



A Professional Learning Path to Rigorous and Relevant Instruction

KEY LESSONS FROM THE TRANSFER SCHOOL INSTITUTE



Office of Multiple
Pathways to Graduation



01	ACKNOWLEDGMENTS
03	PREFACE
07	INTRODUCTION
13	PART 1: SHELTERED INSTRUCTION
13	FOR PRACTITIONERS
24	FOR FACILITATORS OR PRACTITIONERS
33	PART 2: LEARNING STRATEGIES
33	FOR PRACTITIONERS
49	FOR FACILITATORS OR PRACTITIONERS
61	PART 3: HIGHER-ORDER THINKING
87	APPENDICES
88	APPENDIX A: LESSON PREPARATION AND DELIVERY RUBRIC
90	APPENDIX B: OVERVIEW OF THE WORKSHOP MODEL
92	APPENDIX C: ADAPTATION OF THE SHELTERED INSTRUCTION OBSERVATION PROTOCOL (SIOP)
98	APPENDIX D: LESSON PLAN REFLECTION
101	APPENDIX E: FEI LESSON PLAN TEMPLATE
102	APPENDIX F: FEI RUBRIC
109	APPENDIX G: SAMPLE QUESTIONS AND ACTIVITIES/PRODUCTS AT EACH LEVEL OF BLOOM'S TAXONOMY
112	APPENDIX H: TOPIC/DETAIL/RESPONSE AND FACT/QUESTION/RESPONSE: DETERMINING IMPORTANCE ACTIVITIES
114	APPENDIX I: BLOOM'S TAXONOMY PLANNING TEMPLATE
116	APPENDIX J: THINKING AT EACH LEVEL OF BLOOM'S TAXONOMY
117	APPENDIX K: A RUBRIC TO ASSESS DISCIPLINE-NEUTRAL SKILLS AND ACTIONS AT EACH LEVEL OF BLOOM'S TAXONOMY

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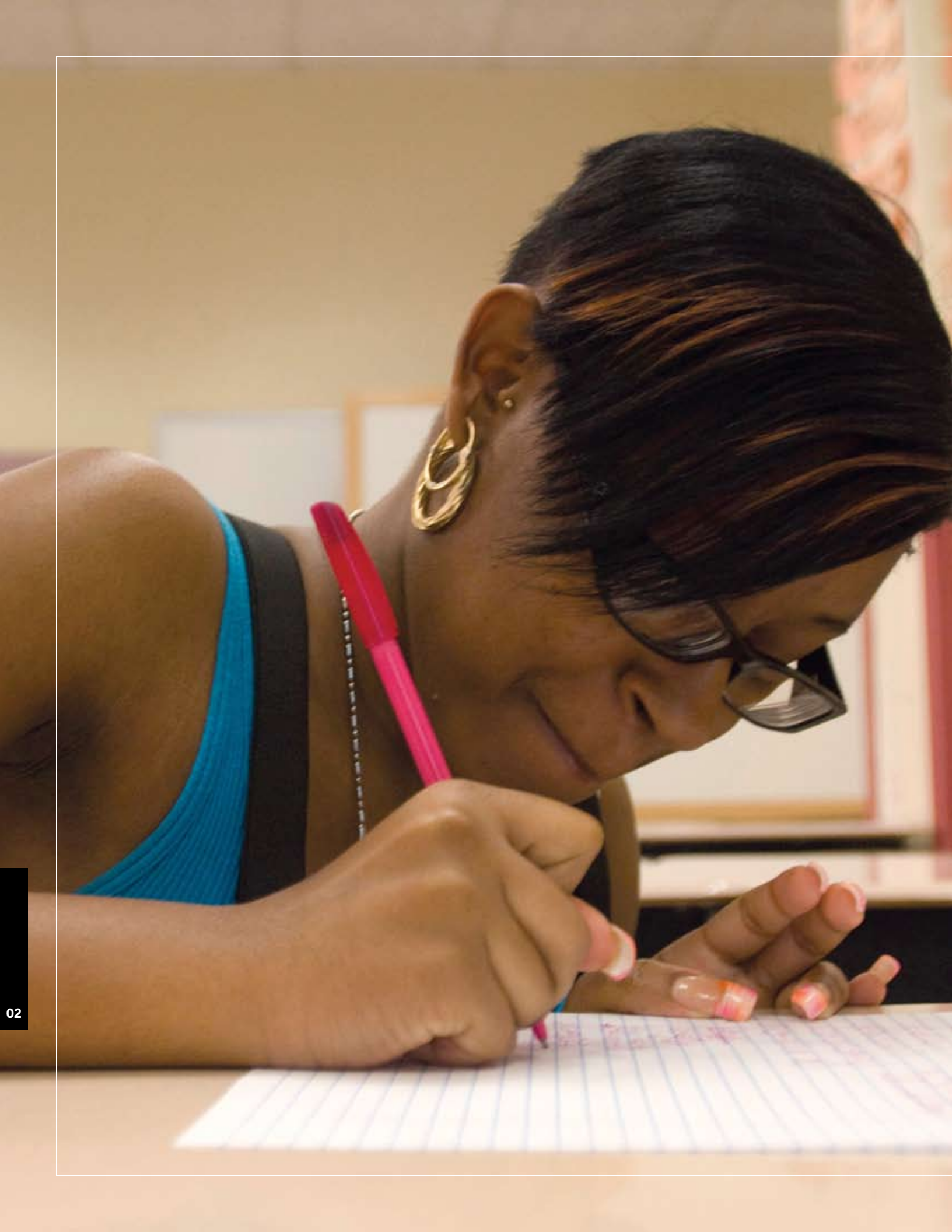
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Preface

This handbook documents the theoretical underpinnings of a powerful teaching and learning model—the Framework for Effective Instruction (FEI)—that draws on the best educational research of the past twenty years. The handbook is a codification of the skills and strategies that constitute effective teaching and learning practices rather than a “how-to” manual.

To learn “how” to use the FEI, schools and networks are encouraged to create a Professional Learning Community (PLC) that will support their efforts to grow as professionals and focus on student learning needs. Schools are more successful at sustaining their professional learning communities over time if the culture of the community is based on the set of core principles described below.¹ The principles represent a set of ideas regarding adult learning and are fully aligned with the FEI detailed in this handbook.

- i. Improving one’s teaching practice and learning new ways of working with students are complex, inter-related activities that require a high degree of technical expertise. The most effective professional learning environments are able to provide educators with several layers of scaffolding, giving them opportunities to:
 - Explore models of new techniques and skills;
 - Analyze and evaluate the strategies behind them;
 - Practice them;
 - Apply them to their own classrooms and students.

Educators are often asked to implement new practices without the benefit of all four layers of scaffolding and, as a result, it becomes very difficult for teachers to feel and be effective in their work.

¹ Derived from *The Core Principles of The Center for Urban Education*. Developed by Rudenstine & Associates, February 2008. ©

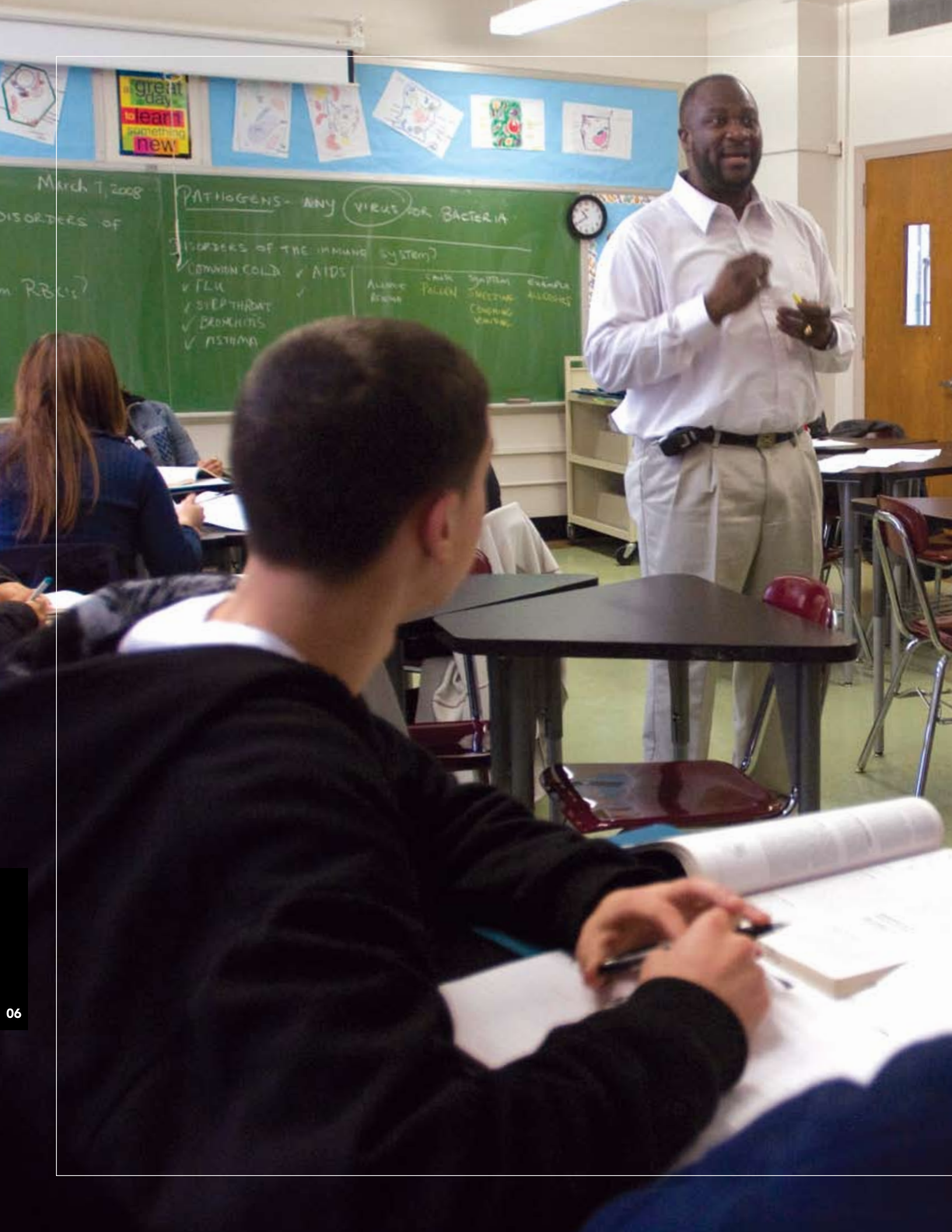
2. Learning is most effective when collaboration is an integral part of the process.
 - When teachers and their peers collaborate, their desire to develop professionally increases. The opportunity for collegiality is often accompanied by intellectual and technical growth.
 - Principals should have access to a community of professional colleagues devoted to developing instructional expertise in their schools.
3. Not all learners want to engage in the same tasks, nor do they learn in the same way or at the same pace, especially if they have widely differing experiences, interests, and background knowledge.
 - All-too-often “one-size-fits-all” professional development programs have been imposed on teachers (and principals), ignoring their personal and collective goals for improving their practice.
 - Teachers and principals need a range of opportunities and experiences to foster their learning. The skills needed to lead and participate in this sort of diverse and differentiated community are significantly more complex than those based on a premise of homogeneity.
4. Concrete and specific feedback—in the form of self-reflection, guidance, or a response from a peer or expert—is critical to the process of consolidating new learning. The most active and effective adult learners are those who have acquired the habit of responding constructively to feedback. This combination of self-confidence and metacognitive skill makes it possible for them to examine their work with a critical eye, using available models and expertise to effectively determine where they stand in relation to their particular goals.

