subject or discipline as determined by a legislative body, school board, or a school administrator. Within those chunks of time, however, teachers traditionally have enjoyed a great deal of flexibility and autonomy. That is, what they did with class time was largely up to them. Over the past decade that flexibility has begun to wane -- a by-product of high-stakes testing. Teachers report a narrowing of the curriculum that focuses on tested items and breadth of content while sacrificing depth.<sup>16</sup>

Many school districts/divisions require teachers to follow strict pacing guides which prescribe how much time to spend on certain lessons or concepts. Pacing guides are intended to be instruments that teachers use to measure the amount of instructional time devoted to certain topics in light of the total content that must be taught. Properly used, pacing guides are tools to steer daily instructional decisions within the context of the entire curriculum. Used improperly, however, pacing guides unduly restrict the proper ebb and flow of the classroom and restrict the instructional pace regardless of student ability. On this topic, one writer stated:

Pacing guides are not an inherently bad idea. Their effects depend on their design and how district and school leaders use them. The best pacing guides emphasize curriculum guidance

instead of prescriptive pacing; these guides focus on central ideas and provide links to exemplary curriculum material, lessons, and instructional strategies.<sup>17</sup>

Thus, pacing, if used wisely, can be an important component of instructional planning. It allows teachers to see the curriculum in its entirety and to avoid the trap of overemphasizing one area of content at the expense of others. Because instructional time with students is fixed, teachers must value class time; pacing can help with this important planning consideration.

***Data-driven Aspects of Planning.*** All of the attributes of instructional planning require the use of data, either implicitly or explicitly. However, in terms of using data in planning, a central concern to consider is the proper use of proper data.<sup>18</sup> Simply claiming “data-based” does not improve practice. Rather, we must:

- gather pertinent data (i.e., quantitative and qualitative information);
- distill the real meaning of these data (i.e., What does the information tell us about teaching and learning?);
- aptly apply the information to improve and sustain good practice; and then
- improve results.

“Data-driven decision-making does not simply require good data; it also requires good decisions.”<sup>19</sup>

### **Research Base for Performance Standard 3: Instructional Delivery**

*The teacher effectively engages students in learning by using a variety of instructional strategies in order to meet individual learning needs*

Students arrive at school with a variety of backgrounds, interests, and abilities. This means that a one-size-fits-all approach to instruction is ineffective, probably counterproductive, and perhaps even unethical. If the goal of instruction is to provide an opportunity for all students to learn, then the instructional practices that teachers choose to employ in the classroom matter -- and matter greatly.<sup>20</sup> In an analysis of educational productivity in the United States and other countries, teacher classroom instruction was identified as one of the most significant variables that has great effect on student affective, behavioral, and cognitive outcomes.<sup>21</sup> Good quality instruction positively and directly affects student achievement. For instance, the instructional practice of reinforcement has a magnitude of 1.17 standard deviations on educational outcomes. And the effect of cues, engagement, and corrective feedback, each, is approximately one standard deviation. Personalized and adaptive instruction, tutoring, and diagnostic-prescriptive methods also have strong effects on student learning, with effect sizes of .57, .45, .40, and .33, respectively.<sup>22</sup>

## Student Engagement

Instead of using uniform strategies for all students, effective teachers design instruction that motivates each student and they communicate content in such a way that students are able to comprehend based on their individual prior learning and ability. Because students learn in a variety of ways and at a variety of rates, teachers should deliver their lessons with appropriate variety in order to maximize student engagement. One tool that can be helpful in sustaining high levels of student engagement is to connect to the ways individual students learn. A meta-analysis of the extant research suggests that instruction based on learning styles is positively related to student attitudes and achievement.<sup>23</sup> Dunn, et al., extended this finding to at-risk students, reporting that mean achievement increased nearly one standard deviation (i.e., approximately 84<sup>th</sup> percentile versus 50<sup>th</sup> percentile) when teachers accommodated for learning styles.<sup>24</sup>

Implementing a variety of classroom techniques and strategies also enhances student motivation and decreases discipline problems.<sup>25</sup> Furthermore, differentiated instruction enables teachers to adjust their curriculum, materials, learning activities, and assessment techniques to ensure that all students in a mixed-ability classroom can have different avenues to process new knowledge and develop skills, while having equal access to high-quality learning.<sup>26</sup>

Another essential aspect of effective instruction that helps build and sustain student engagement is relevance of the instruction. Making instruction relevant to real-world problems is among the most powerful instructional practices a teacher can use to increase student learning.<sup>27</sup> This kind of instruction allows students to explore, inquire, and meaningfully construct knowledge of real problems that are relevant to their lives. Moreover, students are motivated and engaged when their learning is authentic, especially when the real-world tasks performed have personalized results.

