NIET Teacher Handbook

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EXPLANATION OF TAP'S TEACHING SKILLS, KNOWLEDGE AND RESPONSIBILITIES PERFORMANCE STANDARDS

To measure teaching skills, knowledge and responsibilities, TAP has defined a set of professional indicators required of all TAP teachers. A comprehensive rubric has been developed to measure teachers' performance in each of those indicators. It is essential that all teachers in a TAP school develop an in-depth understanding of teaching expectations as well as how teachers' performance will be measured using these rubrics.

This handbook serves as a guide for teachers implementing the TAP Teaching Standards. Teachers are encouraged to use this handbook as a guide towards understanding and implementing effective instructional practices. This handbook provides numerous examples of what each of these indicators looks and sounds like in the classroom. Understanding the indicators in isolation, however, does not guarantee that teachers will accurately and consistently implement them. Teachers also need to see what each indicator looks like in the context of their instructional practice in order to understand how they are accurately applied.

While many instructional strategies may be considered "proven best practices," it takes a high-quality implementation of these strategies in order for them to have a positive impact on student achievement. In the same way, application of the teaching indicators apart from a specific instructional purpose will not have a positive impact on student achievement. Only when teachers adeptly implement instructional strategies and apply the TAP Teaching Standards will student achievement gains be realized.

TAP's *Teaching Skills, Knowledge and Responsibilities Performance Standards* are divided into four domains. Within each domain, performance indicators are listed with bulleted descriptors and a rubric specifying performance levels for measuring actual teacher performance. Teachers may earn a score of a 1, 2, 3 ,4 or 5 for each indicator.

Throughout this section we have used the "exemplary" column as a platform to discuss each indicator. This is done to ensure that every aspect of each descriptor is considered. It should be noted that a teacher exhibiting consistent traits associated with the "proficient" column is considered a "rock solid" teacher and has instructed at a high level for the observed lesson.

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TEACHING SKILLS, KNOWLEDGE, AND PROFESSIONALISM PERFORMANCE STANDARDS

The *Teaching Skills, Knowledge, and Professionalism Performance Standards* are divided into four domains, as shown in the overview below. Within each domain, performance indicators are listed with bulleted descriptors and a rubric specifying three performance levels for measuring actual teacher performance. Performance definitions are provided at levels 5, 3, and 1, but raters can also score performance at levels 2 or 4 based on their professional judgment. Teachers earn a score of 1, 2, 3, 4, or 5 for each indicator.

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INSTRUCTION

	Significantly Above Expectations (5)* (Exemplary)	At Expectations (3)* (Proficient)	Significantly Below Expectations (1)* (Unsatisfactory)
Standards and Objectives	• All learning objectives and state content standards are explicitly communicated. • Sub-objectives are aligned and logically sequenced to the lesson's major objective. • Learning objectives are: (a) consistently connected to what students have previously learned, (b) know from life experiences, and (c) integrated with other disciplines. • Expectations for student performance are clear, demanding, and high. • State standards are displayed and referenced throughout the lesson. • There is evidence that most students demonstrate mastery of the objective.	• Most learning objectives and state content standards are communicated. • Sub-objectives are mostly aligned to the lesson's major objective. • Learning objectives are connected to what students have previously learned. • Expectations for student performance are clear. • State standards are displayed. • There is evidence that most students demonstrate mastery of the objective.	• Few learning objectives and state content standards are communicated. • Sub-objectives are inconsistently aligned to the lesson's major objective. • Learning objectives are rarely connected to what students have previously learned. • Expectations for student performance are vague. • State standards are displayed. • There is evidence that few students demonstrate mastery of the objective.
Motivating Students	• The teacher consistently organizes the content so that it is personally meaningful and relevant to students. • The teacher consistently develops learning experiences where inquiry, curiosity, and exploration are valued. • The teacher regularly reinforces and rewards effort.	• The teacher sometimes organizes the content so that it is personally meaningful and relevant to students. • The teacher sometimes develops learning experiences where inquiry, curiosity, and exploration are valued. • The teacher sometimes reinforces and rewards effort.	• The teacher rarely organizes the content so that it is personally meaningful and relevant to students. • The teacher rarely develops learning experiences where inquiry, curiosity, and exploration are valued. • The teacher rarely reinforces and rewards effort.
Presenting Instructional Content	Presentation of content always includes: • visuals that establish the purpose of the lesson, preview the organization of the lesson, and include internal summaries of the lesson; • examples, illustrations, analogies, and labels for new concepts and ideas; • modeling by the teacher to demonstrate his or her performance expectations; • concise communication; • logical sequencing and segmenting; • all essential information; and • no irrelevant, confusing, or nonessential information.	Presentation of content most of the time includes: • visuals that establish the purpose of the lesson, preview the organization of the lesson, and include internal summaries of the lesson; • examples, illustrations, analogies, and labels for new concepts and ideas; • modeling by the teacher to demonstrate his or her performance expectations; • concise communication; • logical sequencing and segmenting; • all essential information; and • no irrelevant, confusing, or nonessential information.	Presentation of content rarely includes: • visuals that establish the purpose of the lesson, preview the organization of the lesson, and include internal summaries of the lesson; • examples, illustrations, analogies, and labels for new concepts and ideas; • modeling by the teacher to demonstrate his or her performance expectations; • concise communication; • logical sequencing and segmenting; • all essential information; and • no irrelevant, confusing, or nonessential information.
Lesson Structure and Pacing	• The lesson starts promptly. • The lesson's structure is coherent, with a beginning, middle, end, and time for reflection. • Pacing is brisk and provides many opportunities for individual students who progress at different learning rates. • Routines for distributing materials are seamless. • No instructional time is lost during transitions.	• The lesson starts promptly. • The lesson's structure is coherent, with a beginning, middle, and end. • Pacing is appropriate and sometimes provides opportunities for students who progress at different learning rates. • Routines for distributing materials are efficient. • Little instructional time is lost during transitions.	• The lesson does not start promptly. • The lesson has a structure, but may be missing closure or introductory elements. • Pacing is appropriate for less than half of the students and rarely provides opportunities for students who progress at different learning rates. • Routines for distributing materials are inefficient. • Considerable time is lost during transitions.

* Performance definitions are provided at levels 5, 3, and 1. Raters can score performance at levels 2 or 4 based on their professional judgment.

INSTRUCTION, *continued*

	Significantly Above Expectations (5)* (Exemplary)	At Expectations (3)* (Proficient)	Significantly Below Expectations (1) * (Unsatisfactory)
Activities and Materials	Activities and materials include all of the following: • support the lesson objectives; • are challenging; • sustain students' attention; • elicit a variety of thinking; • provide time for reflection; • are relevant to students' lives; • provide opportunities for student-to-student interaction; • induce student curiosity and suspense; • provide students with choices; • incorporate multimedia and technology; and • incorporate resources beyond the school curriculum texts (e.g., teacher-made materials, manipulatives, resources from museums, cultural centers, etc.). • In addition, sometimes activities are game-like, involve simulations, require creating products, and demand self-direction and self-monitoring.	Activities and materials include most of the following: • support the lesson objectives; • are challenging; • sustain students' attention; • elicit a variety of thinking; • provide time for reflection; • are relevant to students' lives; • provide opportunities for student-to-student interaction; • induce student curiosity and suspense; • provide students with choices; • incorporate multimedia and technology; and • incorporate resources beyond the school curriculum texts (e.g., teacher-made materials, manipulatives, resources from museums, cultural centers, etc.).	Activities and materials include few of the following: • support the lesson objectives; • are challenging; • sustain students' attention; • elicit a variety of thinking; • provide time for reflection; • are relevant to students' lives; • provide opportunities for student-to-student interaction; • induce student curiosity and suspense; • provide students with choices; • incorporate multimedia and technology; and • incorporate resources beyond the school curriculum texts (e.g., teacher-made materials, manipulatives, resources from museums, etc.).
Questioning	Teacher questions are varied and high quality, providing a balanced mix of question types: ◦ knowledge and comprehension; ◦ application and analysis; and ◦ creation and evaluation. • Questions are consistently purposeful and coherent. • A high frequency of questions is asked. • Questions are consistently sequenced with attention to the instructional goals. • Questions regularly require active responses (e.g., whole-class signaling, choral responses, written and shared responses, or group and individual answers). • Wait time (3-5 seconds) is consistently provided. • The teacher calls on volunteers and nonvolunteers, and a balance of students based on ability and sex. • Students generate questions that lead to further inquiry and self-directed learning.	Teacher questions are varied and high quality, providing for some, but not all, question types: ◦ knowledge and comprehension; ◦ application and analysis; and ◦ creation and evaluation. • Questions are usually purposeful and coherent. • A moderate frequency of questions asked. • Questions are sometimes sequenced with attention to the instructional goals. • Questions sometimes require active responses (e.g., whole-class signaling, choral responses, or group and individual answers). • Wait time is sometimes provided. • The teacher calls on volunteers and nonvolunteers, and a balance of students based on ability and sex.	Teacher questions are inconsistent in quality and include few question types: ◦ knowledge and comprehension; ◦ application and analysis; and ◦ creation and evaluation. • Questions are random and lack coherence. • A low frequency of questions is asked. • Questions are rarely sequenced with attention to the instructional goals. • Questions rarely require active responses (e.g., whole-class signaling, choral responses, or group and individual answers). • Wait time is inconsistently provided. • The teacher mostly calls on volunteers and high-ability students.

INSTRUCTION, *continued*

	Significantly Above Expectations (5)* (Exemplary)	At Expectations (3)* (Proficient)	Significantly Below Expectations (1) * (Unsatisfactory)
Academic Feedback	• Oral and written feedback is consistently academically focused, frequent, and high quality. • Feedback is frequently given during guided practice and homework review. • The teacher circulates to prompt student thinking, assess each student's progress, and provide individual feedback. • Feedback from students is regularly used to monitor and adjust instruction. • Teacher engages students in giving specific and high-quality feedback to one another.	• Oral and written feedback is mostly academically focused, frequent, and mostly high quality. • Feedback is sometimes given during guided practice and homework review. • The teacher circulates during instructional activities to support engagement and monitor student work. • Feedback from students is sometimes used to monitor and adjust instruction.	• The quality and timeliness of feedback is inconsistent. • Feedback is rarely given during guided practice and homework review. • The teacher circulates during instructional activities, but monitors mostly behavior. • Feedback from students is rarely used to monitor or adjust instruction.
Grouping Students	• The instructional grouping arrangements (either whole class, small groups, pairs, or individual; heterogeneous or homogeneous ability) consistently maximize student understanding and learning efficiency. • All students in groups know their roles, responsibilities, and group work expectations. • All students participating in groups are held accountable for group work and individual work. • Instructional group composition is varied (e.g., race, gender, ability, and age) to best accomplish the goals of the lesson. • Instructional groups facilitate opportunities for students to set goals, reflect on, and evaluate their learning.	• The instructional grouping arrangements (either whole class, small groups, pairs, or individual; heterogeneous or homogeneous ability) adequately enhance student understanding and learning efficiency. • Most students in groups know their roles, responsibilities, and group work expectations. • Most students participating in groups are held accountable for group work and individual work. • Instructional group composition is varied (e.g., race, gender, ability, and age) to, most of the time, accomplish the goals of the lesson.	• The instructional grouping arrangements (either whole class, small groups, pairs, or individual; heterogeneous or homogeneous ability) inhibit student understanding and learning efficiency. • Few students in groups know their roles, responsibilities, and group work expectations. • Few students participating in groups are held accountable for group work and individual work. • Instructional group composition remains unchanged, irrespective of the learning and instructional goals of a lesson.
Teacher Content Knowledge	• Teacher displays extensive content knowledge of all the subjects she or he teaches. • Teacher regularly implements a variety of subject-specific instructional strategies to enhance student content knowledge. • Teacher regularly highlights key concepts and ideas and uses them as bases to connect other powerful ideas. • Limited content is taught in sufficient depth to allow for the development of understanding.	• Teacher displays accurate content knowledge of all the subjects he or she teaches. • Teacher sometimes implements subject-specific instructional strategies to enhance student content knowledge. • Teacher sometimes highlights key concepts and ideas and uses them as bases to connect other powerful ideas.	• Teacher displays under-developed content knowledge in several subject areas. • Teacher rarely implements subject-specific instructional strategies to enhance student content knowledge. • Teacher does not understand key concepts and ideas in the discipline and therefore presents content in an unconnected way.
Teacher Knowledge of Students	• Teacher practices display understanding of each student's anticipated learning difficulties. • Teacher practices regularly incorporate student interests and cultural heritage. • Teacher regularly provides differentiated instructional methods and content to ensure children have the opportunity to master what is being taught.	• Teacher practices display understanding of some students' anticipated learning difficulties. • Teacher practices sometimes incorporate student interests and cultural heritage. • Teacher sometimes provides differentiated instructional methods and content to ensure children have the opportunity to master what is being taught.	• Teacher practices demonstrate minimal knowledge of students' anticipated learning difficulties. • Teacher practices rarely incorporate student interests or cultural heritage. • Teacher practices demonstrate little differentiation of instructional methods or content.

INSTRUCTION, *continued*

	Significantly Above Expectations (5)* (Exemplary)	At Expectations (3)* (Proficient)	Significantly Below Expectations (1) * (Unsatisfactory)
Thinking	The teacher thoroughly teaches two or more types of thinking: • analytical thinking, where students analyze, compare and contrast, and evaluate and explain information; • practical thinking, where students use, apply, and implement what they learn in real-life scenarios; • creative thinking, where students create, design, imagine, and suppose; and • research-based thinking, where students explore and review a variety of ideas, models, and solutions to problems. The teacher provides opportunities where students: • generate a variety of ideas and alternatives; • analyze problems from multiple perspectives and viewpoints; and • monitor their thinking to ensure that they understand what they are learning, are attending to critical information, and are aware of the learning strategies that they are using and why.	The teacher thoroughly teaches one type of thinking: • analytical thinking, where students analyze, compare and contrast, and evaluate and explain information; • practical thinking, where students use, apply, and implement what they learn in real-life scenarios; • creative thinking, where students create, design, imagine, and suppose; and • research-based thinking, where students explore and review a variety of ideas, models, and solutions to problems. The teacher provides opportunities where students: • generate a variety of ideas and alternatives; and • analyze problems from multiple perspectives and viewpoints.	The teacher implements no learning experiences that thoroughly teach any type of thinking. The teacher provides no opportunities where students: • generate a variety of ideas and alternatives; or • analyze problems from multiple perspectives and viewpoints.
Problem Solving	The teacher implements activities that teach and reinforce three or more of the following problem-solving types: • Abstraction • Categorization • Drawing Conclusions/Justifying Solutions • Predicting Outcomes • Observing and Experimenting • Improving Solutions • Identifying Relevant/Irrelevant Information • Generating Ideas • Creating and Designing	The teacher implements activities that teach two of the following problem-solving types: • Abstraction • Categorization • Drawing Conclusions/Justifying Solution • Predicting Outcomes • Observing and Experimenting • Improving Solutions • Identifying Relevant/Irrelevant Information • Generating Ideas • Creating and Designing	The teacher implements no activities that teach the following problem-solving types: • Abstraction • Categorization • Drawing Conclusions/Justifying Solution • Predicting Outcomes • Observing and Experimenting • Improving Solutions • Identifying Relevant/Irrelevant Information • Generating Ideas • Creating and Designing

PLANNING

	Significantly Above Expectations (5)* (Exemplary)	At Expectations (3)* (Proficient)	Significantly Below Expectations (1) * (Unsatisfactory)

Instructional Plans	Instructional plans include:
	• measurable and explicit goals aligned to state content standards;
	• activities, materials, and assessments that:
	  ◦ are aligned to state standards.
	  ◦ are sequenced from basic to complex.
	  ◦ build on prior student knowledge, are relevant to students' lives, and integrate other disciplines.
	  ◦ provide appropriate time for student work, student reflection, and lesson and unit closure;
	• evidence that plan is appropriate for the age, knowledge, and interests of all learners; and
	• evidence that the plan provides regular opportunities to accommodate individual student needs.
		Instructional plans include:
		• goals aligned to state content standards;
		• activities, materials, and assessments that:
		  ◦ are aligned to state standards.
		  ◦ are sequenced from basic to complex.
		  ◦ build on prior student knowledge.
		  ◦ provide appropriate time for student work, and lesson and unit closure;
		• evidence that plan is appropriate for the age, knowledge, and interests of most learners; and
		• evidence that the plan provides some opportunities to accommodate individual student needs.
			Instructional plans include:
			• few goals aligned to state content standards;
			• activities, materials, and assessments that:
			  ◦ are rarely aligned to state standards.
			  ◦ are rarely logically sequenced.
			  ◦ rarely build on prior student knowledge
			  ◦ inconsistently provide time for student work, and lesson and unit closure;
			• little evidence that the plan is appropriate for the age, knowledge, or interests of the learners; and
			• little evidence that the plan provides some opportunities to accommodate individual student needs.