LEARNING HOW TO IMPLEMENT THE FEI: A MODEL FOR PROFESSIONAL LEARNING²

The professional learning model described here should be particularly useful for networks of schools creating a professional learning community to support and guide the implementation of the FEI in their classrooms.

1. **Multi-school Trainings** for principals and teachers. At several points during the year, educators from a number of Transfer Schools meet to work and learn together. During these trainings, participants receive scaffolded training in the FEI and expand the number of available peer-group members and experts in their professional learning community, increasing opportunities for collaboration and feedback.
2. **On-site Professional Development Sessions** organized to broaden and deepen the learning begun during the multi-school trainings. It is here that coaches begin to address the specific learning needs and interests of individual schools, while maintaining a collaborative element to the learning. This is the first layer of differentiation: moving from one large, inclusive group to several smaller groups (individual schools), and adjusting the project’s focus accordingly.

3. **Regular On-site Instructional Coaching** for teachers, both in “real-time” classroom work, and in individual or collaborative sessions outside the classroom. The coaching provides teachers with opportunities to see strategies modeled in their own classrooms and to practice and apply new strategies in the company of a coach who can provide collegial support and concrete feedback. This form of coaching is most effective with teachers who are able and willing to partner with an expert (with all that this entails: classroom observation, modeling, and co-teaching, in addition to guidance and feedback) in learning to use the FEI to guide their classroom work. They do *not* need to have expertise in—or even familiarity with—the FEI, nor do they need to be experienced teachers. This is the second layer of differentiation: moving from working with the site-based professional learning community to partnering with individuals and small sub-groups, in an even more fine-tuned and collaborative approach to teachers’ learning goals.
4. **On-site Instructional Leadership Coaching** to provide expert support to Instructional Leaders as they navigate the implementation of the FEI within their programs. (“Instructional Leader” typically refers to principals, however, other leaders—such as Teacher Leaders, Team Leaders, or Department Heads—can also be encouraged to participate in this work. This creates an effective way to include the teachers who are most enthusiastic about building a sustainable teaching and learning culture.) The coaching provides an opportunity to collaboratively explore the unique concerns and goals of leaders. Participation in consistent and regular instructional leadership coaching tends to result in an acceleration of the model’s use by teachers. The leader has the opportunity to quickly become confident mentoring and supervising teachers as they practice and apply the FEI.
5. **Access to Models, Tools, and Templates** that can be easily used (and modified) by teachers and Instructional Leaders in their efforts to learn and implement the FEI in their schools.



Introduction

The Office of Multiple Pathways to Graduation (OMPG) was created with a focus on re-engaging and serving over-age and under-credited students, including students who have dropped out of high school, by providing a diverse array of educational options that lead to high school credentials and clear connections to post-secondary education and careers. These options include full-time and part-time GED programs, Young Adult Borough Centers (YABCS), and Transfer Schools.

Transfer High Schools are small, academically-rigorous high schools designed to re-engage students who are over-age and under-credited or have dropped out of high school. Eligible students must have been enrolled in a New York City high school for at least one year. Students are far from reaching promotion standards for their grade level in their current high school and usually enter the Transfer School at age 16 or 17.

Today, there are 37 Transfer Schools in New York City. In 2007–2008, 3,825 students city-wide attended the existing 30 schools, and in the fall of 2008, seven new schools opened—all of which are based on a school model that adheres to essential elements identified and codified through the Transfer School Institute’s research and work. This current system of Transfer Schools demonstrates significant restorative power for the academically struggling, disengaged, and/or out-of-school student, graduating up to 69% of students, compared to an average of 19% for this population in large, articulated high schools.

When students enter Transfer Schools they are typically disengaged and have attendance and literacy challenges. Based on 8th grade ELA scores, 81.2% of students scored either a one or two on the exam, not including students not receiving a score. Transfer Schools meet these challenges with additional academic and youth development supports in a more personalized, student-centered learning environment. At each school, Department of Education staff and community-based partners work together to put into practice the Transfer School Institute’s

This handbook outlines effective strategies for creating powerful learning environments in Transfer Schools.



essential elements—rigorous academic standards, student-centered pedagogy, support to meet instructional and developmental goals, and a focus on connections to college.

Across New York City’s Transfer Schools, educators are working to create powerful learning environments for their students, searching for effective instructional strategies to meet the needs of the young people they serve. Educators are retooling their programs to ensure that New York City’s young people receive diplomas, a demand that can be challenging to meet when faced with a large student population that is over-age, under-credited, and has had few points of success in comprehensive high schools.

The New York City Department of Education’s Office of Multiple Pathways to Graduation commissioned this handbook to lay out a Framework for Effective Instruction (FEI).³ The handbook integrates the three components on the next page to create a structure that supports educators in the continued improvement of their classroom practices.

³The Framework for Effective Instruction was developed by, and is the sole property of, The Center for Urban Education (CUE) and Rudenstine & Associates. All rights reserved. In 2006–07, CUE implemented the model in two New York City Transfer Schools and expanded its work to several schools and GED programs in 2007–09.



In recent decades, some of the best work by practitioners and researchers in effective instruction includes:

1. The sheltered instruction model for English Language Learners;
2. The use of seven key learning strategies for struggling readers and the development of metacognitive thinking skills;
3. The development of higher-order thinking skills in all students.

This handbook outlines the essential elements of teaching and learning, and focuses on how these elements can be adapted and/or integrated within a Transfer School context. The framework has proven particularly effective in training educators in New York City's Transfer Schools because it addresses gaps in the academic knowledge and skills of over-age and under-credited students.

This handbook is organized in three parts, each exploring one of the core components of the FEI in detail. Each part has two sections: an overview and a description of activities, which educators can use to improve their classroom practices.

Providing school staff with valuable instructional resources and professional learning drives the quality of Transfer Schools.

Part 1 describes the foundation of the FEI, an adapted sheltered instruction model, which is a strong model for teaching students who struggle academically.

PART 1: FEI ADAPTATION OF THE SHELTERED INSTRUCTION MODEL

Part 1 describes the foundation of the FEI, an adapted sheltered instruction model, which is a strong model for teaching students who struggle academically.

This section describes the core of the FEI: an enhanced version of the sheltered instruction model.⁴ Sheltered instruction is an approach to teaching English that provides age-appropriate content while simultaneously promoting English proficiency.

Although the model was designed to support English-language learners, its eight instructional elements—preparation, building background, comprehensible input, learner-centered strategies, interaction, practice/application, review/assessment, and lesson delivery—provide a powerful foundation for teachers working with all students who struggle with standard academic skills. Because sheltered instruction is a model for strong teaching, it is exceptionally valuable within Transfer Schools, providing teachers with a clear set of guidelines for comprehensive and coherent curriculum planning.

The sheltered instruction model serves as our foundation, but the FEI shifts its emphasis from a teacher-centered instructional approach to one that places learners at the heart of the work. This shift is critical for Transfer Schools, where students often arrive after years of having been bystanders—rather than full participants—in their own learning.

PART 2: LEARNING STRATEGIES

Part 2 provides tools for teaching essential learning strategies.

This section of the handbook provides direction for integrating high-impact learning strategies into lesson and unit plans across all disciplines. We've divided the text into three sections:

1. A discussion of key learning strategies: determining the relative importance of issues and ideas, asking questions, drawing inferences, predicting, synthesizing, visualizing, and making connections;⁵
2. A description of metacognitive tools to support students' development of a strong understanding of their thinking processes;⁶
3. A set of hands-on activities designed to deepen practitioners' familiarity with the strategies.

Because they were first identified and explored by literacy experts, the learning strategies detailed in this section are often referred to as literacy strategies. However, we consider these strategies to be at the heart of all learning, across all fields, disciplines, and mediums. Scientists make connections, ask questions, and test inferences in the course of their daily work. The same can be said about mathematicians and historians. Therefore, the FEI adopts a more integrated approach to teaching and learning.

Moreover, identifying important ideas and synthesizing information is not exclusive to reading and writing. It is a critical component of interpreting art, solving geometric proofs, and engaging in serious dinner table conversation about national and international events. The FEI provides practitioners across the disciplines with the tools to teach students these essential learning strategies.

⁴ The SIOP Institute: www.siopinstitute.net.

⁵ The Teachers College Reading and Writing Project at Columbia University: rwproject.tc.columbia.edu; The Public Education and Business Coalition: www.pebc.org; and The Literacy Collaborative at Ohio State University: www.lcosu.org.

⁶ Fisher, Robert. "Thinking Skills." *Learning to Teach in the Primary School*. Ed. James Arthur, Teresa Grainger, & David Wray. Upper Saddle River: Routledge, 2006. 226–38.

PART 3: HIGHER-ORDER THINKING SKILLS (HOTS)

Part 3 uses activities to show how using Bloom's Taxonomy promotes higher-order thinking.

We live in a time when educators focus on setting goals and measuring results. In 1948, a group of testing and assessment specialists convened to explore ideas about the goals of the educational process. They believed that “a common framework for classifying intended student learning outcomes could promote the creation of a set of effective assessment tools” (Anderson & Krathwohl, 2001). As a group, they identified three domains of educational activities: cognitive, affective, and psychomotor. Led by Benjamin Bloom, the group focused their early energies on mapping out the cognitive domain. In 1956, they published their seminal work, *A Taxonomy of Educational Objectives: The Classification of Educational Goals, Handbook 1: Cognitive Domain*, often referred to as “Bloom’s Taxonomy.”⁷

The final chapter of this handbook begins with providing readers with an overview of Bloom’s Taxonomy—remembering, understanding, applying, analyzing, evaluating, and creating.⁸ Then, we introduce practitioners to a process of creating a standards-driven curriculum that encourages students to think at “high” levels. Finally, the handbook provides a set of exercises designed to guide practitioners in integrating higher-order thinking into their unit and lesson-plans.