Questioning can be another highly effective instructional tool when used properly. In particular, the types of questions asked, wait time, and types of responses play a role in the propitious use of questioning. Unfortunately, there are substantial differences in the adept use of questioning between effective teachers and ineffective teachers. On the negative side, in a study of mathematics classrooms Craig and Cairo found that teachers ask more than 99 percent of the questions.<sup>28</sup> They also found that teachers tended to provide little wait time, asked recall and use questions, and designated a particular student to answer a question. On the positive side, in one case study the researchers found that teachers deemed effective asked approximately seven times higher cognitive-level questions than those considered ineffective.<sup>29</sup> Selected instructional practices exhibited by effective teachers are noted in Figure 3.

*Figure 3. Selected Instructional Practices Employed by Effective Teachers*

### **The effective teacher:**

- stays involved with the lesson at all stages so that adjustments can be made based on feedback from the students.<sup>30</sup>
- uses a variety of instructional strategies, as no one strategy is universally superior with all students.<sup>31</sup>
- uses research-based strategies to enhance the time students spend with teachers by making instruction student-centered.<sup>32</sup>

### **The effective teacher: (continued)**

- involves students in appropriate and challenging learning activities, such as cooperative learning, to enhance higher order thinking skills.<sup>33</sup>
- knows that instructional strategies that use students' prior knowledge in an inquiry-based, hands-on format facilitate student learning.<sup>34</sup>
- uses remediation, skills-based instruction, and differentiated instruction to meet individual student's learning needs.<sup>35</sup>
- uses multiple levels of questioning aligned with students' cognitive abilities with appropriate techniques.<sup>36</sup>

There is no single classroom practice that is necessarily effective with all subject matter and all grade levels.<sup>37</sup> Effective instruction involves a dynamic interplay among content to be learned, pedagogical methods applied, characteristics of individual learners, and the context in which the learning is to occur.<sup>38</sup> Ultimately, subject matter knowledge, pedagogical skills, and an inspiration for instructional innovation and development can liberate individual teachers to explore the diversification and richness of daily practice.

## **Research Base for Performance Standard 4: Assessment of and for Student Learning**

*The teacher systematically gathers, analyzes, and uses all relevant data to measure student academic progress, guide instructional content and delivery methods, and provide timely feedback to both students and parents throughout the school year.*

High quality assessment can produce valid information about students' learning outcomes and provide insight into the effectiveness of teachers' instruction. Research has indicated that teachers who introduce formative assessment into their classroom practice can affect substantial achievement gains. In their 1998 research review, Black and Wiliam examined a multitude of empirical studies to determine whether improvement in classroom assessments can lead to improvement in learning.<sup>39</sup> They found that formative assessment has substantial positive effects on student achievement, with effect size ranging from 0.3 to 0.7 standard deviations. Particularly, they found that formative assessment is more effective for low achievers than for other students, thus, reducing an achievement gap while raising achievement overall at the same time.<sup>40</sup>

Assessments are more likely to have a positive influence on student learning when they exhibit the characteristics noted in Figure 4.

*Figure 4. Assessment Characteristics that Positively Influence Student Learning*

### **Assessments are more likely to influence student learning when they:**

- are aligned with the framework of learning targets and instruction.
- are of sufficient validity and reliability to produce an accurate representation of student learning.
- are accompanied with frequent informative feedback, rather than infrequent judgmental feedback.

**Assessments are more likely to influence student learning when they: (continued)**

- involve students deeply in classroom review and monitoring.
- emphasize testing processes and results.
- communicate in a timely and effective manner.
- are documented through proper record keeping of learning results.<sup>41</sup>

Students as well as teachers have strong beliefs about the importance of feedback. Students report that informative feedback makes them aware of their mistakes, highlights ways to make corrections, and informs them of teacher expectations. Teachers report that providing feedback can be arduous and painstaking, but also they feel that it is an important part of instruction.<sup>42</sup>

As noted earlier, there are multiple methods for assessing student learning. Guskey found that teachers and administrators believed student portfolios were the most important type of assessment tool used to measure student learning, while division, state, and national assessments ranked the lowest.<sup>43</sup> Interestingly, homework ranked in the middle of Guskey's analysis of assessment types. Regardless of the type of assessment used, the more important issue is the practical value of the assessment in use. Tomlinson suggested that teachers must find a proper fit between students and the method being used to assess their learning.<sup>44</sup> Assessment, she posited, is a form of communication. Teachers must allow students to communicate their learning in a manner best suited to their needs.