Student Work	Assignments require students to: • organize, interpret, analyze, synthesize, and evaluate information rather than reproduce it; • draw conclusions, make generalizations, and produce arguments that are supported through extended writing; and • connect what they are learning to experiences, observations, feelings, or situations significant in their daily lives, both inside and outside of school.	Assignments require students to: • interpret information rather than reproduce it; • draw conclusions and support them through writing; and • connect what they are learning to prior learning and some life experiences.	Assignments require students to: • mostly reproduce information; • rarely draw conclusions and support them through writing; and • rarely connect what they are learning to prior learning or life experiences.
Assessment	Assessment Plans: • are aligned with state content standards; • have clear measurement criteria; • measure student performance in more than three ways (e.g., in the form of a project, experiment, presentation, essay, short answer, or multiple-choice test); • require extended written tasks; • are portfolio-based with clear illustrations of student progress toward state content standards; and • include descriptions of how assessment results will be used to inform future instruction.	Assessment Plans: • are aligned with state content standards; • have measurement criteria; • measure student performance in more than two ways (e.g., in the form of a project, experiment, presentation, essay, short answer, or multiple-choice test); • require written tasks; and • include performance checks throughout the school year.	Assessment Plans: • are rarely aligned with state content standards; • have ambiguous measurement criteria; • measure student performance in less than two ways (e.g., in the form of a project, experiment, presentation, essay, short answer, or multiple-choice test); and • include performance checks, although the purpose of these checks is not clear.

ENVIRONMENT

	Significantly Above Expectations (5)* (Exemplary)	At Expectations (3)* (Proficient)	Significantly Below Expectations (1) * (Unsatisfactory)
Expectations	• Teacher sets high and demanding academic expectations for every student. • Teacher encourages students to learn from mistakes. • Teacher creates learning opportunities where all students can experience success. • Students take initiative and follow through with their own work. • Teacher optimizes instructional time, teaches more material, and demands better performance from every student.	• Teacher sets high and demanding academic expectations for every student. • Teacher encourages students to learn from mistakes. • Teacher creates learning opportunities where most students can experience success. • Students complete their work according to teacher expectations.	• Teacher expectations are not sufficiently high for every student. • Teacher creates an environment where mistakes and failure are not viewed as learning experiences. • Students demonstrate little or no pride in the quality of their work.
Managing Student Behavior	• Students are consistently well-behaved and on task. • Teacher and students establish clear rules for learning and behavior. • The teacher uses several techniques, such as social approval, contingent activities, and consequences, to maintain appropriate student behavior. • The teacher overlooks inconsequential behavior. • The teacher deals with students who have caused disruptions rather than the entire class. • The teacher attends to disruptions quickly and firmly.	• Students are mostly well-behaved and on task, some minor learning disruptions may occur. • Teacher establishes rules for learning and behavior. • The teacher uses some techniques, such as social approval, contingent activities, and consequences, to maintain appropriate student behavior. • The teacher overlooks some inconsequential behavior, but other times addresses it, stopping the lesson. • The teacher deals with students who have caused disruptions, yet sometimes he or she addresses the entire class.	• Students are not well-behaved and are often off task. • Teacher establishes few rules for learning and behavior. • The teacher uses few techniques to maintain appropriate student behavior. • The teacher cannot distinguish between inconsequential behavior and inappropriate behavior. • Disruptions frequently interrupt instruction.
Environment	The classroom: • welcomes all members and guests. • is organized and understandable to all students. • supplies, equipment, and resources are easily and readily accessible. • displays student work that frequently changes. • is arranged to promote individual and group learning.	The classroom: • welcomes most members and guests. • is organized and understandable to most students. • supplies, equipment, and resources are accessible. • displays student work. • is arranged to promote individual and group learning.	The classroom: • is somewhat cold and uninviting. • is not well-organized and understandable to students. • supplies, equipment, and resources are difficult to access. • does not display student work. • is not arranged to promote group learning.
Respectful Culture	• Teacher-student interactions demonstrate caring and respect for one another. • Students exhibit caring and respect for one another. • Teacher seeks out and is receptive to the interests and opinions of all students. • Positive relationships and interdependence characterize the classroom.	• Teacher-student interactions are generally friendly, but may reflect occasional inconsistencies, favoritism, or disregard for students' cultures. • Students exhibit respect for the teacher and are generally polite to each other. • Teacher is sometimes receptive to the interests and opinions of students.	• Teacher-student interactions are sometimes authoritarian, negative, or inappropriate. • Students exhibit disrespect for the teacher. • Student interaction is characterized by conflict, sarcasm, or put-downs. • Teacher is not receptive to interests and opinions of students.

PROFESSIONALISM

Performance Standard		Significantly Above Expectations (5) (Exemplary)	At Expectations (3) (Proficient)	Significantly Below Expectations (1) (Unsatisfactory)
Growing and Developing Professionally	1. The educator is prompt, prepared, and participates in professional development meetings, bringing student artifacts (student work) when requested.	Regularly	Sometimes	Rarely
	2. The educator appropriately attempts to implement new learning in the classroom following presentation in professional development meetings.	Regularly	Sometimes	Rarely
	3. The educator develops and works on a yearly plan for new learning based on analyses of school improvement plans and new goals, self-assessment, and input from the teacher leader and principal observations.	Regularly	Sometimes	Rarely
	4. The educator selects specific activities, content knowledge, or pedagogical skills to enhance and improve his/her proficiency.	Regularly	Sometimes	Rarely
Reflecting on Teaching	5. The educator makes thoughtful and accurate assessments of his/her lessons' effectiveness as evidenced by the self-reflection after each observation.	Regularly	Sometimes	Rarely
	6. The educator offers specific actions to improve his/her teaching.	Regularly	Sometimes	Rarely
	7. The educator accepts responsibilities contributing to school improvement.	Regularly	Sometimes	Rarely
	8. The educator utilizes student achievement data to address strengths and weaknesses of students and guide instructional decisions.	Regularly	Sometimes	Rarely
Community Involvement	9. The educator actively supports school activities and events.	Regularly	Sometimes	Rarely
School Responsibilities	10. The educator accepts leadership responsibilities and/or assists peers in contributing to a safe and orderly school environment.	Regularly	Sometimes	Rarely

EXPLANATION OF THE TAP TEACHING STANDARDS

This section will review the important elements of the first three domains of the *Teaching Skills, Knowledge, and Professionalism Performance Standards*. The following pages provide an explanation of all the indicators for *Instruction*, *Planning*, and *Environment*. Each indicator's descriptors will be explained with examples of how these descriptors might be implemented in a classroom. Additionally, this section provides suggested reflection questions for teachers to ask themselves as well as describes student engagement through the lens of each indicator.

INSTRUCTION

This section includes resources and information on the 12 indicators under *Instruction*:

1. Standards and Objectives
2. Motivating Students
3. Presenting Instructional Content
4. Lesson Structure and Pacing
5. Activities and Materials
6. Questioning
7. Academic Feedback
8. Grouping Students
9. Teacher Content Knowledge
10. Teacher Knowledge of Students
11. Thinking
12. Problem Solving

Standards and Objectives

Planning effective lessons aligned to the standards is dependent upon the teacher's ability to create and communicate *clearly defined learning outcomes* or objectives appropriate for the students. In many ways this indicator is the foundation for all other indicators because if the teacher is not clear about what he or she wants students to know and be able to do as a result of the lesson, the balance of the lesson cannot be properly developed or implemented. Both the students and the teacher should understand what is to be accomplished during each lesson.

Exemplary/Significantly Above Expectations Descriptors for Standards and Objectives

1. All learning objectives and state content standards are explicitly communicated.
2. Sub-objectives are aligned and logically sequenced to the lesson's major objective.

3. Learning objectives are:
   - » Consistently connected to what students have previously learned;
   - » Know from life experiences; and
   - » Integrated with other disciplines.
4. Expectations for student performance are clear, demanding, and high.
5. State standards are displayed and referenced throughout the lesson.
6. There is evidence that most students demonstrate mastery of the objective.

Descriptor 1: All learning objectives and state content standards are explicitly communicated.

The first descriptor under *Standards and Objectives* deals with the ability to "explicitly communicate" the objective or learning outcome, whether it is a state standard or sub-objective of a standard. Before a learning objective can be clearly communicated, it must be clearly written. There are three components of a clearly written objective:

1. Observable verbs/actions
2. Clear description of learning outcome
3. Measurable standards

Bloom's Taxonomy can assist in writing objectives. Observable verbs are arranged in order of complexity in thinking. However, "explicitly communicated objectives" go beyond merely stating a clearly written objective or standard. Communicated implies that the teacher can be certain that the students know and understand the learning objective. This requires the teacher to continually make references to the objective/standard throughout the lesson and to make connections for what the teacher and students are doing as it relates to the lesson's objective. This also provides purpose for what takes place during a lesson. The teacher and students may also refer to the stated objective/standard again at the end of the lesson for a reflection on how the students met the learning objective.

Descriptor 2: Sub-objectives are aligned and logically sequenced to the lesson's major objective.

Once the objective is clearly defined, the next step is to develop the necessary sub-objectives. The selection of appropriate sub-objectives depends on the needs of the students, the complexity of the objective, and the content. There are three basic reasons for including sub-objectives:

1. To review **prior learning**
2. To teach a **new sub-skill**
3. To teach a **process** that supports the main objective

EXAMPLE 1

Teacher: "Today we will be creating a graph that illustrates how classmates responded to a questionnaire about sports using the pie, bar, or line format. I have put together a rubric to assist you in completing this assignment."

When looking at the objective above, several sub-objectives could be identified. In reality, the needs of the students would determine what sub-objectives to include. For this example, there are a few sub-objectives that would probably be included in this lesson so that all students could be successful:

- To understand how to apply the pie, bar, and line graph (prior learning)
- To be able to calculate results of surveys into percentages (prior learning)
- To be able to apply the rubric to the project (process)

EXAMPLE 2

Teacher: "Today we are going to write a paragraph about a character in the story we just read. First you will complete this graphic organizer. It will provide guidance in describing your character effectively. Next you can write the paragraph. Use this paragraph checklist when you do your final edit."

This objective is very complex. It requires the student's ability to do many things other than the main objective of writing a paragraph. To what degree the sub-objectives must be taught may vary. As one might expect, there are times when what appeared to be a sub-objective becomes the lesson's objective based on the students' needs. Here are a few of the identifiable sub-objectives for this objective:

- To apply a paragraph format (prior learning)
- To be able to apply the pre-writing graphic organizer (sub-skill)
- To be able to identify characteristics of characters from a text (sub-skill)
- To be able to access each item on the checklist (process)

Descriptor 3: Learning objectives are:

- » **consistently connected to what students have previously learned;**
- » **know from life experiences; and**
- » **Integrated with other disciplines.**

This descriptor is about making connections in learning. It is important for teachers to connect new learning to prior learning so students are able to see learning as a continuum and to make real-life connections about how this learning impacts their lives. This connection can be done in a variety of ways. This descriptor is closely related to the descriptors under *Motivating Students* and *Teacher Knowledge of Students,* which refer to relevancy of students' lives and the incorporation of their interests and cultural heritage.

EXAMPLE 3

A teacher may model his/her thought process as he/she makes a connection to a specific topic and then lead students to do this through questioning. It may also be accomplished through group projects based on real-life scenarios. For example, students learning measurement may calculate the amount of carpet or paint needed to redecorate their room. Students learning about the Great Depression may research how policies from Roosevelt's New Deal continue to affect them today.

It is also important for teachers to lead students to make connections for how what they learn in one content area connects to another content area. For example, when measuring or creating graphs in science, a teacher may make connections to math with an emphasis on math vocabulary students are learning. In literature classes, connections may be made between what is being read and a historical time period students may be studying in social studies. It is important to make such connections significant and meaningful to students.

Descriptor 4: Expectations for student performance are clear, demanding, and high.

This descriptor deals with creating learning objectives and expectations that are demanding and of high quality for all students. Whether the teacher has succeeded in doing so can only be determined by the students' response to the lesson. It is important to look at assessment and other diagnostic methods for determining what to teach. For an objective to be demanding and high for all students, a teacher may need to develop different activities and/or assessments for different levels of students within the class. It is important that all students are challenged by the learning objective.

This descriptor refers to not only clear expectations for what students are to do to support their learning, but also clear expectations for procedures and student behavior during the lesson. For expectations to be clear, students should be provided a model for what they are to do. This may include the use of visuals, teacher or student modeling, anchor papers, and rubrics to demonstrate how student work will be assessed, written steps the students are to follow when completing the assignment, etc. If students are working in groups, expectations for each group member, as well as the expectation for the group as a whole, should be clearly explained. Students need to clearly understand how they will be held accountable for individual work and group work. Procedures for obtaining materials for the group work, the expected noise level, where students may work, etc. should all be clearly explained. This descriptor connects to the *Presenting Instructional Content* descriptor, "modeling by the teacher to demonstrate his/her performance expectations," and the *Grouping Students* descriptor, "all students in groups know their roles, responsibilities, and group work expectations."

Descriptor 5: State standards are displayed and referenced throughout the lesson.

This descriptor deals with the importance of providing a visual display of the state standard or learning objective that can be referenced by the teacher and students throughout the lesson.

Posting the Standard or Objective

Posting the state standards in the classroom provides a visual purpose for why students are learning what they are learning. However, it is not beneficial to post a standard that all students cannot see, is not referenced, or is not understood. Therefore, it is important for the teacher to reference the standard in language that students understand throughout the lesson to provide direction and focus. Many state standards are also the language of the state test. Therefore, it is important to post the standard as an opportunity to teach students vocabulary they will need to know to be successful. In some cases, teachers use pictures or symbols to expand meaning for them. This is especially true for lower-grade students, visual learners, and students not familiar with the English language. To derive full meaning from posting the standards, the following suggestions are made:

- Post the standards in **large enough print so that all students can read** them from their seats. By doing this, the teacher can reference them any time and know that the students are able to see and read them. Posting standards that only can be read by the teacher does not provide a learning tool for the students.
- Post the standards **using some visual formatting** such as webbing, mapping, or any other meaningful graphic organizer. This supports students in making connections among the standards and other content areas. For example, a teacher may create a web for standards connected to what the students will be learning about World War II. The center of the web would reference World War II. The spokes or lines extending from the center would reference the sub-standards or objectives that will be part of the unit, such as significant individuals they will be studying, important battles, etc.
- Post anchor papers or **examples of exemplary student work** along with scoring rubrics to demonstrate how students will be assessed for meeting the standard(s). These exemplary pieces may be from former students or teacher-created examples.
- Post standards for a specific unit together in the classroom. By doing this, the teacher and/or students can follow the progression of sub-objectives for a particular unit and date the standards as they are learned. This method of posting standards can provide students with a clear direction for a new unit of study.
- Provide students copies of standards to keep in their notebooks so they can record when each are taught and mastered.

Referencing the Standards

State standards are usually broad in scope. Before mastery of the standard can be accomplished, it is often necessary that students master many subordinate sub-objectives first. A metaphor provides an understanding of how the standards relate to teaching on a daily basis. For example, a state standard can be compared to the main idea of a story, while the daily lessons represent the supporting details. Therefore, by referencing the state standards, the student has an opportunity to relate the lesson to the "big picture" and to prior learning.

Descriptor 6: There is evidence that most students demonstrate mastery of the objective.

This descriptor is the most important one of all. No matter what teachers do or do not do, if students do not learn the information, then it is a waste of time and effort. Teachers must focus on what students have learned as opposed to what they have taught. Effective teachers plan formative assessments (verbal and/or written) that enable them to check for student mastery of the material taught and make modifications to their future lesson plans to meet the needs still evident in the student work.

SUGGESTED REFLECTION QUESTIONS ON STANDARDS AND OBJECTIVES

- How do I decide on the standards/objectives I will teach?
- How do I identify the sub-objectives for a lesson?
- How do I decide on the method I will use to communicate the standards/objectives to students?
- How do I utilize a visual of the standards/objectives during a lesson?
- How do I communicate my expectations to the students?
- How will I obtain evidence that most students have demonstrated mastery of the objective?

STANDARDS AND OBJECTIVES: STUDENT ENGAGEMENT

- Students turn the objective into an essential question and return to answer during the lesson.
- Individually or in groups -- students make connections to previous lessons and make personal connections.
- Students deconstruct the objective to determine the criteria for master of the objective.
- Students return to the objective of the lesson to analyze their own understanding.
- Students assess their own work and understanding to the clear criteria of mastery for the objective.

Motivating Students

This indicator focuses on a teacher's ability to organize and present the content in a manner that motivates students to learn. For a teacher to be able to develop these types of learning experiences, a teacher must have in-depth knowledge of the students he/she teaches. Therefore, this indicator connects strongly to *Teacher Knowledge of Students*.

Exemplary/Significantly Above Expectations Descriptors for Motivating Students

1. The teacher consistently organizes the content so that it is personally meaningful and relevant to students.
2. The teacher consistently develops learning experiences where inquiry, curiosity, and exploration are valued.
3. The teacher regularly reinforces and rewards effort.

For content to be personally meaningful to students there must be a clearly communicated purpose for student learning. Students need to understand why the content or skill being taught in a lesson is important for them to master and how their mastery of this will impact their own lives. Lessons that value inquiry, curiosity, and exploration provide opportunities for students to generate questions and conduct their own research or explore to locate the answers. When students have opportunities to generate their own questions about a given topic, their motivation to learn is usually increased as the learning becomes more student-directed than teacher-directed.