Part 3 uses activities to show how using Bloom's Taxonomy promotes higher-order thinking.

⁷ Though Benjamin Bloom is primarily credited with the creation of the Taxonomy, it was actually authored by a group of cognitive psychologists, curriculum and instruction specialists, and testing and assessment specialists: M.D. Engelhart, E.J. Furst, W.H. Hill, and D.R. Krathwohl.

⁸ Anderson & Krathwohl, 2001; Bloom, 1956.



PART 1:

Sheltered Instruction

FOR PRACTITIONERS

Sheltered instruction has evolved into a well-developed and research-tested model for teaching and learning.⁹ At the heart of sheltered instruction is the premise that when students learn language successfully, it occurs in two distinct phases: first, mastery of conversational language; and later, the acquisition of academic language.¹⁰ Although many new immigrants achieve fluency in conversation, their success rate in mastering academic language is far lower. The sheltered instruction model provides English Language Learners with a way to bridge the gap between the conversational language they have mastered and the academic language that remains elusive.

The strengths of sheltered instruction are particularly well-suited to Transfer Schools working with over-age and under-credited students. Using sheltered instruction as the foundation for work in this context is rooted in two discoveries: First, many Transfer School students are already bilingual in the conversational domain. They usually speak their first language (L1) outside of school, often blending English and their first language entirely comfortably. Despite their flexible, creative use of conversational language, Transfer School students often struggle to grasp academic concepts, in large part because they lack sufficient background to develop appropriate semantic understanding.

Second, even Transfer School students who are native-born speakers of English are mostly fluent only in conversational language, and many have gaps in their mastery of academic English. This is due to a number of factors. Some haven't attended school regularly. Many have had little access to academic language outside of school, creating a lack of reinforcement for their in-school learning. Others were identified as lacking in intelligence and placed in courses without academic rigor. And almost all were never taught metacognitive and literacy strategies to support their academic efforts.

In short, many native and non-native English speakers come to Transfer Schools lacking the sufficient background knowledge and personal experience needed to achieve success in an academic environment. That is, they treat academic language as a "foreign" language. Adapting the sheltered instruction model provides practitioners with guidelines for developing lesson and unit plans that support Transfer School students in their development of academic language fluency.

Transfer School students often treat "academic language" like a foreign language.

⁹ CREDE: Center for Research on Education, Diversity and Excellence, 2000 & 1996: <http://crede.berkeley.edu>; The SIOP Institute: www.siopinstitute.net.

Practitioners teach students to think about not only what they learn—but how they learn.

THE FEI ADAPTATION OF THE SHELTERED INSTRUCTION (SI) MODEL¹¹

The FEI begins with the eight instructional components articulated in the sheltered instruction model:

1. Prepare Lesson Well
2. Build Background
3. Ensure Student Comprehension
4. Use Learner-Centered Strategies
5. Interact
6. Practice and Apply
7. Review and Assess
8. Review Lesson Delivery

Through a set of adaptations, the FEI is both more comprehensive and more student-centered. For example:

SHELTERED INSTRUCTION MODEL	FEI ADAPTATION
The fourth component of the SI model involves using teacher-directed strategies to maximize learning. The strategies include tools such as graphic organizers.	The FEI involves a set of learner-centered strategies (such as determining importance in text and synthesizing information) that students use—on their own initiative—to carry out teacher-directed tasks. Examples include having students participate in discussions or write analytic papers.
The sixth component of the SI model promotes providing opportunities for students to practice and apply their knowledge. Within an SI classroom, these opportunities generally focus on the use of manipulatives and making connections to everyday life .	The FEI promotes creating a workshop model environment, where students have “choice and voice” in the work they engage in , and where there are numerous opportunities for students to reflect on and discuss learning strategies to develop their thinking skills.

These adaptations—as well the others embedded in the FEI—create a reflective dynamic for practitioners. As they teach students to think explicitly about *how* they learn (not just *what* they are learning), teachers begin to reflect on their work in a similar way. The FEI provides teachers with new insight into the full range of their work with students, while also equipping them with the tools necessary to support their own professional growth.

¹⁰ Cummins, Jim. “Reading and the Bilingual Student: Fact and Friction.” *English Learners: Reaching the Highest Level of English Literacy*. Ed. Gilbert Garcia. Newark, DE: International Reading Assoc., 2003. 2–33.

Cummins, Jim. “Knowledge, power, and identity in teaching English as a second language.” *Educating Second Language Children: the Whole Child, the Whole Curriculum, the Whole Community*. Ed. Fred Genesee. Cambridge: Cambridge UP, 1994. 33–58.

¹¹ The SIOP Institute: www.siopinstitute.net.

1. Prepare Lesson Well

This component lays the foundation for designing strong plans. Teachers articulate objectives, collect the resources and materials students will work with, and identify key activities and tools that will guide student learning. Appendix A (page 88) provides a rubric for assessing teachers' overall lesson preparation and delivery within the FEI.

Figure 1: Lesson Preparation

FEI ADAPTATION OF THE SI MODEL	INSTRUCTIONAL EXAMPLES
Set clear content and skill objectives for each unit and each day.	Note: State and Local Standards should be used for these objectives.
Set clear language objectives for each unit and each day.	The study of root words, prefixes, and suffixes to build vocabulary; identification of specific grammar points, such as the structure of independent and dependent clauses; and idiom study.
Prepare a wide range of supplementary materials.	Realia—such as cultural artifacts, graphs, charts, models, pictures, related literature, and text summaries.
Employ strategies to adapt content to all levels of student proficiency.	Graphic organizers, outlines, highlighted text, leveled study guides (texts written at different reading levels for students who read at different levels), audio-taped text, and marginal notes.
Create meaningful activities that integrate lesson concepts with language practice opportunities for reading, writing, listening, and/or speaking.	Activities that mirror the “real world”: conducting interviews, writing letters, writing research papers, conducting experiments, critiquing literary works, and holding discussions.

Building background gives students a context for their learning.

2. Build Background

Background refers to the schemas¹² that students need in order to engage with academic content. When working with New York City Transfer School students, practitioners need to pay particular attention to the schemas students already possess, and then identify “background” areas that need to be “built-up” so that students can engage successfully with new, difficult material.

Figure 2: Build Background

FEI ADAPTATION OF THE SI MODEL	INSTRUCTIONAL EXAMPLES
Connect instruction to what students already know about the topic.	Ask what students remember or know about a topic. Ask how new information relates to previous learning. Refer to previously constructed word banks, outlines, charts, maps, etc.
Connect students’ previous knowledge to new information.	
Provide critical new background information that will help students understand the material.	In a study of genetics, show a short film or read a section of <i>The Hot Zone</i> by Richard Preston to provide a “hook” for students to use in the unit of study.
Identify and emphasize vocabulary that might be a problem for students.	Introduce, write, speak, repeat, and highlight words. Have students create personal dictionaries, word walls, and concept definition maps (bulletin boards covered with terms and concepts currently being studied). Have students complete cloze sentences, word sorts, and word study books (a series of vocabulary and comprehension-building activities to be used with the study of texts). ¹³

¹² **Schema:** An organized bit of built background: a constellation of information, thoughts, questions, and experiences about a topic or idea that one can draw on to support the learning of new material.

¹³ **Cloze sentences:** Sentences where words are strategically replaced with blanks: these can be used to teach vocabulary, letter sounds or concepts.

Word sorts: A process for teaching vocabulary, sounds or concepts by providing students with a range of strategically chosen words and asking them to sort them into rational categories.

Word study books: These are similar to personal dictionaries. As students read texts and study ideas, they keep track of important terms and concepts that are annotated so that students document their learning.

3. Ensure Student Comprehension

Transfer School students in academic courses are engaged in two complicated activities: learning new content information and concepts, and mastering academic English. Teachers are sometimes unaware of the ways in which students misunderstand directions and activities, and valuable learning time may be lost. We've designed the FEI comprehension tools to support teachers in maximizing student opportunities to engage with new material.

Figure 3: Student Comprehension

FEI ADAPTATION OF THE SI MODEL	INSTRUCTIONAL EXAMPLES
Explain academic tasks clearly.	Model activities, write directions on the board, teach routines that are used consistently, provide visual cues, and use analogies.
Use speech appropriate for students' proficiency level.	Speak at a slower rate, enunciate carefully, use simple sentence structures, and limit use of idioms.
Check for comprehension and recall regularly.	Dip-stick ¹⁴ , question, assign journal entries, and use a "ticket-to-leave."
Anticipate and be prepared to clarify confusions and misconceptions.	Explain idioms and prepare analogies that activate student schemas.

¹⁴ **Dip-sticking** refers to the process of checking the level of student understanding (similar to checking the level of one's oil). It is a method of formative assessment and can be done in many different ways. A few examples: asking the class a question and seeing how many students really have a response by looking at the number of raised hands, calling on a few students randomly, and asking all students to respond to a prompt on an index card.

Learner-centered strategies are at the heart of this approach.

4. Use Learner-Centered Strategies

Learner-centered strategies are processes that students use to understand academic material. The handbook divides these strategies into three categories:

1. Literacy strategies, such as questioning, predicting, and visualizing;
2. Metacognitive tools, which help learners develop an understanding of their own thinking;
3. Higher-order thinking skills—tools to teach learners to analyze, synthesize, and evaluate new information.

These particular strategies are of critical importance for over-age, under-credited students. They are at the heart of the FEI, and are the focus of the next two sections of this handbook. The figure below provides an introduction.

Figure 4: Learner-Centered Strategies

FEI ADAPTATION OF THE SI MODEL	INSTRUCTIONAL EXAMPLES
Provide ample opportunities for students to use learning strategies.	Have students read language-appropriate texts, participate in discussions, and write analytic papers.
Identify literacy strategies for students to use when interacting with text.	Strategies include visualizing, questioning, determining importance, predicting, making inferences, synthesizing, and making connections.
Ask students to talk about both <i>what</i> they read and <i>how</i> they read it.	Help students match thinking and problem-solving strategies to particular situations, clarify purposes for learning, monitor one's comprehension, and take corrective action if understanding fails.
Create opportunities for students to use metacognitive strategies.	
Encourage students to practice talking about how they think about the material.	
Employ a variety of questions and tasks that promote higher-order thinking skills.	Ask students to use their learning to analyze, synthesize, evaluate, and create.

5. Interact

Part of the work of practitioners in Transfer Schools is to have students become comfortable using academic English, not only in reading, writing, and listening—the dominant roles for students in high school classrooms—but in speaking as well. In order to achieve this, teachers need to design multiple opportunities for students to speak with one another and with the teacher about the content they are studying.