Given the prevalence of standardized assessments at the state, regional, and national levels, in the United States and in numerous countries around the globe, a brief comment on this particular type of assessment seems in order. The extant literature has documented both positive and negative impacts of standardized assessments on teachers' instruction and assessment at the classroom level. The positive evidence indicates that standardized tests motivate teachers to:

- align their instruction to standards;
- maximize instructional time;
- work harder to cover more material in a given amount of instructional time; and
- adopt a better curriculum or more effective pedagogical methods.<sup>45</sup>

However, other research reveals that high-stakes assessments encourage teachers to:

- narrow the curriculum;
- focus on memorization, drills, and worksheets;
- allocate less time to higher-order skills; and
- restrict their teaching to formulated approaches of instruction.<sup>46</sup>

Teachers should maintain a balance between state/national level assessments and classroom level assessments to optimize student learning.

## **Research Base for Performance Standard 5: Learning Environment**

*The teacher uses resources, routines, and procedures to provide a respectful, positive, safe, student-centered environment that is conducive to learning.*

Effective teachers must be proficient in creating a positive classroom environment for learning, otherwise learning -- at least the intended learning -- will not occur. A review of research connecting learning environment and student achievement emphasizes a number of key dimensions, including classroom management and structure, positive classroom climate, and classroom talk.

### **Classroom Management and Structure**

Teachers who emphasize structure in the classroom are more effective than those who do not.<sup>47</sup> In general, structure means “an aggregate of elements of an entity in their relationships to each other.”<sup>48</sup> For our purposes in education, specifically, structure involves physically orienting the classroom for instruction, preparing and organizing materials, and framing lessons in a coherent and logical manner.

Effective teachers implement good classroom management to establish order, maintain safety, engage students, and elicit student cooperation with an ultimate purpose to establish and maintain an environment conducive to instruction and learning.<sup>49</sup> The extant research is fairly clear that good classroom management has a positive influence on students’ motivational development.

A study conducted by one team of researchers found that students’ perception of rule clarity and teacher monitoring are positively related to their development of academic interest in secondary school mathematics classes.<sup>50</sup> Another empirical study revealed that the top quartile teachers (i.e., the most effective teachers as identified by the high academic achievement of the students they taught) were more organized with efficient routines and procedures for daily tasks, and they communicated higher behavioral expectations to students than ineffective teachers. The top teachers also were found to have less disruptive student behaviors (on average, once every two hours) than do the less effective teachers (on average, once every 12 minutes).<sup>51</sup> Another research team noted that teachers who spend more time establishing instructional routines at the beginning of the school year did not need to exert as much effort on similar tasks later in the year.<sup>52</sup> The investment in initial organizational strategies yielded significant gains in reading scores throughout the year. In comparison, achievement gains were lower among students whose teachers did not demonstrate similar organization skills.

### **Positive Classroom Climate**

Effective teachers build a classroom climate where error (i.e., risk taking) is welcomed, where student questioning is high, where engagement is the norm, and where students can gain reputations as effective learners.<sup>53</sup> Wang, Haertel, and Walberg analyzed a knowledge base representing 11,000 statistical findings about student achievement in order to answer the question, What helps students learn?<sup>54</sup> They found classroom instruction and climate was the second most influential factor among six identified types of influence, second only to, but nearly

as prominent as, student aptitude. Based on this research synthesis, classroom climate refers to the socio-psychological dimensions of classroom life.<sup>55</sup>

Teachers who make the effort to engage in positive interactions with students make a difference in the academic and social development of their students. A constructive interaction with students is a motivator for students to act in accordance with the expectation of their teacher. Studies by Ladd and by Furrer and Skinner confirmed that low student achievement can result from stressful student-adult relationships, while positive relationships can lead to higher levels of student participation and engagement.<sup>56</sup> Teacher interactions with students have been found to have effects at all grade levels. Hamre and Pianta found that first grade teachers who engaged in positive interactions with at-risk students reduced the probability of those students experiencing failure in the early grades.<sup>57</sup> Barney found that middle school students developed a more positive attitude toward course content when their teachers took the time to interact with them.<sup>58</sup> Pressley, Raphael, Gallagher, and DiBella found that secondary teachers who got to know their students personally were able to work with them to develop and achieve goals.<sup>59</sup>

## Classroom Talk

The interaction between teacher and students, and among students, is another significant indicator of learning environment. Authority is more distributed than centralized through the communication that happens in a positive classroom environment. Additionally, the talk between teacher and student is personalized. Exemplary teachers have been found to use authentic conversation to learn about students and encourage students to engage their peer’s ideas.<sup>60</sup>

In summary, key features for these three attributes are detailed in Figure 5.