EXAMPLE 1: ORGANIZES THE CONTENT SO THAT IT IS PERSONALLY MEANINGFUL AND RELEVANT TO STUDENTS

A teacher presents a lesson on immigration during the 1860s. She brings in current newspaper articles on immigrants and refugees moving to the United States. Students also interview individuals who have immigrated to the United States. These activities make the content studied relevant to the students' lives and personally meaningful. Students also have the opportunity to develop their own questions to ask during the interviews, which provide experiences that value inquiry. This example also provides a real-world application of immigration.

EXAMPLE 2: PERSONALLY MEANINGFUL AND DEVELOPS LEARNING EXPERIENCES WHERE INQUIRY, CURIOSITY AND EXPLORATION ARE VALUED

A teacher presents a lesson on measurement. Students design a new school cafeteria applying the measurement skills taught. An architect speaks to the students and explains how measurement is used in his profession.

Teachers may reinforce and reward effort in a variety of ways. Students may be rewarded through verbal praise or recognition. A teacher may also use several student examples of work as a model for other students to follow. When a teacher effectively uses *Academic Feedback*, he/she is also reinforcing and rewarding effort by acknowledging students' responses with an explanation for why the response may be accurate or inaccurate. This type of feedback supports an environment in which students feel safe to take risks and respond to questions. In this way it is rewarding and reinforcing their efforts.

SUGGESTED REFLECTION QUESTIONS ON MOTIVATING STUDENTS

- How do I organize the content of a lesson so that it is meaningful and relevant to the students?
- How do I develop learning experiences that provide opportunities for students to ask questions and explore?
- How do I reinforce and reward the efforts of all students?
- Why is it important for students to have opportunities to develop their own questions and search for the answers?
- How does student motivation impact student achievement?

MOTIVATING STUDENTS: STUDENT ENGAGEMENT

- Students can articulate the purpose of the lesson and why it is important to them.
- Students have opportunities to grapple and explore the materials or purpose of the lesson.
- Students are intrinsically motivated to accomplish the task and persevere.

Presenting Instructional Content

This indicator deals with the method in which content is taught within a lesson. The use of visuals and a teacher's ability to clearly communicate performance expectations in a concise and logically sequenced manner are addressed by this indicator's descriptors. The use of visuals with examples, illustrations, analogies, and/or labels are important tools to use when introducing new concepts and can lead students to mastery of specific skills in a more efficient manner. However, it may be that all of these are not included in one lesson. It is important that they are used effectively and appropriately for the content and students taught.

Exemplary/Significantly Above Expectations Descriptors for Presenting Instructional Content

Presentation of content always includes:

1. Visuals that establish the purpose of the lesson, preview the organization of the lesson, and include internal summaries of the lesson;
2. Examples, illustrations, analogies, and labels for new concepts and ideas;
3. Modeling by the teacher to demonstrate his or her performance expectations;
4. Concise communication;
5. Logical sequencing and segmenting;
6. All essential information; and
7. No irrelevant, confusing, or nonessential information.

Descriptor 1: Visuals that establish the purpose of the lesson, preview the organization of the lesson, and include internal summaries of the lesson

The first item under this indicator refers to the effective use of visual materials to assist the learner in making connections with prior learning and in clarifying newly acquired concepts. Visuals that preview the lesson also provide students with a direction for where they are headed and what they will be doing. They support students in identifying and understanding the progression of the lesson. Based on these indicators, there are two main applications for graphic organizers or visuals:

1. Visuals that assist in the learning process
2. Visuals that organize information for the learner

It is important to note that internal summaries (mini reviews within a lesson of what has been taught) may be provided visually or orally by the teacher and students. When a teacher continually reviews sub-objectives in order to connect to the next sub-objective, students are led to ultimately move towards mastery of the lesson objective. Internal summaries provide students opportunities to have concepts restated and to reflect within a lesson on what they are learning as opposed to waiting for a review of all concepts at the end of the lesson. Teachers can lead students in providing these summaries through his/her questions and group discussions.

Descriptor 2: Examples, illustrations, analogies, and labels for new concepts and ideas

Words, mental pictures, and other clarifying techniques simplify and organize new information for the learner. Application of the methods listed in this descriptor enhances learning in the following ways:

1. **Examples:** When presenting a new concept, carefully selected examples help students to understand information. For example, during a lesson about metaphors, the teacher provided visual examples of metaphors from her own writing. She also modeled her thinking process as she created the metaphors. This type of example not only provided opportunities for students to view metaphors, but also to gain an understanding for how they were created within the teacher's writing.

2. **Illustrations:** Providing an illustration of what is being studied helps all learners, especially visual learners. For example, before dissecting a frog, students studied an illustration depicting the internal organs. The illustration also demonstrated how to cut into the frog. Teachers may also use paintings or photographs to provide illustrations of new concepts or historical time periods.

3. **Analogies:** There are times when analogies clarify information for learners. For example, to clarify the distances related to the solar system, a teacher introduced nine common spheres of similar proportions as the planets. She then took students out on the playground and had students arrange them at appropriate distances from the sun, making clear connections for how what they were doing related to distances within the solar system. In this example, students actually participated in the analogy. Another example of an analogy is the comparison of appropriate graphic organizers to the choosing of appropriate tools to hammer in nails or tighten screws. The teacher explained to students that graphic organizers are "tools" to support their organization of material and different organizers support different tasks.

4. **Labels:** Labels help clarify information. For example, students were having a difficult time writing complete sentences so the teacher decided to have students label the parts of their sentences. Pictures with labels may also be used to introduce vocabulary, important people, or new concepts. This type of labeling would be strong since it combines the use of illustrations and labels. During a study of the solar system, the teacher modeled for the students how to label planets. During a study of the circulatory system, a teacher modeled how to label the parts of the heart and identify the function for each part.

Descriptor 3: Modeling by the teacher to demonstrate his or her performance expectations

The ability to model the use of new information and the teacher's expectations for student performance is one of the most important descriptors for this indicator. An effective teacher must be able to model desired outcomes. In order to model effectively, the teacher must be able to do the following:

- Know exactly what the expected outcome is
- Identify the critical elements of the desired outcome
- Create clearly defined steps so learners can achieve the desired outcome
- Provide examples for how the completed project/assignment should look

EXAMPLE 1: KNOW EXACTLY WHAT THE EXPECTED OUTCOME IS

A teacher explained to the students that the learning objective was for them to be able to identify physical characteristics of two characters from a novel and compare and contrast them. She told the students they would be expected to create an illustration of two characters from a novel the class was reading and then complete a Venn Diagram to compare their characteristics. She chose two different characters to model her expectations and the thought process she went through in deciding how to draw the characters. She explained various ways the students could approach the project and provided clear criteria through the use of a rubric for how the finished project would be evaluated. She led the students to apply the rubric to her work as an additional way to ensure they understood her expectations for their work. She then modeled how she took the characteristics of the two drawings and used a Venn Diagram to organize the similarities and differences in the drawings. Students were able to clearly understand the expected outcome for the lesson and the expectations for their work.

EXAMPLE 2: IDENTIFY THE CRITICAL ELEMENTS OF THE DESIRED OUTCOME

As the teacher modeled her work of the steps in the example above, she identified the elements or requirements for the student work. Using the rubric for the assignments, she identified each required element of the illustration and Venn Diagram on her examples. This provided students a clear understanding of what needed to be included in each assignment and how the elements would be evaluated.

EXAMPLE 3: CREATE CLEARLY DEFINED STEPS SO LEARNERS CAN ACHIEVE THE DESIRED OUTCOME

When modeling the expectations for the assignment in the example above, the teacher clearly explained the order in which the students would need to complete the steps required for the assignment. First, they would need to select two important characters with criteria for how to select them. Then students would need to identify specific characteristics of these characters that would be incorporated into their illustrations. The explanation would continue through each step. To support visual learners, the teacher may display a written list of the steps on the board or chart paper.

Descriptors 4-7: Concise communication; logical sequencing and segmenting; all essential information; and no irrelevant, confusing, or nonessential information

These descriptors relate to a teacher's knowledge of the content he/she is teaching and his/her ability to clearly explain the content to students in a logical manner. For this to occur, a teacher must first clearly define the learning objective for the lesson and then maintain the focus of the lesson on this objective, which may require teachers to redirect students' comments. The sequencing of the lesson relates to the sub-objectives that are taught within

a lesson. Sub-objectives should be taught or reviewed in an appropriate sequence for the grade level and ability of the students. The segmenting of the lesson relates to the pacing of the lesson. An effective teacher will provide sufficient time for the introduction of the lesson, the instruction within the lesson, the student activities, and closure. Although these may be embedded within each other during a given lesson, the segmenting of the lesson allows sufficient time for each to take place so that students can have opportunities to master the learning objective. Therefore, these descriptors are closely connected to the descriptor, "teacher displays accurate content knowledge of all the subjects he or she teaches," under *Teacher Content Knowledge*, and the descriptor, "pacing is appropriate, and sometimes provides opportunities for students who progress at different learning rates," under *Lesson Structure and Pacing*.

SUGGESTED REFLECTION QUESTIONS ON PRESENTING INSTRUCTIONAL CONTENT

- How do I decide on the types of visuals I will use during a lesson?
- Why is it important for me to model my expectations for students?
- How do I plan for effective modeling during a lesson?
- How do students clearly know my expectations for their assignments and for what they are to learn?
- When planning a lesson, how do I decide on the sequencing of the instruction within the lesson?
- When planning a lesson, how do I decide on the manner in which the different elements of the lesson will be segmented?
- How do I maintain focus in a lesson on the learning objective?

PRESENTING INSTRUCTIONAL CONTENT: STUDENT ENGAGEMENT

- Students reference visuals and examples presented during application of learning.
- Students include key concepts when summarizing the information presented.
- Students utilize an example or exemplar to create or assess their own work.
- Students record notes on the steps taken during the teacher model to ensure transfer.

Lesson Structure and Pacing

This indicator blends time and form as it applies to instruction. It addresses the effective segmenting of the lesson so that sufficient time is allocated to all parts of the lesson to best support student learning. Therefore, this indicator connects closely to the descriptor, "logical sequencing and segmenting," under *Presenting Instructional Content*.

Exemplary/Significantly Above Expectations Descriptors for Lesson Structure and Pacing

1. The lesson starts promptly.
2. The lesson's structure is coherent, with a beginning, middle, end, and time for reflection.
3. Pacing is brisk and provides many opportunities for individual students who progress at different learning rates.
4. Routines for distributing materials are seamless.
5. No instructional time is lost during transitions.

Descriptors Focused on Time/Pacing

The rubric indicator focuses on the following issues associated with instructional time:

1. Prompt start
2. Different learning rates
3. Seamless routines
4. Smooth transition

Starting promptly, building smooth transitions, and developing seamless routines can be done with practice and careful planning. The greatest challenge presented in this indicator is the ability to provide enough time so that all students of varying rates of learning can complete each learning task. Therefore, it is important that a teacher has knowledge of the various learning needs of his/her students.

When reviewing evidence from a lesson for these descriptors, the third descriptor, "pacing is brisk," refers to the efficient use of instructional time during the lesson, not the speed of the lesson. Was appropriate time devoted to each element of the lesson? Did the lesson continue to flow or was there time wasted in which students were not focused or engaged in the learning? If the pacing is brisk, all students remain focused and engaged in learning throughout the lesson. Students do not experience "down time" while waiting on other students to complete assignments or on instruction that they have already mastered. Therefore, this descriptor connects to a teacher's use of student feedback to monitor and adjust instruction under *Academic Feedback* to ensure that the pacing of the lesson is brisk and meets the needs of all students.

EXAMPLE: LESSON STRUCTURE AND PACING

A teacher begins a lesson on the causes of the Revolutionary War with an explanation of the learning objective and a preview of the lesson (clear beginning). He then provides direct instruction by modeling how to complete a graphic organizer on the causes and effects of the war. Students are led to finish the organizer on their own as they read the text or other source of information. Students who are below grade level in reading continue to receive direct instruction from the teacher and assistance in completing the graphic organizer. Students who are on grade level or above complete the assignment independently and are provided additional activities to enhance their understanding of the causes (pacing provides opportunities for students who progress at different learning rates). Before students are dismissed, the teacher brings the class together again and reviews the objective and has students identify the causes and effects they included on their graphic organizers (closure). Students complete an exit ticket before leaving class in which they reflect on which cause of the war they believe had the greatest impact (time for reflection).

SUGGESTED REFLECTION QUESTIONS ON LESSON STRUCTURE AND PACING

- How do I decide on the manner in which I will segment the different parts of a lesson?
- How do I plan for effective closure within a lesson?
- How do I plan for the pacing of a lesson that provides opportunities for students who progress at different rates?
- How do I ensure that instructional time is used efficiently throughout a lesson so that all students remain actively engaged in learning?

LESSON STRUCURE AND PACING: STUDENT ENGAGEMENT

- Students engage in learning throughout the lesson with no down time.
- Students have the opportunity to reflect on their learning orally or in writing.
- Students who complete lesson activities early engage in additional high quality instructional activities.
- Students move from one lesson activity to another with ease.

Activities and Materials

This indicator addresses the variety and appropriateness of activities and materials that a teacher chooses to implement during a lesson. By using a variety of materials and activities, teachers are able to address various learning styles and intelligences. Therefore, the criteria used by teachers in choosing materials and activities should be those that clearly support the lesson objectives and that are related to the needs of the students, making this indicator closely related to *Teacher Knowledge of Students*. In order to plan appropriate activities and materials, a teacher must have knowledge of the needs and interests of the students.

Exemplary/Significantly Above Expectations Descriptors for Activities and Materials

Activities and materials include all of the following:

1. Support the lesson objectives;
2. Are challenging;
3. Sustain students' attention;
4. Elicit a variety of thinking;
5. Provide time for reflection;
6. Are relevant to students' lives;
7. Provide opportunities for student-to-student interaction;
8. Induce student curiosity and suspense;
9. Provide students with choices;
10. Incorporate multimedia and technology; and
11. Incorporate resources beyond the school curriculum texts.
12. In addition, sometimes activities are game-like, involve simulations, require creating products, and demand self-direction and self-monitoring.

The descriptors for *Activities and Materials* can be classified into three main categories:

1. Content-Related Descriptors

1. Support the lesson objectives
2. Are challenging
3. Elicit a variety of thinking
4. Provide time for reflection
5. Are relevant to students' lives

2. Student-Centered Descriptors

1. Sustain students' attention
2. Provide opportunities for student-to-student interaction
3. Induce student curiosity and suspense
4. Provide students with choices

3. Materials Descriptors

1. Incorporate multimedia and technology
2. Incorporate resources beyond the school curriculum texts
3. In addition, sometimes activities are game-like, involve simulations, etc.

When applying this indicator to a lesson, it is critical that evidence for the first descriptor exists. Therefore, this descriptor connects directly to the descriptors under *Standards and Objectives*. A teacher may incorporate a variety of activities and materials within a lesson, but if their use is not purposeful in supporting students in meeting the learning objective, then the purpose for their use may not be clear or appropriate.

In developing activities and materials that are challenging, it is important that they are challenging for all students as opposed to just a few. Therefore, this descriptor relates closely to *Teacher Knowledge of Students.*

The descriptor, "incorporate resources beyond the school curriculum texts," relates to the use of materials beyond a textbook. A teacher may use manipulatives that are provided by the curriculum tool kits. These would still be considered resources beyond the school curriculum *text*. This may also include the use of photographs, novels, picture books, personal artifacts, etc.

The last descriptor under the exemplary category includes the word *sometimes*. Therefore, the expectation would not be for all of these to be included all of the time.

Questions to Ask When Increasing Student Participation

When beginning to develop these skills, teachers may ask the questions below as they observe a lesson or after they teach a lesson themselves:

1. Students' attention: How will I maintain all students' attention during the lesson? (list)
2. Student-to-student interaction: How will I allow for meaningful student-to-student interaction? (list)
3. Student curiosity: How will I deliberately set the conditions for students to demonstrate curiosity?
4. Choices: How will I provide students with significant choices related to the content?
5. Creating: How will children create and self-monitor their own learning?

After answering these questions, teachers should always ask what impact each of these will have on student achievement and what will be the evidence for this.

EXAMPLE 1: DESIGNING A VARIETY OF ACTVITIES

A teacher assessed students and realized that they were experiencing difficulty in making inferences. Not only was this a critical reading comprehension skill, but also a skill tested on the standardized test. Her objective was: "By the end of this lesson you will be able to identify details in text and use your own experiences to develop an appropriate inference." Next, she looked at the descriptors related to content when she began to design her lesson. She designed her lesson with several activities:

EXAMPLE 1: DESIGNING A VARIETY OF ACTIVITES, continued

- Students were to work in pairs to identify details from the text that connected to the inference question asked.
- Each student would think of an experience or prior knowledge they had that connected to the text and then pair/share this with a partner.
- Each student would complete a graphic organizer with this information.
- Each student would write the inference and include a reflection on how the process had been supportive in making an appropriate inference.

After the activities were designed, the teacher used select descriptors to be certain that students were involved in the referenced activities:

1. Support: The activities supported the objective for students to make an inference.
2. Thinking: She determined that when students are asked to infer, they are thinking at a higher level. A question she was sure to ask was: "How did you develop your inference? Why was it appropriate?"
3. Reflection: There was time for reflection in the lesson when the students were told to reflect on how the process had supported them.
4. Relevant: By using their own experiences and/or background knowledge, the lesson became relevant to the students since they had opportunities to make connections to the text.
5. Interaction: Students also had opportunities for student-to-student interaction when they paired/shared.
6. Curiosity: Student curiosity and suspense would be provided as students would continue reading text or conducting research to learn if their inference was correct.
7. Choices: Students were provided choices for the connections they would make to the text and the supporting details they would identify that connected to the inference question.