Figure 5: Interaction

FEI ADAPTATION OF THE SI MODEL	INSTRUCTIONAL EXAMPLES
Encourage elaborated responses to lesson concepts.	Discussions, role playing, interviews, conferences, reciprocal teaching, presentations, small group work, and partnered work.
Group students to support the language and content objectives of the lesson.	Whole class, small flexible heterogeneous and homogeneous groupings, partnering, and individual work.
Allow sufficient wait time, so students can think and then respond.	Count to five slowly before helping a student or asking another student to take over.
Encourage students to clarify key concepts as needed.	Use help from teacher/aide, computer, bound dictionary, or peers.

Teachers focus on key learning strategies, which enable students to apply their content knowledge to other new contexts.

6. Practice and Apply

Allow plenty of time for students to practice and apply their knowledge. All students need opportunities to do this so that it becomes an integral part of the mental schemas available to them.

The FEI organizes learning around a workshop model (See Appendix B on page 90), where students engage in authentic academic activities—such as labs, historical research, and literary analysis—while the teacher provides coaching support. Within the workshop structure, it is critical that students be engaged in activities that require them to practice using metacognitive tools, higher-order thinking skills, and literacy strategies (to be discussed in detail in Parts 2 and 3 of the handbook), in addition to the content knowledge they are learning.

In the FEI model, educators design lessons that require students to practice new content knowledge, as well as the strategies and tools that help students use this knowledge in new contexts. In a typical high school classroom, students might learn, for example, how to factor polynomials in their Algebra class. But when the teacher asks them to factor trinomials, they become frustrated, arguing that they haven't been taught to do this. By incorporating a focus on key learning strategies—in this case inference, prediction, and making connections to previous knowledge—into the unit, a teacher would provide students with the tools they need to begin deciding how to transfer their knowledge of polynomial factoring to their work with trinomials.

Figure 6: Practice/Application

FEI ADAPTATION OF THE SI MODEL	INSTRUCTIONAL EXAMPLES
Provide hands-on manipulatives and materials to practice new content knowledge.	Examples vary by subject matter: in math one might use graphing calculators; in science a dissecting kit.
Design activities that allow students to apply knowledge about content and language to new situations.	Language practice involves opportunities to read, write, speak, and listen.
Provide opportunities for students to identify and explore their own questions and interests.	Conduct Internet research, perform computer simulations, design models, participate in labs.
Provide activities and projects that require students to practice analyzing, evaluating, and synthesizing material in order to create a product.	Have students create an alternate, believable ending to a story; create a set of criteria to assess the quality of a piece of their writing; analyze the author's intention in a text.
Provide opportunities for students to practice thinking about their thinking.	Ask students to notice how you figured out a difficult math problem (which strategies were used).
Create activities that require students to practice making their own meaning out of new information.	Read using the literacy strategies to make meaning: questioning a text, visualizing, identifying important ideas, messages, and events, etc.

7. Review and Assess

In addition to providing opportunities for practice and application, teachers must allocate time at the end of each day to review new material and assess student mastery. In a constructivist or workshop-based classroom, this does not imply that students are being quizzed each day, but rather that teachers are designing activities that provide them with clear evidence of student learning (or the lack thereof). This, in turn, will guide instructional planning for the following day. In many respects, these formative assessments tell teachers as much about their own success or failure as about their students’.

Here, again, a critical feature of the review and assessment is attention to student mastery of literacy strategies, metacognitive tools, and higher-order thinking skills, in addition to checking for student understanding of academic content. The goal is to make these strategies present every day.

Returning to the polynomial/trinomial example from the previous page: the Algebra teacher in this classroom would review the mathematical concept of complex factoring *and* the ways in which learning strategies can deepen understanding of the concept. In order to assess student understanding of both, the teacher might provide students with a factoring equation, first asking them to solve it, and then encouraging them to write about how they used strategies in their attempt. Their success in solving the problem is only part of what she tracks, because she will gain a clearer understanding of her students’ learning processes by also examining the ways in which they approach the equation, the places where they become confused, and the tools they employ to “fix” the breakdown in their understanding.

Practitioners should assess student mastery in order to guide instructional planning for the next class.

Figure 7: Review and Assess

FEI ADAPTATION OF THE SI MODEL	INSTRUCTIONAL EXAMPLES
Review key vocabulary.	Introduce, write, speak, repeat, and highlight words. See Figure 3 (page 17).
Provide consistent feedback on student work.	Model appropriate language usage and correct often-repeated errors.
Assess student comprehension and learning of objectives throughout the lesson.	Spot checking, dip-sticking, individual response boards, and quizzes.
Provide opportunities for students to show understanding of content.	Outcome sentences (“I wonder...”; “I discovered...”; “I still want to know...”; “I learned...”; “I still don’t understand...”), journal entries, pair and group share.
Ask students to talk about <i>what</i> they learned and <i>how</i> they learned it.	Journal entries, pair and group share.
Allow students to show their understanding of how the strategies they practiced helped them understand the content.	
Ask students to show how their higher-order thinking was developed.	Written reflections and whole group sharing.

8. Lesson Delivery

Part of the challenge for practitioners is making time to reflect (often with a supervisor or coach who has observed the lesson) on the extent to which the delivery of the lesson matched their preparation and achieved their objectives. The appendix includes two tools to support this reflective work (which can be found in Appendices c and d).

Figure 8: Lesson Delivery

FEI ADAPTATION OF THE SI MODEL	INSTRUCTIONAL EXAMPLES
Content and skill objectives are clearly supported. Language objectives are clearly supported.	State objectives in writing and orally. Ask students to evaluate the effectiveness of the lesson.
Students are engaged 90–100% of the time.	See Appendix C: Adaptation of the Sheltered Instructional Observation Protocol (SIOP).
The pacing of the lesson is appropriate to the students' language proficiency levels.	See Appendix D: Lesson Plan Reflection.

What does
good teaching
and learning
look like?

FOR FACILITATORS OR PRACTITIONERS

PRACTICE AND APPLICATION ACTIVITIES

The following pages describe a series of activities that provide practitioners with an opportunity to practice and apply their new knowledge (of the FEI) to their lesson planning. Although the activities will be more effective in a group setting with a designated facilitator to guide the process, individual teachers who want to improve their practice can also work on the exercises independently or with a colleague informally.

Activity 1: Building Background

STEPS	FACILITATOR'S NOTES
Ask: What does good teaching and learning look like?	<p>Ask teachers to think about practices they employ in their own classrooms, or those they have read about or observed.</p> <p>Have participants work alone first, then share with a partner.</p> <p>Post the eight FEI categories around the room on poster-paper. Put each element on a separate piece of paper.</p>
Ask partners to write each item on their list in the poster-paper category they feel is the best fit.	
Have participants walk around the room and write notes on the posted FEI categories.	Give participants "sticky notes" for their questions, wonderings, disagreements, additional thoughts, etc.
<p>Ask: What have you noticed so far about these categories?</p> <p>Ask: What have you noticed about your process thinking about these categories?</p>	Hear from a few people.
Show participants the FEI Rubric. Ask participants to spend 10+ minutes working alone or with their partner to compare the group's work to the FEI description.	See Appendix F.
Ask participants to share their observations about the differences between their understanding of good instruction and the FEI.	It is critical to check in with the group to see what they have come to understand, and how they came to understand it. Also ask them to notice what has changed in their thinking and how it changed.

This first activity addresses a number of aspects of the FEI model. First, it builds background by asking participants to draw on prior knowledge and experience. Second, it presents a best-practice model to help participants begin to deepen their understanding of what effective instruction can be. And finally, it provides an opportunity for participants to reflect on their thinking and learning, which allows for the connection of prior knowledge/experience to new knowledge and the initial introduction of metacognitive strategies to enhance understanding.

After engaging in Activity 1, the facilitator should “walk through” the FEI with participants, clarifying, describing, and exploring the central components. Then, the facilitator should present participants with the FEI Lesson Plan Template (Appendix E), which supports teachers in the development of lessons that incorporate FEI techniques.

Activities 2 and 3 are an extension of Activity 1. Participants write a demonstration lesson and then work together to assess the quality of each lesson. The purpose of Activities 2 and 3 is to activate and build upon participants’ background schemas (making connections between new instructional information and prior knowledge and experience, and clarifying new concepts and vocabularies). The facilitator should focus on the quality of participants’ observations, feedback, and reflections, rather than on the quality of the prepared lessons. Here, the lessons deepen understanding of the complex nature of the model, rather than provide evidence of its mastery.

Activity 2: Practice Stage 1

(60 minutes)

STEPS	FACILITATOR'S NOTES
Ask participants to write a demonstration lesson using the FEI Lesson Plan Template.	<i>See Appendix G. Let participants know that the lesson can be on any topic they choose, but preferably on something they want to learn to teach better.</i>
Ask participants to use the FEI Rubric to review their lesson after it is finished, and to keep track of their observations during the comparison.	<i>See Appendix F. The observations are a critical part of this activity because they help participants see how one can build simple metacognitive inquiry into an activity that makes one’s thinking processes more transparent.</i>
Ask participants to share their observations with one another.	
Ask for two volunteers to “perform” their lessons. The rest of the group should “assess” the quality of the lessons using the FEI Rubric.	<i>See Appendix F.</i>
Have volunteers share their self-assessments and their observations. Have the group ask the volunteers questions about the lessons they performed.	<i>The facilitator should model this process so that participants understand the power of asking good questions.</i>

Activity 3: Practice Stage 2

(3 hours)

STEPS	FACILITATOR'S NOTES
Working as a group, participants look at one another's lesson plans, using the FEI to "assess" them.	
Ask participants to describe how they approached this task: where did they begin in their assessment, and why?	<i>Model this for participants: "Whenever I look at lessons I begin by looking at the Objective, matching it to the Assessment Activity to see how tight the fit is. I did that with X's lessons and noticed..." etc.</i>
Talk with a partner: What was it like to have your lesson reviewed, and to review others'?	<i>This question begins to build the platform for discussing what it means for this group to work as a professional learning community. This will be addressed in different ways throughout the training.</i>
Share with the larger group.	

In completing these activities participants are engaged in exploring the FEI, while also beginning the work of becoming a professional learning community whose purpose is to improve instruction across the school. Activity 4 is designed to make some of this work explicit by asking participants to set professional goals publicly, in addition to identifying goals for the group.