*Figure 5: Summary of Selected Features of Positive Learning Environment*

Positive Learning Environment Attributes	Features of Attributes
Classroom management and structure	<ul style="list-style-type: none"> <li>• identifying and communicating desirable behavior</li> <li>• consistently applying rules and procedures</li> <li>• monitoring student behavior</li> <li>• taking preventive rather than reactive management actions</li> <li>• pacing class activities and transitioning between tasks smoothly</li> <li>• maximizing instructional time</li> <li>• keeping students on tasks</li> <li>• making learning meaningful<sup>61</sup></li> </ul>
Positive classroom climate	<ul style="list-style-type: none"> <li>• cooperation among teachers and students</li> <li>• common interest and values</li> <li>• pursuit of common goals</li> <li>• a clear academic focus</li> <li>• well-organized and well-planned lessons</li> <li>• explicit learning objectives</li> <li>• appropriate level of task difficulty for students</li> <li>• appropriate instructional pace<sup>62</sup></li> </ul>

Positive Learning Environment Attributes	Features of Attributes
Classroom talk	<ul style="list-style-type: none"> <li>• respectful, supportive, and productive</li> <li>• modeled by teachers</li> <li>• practiced with students</li> </ul>

## Research Base for Performance Standard 6: Professionalism

*The teacher maintains a commitment to professional ethics, communicates effectively, and takes responsibility for and participates in professional growth that results in enhanced student learning.*

Teachers' daily practice is grounded in the beliefs, values, and attitudes they hold toward the profession, the students, the schools, and themselves.<sup>63</sup> To illustrate, caring about students is one of the most widely documented personal qualities of effective teachers. Effective teachers often are described as warm, friendly, and caring; conversely, ineffective teachers often are said to create a tense classroom and are described as cold, abusive, and uncaring.<sup>64</sup> When students perceive that their teachers care about them, they respond by "optimizing their commitment to learning and putting forth greater efforts to reach their potential."<sup>65</sup>

Additional examples of how teachers impact school success -- and their own success -- through their professional demeanor and ethical treatment of others might include a personal quality as simple as attitude. In particular, enthusiasm and motivation are two essential attitudes that impact teacher effectiveness and, ultimately, student achievement. Even teachers' enthusiasm for the teaching profession has positive effects on their instructional behaviors.<sup>66</sup> Teachers who are more enthusiastic about teaching exhibit higher quality instructional behavior, such as monitoring student learning, providing students with more cognitive autonomy support, offering more social support to students, and using higher levels of cognitive challenge. Teacher motivation also is expressed in a range of teacher behaviors that are perceived to be conducive to student learning, such as enthusiasm in content area taught, interest about students' personal and developmental needs, participation in content-related activities outside of class time, and the display of value and emotion for students.<sup>67</sup>

Teachers who demonstrate care and concern toward their students are perceived more positively and, in fact, are more effective<sup>68</sup> and, as with the personal quality of caring, other qualities such as fairness and respect have a positive impact on the teacher's bearing and effectiveness within the school community.

Clearly, an ethic of care and, more broadly, an ethic of working within the context of ethical, legal, and professional standards of conduct, is a key component of professionalism. Additionally, teachers are held to a high standard of personal and professional conduct, due largely to the fact that they are viewed as exemplars of behavior for the students they teach. In fact, the U.S. Supreme Court has stated that a "teacher serves as a role model for ... students, exerting a subtle but important influence over their perceptions and values."<sup>69</sup> Consequently, a teacher's behavior that jeopardizes student welfare can be justification for dismissal.<sup>70</sup> More to the point, if a nexus exists between a teacher's personal and professional life that harms students or a school's ability to operate effectively and efficiently, then that teacher has violated the ethical principles of teaching to the extent that dismissal often is justified. Guidelines for

determining adverse impact on students includes such factors as the age and maturity of the students, the proximity of the teacher's conduct, the teacher's motivation, extenuating or aggravating circumstances, and the likelihood of the conduct being repeated.<sup>71</sup>

## **Professionalism and Professional Growth**

Another key attribute of professionalism is a commitment to continuous improvement and perpetual learning. Interestingly, effective teachers monitor and strengthen the connection between their own development and students' development.<sup>72</sup> Evidence indicates that teachers who receive substantial professional development can help students achieve more. For example, based on the findings of one meta-analysis, teachers who received substantial professional development (in this instance, 49 hours) boosted their students' achievement about 21 percentile points, and this effect size is fairly consistent across content areas.<sup>73</sup>