EXMPLE 2: PROVIDING STUDENTS WITH CHOICES

One teacher reflected upon each lesson after school by using the questions on the previous page. She noted that she could not consistently think of many instances when students made significant choices. The following week she added two opportunities for students to make significant content-related choices: 1) Students could develop a summary using any media; and 2) Students were able to choose whether to write prose or poetry for an assignment. During her reflection, she admitted that she saw some enthusiasm expressed by several of her students who were otherwise passive. In analyzing the student work, she found that several students who normally performed on a lower level were able to show mastery of the skill when provided choices for how they would meet the objective. She then began developing other ways to provide students with choices in future lessons. She found students were able to provide evidence of mastery in a way that supported their own strengths or intelligence.

SUGGESTED REFLECTION QUESTIONS ON ACTIVITIES AND MATERIALS

- How do I decide on the types of materials I will use during a lesson?
- How do I decide on the types of activities I will use during a lesson?
- How do I develop activities that are aligned to the learning objective?

ACTIVITIES AND MATERIALS: STUDENT ENGAGEMENT

- Students understand how what they are doing connects with the lesson objective.
- Students demonstrate enjoyment in the completion of activities and a desire to continue work.
- Students are cognitively engaged in tasks that facilitate thinking and interaction.
- Students ask questions and generate ideas for further learning during lesson activities.

Questioning

Questioning is an art form that reveals a great deal about a teacher's effectiveness. The rubric descriptors provide a basic framework for the types of questions to ask within a lesson and how teachers should lead students in responding to questions.

Exemplary/Significantly Above Expectations Descriptors for Questioning

1. Teacher questions are varied and high quality, providing a balanced mix of question types:
   - » Knowledge and comprehension;
   - » Application and analysis; and
   - » Creation and evaluation.
2. Questions are consistently purposeful and coherent.
3. A high frequency of questions is asked.
4. Questions are consistently sequenced with attention to the instructional goals.

5. Questions regularly require active responses.
6. Wait time is consistently provided.
7. The teacher calls on volunteers and nonvolunteers, and a balance of students based on ability and gender.
8. Students generate questions that lead to further inquiry and self-directed learning.

The descriptors for *Questioning* can be classified into two main categories:

1. Procedural Questioning Descriptors

Several of the descriptors are focused on simple procedural operations that are easy to develop. These descriptors are:

1. A high frequency of questions is asked.
2. Wait time is consistently provided.
3. The teacher calls on volunteers and nonvolunteers, and a balance of students based on ability and gender.

EXAMPLE

It may benefit teachers trying to include these descriptors in a lesson to write students' names on Popsicle sticks or strips of paper and pull a name to respond to the questions asked. Teachers may also assign numbers to students and use a deck of playing cards to call on students by their numbers. Students may also choose classmates to call upon. These types of methods help a teacher avoid repeatedly calling on the same students or calling only on volunteers who may have their hands raised. Teachers may also have students respond to a partner before answering a question aloud for the whole class. This method can provide a way to hold each student accountable for formulating a response and sharing their answer with someone else. When providing wait time for students, it is important for the teacher to label this for students so that he/she may use the opportunity to teach students how to provide wait time for one another.

2. Content-Related Descriptors

Four descriptors listed for questioning are related to the intricate use of a variety of questions to support student learning. These indicators are:

1. Teacher questions are varied and high quality, providing a balanced mix of question types:
   - » Knowledge and comprehension;
   - » Application and analysis; and
   - » Creation and evaluation.
2. Questions are consistently purposeful and coherent.
3. Questions are consistently sequenced with attention to the instructional goals.
4. Students generate questions that lead to further inquiry and self-directed learning.

When a teacher effectively utilizes questions that are purposeful and coherent, then students' responses may be utilized as a formative assessment in determining which students have mastered the learning objective (*Standards and Objectives*).

For support in generating questions, refer to Bloom's Taxonomy. It is important to note how the use of higher-order questions will impact the evidence for the descriptors under *Thinking*.

The effective teacher does not limit the use of questions in a lesson to only teacher-generated questions, but guides students in generating questions that support their own learning. In leading students to generate their own questions, it is also important for them to have knowledge of the different question types. These can be modeled for them through the teacher's questions and through a purposeful teaching of Bloom's Taxonomy.

EXAMPLE

When a teacher introduces a lesson, students may be led to complete a "KWL chart." By doing this, each student has the opportunity to generate questions that he/she wants answered as the content is being presented. Students may also generate questions about a topic they are researching. For example, students may be writing biographies on significant figures of the Civil Rights Movement. The teacher provides specific information that must be included in the biography and also allows students to generate questions they would like to learn about the individual. Both sets of questions would guide the student's research. By providing opportunities for students to generate questions, teachers also develop learning experiences where inquiry is valued (*Motivating Students*) and provide students with choices (*Activities and Materials*).

SUGGESTED REFLECTION QUESTIONS ON QUESTIONING

- How do I decide on the types and frequency of questions I ask during a lesson?
- Why is it important for teachers to ask higher-order questions during a lesson?
- How do I provide opportunities for all students to respond to my questions?
- How do I provide for wait time during a lesson?
- What is the purpose for a teacher to provide wait time?

QUESTIONING: STUDENT ENGAGEMENT

- Students respond to a variety of questions throughout the lesson in order to build understanding of the lesson objective.
- Students actively discuss responses to questions with partners or in small groups.
- Time is provided for students to generate individual responses to questions prior to sharing with other students or the class.
- Students are inquisitive and generate questions to deepen their understanding.
- Students ask clarifying questions as needed.

Academic Feedback

This indicator focuses on how teachers respond to students' comments and questions. The descriptors address the quality of the feedback in supporting student learning as opposed to feedback that only informs students of the accurateness of their responses. Additionally, these descriptors address how a teacher uses student feedback to make adjustments in instruction.

Exemplary/Significantly Above Expectations Descriptors for Academic Feedback

1. Oral and written feedback is consistently academically focused, frequent, and high quality.
2. Feedback is frequently given during guided practice and homework review.
3. The teacher circulates to prompt student thinking, assess each student's progress, and provide individual feedback.
4. Feedback from students is regularly used to monitor and adjust instruction.
5. Teacher engages students in giving specific and high-quality feedback to one another.

Feedback Descriptors Focused on Quality

The checklist below provides information that helps teachers develop the ability to provide high-quality feedback. The rubric references "high-quality" feedback in two descriptors (1 and 5). Without consensus on what high-quality feedback is, the rubric cannot be scored accurately. There are many instructional leaders who feel that a classroom observer should be able to "guess" what the objective for the lesson is by simply listening to a teacher's feedback during a lesson. Such precision must be developed using the criteria below.

Checklist for Determining Quality of Feedback:

- Feedback relates to the lesson objective or sub-objective.
- Feedback causes students to think.
- Feedback is specific.
- Feedback is timely.
- Feedback is varied to meet the unique needs of the students and classroom.

Descriptor 1 references the use of oral and written feedback. However, evidence for this descriptor may be present if the teacher consistently provides high-quality oral feedback as opposed to procedural, superficial oral and written feedback.

EXAMPLE: FEEDBACK RELATES TO THE LESSON OBJECTIVE

The objective of a lesson was: "Boys and girls, today you will learn about one way to form a paragraph. We formulate a topic sentence and at least three supporting sentences. Then we end the paragraph with a summary statement." She provided a graphic organizer after they collectively developed a topic sentence. While children wrote the supporting details independently, she provided feedback. The following feedback was recorded:

EXAMPLE: FEEDBACK RELATES TO THE LESSON OBJECTIVE, continued

- "Marie, very nice sentences because they include strong details."
- "Henry, your first detail is a complete sentence. That's just great. Look at your second detail. What can we add to make a complete sentence?"
- "Louise, if you would like more inspiration, let's look at the story for paragraph details. Good. It's right there. I think you will find some great material for writing details."
- "Jamie, you have three details that will make a great paragraph. What will make a good summary statement?"

It is also important for teachers to model for students how to provide each other with high-quality academic feedback.

EXAMPLE: STUDENTS PROVIDE HIGH QUALITY ACADEMIC FEEDBACK

Following the same lesson objective as provided in the above example. After the students have completed their writing, the teacher pairs them for the purpose of conferencing on each other's writing. To ensure students know her expectations for the conferences, she pairs with a student and models the questions and type of feedback she would provide to the student. Within this model she explains that it is important for students to clearly explain why an area of the writing is strong and why another needs to be strengthened. She does this by providing high-quality feedback that is focused on the lesson objective of writing a topic sentence, supporting details, and summary statement. Along with this model, the teacher may also include written feedback on the student's writing that is focused on the objective.

SUGGESTED REFLECTION QUESTIONS ON ACADEMIC FEEDBACK

- How do I decide on the type of feedback I provide to students?
- How do I use student feedback to make adjustments in my instruction?
- How do I engage students in providing quality feedback to one another?

ACADEMIC FEEDBACK: STUDENT ENGAGEMENT

- There is evidence that student proficiency increases as a result of feedback that is provided.
- Students seek out teacher and peer feedback.
- Students respectfully engage in providing academically focused feedback to one another that is valued.

Grouping Students

This indicator deals with the instructional arrangements of the students during a given lesson. It focuses on how the students will be grouped for the instruction and activities of the lesson and how they will be held accountable for the work they are expected to complete.

Exemplary/Significantly Above Expectations Descriptors for Grouping Students

1. The instructional grouping arrangements (either whole class, small groups, pairs, or individual; heterogeneous or homogeneous ability) consistently maximize student understanding and learning efficiency.
2. All students in groups know their roles, responsibilities, and group work expectations.
3. All students participating in groups are held accountable for group work and individual work.
4. Instructional group composition is varied (e.g., race, gender, ability, and age) to best accomplish the goals of the lesson.
5. Instructional groups facilitate opportunities for students to set goals, reflect on, and evaluate their learning.

Structuring Learning Groups

Indicators 1, 2, 3, and 4 focus on structuring learning groups. For teachers learning how to implement grouping that enhances learning, these descriptors are a good place to start when planning.

When placing children into groups, the teacher must be able to assure that every student is actively engaged. This can be done by clearly defining the roles and responsibilities.

EXAMPLE: ROLES AND RESPONSIBILITIES

During an observation, a teacher placed students into learning groups. She assigned four roles to groups of four students. Unfortunately, two of the roles were so contrived that students perceived them as purposeless. The roles of "time manager" and "encourager" had no relevant responsibilities and the teacher's expectations for these roles were not explained or modeled. When she walked around, about half the students were not engaged in the activity. The next time this teacher tried grouping, she looked at the learning objective for the lesson and identified all of the components needed for successful mastery and developed the group roles based on these components. By focusing on the learning objective, she was able to develop meaningful roles and divide the "work load" evenly. In addition, the teacher modeled the expectations for each role and provided a visual identifying the responsibilities for each individual role. This time, when she circulated among the groups, she noted full participation.

The following example illustrates specific examples of roles that may be assigned to group members. A science teacher is having students work in groups to conduct an experiment. Each group is expected to illustrate the results of the experiment and present recorded data. There are four members in each group and the following roles are assigned: Materials Manager, Illustrator, Data Recorder, and Task Manager. Each role is clearly defined and explained by the teacher to ensure that all students understand the expectations.

Questions to Ask When Designing Accountability

- What outcome do I expect students to accomplish by the end of each group session?
- How will I provide quality feedback on progress? By group? By individual?
- How will I record this information in a grade book and/or student record?
- How will I use this information as a formative assessment?
- Is this work expectation appropriate for small groups? Whole group? Individual?

EXAMPLE: GROUP WORK EXPECTATIONS AND GROUPS AND INDIVIDUALS ARE HELD ACCOUNTABLE

A teacher implemented group learning using centers in her classroom. She often did this but complained about the noise. When her classroom was observed, it was evident how she could increase proficiency. Children moved from one center to another when the bell rang. There was no expectation for what the students were to accomplish at the centers. The teacher realized how important it was to have clear expectations and accountability for what students did in groups independently. By answering the following "Suggested Coaching Questions on Grouping," she was able to construct reasonable outcomes for each center. She provided feedback on student performance and a chart was placed at each center. This chart provided ongoing feedback to students about what they needed to accomplish. The teacher was also able to provide valuable information to the parents.

There must be a rationale for why students are grouped together. There are a variety of grouping patterns, including:

- By heterogeneous or homogeneous grouping of ability
- By demographic balance
- By interest
- By ability to focus
- By ability to communicate
- By language acquisition levels

Regardless of how the grouping arrangements are developed, the grouping should *enhance* the learning for all students. The ability of a teacher to group students in this manner is directly connected to his/her knowledge of the students; their individual needs, interests, and abilities.

SUGGESTED REFLECTION QUESTIONS ON GROUPING

- How do I decide on the instructional grouping of students during a lesson?
- How do I hold groups and individuals accountable for work completed within a group?
- How do I decide on the roles individuals will have when working in groups?
- How do I communicate my expectations to students for their own work and that of the group?
- How do I assess the performance of groups and individuals when it is completed in a group setting?

GROUPING STUDENTS: STUDENT ENGAGEMENT

- Students work respectfully with one another in a variety of grouping arrangements.
- Students learn with and from one another while engaged in collaborative group activities.
- Students complete work that meets the teacher's expectations individually and as a group.
- Students reflect on their progress toward mastery of the objective within their groups.

Teacher Content Knowledge

This indicator addresses the teacher's knowledge of the content he/she is teaching, as well as their ability to implement strategies to support student learning. Also addressed in this indicator is the teacher's ability to connect the content being taught to other ideas and concepts.

Exemplary/Significantly Above Expectations Descriptors for Teacher Content Knowledge

1. Teacher displays accurate content knowledge of all the subjects he or she teaches.
2. Teacher regularly implements a variety of subject-specific instructional strategies to enhance student content knowledge.
3. Teacher regularly highlights key concepts and ideas, and uses them as bases to connect other powerful ideas.
4. Limited content is taught in sufficient depth to allow for the development of understanding.

EXAMPLE 1: TEACHER HIGHLIGHTS KEY CONCEPTS AND CONNECTS TO OTHER POWERFUL IDEAS

A teacher is conducting a lesson on immigration in the 1860s and relates immigration from the time period to the present day. News articles about immigrants and refugees are presented during class. Students select someone they know who has immigrated to the United States to interview. Comparisons are made between immigrants of the 1860s and immigrants of today (reasons for immigrating, countries of origin, experiences, etc.). By connecting immigration of the 1860s to immigration of the present day, having students interview immigrants, and debate the impact of immigrants in their community, the teacher has highlighted key concepts and connected them to more powerful ideas.

EXAMPLE 2: TEACHER HIGHLIGHTS KEY CONCEPTS AND CONNECTS TO OTHER POWERFUL IDEAS

Groups of students are studying the circulatory and respiratory systems. During their study of how the two systems function and support each other, they also study diseases of the two systems. The teacher has students utilize the information they have gained to develop plans for a healthy lifestyle, which could help prevent heart attacks, lung cancer, etc. Students present their plans to other students and to the school administration. They also use the plans to develop a healthy menu for the school cafeteria.

By leading students to connect to these other ideas and concepts, a teacher provides evidence of his/her knowledge of the content being taught and ability to utilize a variety of subject-specific instructional strategies to teach the content.

SUGGESTED REFLECTION QUESTIONS ON TEACHER CONTENT KNOWLEDGE

- How do I prepare myself to teach (insert the specific topic taught)?
- How do I develop or select instructional strategies to teach (insert the specific topic being taught)?
- How do I decide on the ways in which you will connect the content being taught to more powerful ideas?
- What are some other ideas to which I could have connected during the lesson?

TEACHER CONTENT KNOWLEDGE: STUDENT ENGAGEMENT

- Students are able to communicate how the supports (i.e., graphic organizer) they use build their understanding of the objective.
- Students can label their own thinking as they apply the lesson model to their own work.
- Students are not confused in too broad information but rather are clear as to what the lesson objective is, how it is developed, and what they need to do to demonstrate mastery.

Teacher Knowledge of Students

This indicator deals with how well a teacher knows his/her students and their learning styles and interests. Therefore, it is closely connected to the indicator, *Motivating Students.*

Exemplary/Significantly Above Expectations Descriptors for Teacher Knowledge of Students

1. Teacher practices display an understanding of each student's anticipated learning difficulties.
2. Teacher practices regularly incorporate student interests and cultural heritage.
3. Teacher regularly provides differentiated instructional methods and content to ensure children have the opportunity to master what is being taught.

Descriptors 1 and 3 address a teacher's ability to meet students' learning needs. These descriptors connect closely to the descriptor, "pacing is brisk," and provide many opportunities for individual students who progress at different learning rates under *Lesson Structure and Pacing*. Descriptor 2 deals with a teacher's ability to connect the content being taught to the interests and background of the students. Therefore, these descriptors relate closely to the descriptor, "the teacher consistently organizes the content so that is personally meaningful and relevant to students," under *Motivating Students*.