Activity 4: Practice Stage 3

(60 minutes)

STEPS	FACILITATOR'S NOTES
Working as a group, participants look at one another's lesson plans, using the FEI Description to "assess" their plans.	<i>Again, participant observations are critical here, as this continues to build the case for the value of metacognitive strategies.</i>
Ask participants to work independently to identify gaps in their own lessons.	<i>Provide an example: "I don't know how to make content comprehensible throughout the lesson." Ask the Instructional Leader to note gaps in his/her practice, as well as gaps across the staff lessons as a whole.</i>
Ask participants to share their gaps with each other.	<i>Facilitator needs to document the gaps of each participant.</i>
Discussion: How can we use this data to inform our professional development this year?	<i>Two patterns will emerge here: many participants will identify similar areas, such as comprehensible input; and individuals will also note one or two areas that are specific to their own development. This is a general conversation designed to introduce the notion of long-term instructional improvement to the group. Do not expect to develop a detailed plan at this stage of the workshop.</i>
Journal Writing: What did you learn by engaging in this process? How did it inform your practice? What did you notice about your lesson?	

Activity 5: Determining Importance

(30 minutes)

STEPS	FACILITATOR'S NOTES
Ask one person to do his/her demo lesson for the group.	<i>Using principals as participants is an excellent way to proceed because it brings them into the group as learners willing to work on their practice. Otherwise, a volunteer can model the demo.</i>
Ask the group to critique the lesson using the FEI as a guideline.	<i>The group will struggle to apply the model to the lesson. Be patient and do not do the work for them.</i>
Ask the presenter to respond to the feedback.	<i>Practice making the use of strategies explicit and transparent.</i>
Journal Writing: What did you learn by engaging in this process? How does it inform your practice? What did you notice about your lesson?	
Share reflections.	

At this stage, the group will begin to play a more active role in directing its own learning. The facilitator should work with the group to identify an area of the model the group wants to explore more deeply. This will be the focus of the next phase of work.

Activity 6: Honing Aspects of Our Practice

(75 minutes)

STEPS	FACILITATOR'S NOTES
Watch a video of X aspect of the sheltered instruction model.	<i>SIOIP produces a number of videos that portray exemplary practice of the model.</i>
Guided Discussion: What do you see? What SI practices are being used effectively? How would you strengthen the lesson? What do you wonder about? What did this remind you of?	
Ask the group to read the teaching scenarios that demonstrate X aspect of the FEI.	<i>All teaching scenarios can be found in "Making Content Comprehensible for English Learners: The SIOIP Model" by Echevarria, Vogt & Short, 2004.</i>
Divide the group into threesomes. Assign one scenario to each threesome and ask them to assess the scenario using the FEI.	<i>There are scenarios of three teachers for each SI Component: one excellent, one satisfactory, and one weak. Everyone should read all three, but different threesomes will take the lead in the critique.</i>

If participants would like to hone their practice in additional aspects of the model, Activity 6 can be repeated.

At this point, participants should have a working understanding of the FEI adaptation of the SI Model, even if they do not yet feel comfortable using it. The closing activity for this section asks participants to return their attention to the group's development as a professional learning community, reminding them that this is only the beginning of their work together.

Activity 7: Closing Reflection

(60 minutes)

STEPS	FACILITATOR'S NOTES
<p>Journal Writing:</p> <p>How has the FEI been a useful instrument for you so far?</p> <p>How is your thinking about teaching and learning evolving?</p> <p>How might you use this in your practice?</p>	
<p>Share.</p>	<p><i>Participants are likely to comment on how little they reflect on their practice, and how useful they have found it to be.</i></p> <p><i>Participants will ask "Do all parts of the model need to be addressed in every lesson?"</i> Response: "Which would you leave out?"</p>
<p>Ask participants to work with a partner to think about how the school might use this model to improve teaching and learning for all students in the school.</p>	
<p>Journal Writing:</p> <p>What are your concerns and hopes as you prepare to work with the FEI this year?</p> <p>What goals do you have for changing your practice this year?</p> <p>What will the challenges be to evolving into an on-going professional learning community?</p>	
<p>Share both the partner work and the journal writing.</p>	

This chapter of the handbook described the backbone of the Framework for Effective Instruction—an adapted version of the eight elements of the sheltered instruction model. The following chapters will focus on specific strategies that practitioners can use in their daily work with Transfer School students.

RECOMMENDED TEXTS FOR STUDY OF THE SHELTERED INSTRUCTION MODEL

Echevarria, Jana, and Anne Graves. *Sheltered Content Instruction: Teaching English Language Learners with Diverse Abilities*. 3rd ed. Boston: Pearson Allyn & Bacon, 2007.

Echevarria, Jana, MaryEllen Vogt, and Deborah Short. *Making Content Comprehensible for English Learners: The SIOP Model*. 2nd ed. Boston: Pearson Allyn & Bacon, 2004.

Gleick, James. *Chaos: Making a New Science*. New York: Penguin, 1987.

Herrell, Adrienne. *50 Strategies for Teaching English Language Learners*. Upper Saddle River, NJ: Merrill, 2000.



PART 2:

Learning Strategies

FOR PRACTITIONERS

Over the past decade, practitioners, researchers, and policy-makers have turned their attention to the difficult work of improving adolescent literacy:

- In a typical high-poverty urban school, approximately 50% of incoming 9th grade students read at a 6th or 7th grade level (Balfanz et al., 2002);
- On average, African-American and Hispanic 12th grade students read at the same level as white 8th grade students (Office of Vocational and Adult Education, 2002);
- Between 1971 and 2004, the reading levels of America's 17 year-olds showed no improvement at all (NCES, 2004);
- Roughly 23% of high school graduates are not ready to succeed in an introductory-level college writing course (ACT, 2005);
- About 40% of high school graduates lack the literacy skills employers seek (Achieve, 2005).¹⁵

Educators who work in Transfer Schools are committed to reversing these trends and tackling students' literacy challenges. They understand a great deal about the complexity of the learning process and have worked hard to develop curriculum that builds on the assets of their students. In New York City, based on 8th grade ELA scores, 81.2% of Transfer School students scored either a 1 or 2 on the exam, not including scoreless students. The field of education has recently begun to develop high-impact learning strategies for these students and provide its teachers with tools to support students in developing deep understandings about challenging academic material.

Literacy experts have been at the forefront of this groundbreaking work, and the recommended models now complement the asset-building approach of Transfer Schools. About twenty years ago, literacy researchers and practitioners began to study elementary school students with competent reading skills in order to understand the reading process more deeply. This was a dramatic change in direction because the field had previously only studied the deficits of "struggling" readers. Although these earlier efforts described the problems that students encountered, they offered no new strategies to address these problems. When researchers and practitioners shifted their focus,

Effective literacy strategies are effective learning strategies.

¹⁵ Excerpted from the Adolescent Literacy Fact Sheet, The Alliance for Excellent Education (www.all4ed.org), February 2006.

they uncovered and documented the strategies that competent readers use (generally without awareness) to make meaning of texts.

Because literacy experts pioneered this work, the strategies are often known as “literacy” strategies. However, careful analysis reveals that they are fundamentally about more than just reading and writing. They are about learning and thinking. Making connections, questioning, visualizing, drawing inferences, predicting, determining importance, and synthesizing¹⁶ are the basic tools used by professionals in all fields (often automatically) to tackle complex projects.

Within the context of Transfer Schools, teaching students to use these strategies provides them with the ability to engage in challenging academic tasks more successfully. The Framework for Effective Instruction (FEI) refers to these strategies as “learner-centered,” because their mastery allows students to make independent cognitive and metacognitive decisions about how to approach learning.

This section explores these learning strategies in depth (the fourth component of the FEI, listed in Figure 9, below). It discusses key strategies and provides a brief introduction to the components of metacognition.¹⁷ The section closes with a set of hands-on activities designed to deepen practitioners’ familiarity with these strategies.

Figure 9: Learner-Centered Strategies

FEI ADAPTATION OF THE SI MODEL	INSTRUCTIONAL EXAMPLES
Identify literacy strategies for students to use when interacting with text.	Strategies include visualizing, questioning, determining importance, predicting, making inferences, synthesizing, and making connections.
Ask students to talk about both what they read and how they read it.	Help students match thinking and problem-solving strategies to particular situations, clarify purposes for learning, monitor one's comprehension, and take corrective action if understanding fails.
Create opportunities for students to use metacognitive strategies.	
Encourage students to practice talking about how they think about the material.	

(This is a partial reprinting of Figure 4 from page 18 of the Handbook.)

¹⁶ Harvey & Goudvis, 2000; The Teachers College Reading and Writing Project at Columbia University: www.rwproject.tc.columbia.edu; The Public Education and Business Coalition: www.pebc.org; and Boke, 2004.

¹⁷ Fisher, Robert. “Thinking About Thinking: Developing Metacognition in Children.” *Early Child Development and Care* 141 (1998): 1–15.

LEARNING STRATEGIES

Educators have come to near consensus about the key learning strategies:

1. Making Connections
2. Questioning
3. Visualizing
4. Drawing Inferences
5. Making Predictions
6. Determining Importance
7. Synthesizing

Over time, a significant body of work is providing practitioners with many ways of teaching the strategies to students of all ages. This section briefly describes each strategy, and at the end of the chapter, readers will find a short list of texts that provide in-depth discussions of each strategy.

Although all strategies are applicable to all subject areas, the connections between certain subjects and certain learning strategies are more obvious. We have included these suggested connections within the descriptions of each learning strategy, but it should not discourage a practitioner from using all of the learning strategies in every subject area.

1. Making Connections

One of the best ways to build background for new courses of study is by making connections.

There are three kinds of connections that skillful learners make:

- **Text-to-Self:** Connections students make between new material and their prior knowledge and experience: “This reminds me of when I studied...”, or “I had something similar happen to me when...”.
- **Text-to-Text:** Connections between new material and previous areas of study: “Now that we are learning percentages, I can see how it’s just another way of talking about fractions.”
- **Text-to-World:** Connections between new material and important issues in society or the world at large: “Studying the Holocaust has made me want to learn more about why, and how many, human beings are unwilling to offer help while people around them suffer.”

As students learn to make connections—and/or become more aware of the connections they are already making—they engage in the process of “activating” and extending their schemas, which, in turn, will support them as they learn new material.

Making connections to one’s self, the text, and the world helps build background.

Questioning is the door to understanding, and it rekindles student curiosity.

2. Questioning

Questioning is the door to understanding. Young children are filled with questions about the world around them and unabashedly give voice to their curiosity. As children progress through school, the role of questioning seems to change. They view questions as a sign of ignorance: they ask in order to clarify confusion, not to explore new ideas. Teachers ask questions to see if students understand, and students are expected to provide answers.¹⁸

The questioning strategy rekindles student curiosity, explicitly encouraging them to wonder and to use their questions to make meaning of new material. In order to teach this strategy, practitioners need to make students aware of the following:

1. **Why skillful learners ask questions:** to explore new avenues of thinking, to clarify or clear up confusions, to expand our working schemas;
2. **The different questions that skillful learners ask:** who, what, where, when, why, and how;
3. **Where skillful learners look for answers to their questions:** in the text (either in passages to come or those already read), in their experience and related previous knowledge (their schemas), and in other sources (dictionaries, thesauruses, Internet, film, articles, and books).