## **Professionalism and Contributing to the Learning Community**

Effective teachers act individually and collectively to advance the teaching profession, and act as shapers, promoters, and well-informed critics of educational policies, instructional innovations, and internal changes that impact on student learning.<sup>74</sup> A teacher can contribute to the teaching profession by engaging in various types of study, inquiry, and even experimentation to develop personal best practices. Individually, teachers are powerful resources to enrich the professional knowledge base about academic standards, curriculum, pedagogy, and assessment by reflecting and sharing experiences of "what works" and "what does not work." Collectively, teachers can network with professional associations and collaborate with social/business agencies to advance overall school improvement.<sup>75</sup> Ultimately, effective teachers contribute substantially to fostering, supporting, and sustaining a learning community in which all members of the school -- including students and teachers -- are actively engaged in ongoing learning.

Figure 6 summarizes selected research findings regarding the importance of professionalism for teacher effectiveness.

*Figure 6. Teacher Effectiveness and Professional Behaviors and Dispositions*

### **Professional behaviors of effective teachers:**

- Encourage linking professional growth goals to professional development opportunities.<sup>76</sup>
- Empower teachers to make changes to enhance learning experiences, resulting in better student retention, attendance, and academic success.<sup>77</sup>
- Emphasize selecting professional development offerings that relate to the content area or population of students taught, resulting in higher levels of student academic success.<sup>78</sup> For example, science teachers with professional development in laboratory skills have students who outperform their peers.
- Encourage cognizance of the legal issues associated with educational records, and respect and maintain confidentiality.<sup>79</sup>

## Research Base for Performance Standard 7: Student Academic Progress

*The work of the teacher results in acceptable, measurable, and appropriate student academic progress.*

Numerous studies conducted in the United States and in other countries have documented the fact that effective teachers have a significant impact on student achievement. The research consistently has concluded that students in effective teachers' classrooms make academic growth that is larger than what is projected based on longitudinal data. Figure 7 provides a summary of selected key findings drawn from relevant empirical studies.

*Figure 7. Summary Findings of the Relationship between Student Progress and Teacher Effectiveness*

Key Findings
<ul style="list-style-type: none"><li>• Highly effective teachers generally were effective in helping all students make progress, regardless of their prior achievement levels, while ineffective teachers were found to be ineffective with all students. Teachers with average effectiveness facilitated achievement gains with lower achieving students, but not with higher student achievers.<sup>80</sup></li><li>• Teacher effects on student academic gains are cumulative and residual.<sup>81</sup></li><li>• Variations in teacher quality account for at least 7.5 percent of the total variation in measured achievement gains.<sup>82</sup></li><li>• Teachers contributed to 3 percent to 10 percent of the variability in student gain score, while controlling for student prior achievement and background characteristics.<sup>83</sup></li><li>• Teachers who were highly effective in producing higher-than-expected student achievement gains (top quartile) in one end-of-course content test (reading, mathematics, science, social studies) tended to produce top quartile residual gain scores in all four content areas. Teachers who were ineffective (bottom quartile) in one content area tended to be ineffective in all four content areas.<sup>84</sup></li></ul>

At a macro level, effective teachers help their students achieve greater than what is predicted for them on summative, standardized assessments. At a micro level, effective teachers provide instruction and support that leads to quality learning opportunities on a day-to-day basis. For example, based on a large-scale research review, Hattie found that compared to their ineffective colleagues, effective teachers are adept at monitoring student problems and assessing their level of understanding and progress, and they provide much more relevant, useful feedback.<sup>85</sup> The research also shows that effective teachers are more adept at developing and testing hypotheses about learning difficulties or instructional strategies. Additionally, an experimental study reached the following conclusions for teachers who monitored their students' growth on a regular basis:

- They effected greater student achievement than those who used conventional monitoring methods.
- They had more improvement in their instructional structure.

- Their pedagogical decisions reflected greater realism and responsiveness to student progress.
- Their students were more knowledgeable about their own learning and more conscious of learning goals and progress.<sup>86</sup>

Student progress monitoring is a technique that can provide teachers with data on students' performance to evaluate the effectiveness of their instruction and make adjustments in their pedagogical behavior. Progress monitoring also can help teachers set meaningful student achievement goals to tap into greater student learning potential. Teachers who use progress monitoring also are better informed of the strengths and weaknesses in student learning and can better decide on what instructional modifications are necessary. Stecker, Fuchs, and Fuchs noted that teachers effected significant growth in student learning with progress monitoring only when they modified instruction based on progress monitoring data; however, frequent progress monitoring alone did not boost student achievement.<sup>87</sup>

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