Differentiated instruction may include activities to address auditory, visual, and kinesthetic learning styles or it may include providing students with choices in assignments that relate to the multiple intelligences. It may also mean that teachers provide students with extended time to complete assignments or abbreviate assignments based on student need.

EXAMPLE: PROVIDES DIFFERENTIATED INSTITUTIONAL METHODS

During a lesson on the solar system, the teacher displays a poster of the planets, students act out the alignment of the planets, and the class reads an article on one of the planets. Within this lesson, visual, auditory, and kinesthetic learners' needs are addressed.

SUGGESTED REFLECTION QUESTIONS ON TEACHER KNOWLEDGE OF STUDENTS

- How do I identify the learning styles of my students and incorporate these into my lessons?
- How do I identify the interests of my students and incorporate these into my lessons?
- How do I provide differentiated instructional methods within my lessons?

TEACHER KNOWLEDGE OF STUDENTS: STUDENT ENGAGEMENT

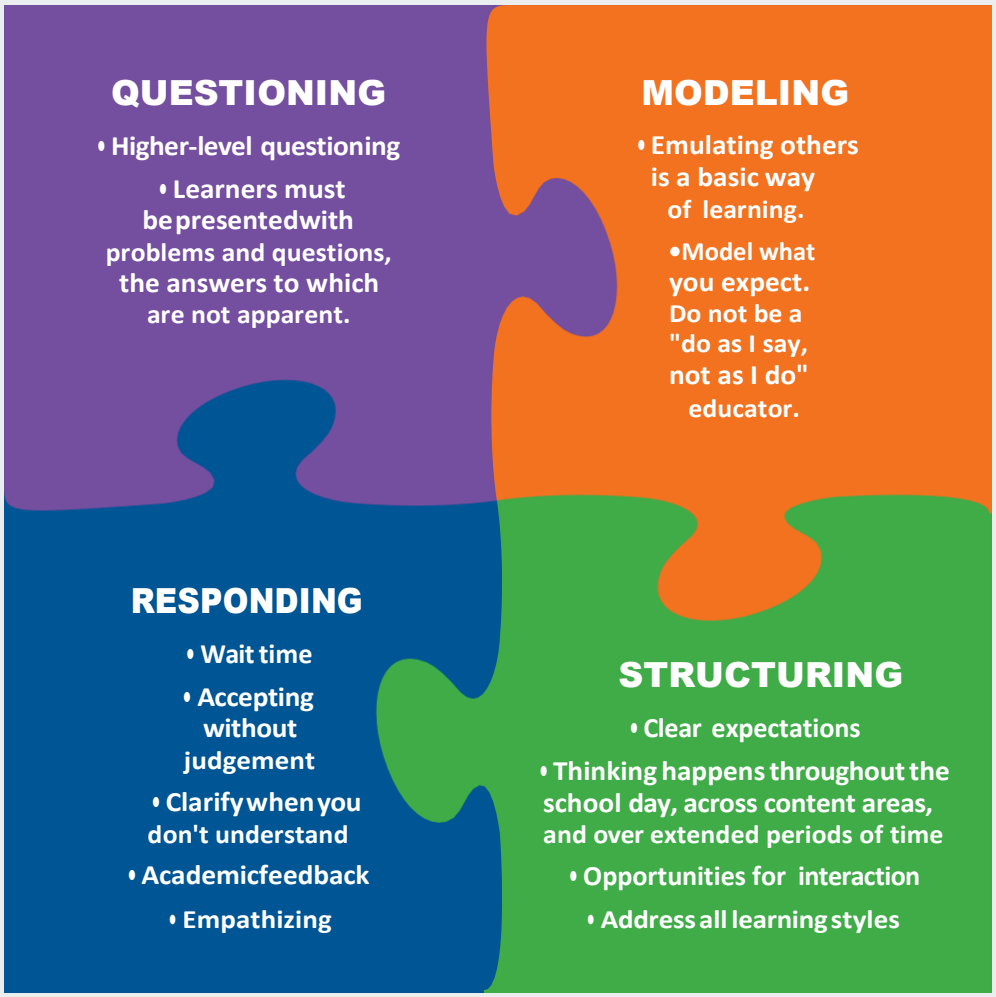
- Students engage in lesson activities with varying supports in order to ensure all students can demonstrate mastery.
- Students connect with the learning and demonstrate a desire to engage with the content.
- Students persist in work.

Thinking

Thinking is something that can and should apply to every observation of a teacher. It is important to note that for students to apply the type of thinking referenced, the teacher must have taught the thinking students need to apply.

Before we explore the different types of thinking, it is important to have a basic understanding of how a teacher should go about teaching these thinking skills. Research shows that there are four main ways that a teacher can "teach" thinking and these are illustrated below:[1]

As you think about what research says about teaching, consider what indicators and/or descriptors are on the NIET Instruction Rubric that align with these expectations. For example: "wait time" is in the Questioning indicator and "modeling" is in Presenting Instructional Content. By purposefully implementing the NIET Instruction Rubric and reflecting upon the specific indicators that align with the research, teachers can effectively teach thinking.



[1] A. Costa (Ed.), *Developing minds: A resource book for teaching thinking* (Rev. ed., Vol. 1). Alexandria, VA: ASCD.

Exemplary/Significantly Above Expectations Descriptors for Thinking

The teacher thoroughly teaches two or more types of thinking:

1. Analytical thinking, where students analyze, compare and contrast, and evaluate and explain information;
2. Practical thinking, where students use, apply, and implement what they learn in real-world scenarios;
3. Creative thinking, where students create, design, imagine, and suppose; and
4. Research-based thinking, where students explore and review a variety of ideas, models, and solutions to problems.

The teacher provides opportunities where students:

5. Generate ideas and alternatives;
6. Analyze problems from multiple perspectives and viewpoints; and
7. Monitor their thinking to ensure that they understand what they are learning, are attending to critical information, and are aware of the learning strategies that they are using and why.

Descriptors 1 through 4 discuss the four types of thinking that teachers are expected to implement regularly and consistently. These thinking types were compiled based on twenty years of research by the most prominent psychologists in America.

Descriptor 1: Analytical thinking, where students analyze, compare and contrast, and evaluate and explain information

Most teachers focus only on analytical thinking in their classrooms. This type of thinking demands that students analyze, evaluate, and explain phenomena. Analyzing, evaluating, and explaining information is a skill that applies to all disciplines and is critical for an informed and educated society.

EXAMPLE 1: ANALYTICAL THINKING

In language arts a class is reading *Charlotte's Web*. Through a Venn Diagram, the class compares and contrasts Wilbur's personality traits with those of Charlotte. Next, the teacher asks the students to analyze the text and find specific words that provide evidence of the character traits the student listed. For the final part of this assignment, the teacher asks students to explain why Charlotte chose to help Wilbur and what each child would do if he or she were Charlotte.

EXAMPLE 2: ANALYTICAL THINKING

Students are studying a specific artist's work. They are asked to observe a painting and identify one thing in the painting or element of the painting that could be removed that would not alter the artist's intent. Students may also be asked to explain what the painting reveals about the artist's attitude towards life, war, nature, etc.

Descriptor 2: Practical thinking, where students use, apply, and implement what they learn in real-world scenarios

Many students often do not see the connections between what they learn in school and how they can use this knowledge in the real world. Teachers who integrate practical thinking into their teaching design learning activities where students are forced to use and apply concepts and ideas that they learn. In this way, this descriptor connects to the descriptor, "the teacher consistently organizes the content so that it is personally meaningful and relevant to students," under *Motivating Students*.

EXAMPLE 1: PRACTICAL THINKING

A class is working on measurement. Often teachers have students measure various objects in the room. While this has students apply the concept of measurement, the utility and relevance of how measurement works in the real world is not clear. Instead, the teacher informs students that they will be building tree and plant boxes throughout the school. These planters will be various shapes and sizes and will require students to not only measure and cut different pieces of wood to build them, but also to estimate the sizes of the correct plants and bushes to put in them.

EXAMPLE 2: PRACTICAL THINKING

A group of students is fed up with the cafeteria food and they have decided to do something about it. First, they research what the necessary requirements are for a healthy lunch. Next, they design a menu for two weeks. Finally, they create the shopping list and pricing list to ensure that the lunches they are requesting are affordable. After working through each of these issues, the students present their menu, shopping list, and pricing list to the school board. Their proposal is negotiated and some items on the menu change.

Descriptor 3: Creative thinking, where students create, design, imagine, and suppose

Children have wonderful imaginations and love to create, design, and invent. In school, however, they are often told to follow strict rules, adhere to criteria, and provide the one correct answer, not necessarily the most creative one. By teaching students to create, design, and imagine, teachers prepare students for the flexible and creative thinking they will need to exercise later in life.

EXAMPLE: CREATE AND DESIGN

- Design a food chain with imaginary animals. Provide a rationale for where each animal fits.
- Create a survey to determine the favorite food of students in your school.
- Design a new playground for the school and make sure your drawing is to scale.
- Rewrite the *Bill of Rights*.
- Create a classroom constitution.
- Create a three-dimensional map of your state.
- Suppose George Washington was never born. Write about what America might be like today without him.
- Create a song or develop new words for an existing melody.
- Create a football or basketball play during a physical education class.

Descriptor 4: Research-based thinking, where students explore and review a variety of ideas, models, and solutions to problems

In the midst of the information age, students need to know not only how to research to find information, but also how to review a variety of ideas and come to solutions that are well-supported and make sense.

EXAMPLE 1: RESEARCH-BASED THINKING

- Research six different professions and describe the benefits and pitfalls of each.
- Research three sources of alternative energy and, based on your analysis of each, recommend the most fruitful source.
- Research the staple foods from countries in three different continents, and describe why those foods are so pervasive.

EXAMPLE 2: RESEARCH-BASED THINKING, ANALYTICAL THINKING, AND PRACTICAL THINKING

During a study of the Jim Crow laws, students also conduct a study of Civil Rights laws. They then compare and contrast the two different groups of laws, identifying strengths and weaknesses. After comparing and contrasting the laws, they debate the need for present laws to ensure all citizens have equal rights and create the wording for these laws.

Descriptor 5: The teacher provides opportunities for students to generate ideas and alternatives

One element of sound thinking and creativity is the ability to generate many ideas and consider many alternatives and possibilities. This type of thinking is rarely employed in classrooms, but there are some simple ways to provide for students to generate lots of ideas and consider alternatives in nearly every subject.

EXAMPLE 1: GENERATE IDEAS

Before beginning a unit on deserts, a teacher asks students to independently list on a sheet of paper all the plants, animals, and attributes of the desert they can identify.

EXAMPLE 2: GENERATE ALTERNATIVES

When solving a fraction problem, a math teacher asks students to generate different ways to solve the problem and different ways to represent their answers.

EXAMPLE 3: GENERATE IDEAS AND ALTERNATIVES

A science teacher has students conduct experiments about which variables lead to maximum plant growth. One group tests different types of light, one tests different types of liquids, one tests different types of soil, and one combines what students hypothesize to be the best of each. In this example, students not only generate ideas about which variables to test, but also consider many alternative explanations.

Descriptor 6: The teacher provides opportunities where students analyze problems from multiple perspectives and viewpoints

This descriptor, much like descriptor 5, applies to many disciplines. As children get older, if they do not learn to consider other peoples' points of view and are not provided with opportunities to look at problems from several perspectives, their thinking is severely restricted. Getting students to consider multiple perspectives provides them opportunities to learn how those different than themselves may view problems and solutions.

EXAMPLE: MULTIPLE PERSPECTIVES AND VIEWPOINTS

- A social studies class studies the Civil War by reading letters from soldiers from the North and South.
- An art class studies predominant symbols in Western art and Eastern art and compares and contrasts the two art forms.
- A physical education and math class work together to conduct a survey on children's favorite sports, then analyzes the data by grade level, gender, and race. They also discuss the factors affecting the data to further develop their understanding of the similarities and differences between grade levels, gender, and race.

Descriptor 7: The teacher provides opportunities for students to monitor their thinking to ensure they understand what they are learning and that they are aware of the learning strategies they are using

Research has shown that monitoring and thinking about one's thinking leads to better academic performance, behavior, and on-task engagement. There are many ways in which teachers can be explicit about reminding children what learning strategy to use, when to use it, and how students can begin to use it on their own.

EXAMPLE: MONITORING THINKING

When reading, a teacher stops at critical points in the passage and reminds students that good readers summarize what they have read. She models how to summarize by modeling her own thinking and later calls on students to engage in this behavior.

Over the course of the year, the teacher models her thinking out loud for students. As the teacher reads, she says, "I've read a lot here. I better stop to summarize so I can remember and use what I am learning."

The teacher makes her thinking explicit in the same way when she clarifies words she does not understand. She reminds students as they read that good readers clarify words that they do not know or understand. As she reads, she stops and says to herself, "I don't understand this word, let me look for context clues, let me ask a partner, let me go to the dictionary, or let me make a note of it and return to it later."

SUGGESTED REFLECTION QUESTIONS ON THINKING

See "Suggested Reflection Questions on Problem Solving," the next indicator.

THINKING: STUDENT ENGAGEMENT

- Students persevere through challenging tasks requiring the application of thinking models.
- Students support responses with relevant justification and reasoning.
- Students identify and discuss their individual progress toward mastery of the objective.
- Students choose the appropriate strategies and tools to support their own thinking.

Problem Solving

Developing multiple skills in problem solving enriches the learner's ability to manage complex tasks and higher levels of learning. By providing opportunities for students to practice many different approaches to solving problems, the teacher empowers the student with an important life skill.

Exemplary /Significantly Above Expectations Descriptors for Problem Solving

The teacher implements activities that teach and reinforce three or more of the following problem-solving types:

1. Abstraction
2. Categorization
3. Drawing Conclusions/Justifying Solutions
4. Predicting Outcomes
5. Observing and Experimenting
6. Improving Solutions
7. Identifying Relevant/Irrelevant Information
8. Generating Ideas
9. Creating and Designing

Descriptor 1: Abstraction

Abstraction is the process of leaving out of consideration one or more properties of a complex object so as to attend to others. For example, when the mind considers the form of a tree by itself or the color of the leaves as separate from their size or figure, the act is called abstraction.

Abstraction is also applied when students take the key components or ideas occurring across given examples and use that idea to solve a new problem.

EXAMPLE: ABSTRATION

After reading *Rumpelstiltskin, Hansel and Gretel*, and *Little Red Riding Hood*, students will create a list of four qualities that define "fairytaleness."

Descriptor 2: Categorization

Students analyze information, classify it, and sort it into meaningful categories.

EXAMPLE 1: CATEGORIZATION

Students develop categories in which to sort vocabulary words. The categories may be common meanings, spelling patterns, parts of speech, etc.

EXAMPLE 2: CATEGORIZATION

In math, students are studying polygons. They will first define the essential characteristics of a polygon, and then sort the following list into examples and non-examples of polygons. Essential characteristics are "closed, plane figure, straight sides, more than two sides, two-dimensional, and made of line segments."

Circle	Cone	Cube	Cylinder
Heptagon	Hexagon	Parallelogram	Pentagon
Quadrilateral	Ray	Rectangle	Rhombus
Sphere	Square	Trapezoid	

Descriptor 3: Drawing Conclusions/Justifying Solutions

Students draw conclusions based on data presented to them in many forms, viewpoints, perspectives, and quality.

De Bono (1994)[1] states that there are three levels of conclusions at which the mind can arrive:

1. A specific answer, idea, or opinion;
2. A full harvesting of all that has been achieved, including, for example, a listing of ideas considered; and
3. An objective look at the "thinking" that has been used.

EXAMPLE 1: DRAWING CONCLUSIONS

Examples of each of the three levels are represented below.

After reading and discussing the events leading up to the Boston Tea Party, students will:

1. Write a paragraph expressing which one event had the greatest impact on causing this insurrection.
2. Debate, then decide which one event had the greatest impact on causing this insurrection, then prepare a written summary with careful notes of all major points.
3. After hearing debate and deciding which one event had the greatest impact on causing this insurrection, students will write a reflective paragraph as to the process they went through in making their final decision.

EXAMPLE 2: DRAWING CONCLUSIONS

Student teams shop for the best buy on candy at the local grocery store. Students gather prices, size/weight of packages, and desirability of the candy. Each team computes price per ounce/gram and where each falls on a 1-10 desirability scale. They then analyze their data and determine which candy is the best buy for their team and provide evidence for their choice. This activity also requires students to justify a solution.

1. De Bono, Edward. (1994). *De Bono's Thinking Course*. New York, NY: Facts on File.

Children analyze several possible solutions, select the best solution, and justify why that solution is best and why other solutions are less adequate.

EXAMPLE 1: JUSTIFYING SOLUTIONS

After studying the Civil War, students will write editorial articles supporting the Confederate or Union stand.

EXAMPLE 2: JUSTIFYING SOLUTIONS

Students will solve math problems and prove to a partner that their answers are correct. Here is one example:

"If you were to construct a 6 x 6 checkered square, how many total squares would there be?" (Hint: How many 1 x 1 squares, 2 x 2 squares, 3 x 3 squares are present?).

Descriptor 4: Predicting Outcomes

Students make predictions, and then test the validity of those predictions.