From here, it's possible to work with students to explore any subject at a deep level. The questioning strategy is crucial in the science classroom. Good scientists ask questions that form their hypotheses and guide them through the scientific process. This is the very foundation of Inquiry Based Learning¹⁹, which is prevalent in science classrooms.

¹⁸ Harvey & Goudvis, 2000: p. 81.

¹⁹ **Inquiry Based Learning** can be defined as a student-centered, active learning strategy focused on questioning, critical thinking, and other forms of student involvement that lead to understanding.

3. Visualizing

Skillful learners create mental images while engaged in complex tasks. These images can spring from any of the five senses. They are sometimes purposeful and sometimes spontaneous. Images provide learners with an extension to their schemas, to aid them in their work. Visualizing requires interpretation, the drawing of inferences, and the compiling of details to create a rich tableau. This, in turn, serves as a springboard for adapting and creating new interpretations and drawing conclusions.

Experienced learners often use visual images to enhance their understanding without even being aware of doing so. For example, they may read a novel and visualize the setting, characters, and action in their minds' eyes. If they later see a film version of the novel they may realize that they had already created their own rich sets of images to accompany their reading (leading to frequent disappointment by the movie's interpretation, which pales in comparison to their own).

Textbook companies, well aware of the help that visualization can provide, pack each page with graphs, charts, pictures, timelines, and diagrams designed to evoke images that might “stick” with readers. Students need to also learn how to develop their own images or how to use images to deepen their understanding of the material.

Defining visualization as a strategy—rather than an automatic process or an innate learning “style”—makes it a tool that can be learned and used by anyone, at their discretion, to explore ideas.

Although visualization is something students connect to novels (mostly from the conditioning of watching an accompanying movie), few students, teachers, and practitioners recognize the power of visualization in the math classroom. Visualization is a skill that can easily be transferred from one classroom to another. Teachers can bring a number of different representations to a single concept. For example, we may write 50% on the board, and bring in a graph, pie chart, or other visual that represents the same thing. Similarly, if we teach students to visualize math concepts, the point at which the x and y axes cross may be less foreign to them, or they may begin to understand how one-half is bigger than one-quarter.

Creating visual images is a great way to enhance understanding.

Inferences are open to interpretation; there is no single “correct” answer.

4. Drawing Inferences

Inferring is about interpreting the world around us. With regard to text, it is “reading between the lines”: using the explicit to draw conclusions about implicit messages (the plot of a novel is explicit; its themes implicit). Ultimately, inferences are assumptions based on “facts.” They rely on our ability to use the schemas we have developed, through prior learning and experience, to make meaning of a current situation or text. The beauty of inferences is that they are inherently open for interpretation. We will never know, for example, if there is “evil” in human nature. This is territory to be legitimately explored by students, without being bound by the need for a single “correct” interpretation.

Teaching students to infer is complex but critical in all disciplines:

- In humanities classes, archetypical text study depends on the ability to infer, as students are expected to ponder the “big ideas” embedded in their texts: “Are feuds between groups—such as Shakespeare’s Montagues and Capulets—human nature?”
- In the sciences, the mastery of the scientific method hinges on students’ ability to hypothesize (infer—and then test—the causes of a specific phenomenon, based on prior knowledge and experience): “How did life begin on earth?” “How can we stop the ozone layer from disappearing?”
- In math class, students rely on their inference skills when struggling with big ideas: “Were formulas created or discovered?” These skills are frequently used to analyze real life applications of abstract formulas: “How does this equation show the growth of the human population?”
- Students in social studies classes will need to infer in order to uncover the meanings of political cartoons, etc.

Across the disciplines, practitioners can begin to teach inference by working with students to distinguish between “facts”—explicit text—and interpretation. The following sort of process has proven very effective with Transfer School students:

1. Read some text (a chapter or sub-chapter) with a natural beginning and end: *Romeo and Juliet*, or an article on the Big Bang Theory or the Greenhouse Effect.
2. Ask students to identify the subject or topic.
3. Ask students to identify the main idea or thesis, with a supporting quote and page number.
4. Students should then explain the quotation in their own words.
5. Next, they should find supporting evidence in the text (three to six examples, with page numbers).
6. Ask them to write a succinct paragraph summarizing the text.
7. And finally, students should use the summary and supporting evidence to make a list of inferences about the answers to the big questions embedded in the text (such as those listed above).²⁰

Experienced learners are constantly engaged in a lightning-fast version of this process, allowing them to quickly expand and deepen the range of their schemas, while also drawing increasingly nuanced inferences.

5. Making Predictions

Prediction and inference are closely linked. But because there are critical distinctions between them, it's useful to think of them as separate strategies. As suggested earlier, inference is implicit, focusing on major ideas and themes that may never be overtly stated. Prediction, on the other hand, is firmly grounded in the central subject or plot of a text—it is explicitly about “outcomes”:

- What do you believe the relationship between the Montagues and Capulets will be at the end of *Romeo and Juliet*?
- How large will the Roman Empire become?
- How will the outcome change if we add alcohol instead of water to our experiment?
- Which way will the slope of a line move if we change a sign from negative to positive?

In addition, while inferences are assumptions based on facts about current or past circumstances, predictions are inferences that use present or past facts to envision the future.

The art of teaching students to make accurate predictions requires teaching them to reflect on their thinking. They might engage in an activity similar to the one described on the previous page (drawing inferences), but rather than complete the final step, they could substitute the following:

7. Make a prediction about the outcome of the text, drawing on the information described in your summary and supporting evidence. Make certain that the prediction addresses the central ideas of the text.

In order to carry out this task, students will need to notice evidence in the text that they are relying on for their predictions. They will need to consider the evidence that they might be ignoring or overlooking, and they will need to ask themselves if there are multiple ways to arrange the evidence that would result in different, but equally plausible, outcomes.

Students use everything they know to predict an outcome—a great way to analyze their base of knowledge.

Help students leverage connections to small sections of a text into a deeper understanding of the whole.

6. Determining Importance

To support learners in determining what is important in a text, practitioners must begin by exploring what is interesting to students: *What do they want to remember most vividly about the text, and why?* Students generally begin this process by articulating the connections they have made to the text (to themselves, the world, or their own experience).

It's not necessarily enough, however, for students to remain focused on connections. Part of the teacher's work is to help students determine the alignment between how they respond to the text and what is important for understanding the text. Sometimes these may be in alignment, but sometimes, students' interest and attention may be caught by a sub-plot, minor detail, or supporting idea. It is critical for teachers to help students notice this and learn strategies to leverage their understanding of these smaller text segments into a deeper understanding of the meaning of the text as a whole.

Misalignment often happens when students have little background knowledge or experience with the text (also called "inconsiderate" texts).²¹ In the process of making meaning, one of two problems may occur. First, there is so little in the text that makes sense to students that they do not have the tools to make accurate determinations about importance: everything and nothing may seem particularly important. Or second, they are able to draw on a tiny piece of prior knowledge to make meaning of part of the text, and they therefore assume that this part is the most important idea in the text as a whole. (Most people focus on what they understand, and in so doing, render it important regardless of the larger context.)

The practitioners' task is to help students notice the extent to which they have replaced the existing context (the actual text) with their own experience, and to begin to disentangle them. This complex process first requires learners to identify their purpose in reading a particular text, and then to reflect on questions such as the following:

- **Content schemas:** Do they have any direct experience with this content? What have they heard or read about this material in the past?
- **Beliefs and opinions about the content:** Is it a subject that is important to them? Do they have strong feelings or judgments about it?
- **Schemas for the format of the content:** Do they have schemas for the scientific process used during labs? Do they have schemas for textbook layouts, mathematical word problems, or sonnets?
- **Memory of related concepts mentioned prior to, or during, the introduction of new materials:** Did another learner describe his connection to the material? Did they conduct an Internet search on the author of the text in order to understand the main ideas that he is concerned with?²²

This reflective work allows students to process the ways in which their existing schemas are (and potentially are not) useful in understanding the text as a whole. In the process, they should be able to identify areas for further building-background work.

It is important to note that all classrooms use different sets of text. Determining importance as described above is applicable to word problems in math classes and experiments in science classes.

²¹ Keene & Zimmerman, 1997.

²² Keene & Zimmerman, 1997.

7. Synthesizing

At the highest level, synthesis is combining new ideas and material with existing schemas in order to create a new (and more complex) integration of an important concept. While analysis breaks the whole into parts, synthesis recombines ideas, creating a new whole.²³ Synthesis is not a single action, but many points along a continuum. Early in the process it involves “taking stock of meaning while [reading and using] it to help [one’s] thinking evolve, perhaps leading to new insight, perhaps not, but enhancing understanding in the process.”²⁴ Synthesizing requires learners to interact with texts on a personal level. They begin by identifying what is interesting and important to them—regardless of the meaning of the text as a whole—making connections to their prior knowledge and experience to see what new understanding and thinking develops.

A student might notice, for example, a paragraph in a history textbook about the Nazi efforts to master eugenics. This observation may raise questions connected to last year’s biology unit on genetics, which may, in turn, remind them of a recent article in *The New York Times* about a young woman who decided to have a genetic test to see if she carried the gene for Huntington’s Disease. At the highest level, these disparate and related forays into the field of genetics may lead the student to examine, adapt, or develop a set of beliefs or opinions about the role of genetic testing in contemporary society. Minimally, the student might draw on knowledge of genetics to help fill in the blanks in the history textbook concerning the purpose of eugenics.

Synthesis takes many ideas to create a new idea, and requires learners to personally connect with the text.

²³ Harvey & Goudvis, 2000: p. 143.

²⁴ Harvey & Goudvis, 2000: p. 145.



Experienced learners use metacognition: they think about, and regulate, their own thinking.