EXAMPLE: PREDICTING OUTCOMES

Students are reading *A Rat's Tale*, by Tor Seidler, about two young rats from different socioeconomic levels, whose true love must endure all kinds of adventures and challenges. When Montague decides to save the wharf, students predict and record in their reading journals some possible scenes that may unfold in the story and whether Montague will be successful.

Descriptor 5: Observing and Experimenting

Children observe, record, code, and measure. Children develop hypotheses, gather instruments, then collect and analyze data.

EXAMPLE: OBSERVING AND EXPERIMENTING

After a study of yearly weather patterns, students will keep daily weather records for one month, noting the date, type of weather, temperature, and amount of precipitation. They will create their own rain gauges to measure the precipitation.

EXAMPLE: OBSERVING AND EXPERIMENTING, continued

At the end of the month they will determine the median and mean for temperature and precipitation. Using this data and their knowledge of yearly weather patterns, they will hypothesize whether the medians and means for the next month will be the same, higher, or lower. At the end of the second month, students will again analyze their data, compare to the previous month, and either confirm or refute their hypotheses.

Descriptor 6: Improving Solutions

Children are given a solution to a problem, and asked to suggest methods for improving it.

EXAMPLE 1: IMPROVING SOLUTIONS

Students have read a series of *Nate the Great* mysteries. There is a discussion of weak and strong endings. Pairs of students choose one to reread together that they feel has a weak ending. Together they rewrite the ending to give a better explanation that solves the mystery.

EXAMPLE 2: IMPROVING SOLUTIONS

Students studying World War II may choose a specific battle and develop ways it could have been more effectively planned by the losing side to change the outcome.

Descriptor 7: Identifying Relevant/Irrelevant Information

Students are given relevant and irrelevant information needed to solve a problem. They identify relevant information and use that information to solve a problem.

EXAMPLE 1: IDENTIFYING RELEVANT OR IRRELEVANT INFORMATION

Students reread the fairytale, *Goldilocks*. They are then asked to fill in a "T-chart" with evidence from the story that is relevant or irrelevant to whether or not Goldilocks is a criminal and should be arrested. Finally, they render their verdict.

EXAMPLE 2: IDENTIFYING RELEVANT OR IRRELEVANT INFORMATION

When solving word problems in math, students identify information that is necessary and unnecessary to use in developing their solution.

Descriptor 8: Generating Ideas

Children are given ill-defined problems and taught to look for analogies, to brainstorm, to generate idea lists, to create representations, and to come up with viable solutions.

EXAMPLE: GENERATING IDEAS

Students are in small groups and are presented with the following information after studying the geography of the Southwest U.S. and the water cycle in science:

"It is the year 2010. The Colorado River, which in the past has been a major source of water to Southern California, has dried up. How can we replace this critical source of water?"

Students will generate as many possible solutions as they can, order them from most effective to least, and provide reasoning for deciding which would be their first and last choices.

Descriptor 9: Creating and Designing

Children are asked to create or design a product, an experiment, or a problem for another student to solve or evaluate (e.g. video, cartoon strip, presentation, software application, etc.).

EXAMPLE 1: CREATING AND DESIGNING

Students read *The Legend of Jimmy Spoon* by Kristina Gregory. Since this book lacks a map, students will create one showing the locations Jimmy visits with his adopted Shoshone tribe. They can begin with a generic map, which includes Utah, Idaho, Montana, and Wyoming, to trace Jimmy's travels throughout the book.

EXAMPLE 2: CREATING AND DESIGNING

Students create tutorials in PowerPoint to teach younger students basic information about the continents. Presentations must be at their partner's reading level and include a mini quiz at the end.

SUGGESTED REFLECTION QUESTIONS ON THINKING AND PROBLEM SOLVING

- How do I plan for activities and/or assignments that teach students different types of thinking or problem solving?
- What specific activities and/or assignments did I utilize within the lesson?
- What type of thinking and/or problem solving was taught during each activity?

PROBLEM SOLVING: STUDENT ENGAGEMENT

- Students produce solutions to challenging tasks through engaging in a variety of thinking types.
- Students create clear representations of problems through the application of thinking.
- Students apply a variety of models or approaches to a given problem until the appropriate model/approach is confirmed.
- Students persist in deep engagement in solving problems demonstrating satisfaction when arriving at a solution.
- Students produce products that require thinking and understanding of a specific concept/objective.

PLANNING

This section includes resources and information on the three indicators under *Planning*:

1. Instructional Plans
2. Student Work
3. Assessment

When planning for effective lessons, it is important to keep how you will engage students as active participants in their learning, at the forefront of your planning. A proficient lesson includes students at the center of learning and instruction; proficient teachers must plan to scaffold activities, materials, and questions so that students are engaged in an academic discourse that includes rich thinking and problem-solving .

Instructional Plans

Time spent developing strong lesson plans yields many benefits. Lesson plans contribute to better-managed classrooms and more effective and efficient learning experiences for students.

Instruction in a school using the NIET evaluation system is based heavily on state standards, as well as analysis of formative and summative student assessments. Therefore, it is important that teachers incorporate these into their daily planning.

Exemplary/Significantly Above Expectations Descriptors for Instructional Plans

Instructional plans include:

1. Measurable and explicit goals aligned to state content standards;
2. Activities, materials, and assessments that:
   - » Are aligned to state standards.
   - » Are sequenced from basic to complex (teaching of sub-objectives follows a logical progression).
   - » Build on prior student knowledge, are relevant to students' lives, and integrate other disciplines.
   - » Provide appropriate time for student work, student reflection, and lesson and unit closure.
3. Evidence that plan is appropriate for the age, knowledge, and interests of all learners; and
4. Evidence that the plan provides regular opportunities to accommodate individual student needs.

Evaluating Lesson Plans

It is suggested that administrators and teacher leaders select a system or protocol that provides feedback to teachers on individual lesson plans on a regular basis. This development would be an appropriate activity for a professional development meeting. Administrators and teacher leaders might bring examples of lesson plans to a meeting and analyze various aspects utilizing the rubric (e.g. checking the alignment of activities, materials, and assessments, or evaluating the learning objectives to ensure alignment to state standards). By focusing on specific descriptors of this indicator, administrators and teacher leaders can more narrowly focus their analysis of teachers' lesson plans. Specific written feedback can then be provided to teachers.

SUGGESTED REFLECTION QUESTIONS ON INSTRUCTIONAL PLANS

- How will I set goals that are aligned to the state content standards?
- How will I determine which activities, materials, and assessments to include in each lesson?
- How will I ensure that all activities, materials, and assessments are aligned to the lesson learning objective?
- How will I plan for activities, materials, and assessments that are age appropriate and peak the interests of most learners?
- How will I intentionally plan to incorporate opportunities to accommodate individual student learning needs?

INSTRUCTIONAL PLANS: STUDENT ENGAGEMENT

- Students demonstrate understanding of the lesson objectives and the connection to the state content standards.
- Students are authentically engaged in the lessons activities.
- Students make connections between their background knowledge and the lesson's activities and materials.
- Students complete assigned activities and assessments.

Student Work

The development and observation of student work should enhance and reinforce instruction in the classroom. Student work and/or assignments should be developed so that they are aligned to pre-tests and post-tests, which should be aligned to the high-stakes test.

It is critical that teachers are able to use the analysis of student work as a predictor for how students will perform on post-tests. If students are not progressing properly or progressing more quickly than expected, the teacher's long-range plan should be adjusted to reflect students' changing needs. Teachers may also review examples of student work for the purpose of analyzing characteristics of sub-groups or for isolating reasons students are still not mastering a specific skill by comparing the work to specific and commonly agreed-upon criteria.

Exemplary/Significantly Above Expectations Descriptors for Student Work

Assignments require students to:

1. Organize, interpret, analyze, synthesize, and evaluate information rather than reproduce it;
2. Draw conclusions, make generalizations, and produce arguments that are supported through extended writing; and
3. Connect what they are learning to experiences, observations, feelings, or situations significant in their daily lives, both inside and outside of school.

SUGGESTED REFLECTION QUESTIONS ON STUDENT WORK

- How will I plan to engage student thinking in organizing, interpreting, analyzing, synthesizing and evaluating information rather that reproducing work?
- How will I encourage students to engage high quality problem solving, so that they can draw conclusions, make generalizations, and produce arguments through extended writing assignments?
- How will I create opportunities for students to connect what they are learning to experiences, observations, feelings or situations in their daily lives?
- How will I design student work that encourages students to think beyond learning in the classroom?

STUDENT WORK: STUDENT ENGAGEMENT

- Student work demonstrates mastery of the lesson objectives.
- Student work includes multiple opportunities for thinking and problem solving.
- Students make connections between what they are learning and their daily lives, you can see the applied relevance of student interaction through their engagement in the lessons activities.

Assessment

Effective assessment is a fundamental part of instruction and learning. The goal of this section is to provide information and examples of assessment. An effective assessment plan answers the questions, "What do I want my students to be able to do as a result of my teaching?" and "How do I know the students learned what I taught?" When these questions are asked and answered regularly, the teacher can effectively plan, diagnose, and intervene on a continual basis to raise student achievement.

Exemplary/Significantly Above Expectations Descriptors for Assessment Plans

Assessment plans:

1. Are aligned with state content standards;
2. Have clear measurement criteria;
3. Measure student performance in more than three ways (e.g., in the form of a project, experiment, presentation, essay, short answer, or multiple-choice test);
4. Require extended written tasks;
5. Are portfolio-based with clear illustrations of student progress towards state content standards; and
6. Include descriptions of how assessment results will be used to inform future instruction.

SUGGESTED REFLECTION QUESTIONS ON ASSESSMENT

- How will I develop clear measurement criteria aligned to the state content standards?
- How will I plan for students to demonstrate mastery through multiple measures (e.g., in the form of a project, experiment, presentation, essay, short answer, or multiple choice test)?
- How will I plan to use assessment to accommodate the needs of individual students?
- How will I use assessment to plan for future instruction?

ASSESMENT: STUDENT ENGAGEMENT

- Students demonstrate mastery through multiple measures.
- Students can demonstrate their understanding/thinking through writing.
- Students use the lesson's clear measurement criteria to self-assess.
- Students set goals based on their assessment results for future learning

ENVIRONMENT

This section includes resources and information on the four indicators under *Environment*:

1. Expectations
2. Managing Student Behavior
3. Environment
4. Respectful Culture

Expectations

Exemplary//Significantly Above Expectations Descriptors for Expectations

1. Teacher sets high and demanding academic expectations for every student.
2. Teacher encourages students to learn from mistakes.
3. Teacher creates learning opportunities where all students can experience success.
4. Students take initiative and follow through with their own work.
5. Teacher optimizes instructional time, teaches more material, and demands better performance from every student.

The descriptors under this indicator directly connect to descriptors in the *Instruction* domain. For a teacher to include the descriptors under *Expectations*, he/she must have knowledge of the students he/she is teaching. Differentiated instruction methods that are demanding for every student and create opportunities for all students to experience success can only be implemented when a *teacher's knowledge of students* is developed and utilized during instruction. When a teacher sets high and demanding expectations for every student, he/she is also able to develop and/or select *activities and materials* that are challenging. The second descriptor connects to *Motivating Students*. When a teacher regularly reinforces and rewards efforts, students will be encouraged to learn from their mistakes and take risks. A teacher must be able to create a safe learning environment in which students' efforts are reinforced and valued in order for students to experience success. For a teacher to optimize instructional time, he/she must be able to implement lessons that include appropriate *lesson structure and pacing* for students who progress at different learning rates. For additional explanation of these indicators, refer to the pages in this handbook that address each of the indicators under *Instruction*.

SUGGESTED REFLECTION QUESTIONS FOR EXPECTATIONS

- How do I ensure that your expectations are high, demanding and academic for all students?
- Why is it important for students to have opportunities to learn from their mistakes?
- How will I ensure that all students experience success with the lesson?
- In the lesson how will students take initiative for their own work and persevere with their work?
- How will I sequence the lesson in order for students to deepen their understanding of the objective?

EXPECTATIONS: STUDENT ENGAGEMENT

- Students are encouraged to exceed the academic expectations for the lesson.
- Students are not afraid to make mistakes and see the mistakes as learning opportunities.
- Students know if they were successful during the lesson when accomplishing the lesson's objective.
- Students experience success since the lesson was differentiated for specific needs.
- Students do not give up easily and strive to complete their work.
- Students do not feel rushed in the lesson and have opportunities to develop their understanding for depth.

Managing Student Behavior

Exemplary Descriptors for Managing Student Behavior

1. Students are consistently well-behaved and on task.
2. Teacher and students establish clear rules for learning and behavior.
3. The teacher uses several techniques, such as social approval, contingent activities, and consequences, to maintain appropriate student behavior.
4. The teacher overlooks inconsequential behavior.
5. The teacher deals with students who have caused disruptions rather than the entire class.
6. The teacher attends to disruptions quickly and firmly.

Resource:
Managing student behavior has generated a huge proliferation of books and workshops. A good website for basic tips and information is Adprima at *www.adprima.com/managing.htm*. LEARN North Carolina also has great suggestions on classroom management at *www.learnnc.org*.

Timely and effective management of student behavior is critical for effective instruction to take place within a classroom. Descriptors under *Standards and Objectives* and *Presenting Instructional Content* both address a teacher's modeling of clear expectations for students. While these indicators focus on instruction, expectations must also be clearly modeled for student behavior for effective instruction to occur that increases student achievement. For a teacher to manage student behavior effectively, he/she must not only model the expectations but have *knowledge of the students* he/she is teaching. Teachers must be aware of and practice a variety of techniques to maintain appropriate behavior that are dependent upon having knowledge of individual student's needs. Teachers must also know students' interests in order to motivate them to change inappropriate behaviors. Therefore, this indicator is also connected to *Motivating Students*.

SUGGESTED REFLECTION QUESTIONS ON MANAGING STUDENT BEHAVIOR

- What strategies do I implement to encourage students to behave and stay on task during the lesson? How do you involve your students in this process?
- How do I and my students establish the class expectations/rules to ensure learning is valued?
- What are some techniques my students and I use to maintain appropriate individual and group behavior?
- What types of behavior do I deem inconsequential and often overlook?
- How do I address specific students that are misbehaving while not punishing the entire class?
- Why is it important to attend to interruptions quickly and firmly while teaching a lesson? How can this impact the learning of others?

MANAGING STUDENT BEHAVIOR: STUDENT ENGAGEMENT

- Students in partnership with the teacher determine the class expectations/rules for appropriate learning behavior.
- Students self-monitor their own behavior based upon clear class learning expectations/rules.
- Students have several coping strategies to use when frustrated and feel comfortable using these in the classroom.

Environment

Exemplary/Significantly Above Expectations Descriptors for Environment

The classroom:

1. Welcomes all members and guests.
2. Is organized and understandable to all students.
3. Supplies, equipment, and resources are easily and readily accessible.
4. Displays student work that frequently changes.
5. Is arranged to promote individual and group learning.

This indicator deals with the learning environment of the classroom, including the physical arrangement of the furniture and availability of supplies for students to utilize. When supplies, equipment, and resources are easily and readily accessible, then the descriptor, "routines for distributing materials are efficient," under *Lesson Structure and Pacing,* can be met.

LEARN North Carolina has a great section on **tips for creating a positive physical environment**. The following checklist from the site can be used for self-observation of a classroom's environment:

- » Various areas of the classroom are created for use in a variety of activities.
- » Desks or general seating is arranged so that the teachers can easily get to each student.
- » The lighting in the room is adequate.
- » The room temperature is generally moderate to cool. Warm classrooms lead students to be more lethargic, inattentive, and consequently bored and disruptive.
- » The entrance to your room does not cause distractions to students during lessons.

- There is a place in your classroom, away from the rest of the class, where you can have a private conversation or give a private reprimand to an individual student.
- The blackboard is visible to all students during lessons and is clean and uncluttered.
- Bulletin boards are attractive and not cluttered with "old work."
- The room has just the amount of furniture that is functional and does not contain useless or nonessential furnishings.
- The seating arrangement is designed in an orderly way so that the organization of the seats helps the students to feel more organized.
- Study carrels are used only in conjunction with other types of seating arrangements.
- Students are seated far enough apart so that innocent moves by students don't distract other students.
- Seats are arranged in such a way as to reduce traffic distractions. For example, as students get up to go to the bathroom or pencil sharpener, they do not overly distract students they pass.
- Make sure that students have assigned seats, and don't allow them to constantly change their seats.

SUGGESTED REFLECTION QUESTIONS ON CLASSROOM ENVIRONMENT

- Is my room welcoming? What evidence is there that indicates that it is?
- Is it conducive to student independence (e.g., can they get their own paper, is the pencil sharpener located in a logical place)?
- Is a variety of student work posted on the bulletin boards? Or just the best?
- Is the room arranged to promote individual and group work? Can the classroom accommodate different grouping patterns?
- Is the information students need posted so they can use it (e.g., the standards, the goals for the day, the schedule/agenda)?
- What are the biggest challenges to having my classroom set up as I would like?
- What might be some solutions?
- How will I plan and rotate the work on my bulletin boards so that all students have an opportunity to have their work displayed?

ENVIRONMENT: STUDENT ENGAGEMENT

- Students feel welcome in the classroom and help others to feel welcome.
- Students work together with the teacher to keep the classroom organized and ensure that materials are easily assessable when needed.
- Student may take on the responsibility of changing their own work.
- Students can move desk when the lesson requires group work but can also create individual space when needed.