INTRODUCING METACOGNITION

The term *metacognition* is relatively new, introduced in 1976 by John Flavell, and defined as “the individual’s own awareness and consideration of his or her cognitive processes and strategies” (1979). Experienced learners have three well-developed metacognitive assets: first, the capacity to plan, organize, and monitor their learning (self-regulation); second, awareness of their working schemas; and third, the willingness and confidence to engage in mental exploration of their own thoughts and knowledge.²⁵

Novice learners tend to have less developed metacognitive awareness, and as a result, they are more likely to “fail to utilize the knowledge and skills they have, they tend not to plan, have no strategy in attempting tasks, [overestimate the capacity of their memory], and do not monitor their progress.”²⁶

A critical part of the work of educators in Transfer Schools is to teach students to develop effective metacognitive capabilities, because it is through the process of thinking about their thinking that students begin to take control over their learning. Metacognition helps students:

- Plan how to carry out challenging academic tasks;
- Monitor their progress;
- Make decisions about which strategy to use at a particular moment;
- Choose to change strategies if one or another is not helping them progress effectively;
- Reflect on their learning in order to expand the quantity and quality of the schemas available to them.

25 Palincsar, Annemarie, and Ann Brown. “Reciprocal Teaching of Comprehension-Fostering and Comprehension-Monitoring Activities.” *Cognition and Instruction* 1 (1984): 117–175.

26 Fischer, 1998: p. 8.



Figures 10 and 11 on the following pages provide examples of how metacognitive thinking and a productive use of the learning strategies might be taught as part of a lesson on a specific academic subject. Building on the math example provided in Part 1 (page 20), Figure 10 displays two versions of the same lesson plan on factoring: the lesson on the left (Figure 10a) does not incorporate the strategies, while the lesson on the right does (Figure 10b). Figure 11 follows the same format for a humanities lesson on the Holocaust.

In comparing the two versions of each lesson, you can see how strategies to support content learning provide students with much more autonomy. They are no longer solely dependent on the teacher to make meaning, but instead rely on their own prior knowledge, their ability to identify patterns and use them to make informed responses to the text, and their willingness to draw on the expertise of their peers (as well as additional resources).

Figure 10: Solving Polynomial Equations by Factoring

Figure 10a

DESIRED RESULTS	
Content Objective	To solve polynomial equations by factoring.
Learning Strategy Focus	Make connections between the methods for factoring various monomials/ polynomials.
Assessment Evidence	Students will be tested orally, both individually and in a large group, on the methods and vocabulary related to factoring.
MINI-LESSON	
Purpose	Help students acquire the skills to solve polynomial equations after they have been factored.
Build Background	Students will be asked to find solutions for the different types of polynomial equations that they have studied.
Vocabulary	Equation, solution, factor, grouping, monomial, polynomial, binomial, trinomial, common factors, ax^2 form, x^2 form
Instruction	<p>Students will be shown the similarities between solving each type of polynomial after they have been factored. Give students their second review packet (from Glencoe: <i>Math Matters 1</i>).</p> <p>The Instructor will work 1:1 with students to identify gaps in their knowledge.</p>
INDEPENDENT WORK	
Independent Work	<p>Students will be given six equations that are a mix of the different types of factoring. Students will be asked to label the method used while obtaining each solution.</p> <p>Students will be introduced to a review packet (Glencoe: <i>Math Matters 1</i>), as a review and to make up missed homework/quizzes.</p> <p>The Instructor will work 1:1 and in small groups with students to identify gaps in their knowledge.</p>
WRAP-UP	
Review	
Reflection	Name the different methods of factoring that will be on the exam. How do we distinguish between these methods?

Figure 10b

DESIRED RESULTS	
Content Objective	To solve polynomial equations by factoring.
Learning Strategy Focus	Make connections between the methods for factoring various monomials/ polynomials.
Assessment Evidence	Write: What clues will you use to identify which factoring methods to use for particular problems?
MINI-LESSON	
Purpose	Give students the skills to solve polynomial equations after they have been factored.
Build Background	Previous knowledge: "Think aloud" problem described below. New information: Vocabulary exercise, handout on factoring methods.
Vocabulary	Prefixes: mono, bi, tri, poly Terms: monomial, polynomial, binomial, trinomial Have students use their knowledge of the word monomial to guess what the prefixes "bi" and "tri" mean. Brainstorm additional words that use the same prefixes.
Instruction	Think aloud: Write a problem on the board. Walk through each of the steps, talking through your thinking on each step. Make sure to emphasize the places where you are making a connection, and the kind of connection it is (problem to self, problem to a different problem, or problem to larger mathematical issues). Pass out the handout. Ask students what clarifying questions they have. Take students through the various strategies to help them clarify their own questions.
INDEPENDENT WORK	
Independent Work	Students will complete six different factoring equations. Their page will be divided in half. On one side is the equation; on the other side is: (1) a discussion of the connection they made in order to decide which method to use—or if they used a different strategy, what it was and why they thought it was more appropriate to use it—(2) Identification of mono, bi, tri, and polynomials. Ask each person at each table (students are sitting in groups of three or four) to show how they approached one problem, and have the rest of the students review the math and the discussion of the strategy for accuracy.
WRAP-UP	
Review	Ask each group to identify one problem that more than one person found challenging. Ask each group to identify a strategy that will help to solve that kind of problem on the exam.
Reflection	Write: Where did you get stuck today? What strategy did you use to try to unstick yourself? Share.

Figure 11: Introducing Holocaust Memorials

Figure 11a

DESIRED RESULTS	
Content Objective	Understand what a memorial is. Name what they find powerful about memorials.
Learning Strategy Focus	Determining Importance Making Connections
Assessment Evidence	How well they will have identified and supported their interpretation of the symbolism present in the memorials we look at.
MINI-LESSON	
Purpose	Encourage students to apply what they have learned about the Holocaust to the creation of a memorial.
Build Background	PowerPoint® presentation of Holocaust memorials and commemorations.
Vocabulary	Memorial, commemorate, symbol
Instruction	Do-now: In your opinion, what's the most meaningful way to remember the Holocaust? PowerPoint® presentation: to introduce vocabulary, view memorials and commemorations, inspire student thinking, and provide a discussion focus for evaluating memorials.
INDEPENDENT WORK	
Independent Work	Evaluative chart to be used during the PowerPoint®. Follow-up worksheet.
WRAP-UP	
Review	
Reflection	Group discussion/reflection (if time allows—will be completed next lesson otherwise). Ticket to Leave: What memorial format (sculpture, picture, poem) did you like best and why?

Figure 11b (continues on next page)

DESIRED RESULTS	
Content Objective	Understand what a memorial is. Understand the evolution of memorials over time, and how the Holocaust memorials are (and potentially are not) evidence of the evolution.
Learning Strategy Focus	Determining Importance Making Connections
Assessment Evidence	Write: In your opinion, what's the most meaningful way to commemorate the Holocaust? How did you come to believe this, and what connections did you make? Where does this form of commemoration fit into the evolutionary arc of memorialization?
MINI-LESSON	
Purpose	Model how to respond personally to a monument by making connections and determining importance. Use these responses to develop a schema for memorial study.
Build Background	Write: Think over our unit on the Holocaust and make a list of six images, ideas, or other information that affected you strongly. Put a star by the three that affected you most strongly (what you determined is important). Share: Explain why you think these three will stay with you (the connections you made).
Vocabulary	Memorial, commemorate, remembrance (memory, remember)
Instruction	Ask: Using your knowledge of root words, guess what these three words mean. Five-minute lesson (with images) on the evolution of memorials: they used to be statues of "Great Men"; now of events, of victims. They can be formal or spontaneous, etc. 15-minute PowerPoint® presentation portraying Holocaust memorials and commemorations. Discussion: Which format (poem, sculpture, image) did you find most accessible? Why? Think Aloud: Using one memorial from the presentation, model how to make connections and explain why the memorial is important, and why it is important to have this memorial in existence.

Figure 11b (continued from previous page)

INDEPENDENT WORK	
Independent Work	<p>Arrange stations around the room. At each station, place a color picture of a memorial, with collateral materials about it: the creator, the location, the date, reviews of it, etc.</p> <p>Students move around the room looking at each memorial without looking at the collateral materials.</p> <p>Ask students to go to a station with a memorial that has a strong effect on them.</p> <p>Students at each station share with one another the reasons why they chose that station. (One student takes notes, one will share with the class and one facilitates).</p> <p>Have each station share with the class.</p> <p>Have each station create a five-minute presentation on its memorial: creator, location, materials used, date, size, key symbols, and where it fits in the evolutionary arc of memorializations.</p> <p>Students present.</p>
WRAP-UP	
Review	<p>Quick written response questions: Name three different types of memorials we looked at today? Why are we studying Holocaust memorials? What does the word "commemorate" mean, and how did you arrive at this meaning?</p>
Reflection	<p>Write: What was the most challenging aspect of today's lesson? Why was this challenging for you in particular? How did you overcome the challenge (if you did)? If you did not, what do you think got in your way?</p> <p>Share.</p>

FOR FACILITATORS OR PRACTITIONERS

PRACTICE AND APPLICATION ACTIVITIES

As we did in Part 1, we've used the following pages to describe a series of activities that provide educators with the opportunity to practice and apply their new knowledge (this time, key learning strategies) to their lesson planning. Although the activities will be more effective in a group setting with a facilitator to guide the process, individual teachers who want to improve their practice can also work on the exercises independently, or with a colleague informally.

How do students make meaning from texts?

Activity 1: Building Background "Reading: what's so hard?"

(2 hours)

STEPS	FACILITATOR'S NOTES
Ask: How do you make meaning of texts?	Take notes on chart paper.
Journal: Why is reading so hard for some students?	<p>Lack of ...</p> <ul style="list-style-type: none"> ■ Habits: of reading, reflecting, etc. ■ Context ■ Phonics/syntax rules: fat/phone, seen/scene (the rules don't make sense) ■ Comprehension skills
With a partner: How do you address reading deficits in your classroom?	
Share the writing and partnered work with the larger group.	
<p>Read the first two paragraphs of this article on quantum physics.</p> <p>Notice yourself as a reader: your reading process for meaning-making, and your reactions as you read.</p> <p>Share reactions with the larger group.</p>	<p>Use an article similar in difficulty to this quantum physics article: http://t1.physik.tu-dortmund.de/stolze/publications/lt25.pdf.</p> <p>This particular article is especially useful for this activity, as it is written in highly technical, dense, academic prose that will be difficult for almost any teacher to understand. By giving practitioners such an opaque text, it provides them with the experience that their students face almost daily, while also forcing them to consciously employ learning strategies to try and make meaning of the text.</p>
Ask: What was our purpose in this activity? And what's your evidence for this inference?	Reading the article achieves two purposes: first, it reminds participants of what it's like to struggle as a reader; second, it presses them to draw consciously on a store of reading strategies that they often use without noticing.
What strategies did you use to try to understand the text?	<p>Examples of things people might say:</p> <p>Looked for familiar concepts</p> <p>Looked at headings</p> <p>Read the beginning and end to find a summary of the text</p> <p>Looked for familiar roots/prefixes/suffixes in unfamiliar words, to speculate about word meanings</p> <p>Took notes in the margins</p> <p>Tried to draw a picture or map of the parts of the text that were familiar</p>

Activity 1 (continued from previous page)

STEPS	FACILITATOR'S NOTES
Work with a partner to match the strategies we used to those listed on the poster paper. List them on the relevant chart paper, along with your name.	<i>Prepare in advance: write each one of the key learning strategies on a piece of paper. (questioning, determining importance, inferring, visualizing, synthesizing, making connections, and predicting).</i> <i>At this point, put them up around the room.</i>
Walk around the room and notice discrepancies between the different postings on the charts.	
Share your observations <i>and</i> your reactions to your observations with the larger group.	<i>This is an opportunity to help people notice their metacognition (their thinking about their own—and others'—thinking processes).</i>

Activity 1 explores the learning strategies as they apply to reading challenging texts. The activity builds upon participants' prior knowledge and experience related to the reading.