Respectful Culture

Exemplary/Significantly Above Expectations Descriptors for Respectful Culture

1. Teacher-student interactions demonstrate caring and respect for one another.
2. Students exhibit caring and respect for one another.
3. Teacher seeks out and is receptive to the interests and opinions of all students.
4. Positive relationships and interdependence characterize the classroom.

Creating a positive classroom climate begins with showing respect to one another. Teachers most often set this in motion when they develop a set of collaborative ground rules for their classrooms and then model these for the students on a regular basis.

Teacher non-verbal cues that indicate respect and interest are:

- Tone of voice
- Eye contact
- Affirmative head nods
- Smiles
- Wait time
- Proximity to student

SUGGESTED REFLECTION QUESTIONS ON RESPECTFUL CULTURE

- Are my students empowered to make decisions?
- Are my students interdependent?
- Do my students have opportunities to collaborate?
- Do my students listen to each other?
- Do my students feel safe sharing their feelings and thoughts with each other?
- Do my students exhibit patience and respect with their peers?
- Do my students handle supplies in a respectful and orderly manner?

RESPECTFUL CULTURE: STUDENT ENGAGEMENT

- Students demonstrate respect when interacting with others during group work and other interactions.
- Students feel safe to express their opinions and interests in the classroom.
- Students are patient with each other and respect their peers.
- Students work together with each other and the teacher to establish positive relationships with everyone in the classroom.

PRE-CONFERENCE PLAN

The purpose of the pre-conference is to ensure that the teacher and the observer are able to connect prior to an announced observations. Observers conduct a pre-conference meeting to obtain pertinent background information about the lesson plan and students involved for additional context, and to address any potential areas of concern before the lesson. During the pre-conference, the teacher being observed engages in a coaching conversation with the observer. As part of this conversation, the observer asks questions about the lesson plan, grouping structures, classroom configuration, specific students, etc. The teacher provides background information, including the makeup of the students in the class; the context of this lesson in the larger unit plan; assessment information; extenuating circumstances; and evidence of planning with the rubrics. A pre-conference is conducted for announced observations.

Below are tips when preparing for a pre-conference.

General Tips for the Pre-Conference Process

- Submit your lesson plan to the observer at least 24 hours in advance of the scheduled pre-conference.
- Be open to engage in a conversation about your classroom and the individual students in your classroom.
- Be prepared to talk through your lesson with your observer.
- Be prepared to answer clarifying questions the observer may ask.
- Be an active listener, including writing down any suggestions that the observer provides.
- Ask questions of the observer to ensure your understanding.
- Use the pre-conference as an opportunity to learn about effective instruction, it is a time to reflect on your own personal growth.

Sample Pre-Conference Questions

- What is the objective of my lesson? Is the objective aligned with state content standards?
- What do I expect the students to know and be able to do by the end of the lesson?
- Where is this lesson in the context of our unit plan?
- What are the prerequisite skills that the students have to know in order to be successful?
- How will I know that students have mastered the objectives in this lesson?
- What is the criteria for mastery of the objective?
- How have I planned for opportunities for all students to engage in activities and materials aligned with the lesson objectives?
- How will I differentiate instruction in order to address a variety of learning styles?
- How will I group students to enhance lesson outcomes?
- What have I been working on to improve my instruction this year?
- What are my plans for assessment, lesson closure, and student reflection?

POST CONFERENCE PLAN

The purpose of the post conference is to provide you the opportunity to self-reflect on your lesson with guidance and support from the observer. The observer will ask questions to guide this reflection. During the post conference you will discuss an area of reinforcement (relative strength of the lesson) and an area of refinement (relative area of improvement). These areas will be identified by the observer based on the lesson's evidence, analysis of student work and rubric indicators. Therefore, the focus of the post conference is on two indicators or descriptors from the rubric as opposed to multiple areas.

General Tips for Preparing for the Post Conference:

- Reflect on all parts of the lesson through the lens of instructional delivery and student outcomes.
- Analyze your student work samples to determine if students were successful in meeting the lesson's objective.
- Following this reflection self-rate your lesson while reading through each of the indicators and descriptors for the Planning, Instruction and Environment Domains.
- Provide your self-reflection scores to the observer prior to the post conference.
- Come to the post conference prepared to discuss your reflections with your observer.
- Be open to the feedback and evidence the observer provides you during the post conference, think of the post conference as an individualized professional development opportunity .

Sample Questions to Ask Yourself Prior to the Post Conference:

- Based on my analysis of the lesson and student work, what were the strengths of the lesson?
- If I were to teach the lesson again what might I do differently?
- How did the lesson meet the needs of all students?
- What trends did I identify in my analysis of student work?
- Were my students successful in meeting the lesson's objective? How do I know?

TAP TEACHER RESPONSIBILITIES SURVEY

As previously mentioned, the details of the fourth domain, *Responsibilities*, are flexible based on the expectations for the teachers in each project. However, below are recommended responsibilities surveys for master, mentor and career teachers.

The responsibilities surveys should be introduced at the beginning of the year to all teachers. It is recommended that TAP schools come back to these surveys at least one more time before the end of the year to make sure all teachers understand their own expectations, and the expectations of the master and mentor teachers who support them.

Teacher Responsibilities Surveys: Master Teacher

	Performance Standard	Significantly Above Expectations (5) (Exemplary)	At Expectations (3) (Proficient)	Significantly Below Expectations (1) (Unsatisfactory)
Staff Development	1. The master teacher leads the design and delivery of research-based professional development activities for his or her cluster group.	Regularly	Sometimes	Rarely
	2. The master teacher consistently presents new learning in cluster that is supported with field-tested evidence of increased student achievement.	Regularly	Sometimes	Rarely
	3. The master teacher models new learning in cluster meetings and in classrooms throughout the year demonstrating how to effectively implement the skill developed in cluster meetings.	Regularly	Sometimes	Rarely
	4. The master teacher is a resource, providing access to materials and research-based instructional methods to his or her cluster group members.	Regularly	Sometimes	Rarely
	5. The master teacher works closely with cluster team members to plan instruction and assessments during cluster development time.	Regularly	Sometimes	Rarely
	6. The master teacher guides and reviews the cluster members' growth plans.	Regularly	Sometimes	Rarely

Note: Career teachers are to respond to Items #1-13. Mentor teachers and administrators who are completing this survey should respond to Items #1-22.

Teacher Responsibilities Surveys: Master Teacher - *Continued*

	Performance Standard	Significantly Above Expectations (5) (Exemplary)	At Expectations (3) (Proficient)	Significantly Below Expectations (1) (Unsatisfactory)
Instructional Supervision	7. The master teacher provides specific evidence, feedback, and suggestions during coaching identifying areas of reinforcement and refinement.	Regularly	Sometimes	Rarely
	8. The master teacher advances the career and mentor teacher's knowledge of state and district content standards and the TAP Rubrics.	Regularly	Sometimes	Rarely
Mentoring	9. The master teacher observes and guides the mentor teacher's professional relationships and responsibilities to career teachers.	Regularly	Sometimes	Rarely
	10. The master teacher guides, supports, and monitors the growth plans of career and mentor teachers.	Regularly	Sometimes	Rarely
	11. The master teacher identifies resources for career and mentor teachers that enhance instructional planning, assessment design, and classroom management.	Regularly	Sometimes	Rarely
	12. The master teacher provides ongoing follow-up and support (e.g. demonstration lessons, team teaching, observations with feedback) to career and mentor teachers.	Regularly	Sometimes	Rarely
Community Involvement	13. The master teacher actively supports school activities and events.	Regularly	Sometimes	Rarely
Note: The remaining items, #14-22, are to be completed by mentor teachers and administrators only.				
s chool r esponsibilities	14. The master teacher works with other leadership team members in developing appropriate school and cluster plans to target student academic and teacher instructional needs.	Regularly	Sometimes	Rarely
	15. The master teacher leads and supports the analysis of school and student achievement data to identify strengths and weaknesses and make suggestions for improvement.	Regularly	Sometimes	Rarely

Teacher Responsibilities Surveys: Master Teacher - *Continued*

	Performance Standard	Significantly Above Expectations (5) (Exemplary)	At Expectations (3) (Proficient)	Significantly Below Expectations (1) (Unsatisfactory)
School Responsibilities, cont.	16. The master teacher communicates and reflects the visions and decisions of the TAP Leadership Team.	Regularly	Sometimes	Rarely
	17. The master teacher assists the administrators in inducting new teachers into the TAP school environment and processes.	Regularly	Sometimes	Rarely
Growing and Developing Professionally	18. The master teacher develops and works on his/her Individual Growth Plan (IGP), which includes new learning based on school goals, self-assessment, and feedback from observations.	Regularly	Sometimes	Rarely
	19. The master teacher includes activities on his/her IGP to enhance content knowledge or pedagogical skills in order to increase his/her proficiency.	Regularly	Sometimes	Rarely
Reflecting on Teaching	20. The master teacher thoughtfully assesses the effectiveness of his/her instruction, as evidenced in cluster by the new learning modeled and the student work presented from his/her field tests.	Regularly	Sometimes	Rarely
	21. The master teacher considers the varied strengths and weaknesses and personal/cultural differences of adult learners through communications and actions that promote effective teaching with all cluster members.	Regularly	Sometimes	Rarely
	22. The master teacher plans, offers, and implements specific alternative actions to improve teaching.	Regularly	Sometimes	Rarely

Comments (optional, and not part of the score):

Teacher Responsibilities Surveys: Mentor Teacher

	Performance Standard	Significantly Above Expectations (5) (Exemplary)	At Expectations (3) (Proficient)	Significantly Below Expectations (1) (Unsatisfactory)
Staff Development	1. The mentor teacher assists the design and delivery of professional development activities for his/her cluster group as needed.	Regularly	Sometimes	Rarely
	2. The mentor teacher provides follow-up (e.g. observations, team teaching, and/or demonstration lessons) that supports/models how to use the ideas and activities learned in cluster.	Regularly	Sometimes	Rarely
	3. The mentor teacher is a resource, providing access to materials and research-based instructional methods to his/her cluster group and/or mentee.	Regularly	Sometimes	Rarely
	4. The mentor teacher works closely with cluster team members to plan instruction and assessments during cluster development time.	Regularly	Sometimes	Rarely
Instructional Supervision	5. The mentor teacher advances the career teacher's knowledge of state and district content standards and the TAP Rubrics.	Regularly	Sometimes	Rarely
	6. The mentor teacher's feedback during coaching specifically defines the areas of reinforcement and refinement.	Regularly	Sometimes	Rarely

Note: Career teachers are to respond to only Items #1-11. Master teachers and administrators who are completing this survey should respond to Items #1-21.

Teacher Responsibilities Surveys: Mentor Teacher - *Continued*

	Performance Standard	Significantly Above Expectations (5) (Exemplary)	At Expectations (3) (Proficient)	Significantly Below Expectations (1) (Unsatisfactory)
Mentoring	7. The mentor teacher provides opportunities/support for the career teacher/mentee through team planning and team teaching.	Regularly	Sometimes	Rarely
	8. The mentor teacher serves as a resource for curriculum, assessment, instructional, and classroom management strategies and resources.	Regularly	Sometimes	Rarely
	9. The mentor teacher guides and coaches career teachers/mentees in the development of their growth plans.	Regularly	Sometimes	Rarely
	10. The mentor teacher observes and coaches mentees and/or career teachers to improve their instruction and align it with the TAP Rubrics.	Regularly	Sometimes	Rarely
Community Involvement	11. The mentor teacher actively supports school activities and events.	Regularly	Sometimes	Rarely
Note: The remaining items, #12-21, cannot be answered by career teachers. They are to be completed only by master teachers and administrators who work with the mentor teacher.				
School Responsibilities	12. The mentor teacher participates and supports the analysis of school achievement data to isolate school strengths and weaknesses in order to make suggestions for improvement.	Regularly	Sometimes	Rarely
	13. The mentor teacher accepts leadership responsibilities and/or assists peers in contributing to a safe and orderly school environment.	Regularly	Sometimes	Rarely
	14. The mentor teacher participates in the setting of school and cluster goals.	Regularly	Sometimes	Rarely
	15. The mentor teacher communicates and reflects the visions and decisions of the TAP Leadership Team.	Regularly	Sometimes	Rarely
	16. The mentor teacher supports the master teacher during development time in cluster meetings by providing individual support to career teachers.	Regularly	Sometimes	Rarely

Teacher Responsibilities Surveys: Mentor Teacher - *Continued*

	Performance Standard	Significantly Above Expectations (5) (Exemplary)	At Expectations (3) (Proficient)	Significantly Below Expectations (1) (Unsatisfactory)
Growing and Developing Professionally	17. The mentor teacher develops a yearly plan/growth plan for new learning based on analyses of school improvement plans and goals, self-assessment, and input from master teacher and principal observations.	Regularly	Sometimes	Rarely
	18. The mentor teacher selects targeted content knowledge and pedagogical skills to enhance and improve his/her knowledge.	Regularly	Sometimes	Rarely
Reflecting on Teaching	19. The mentor teacher makes thoughtful and accurate assessments of his/her lessons' effectiveness and the extent to which they achieved their goals.	Regularly	Sometimes	Rarely
	20. The mentor teacher considers strengths and weaknesses, as well as personal and cultural differences, of adult learners as evidenced in his/her communications and actions that promote effective teaching with all cluster members.	Regularly	Sometimes	Rarely
	21. The mentor teacher provides specific actions to improve his/her teaching.	Regularly	Sometimes	Rarely

Comments (optional, and not part of the score):

Teacher Responsibilities Surveys: Career Teacher

	Performance Standard	Significantly Above Expectations (5) (Exemplary)	At Expectations (3) (Proficient)	Significantly Below Expectations (1) (Unsatisfactory)
Growing and Developing Professionally	1. The career teacher is prompt, prepared, and participates in cluster meetings, bringing student artifacts (student work) when requested.	Regularly	Sometimes	Rarely
	2. The career teacher appropriately attempts to implement new learning in the classroom following presentation in cluster.	Regularly	Sometimes	Rarely
	3. The career teacher develops and works on a yearly plan for new learning based on analyses of school improvement plans and new goals, self-assessment, and input from the master/mentor teacher and principal observations.	Regularly	Sometimes	Rarely
	4. The career teacher selects specific activities, content knowledge, or pedagogical skills to enhance and improve his/her proficiency.	Regularly	Sometimes	Rarely
Reflecting on Teaching	5. The career teacher makes thoughtful and accurate assessments of his/her lessons' effectiveness as evidenced by the self-reflection after each observation.	Regularly	Sometimes	Rarely
	6. The career teacher offers specific actions to improve his/her teaching.	Regularly	Sometimes	Rarely
	7. The career teacher accepts responsibilities contributing to school improvement.	Regularly	Sometimes	Rarely
	8. The career teacher utilizes student achievement data to address strengths and weaknesses of students and guide instructional decisions.	Regularly	Sometimes	Rarely

Comments (optional, and not part of the score):

EDUCATOR PROFESSIONALISM RATING REPORT

(used in Educator Effectiveness schools)

Teacher Name_____ Date ____/____/____

License Number_____

Evaluator Name_____

School Name _____

Performance Standard		Score
Growing and Developing Professionally	1. The educator is prompt, prepared, and participates in professional development meetings, bringing student artifacts (student work) when requested.	
	2. The educator appropriately attempts to implement new learning in the classroom following presentation in professional development meetings.	
	3. The educator develops and works on a yearly plan for new learning based on analyses of school improvement plans and new goals, self-assessment, and input from the teacher leader and principal observations.	
	4. The educator selects specific activities, content knowledge, or pedagogical skills to enhance and improve his/her proficiency.	
Reflecting on Teaching	5. The educator makes thoughtful and accurate assessments of his/her lessons' effectiveness as evidenced by the self-reflection after each observation.	
	6. The educator offers specific actions to improve his/her teaching.	
	7. The educator accepts responsibilities contributing to school improvement.	
	8. The educator utilizes student achievement data to address strengths and weaknesses of students and guide instructional decisions.	
Community Involvement	9. The educator actively supports school activities and events.	
School Respon-sibilities	10. The educator accepts leadership responsibilities and/or assists peers in contributing to a safe and orderly school environment.	

Evaluator Signature _____ **date** _____

Teacher Signature _____ **date** _____

APPENDIX:
A TEACHER EVALUATION SYSTEM THAT WORKS
Research Brief

Summary

Teachers are the most important school-related factor for student achievement gains, but evaluation of teacher performance is seldom conducted in any rigorous way. As policymakers call for a better approach to teacher evaluation, the 20-year history of TAP™: The System for Teacher and Student Advancement provides an example of an integrated system for teacher evaluation and support. TAP teachers are evaluated every year through multiple classroom observations by trained and certified raters and through their contributions to student achievement growth. Based on data from TAP schools, research shows that:

- TAP teacher evaluations provide differentiated feedback on teacher performance.
- TAP classroom evaluations are aligned with value-added student achievement outcomes.
- TAP teachers become more effective over time.
- TAP schools show higher retention of more effective teachers, and higher turnover of less effective teachers.

Creating the capacity for evaluation and evaluation-guided improvement in schools requires the right tools as well as the sustained engagement of teachers and leaders. The example of TAP implies that teacher evaluation should not be pursued as a one-time, one-size-fits-all policy prescription, but should be integrated within a comprehensive, site-based system with specific practical elements to support teachers and improve teaching and learning in the classroom.

Research that Supports the NIET Teaching Standards

The following pages include a summary of relevant recent research that supports each of the indicators on the rubric.

Table 1: Recent Studies Supporting the Instruction Domain

Indicator	Exemplary Descriptor	Research
Standards and Objectives	• All learning objectives and state content standards are explicitly communicated. • Sub-objectives are aligned and logically sequenced to the lesson'smajorobjective. • Learning objectives are: (a) consistently connected to what studentshave previouslylearned, (b)know from life experiences and (c) integrated with other disciplines. • Expectations for student performance are clear, demanding and high. • State standards are displayed and referenced throughout the lesson. • There is evidence that most students demonstrate mastery ofthe objective.	Applebee, A. N., Adler, M., & Flihan, S. (2007). Jussim, L., Robustelli, S. L., & Cain, T. R. (2009). Meece, J. L. anderman, E. M., & Anderman, L. H. (2006). Penuel, W., Fishman, B. J., Gallagher, L. P., Korbak, C., & Lopez-Prado, B. (2009). Rivet, A. E., & Krajcik, J. S. (2008). Schmidt, W. H., Wang, H. C., & McKnight, C. C. (2005). Seidel, T., Rimmele, R., & Prenzel, M. (2005). Shwartz, Y., Weizman, A., Fortus, D., Krajcik, J., & Reiser, B. (2008).
Motivating Students	• The teacher consistently organizes the content so that it is personally meaningful and relevant to students. • The teacher consistently develops learning experiences where inquiry, curiosity and exploration are valued. • The teacher regularly reinforces and rewards effort.	Deci, E. L., Koestner, R., & Ryan, R. M. (1999) Eccles, J. S., & Wigfield, A. (2002) Hidi, S., & Harackiewicz, J. M. (2000) James, M. C., & Scharmann, L. C. (2007) Stipek, D. (2002)
Presenting Instructional Content	Presentation of content always includes: • Visuals that establish the purpose of the lesson, preview the organization of the lesson and include internal summaries of thelesson • Examples, illustrations, analogies and labels for new concepts and ideas • Modeling by the teacher to demonstrate his or her performance expectations • Concise communication • Logical sequencing and segmenting • All essential information • No irrelevant, confusing, or nonessential information	Cook, M. P. (2006) Glen, N. J., & Dotger, S. (2009) Harp, S. F., & Maslich, A. A. (2005) Herman, J. L., Klein, D. C. D., & Abedi, J. (2000) Low, G. (2008) Nesbit, J. C., & Adesope, O. O. (2006) Richland, L.E., Zut, O., & Holyoak, K. J. (2007) Schartz, Y., Weizman, A., Fortus, D., Krajcik, J., & Reiser, B. (2008) Webb, N. M., & Mastergeorge, A. (2003)
Lesson Structure and Pacing	• The lesson starts promptly. • The lesson's structure is coherent, with a beginning, middle, end and time for reflection. • Pacing is brisk and provides many opportunities for individual students who progress at different learning rates. • Routines for distributing materials are seamless. • No instructional time is lost during transitions.	Corno, L. (2008). Davis, E. A. (2003) Konrad, M. Helf, S., & Joseph, L. M. (2011)

Table 1: Recent Studies Supporting the Instruction Domain (Continued)

Indicator	Exemplary Descriptor	Research
Activities and Materials	Activities and materials include all of the following: • Support the lesson objectives • Challenging • Sustain students' attention • Elicit a variety of thinking • Provide time for reflection • Relevant to students' lives • Provide opportunities for student-to-student interaction • Induce student curiosity and suspense • Provide students with choices • Incorporate multimedia and technology • Incorporate resources beyond the school curriculum texts (e.g., teacher-made materials, manipulatives, resources from museums, cultural centers, etc.) • In addition, sometimes activities are game-like, involve simulations, require creating products and demand self-direction and self-monitoring	Brophy, J. (2008) Cornelius-White, J. (2007) Davis, E. A. (2003) de Freitas, S. I. (2006) Dignath, C., & Buttner, G. (2008) Fredricks, J. A., Blumenfeld. P. C., & Paris, A. H. (2004) Harp, S. F., & Maslich, A. A. (2005) Hmelo-Silver, C. E. (2004) Pahl, K., & Roswell, J. (2010) Porter, A. C. (2002) Matsumura, L. C., Garnier, H., Pascal, J., & Valdes, R. (2002) McNeil, N., & Jarvin, L. (2007) Mishra, P., & Koehler, M. J. (2006) Moje, E., Ciechanowski, K., Kramer, K., Ellis, L., Carrillo, R., & Collazo, T. (2004) Mouratidis, A., & Michou, A. (2011) Webb, N. M., Franke, M. L., Ing, M., Chan, A., De, T., Freund, D., & Battey, D. (2008) Zimmerman, B. J. (2008)
Questioning	• Teacher questions are varied and high quality, providing a balanced mix of question types: o Knowledge and comprehension o Application and analysis o Creation and evaluation • Questions are consistently purposeful and coherent • A high frequency of questions is asked • Questions are consistently sequenced with attention to the instructional goals • Questions regularly require active responses (e.g., whole-class signaling, choral responses, written and shared responses, or group and individual answers) • Wait time (3-5 seconds) is consistently provided • The teacher calls on volunteers and non-volunteers and a balance of students based on ability and sex • Students generate questions that lead to further inquiry and self-directed learning	Altermatt, E. R., Jovanovic, J., & Perry, M. (1998) Armendariz, F., & Umbreit, J. (1999) Boyd, M & Rubin, D. (2006) Chin, C. (2007) Erdogan, I., & Campbell, T. (2008) Gillies, R. M. (2011) Kazemi, E., & Stipek, D. (2001) Kelly, S. (2007) Lambert, M. C., Cartledge, G., Heward, W. L., & Lo, Y. (2006) Lustick, D. (2010) Nystrand, M., Wu, L. L., Gamoran, A., Zeiser, S., & Long, D. A. (2003) Staples, M. (2007) Stitcher, J. P., Lewis, T. J., Whittaker, T. A., Richter, M., Johnson, N. W., & Trussell, R. P. (2009) Turner, J., & Patrick, H. (2004)
Academic Feedback	• Oral and written feedback is consistently academically focused, frequent and high quality. • Feedback is frequently given during guided practice and homework review. • The teacher circulates to prompt student thinking, assess each student's progress and provides individual feedback. • Feedback from students is regularly used to monitor and adjust instruction. • Teacher engages students in giving specific and high quality feedback to one another.	Hattie, J., & Gan, M. (2010) Matsumura, L. C., Patthey-Chavez, G. G., Valdes, R., & Garnier, H. (2002) Shute, V. J. (2008) Topping, K. J. (2009)

Table 1: Recent Studies Supporting the Instruction Domain (Continued)

Indicator	Exemplary Descriptor	Research
Grouping Students	• The instructional grouping arrangements (either whole class, small groups, pairs, or individual; heterogeneous or homogeneous ability) consistently maximize student understanding and learning efficiency. • All students in groups know their roles, responsibilities and group work expectations. • All students participating in groups are held accountable for group work and individual work. • Instructional group composition is varied (e.g., race, gender, ability and age) to best accomplish the goals of the lesson. • Instructional groups facilitate opportunities for students to set goals, reflect on and evaluate their learning.	Gillies, R. M., & Haynes, M. (2010) Johnson, D. W., Johnson, R. T., & Roseth, C. (2010) Webb, N. (2008) Webb, N. M., Franke, M. L., De, T. Chan, A. G., Freung, D., Shein, P., & Melkonian, D. K. (2009)
Teacher Content Knowledge	• Teacher displays extensive content knowledge of all the subjects she or he teachers. • Teacher regularly implements a variety of subject specific instructional strategies to enhance student content knowledge. • Teacher regularly highlights key concepts and ideas and uses them as bases to connect other powerful ideas. • Limited content is taught in sufficient depth to allow for the development of understanding.	Ball, D. L., Thames, M. H., & Phelps, G. (2008) Hill, H. C., Rowan, B., & Ball, D. L. (2005) Murdock, J. (2008) Taber, K. (2008)
Teacher Knowledge of Students	• Teacher practices display understanding of each student's anticipated learning difficulties • Teacher practices regularly incorporate students interests and cultural heritage • Teacher regularly provides differentiated instructional methods and content to ensure children have the opportunity to master what is being taught	Hill, H. C., Ball, D. L., & Schilling, S. G. (2008) Pacheco, M., & Gutierrez, K. (2009) McTighe, J., & Brown, J. L. (2005) Tomlinson, C. A, Brighton, C., Hertberg, H., Callahan, C. M., Moon, T. R., Brimijoin, K., Conover, L. A., & Reynolds, T. (2003)
Thinking	The teacher thoroughly teaches two or more types of thinking: • Analytical thinking where students analyze, compare and contrast, and evaluate and explain information • Practical thinking where students use, apply, and implement what they learn in real-life scenarios • Creative thinking where students create, design, imagine and suppose • Research-based thinking where students explore and review a variety of ideas, models, and solutions to problems The teacher provides opportunities where students: • Generate a variety of ideas and alternatives • Analyze problems from multiple perspectives and viewpoints • Monitor their thinking to ensure they understand what they are learning, are attending to critical information and are aware of the learning strategies they are using and why	Beghetto, R. A. (2006) Beyer, B. K. (2008) Carroll, M. (2008) Clark, A. anderson, R. C., Kuo, L., Kim, I., Archodidou, A., & Nguyen- Jahiel, K. (2003) Fuchs, L. S., Fuchs, D., Prentice, K., Burch, M., Hamlett, C. L., Owen, R., Hosp. M., & Jancek, D. (2003) Kaufman, J. C., & Beghetto, R. A. (2009) Marshall, J. C., & Horton, R. M. (2011) Merrill, M. D. (2002) Rittle-Johnson, B., & Star, J. R. (2007) Schraw, G., Crippen, K. J., & Hartley, K. (2006) White, B., & Frederiksen, J. (2005) Zimmerman, C. (2007)

Table 1: Recent Studies Supporting the Instruction Domain (Continued)

Indicator	Exemplary Descriptor	Research
Problem Solving	The teacher implements activities that teach and reinforce three or more of the following problem solving types: • Abstraction • Categorization • Drawing Conclusions/Justifying Solutions • Predicting Outcomes • Observing and Experimenting • Improving Solutions • Identifying Relevant/Irrelevant Information • Generating Ideas • Creating and Designing	Cho, K., & Jonassen, D. H. (2002) Jonassen, D. H. (2000) Julien, H., & Barker, S. (2009) King, A. (2008) Kuhn, D., & Pease, M. (2008) Levering, K., & Kurtz, K. J. (2010) Moreno, R., Ozogul, G., & Reisslein, M. (2011) Nicolaidou, I., Kyza, E. A., Terzian, F., Hadjichambis, A., Kafouris, D. (2011) Sandoval, W. A., & Cam, A. (2011) Schwarz, C. V., Reiser, B. J., Davis, E. A., Kenyon, L., Acher, A., Fortus, D., Schwartz, Y., Hug, B., & Kracjik, J. (2009) Zimmerman, C. (2007)

Table 2: Recent Studies Supporting the Planning Domain

Indicator	Exemplary Descriptor	Research
Instructional Plans	Instructional plans include: • Measurable and explicit goals aligned to state content standards • Activities, materials and assessments that o Align to state standards o Sequence from basic to complex o Build on prior student knowledge, are relevant to students' lives and integrate other disciplines o Provide appropriate time for student work, student reflection and lesson and unit closure • Evidence that plan is appropriate for the age, knowledge and interests of all learners • Evidence that the plan provides regular opportunities to accommodate individual student needs	Applebee, A. N., Adler, M. Flihan, S. (2007) Anghileri, J. (2006) Ayala, C. C., Shavelson, R. J., Ruiz-Primo, M. A., Brandon, P. R., Yin, Y., Furtak, E. M., Young, D. B., & Tomita, M. K. (2008) Cizek, G. J. (2009) Hosp, J. L., & Ardoin, S. P. (2008) Ginsberg, M. B. (2005) Martone, A., & Sireci, S. G. (2009) McNeill, K. L. Lizotte, D.J., Krajcik, J., & Marx, R.W. (2006) Timperley, H. S., & Parr, J. M. (2009) Tsai, Y., Kunter, M., Ludtke, O., Trautwein, U., & Ryan, R. M. (2008) Webb, N. L. (2007) Zohar, A. (2012)
Student Work	Assignments require students to: • Organize, interpret, analyze, synthesize and evaluate information rather than reproduce it • Draw conclusions, make generalizations and produce arguments that are supported through extended writing • Connect what they are learning to experiences, observations, feelings, or situations significant in their daily lives, both inside and outside of school	Belland, B. R., Glazewski, K. D., Richardson, J. C. (2008) Marks, H. M. (2000) Marshall, J. C., & Horton, R. M. (2011) McDermott, M. A., & Hand, B. (2010) Purcell-Gates, V., Duke, N. K., & Martineau, J. A. (2007)
Assessment	Assessment Plans: • Align with state content standards • Have clear measurement criteria • Measure student performance in more than three ways (e.g., in the form of a project, experiment, presentation, essay, short answer, or multiple-choice test) • Require extended written tasks • Portfolio-based with clear illustrations of student progress toward state content standards • Include descriptions of how assessment results will be used to inform future instruction	Furtak, M. E., & Ruiz-Primo, M. A. (2008) Gearhart, M., & Osmundson, E. (2009) Hiebert, J., Morris, A. K., Berk, D., & Jansen, A. (2007) Shepard, L. A. (2001) Tillema, H., & Smith, K. (2007)

Table 3: Recent Studies Supporting the Environment Domain		
Indicator	Exemplary Descriptor	Research
Expectations	• Teacher sets high and demanding academic expectations for every student. • Teacher encourages students to learn from mistakes. • Teacher creates learning opportunities where all students can experience success. • Students take initiative and follow through with their own work. • Teacher optimizes instructional time, teaches more material and demands better performance from every student.	Henningsen, M., & Stein, M. K. (1997) Kulkinski, M. R., & Weinstein, R. S. (2000) Matsumura, L. C., Slater, S. C., & Crosson, A. (2008) Patrick, H. anderman, L. H., Ryan, A. M., Edelin, K. C., & Midgley, C. (2001) Ponitz, C. C., Rimm-Kaufman, S. E., & Brock, L. L. (2009) Stepanek, J. (2000) Zimmerman, B. J. (1998)
Managing Student Behavior	• Students are consistently well-behaved and on task. • Teacher and students establish clear rules for learning and behavior. • The teacher uses several techniques, such as social approval, contingent activities and consequences, to maintain appropriate student behavior. • The teacher overlooks inconsequential behavior. • The teacher deals with students who have caused disruptions rather than the entire class. • The teacher attends to disruptions quickly and firmly.	Allday, R. A. (2011) Bear, G. G. (1998) Hoy, A. W., & Weinstein, C. S. (2006) Kern, L., & Clemens, N. H. (2007) Koth, C. W., Bradshaw, C. P., & Leaf, P. J. (2008) Matjasko, J. L. (2011) Osher, D., Bear, G. G., Sprague, J. R., & Doyle, W. (2010) Simonsen, B., Fairbanks, S., Briesch, A., Myers, D., & Sugai, G. (2008) Solomon, D., Battistich, V., Kim, D., & Watson, M. (1997) Stage, S. A., & Quiroz, D. R. (1997) Sutherland, K. S., Lewis-Palmer, T., Stitcher, J., & Morgan, P. L. (2008)
Environment	The classroom: • Welcomes all members and guests • Is organized and understandable to all students • Supplies, equipment and resources are easily and readily accessible • Displays student work that frequently changes • Is arranged to promote individual and group learning	Barowy, W., & Smith, J. E. (2008) Cohen, E. G. (1994) Evans, G. W., Yoo, M. J., & Sipple, J. (2010) Killeen, J. P., Evans, G. W., & Danko, S. (2003) Kumar, R., O'Malley, P. M., & Johnston, L. D. (2008) Martin, S. H. (2002) Maxwell, L. E., & Chmeilewski, E. (2008) Milkie, M. A., & Warner, C. H. (2011) Read, M. A. (2010) Simonsen, B., Fairbanks, S., Briesch, A., Myers, D., Sugai, G. (2008)
Respectful Culture	• Teacher-student interactions demonstrate caring and respect for one another. • Students exhibit caring and respect for one another. • Teacher seeks out an disreceptive to the interestsand opinions of all students. • Positive relationships and interdependence characterize the classroom.	Crosnoe, R. Johnson, M. K., & Elder, G. H. (2004) Hallinan, M. T. (2008) Hamm, J. V., Farmer, T. W., Dadisman, K., Gravelle, M., & Murray, A. R. (2011) Kulkinski, M. R., & Weinstein, R. S. (2000) O'Connor, E. E., Dearing, E., & Collins, B. A. (2011) Patrick, H. anderman, L. H., Ryan, A. M., Edelin, K. C., & Midgley, C. (2001) Muller, C. (2001) Shann, M. H. (1999)

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