Activity 2 builds on the first by once again asking participants to draw on prior knowledge and experience, while also creating a schema related to the habits of “skillful” readers. This process will help participants focus on the role that the learning strategies and metacognition can play in Transfer Schools. By giving students access to learning strategies, educators give them tools to push their reading to deeper levels without relying exclusively on the teacher as a mediator between themselves and the text.

By giving students access to learning strategies, educators give them tools to push their reading to deeper levels.

Activity 2: Building Background “What do ‘skillful’ readers do?”

(45 minutes)

STEPS	FACILITATOR'S NOTES
Work with a partner to reflect on what skillful readers do.	Refer people back to their work on the quantum physics article for additional ideas.
Ask partners to share with the larger group. Write responses on chart paper.	As people provide responses, ask them to model what they mean. Be prepared to add things such as: make sure they know why they are reading something; make sure they know as much as they can about the author, context, and purpose of the text; monitor their understanding; use fix-it strategies ²⁷ when they have trouble understanding a text.
Ask participants to reflect on the habits and skills their students do and do not possess. Then ask them to think of a few methods they currently use to teach these skills to their students.	Some people may not teach any of these skills. This is fine. They can reflect on why this is so.
Share reflections with the group: what did you notice?	

The next four activities introduce five of the learning strategies: making connections, asking questions, drawing inferences, predicting, and determining importance. These activities are “discipline-neutral”—i.e. they will work equally well with a science text, a work of art, or a novel—allowing practitioners in each discipline to experience the strategies “in action.” For these activities, participants should work with a book that they use when teaching students. If a group of teachers is engaging in the activities together, the group should choose one text to study (*The House on Mango Street* by Sandra Cisneros, and *Monster* by Walter Dean Myers are both effective, but a textbook can work equally well).

In completing these activities, participants engage in an experience similar to what they can create for their Transfer School students on a daily basis. Each activity focuses on the key components of the learning process:

- Tackling new content;
- Connecting new content to prior knowledge and experience: activating and expanding one’s schemas;
- Learning a new strategy (or practicing/noticing a strategy they have already learned);
- Monitoring their learning in order to make adjustments when necessary;
- Reflecting on their learning to deepen their knowledge of themselves as learners, as well as to solidify their understanding of the new material.

The facilitator’s role throughout these exercises is to ensure that participants move seamlessly back and forth between components.

²⁷ **Fix-it Strategies** involve metacognitive skills as students figure out how well they are doing on a task, and if they need to make changes in their approach, they consciously make decisions to “fix” it. Some of the cues for employing fix-it strategies are: one’s mind wanders, one can’t remember what was just read, one becomes anxious or frustrated, one is completing an activity “incorrectly,” or one isn’t sure what to do next during an activity. Different learning strategies (visualization, prediction, questioning, inferring, etc.) can help to “fix” the situation.

Activity 3: Predicting/Making Connections: "Interviewing a text to build background." (45 minutes)

STEPS	FACILITATOR'S NOTES
Journal: Look at the cover of the book and <i>make a prediction</i> about the book's subject; then, explain how you made the prediction.	<i>This uses the strategy of prediction, as well as asking people to practice thinking about their metacognitive processes.</i>
Ask: What did you notice about yourself as a learner when you were asked to make a prediction?	<i>Practicing metacognition.</i>
Have someone read the description on the back of the book aloud.	
Ask: Was your prediction anything like the description on the back? Does reading the back make you want to read the book more or less?	<i>Practicing becoming aware of our reactions to texts as a way to determine what might be interesting to us (text-to-self connections).</i>
Read the "reviews"/"blurbs" aloud.	
Ask: What effect do the reviews have on your interest in the book? Do you know the work of any of the reviewers? Is this compelling?	<i>Practice making connections.</i>
Ask: What's happening to you as a learner as we "interview" this text?	<i>Practicing metacognitive reflection.</i>

Activity 4: Questioning the Text

(60 minutes)

STEPS	FACILITATOR'S NOTES
<p>Read the first two paragraphs of the text aloud. Stop and model possible questions one might have: some will be related to comprehension and vocabulary, and some will be “wonderings.” Reflect aloud on why you asked yourself these questions.</p>	<p><i>This is a modeling technique called “read-aloud, think-aloud,”²⁸ designed to make one’s thinking transparent. It is very effective for complex thinking activities because it provides learners with insight into the ways that literacy strategies can be used to deepen understanding.</i></p> <p><i>Note: Often participants will say they do not have any questions. This usually means they are not confused about anything, but they may have opinions about the text. Opinions are actually responses to questions that we have about texts. For example: “This book is boring.” Underneath this is the question “What do I think of this book?”...The follow-up question is “Why?”</i></p>
<p>Ask: What does my modeling do for you as a reader?</p>	<p><i>Let participants think about their metacognitive processes. Try to help them see how questioning helps us connect ourselves to a text, while also creating a context for deeper understanding.</i></p>
<p>Have participants read a page or two. Pass out “sticky notes”: as they read, have them write down questions with the line and page number and an explanation of how/why they settled on these particular questions.</p>	<p><i>Practice questioning.</i></p>
<p>Journal: Look at your questions. What do they tell you about yourself as a reader? What issues and ideas do you notice and care about?</p>	<p><i>Practice metacognition by asking participants to think about themselves as readers.</i></p>
<p>In a small group, talk through the assignment:</p> <ol style="list-style-type: none"> 1. Discuss your questions. 2. How/why did you come to these questions? 3. As a teacher in your own classroom, how might you follow-up with these questions after having students articulate them? 	<p><i>Ask people to notice similar questions or places in the text where more than one person had a question. Note that this is the beginning of collectively determining importance.</i></p>
<p>Ask: As a teacher, how will you respond to your students’ reactions to doing this work? If they want to know “why do it?,” what will you say to them?</p>	<p><i>This question is designed to help participants make connections to their teaching practice.</i></p>

²⁸ **Read-aloud, think-aloud** is a carefully planned oral reading of a text, during which readers (usually teachers) describe their reading process, questions, and ideas while reading. The technique is used to model a particular way of thinking—or specific use of learning strategy—to students, before they undertake their own reading of a text.

Activity 5: Determining Importance

(30 minutes)

STEPS	FACILITATOR'S NOTES
Ask participants to read a few more pages of the text and identify an idea or passage they feel is important to them. Write the line/page down, and explain the importance.	<i>Practice determining importance by making a connection to the text.</i>
A volunteer shares.	<i>Practice a mini-discussion about what participants find important in a text. Model facilitation for the group, such as: "The rest of us are going to ask her questions about her choice, respond to it, etc. If you focused on the same line, share that. If you identified a different line, share that. Everyone is going to talk, and participate. This is a conversation."</i>
Ask: What strategies were used to determine importance?	<i>Practice making the use of strategies explicit and transparent.</i>

How do students determine importance when reading?

Activity 6: Determining Importance “Exploring Facts/Topics/Themes.”

(60 minutes)

STEPS	FACILITATOR'S NOTES						
<p>Say: “In this exercise, we will look at two versions of the same activity. The first is called T-D-R (Topic/Theme-Details in Text-Response to Theme) and is appropriate for literature, the arts, science, and some areas of history. The second is called F-Q-R (Facts-Questions-Response to Questions), which can be used effectively with science, math, and the social sciences.</p>							
<p>Have the group brainstorm topics, themes, or facts in the text they have been reading.</p>							
<p>Model finding a detail/question in the book related to the identified topics/themes/facts.</p>	<p>Make three columns on the page: T-D-R or F-Q-R. Place the detail/question in the middle column. See Appendix H for activity instructions.</p> <table border="1" data-bbox="901 871 1364 1039"> <thead> <tr> <th><u>Topic/Fact</u></th> <th><u>Detail/Question</u></th> <th><u>Response</u></th> </tr> </thead> <tbody> <tr> <td>The protagonist in <i>Monster</i> is in jail.</td> <td>What did he do? (page 2)</td> <td>I noticed that I assumed he was guilty. Why?</td> </tr> </tbody> </table>	<u>Topic/Fact</u>	<u>Detail/Question</u>	<u>Response</u>	The protagonist in <i>Monster</i> is in jail.	What did he do? (page 2)	I noticed that I assumed he was guilty. Why?
<u>Topic/Fact</u>	<u>Detail/Question</u>	<u>Response</u>					
The protagonist in <i>Monster</i> is in jail.	What did he do? (page 2)	I noticed that I assumed he was guilty. Why?					
<p>Ask participants to read another page or two and (1) see if there are additional topics/themes/facts, and (2) continue identifying details throughout the text.</p>	<p>Have participants list details or questions in the middle column, noting specific lines and page numbers.</p>						
<p>Say: Describe your thinking processes while you are completing this.</p>	<p>Again, participants are practicing metacognition by monitoring their thinking while working.</p>						
<p>A volunteer shares the details/questions identified.</p>	<p>Follow the mini-discussion format described in Activity 5.</p>						
<p>Have participants add to their list of details as they listen—but only the details that they believe are interesting or important.</p>							
<p>Model response to text details: One of the themes in the book is ____. I noticed in the sentences that ____. I find this compelling because ____. In looking at how I responded, I realize that I used the strategy of ____. I used it because ____.</p>	<p>The anatomy of this work: Identify the theme/topic/important fact. Find supporting details, or ask questions. Explain the significance of the theme/fact. Think about one’s process: Identify the strategy that was used, and how.</p>						

Activity 6 (continued from previous page)

STEPS	FACILITATOR'S NOTES
<p>Have participants respond to the details on their charts.</p>	<p><i>Activities like this begin to give participants power over the use of the strategies: they are making decisions about how the strategies support their understanding of a text.</i></p> <p><i>They will notice that they used a range of strategies (predictions, inferences, determining what is important, asking questions, etc.).</i></p>
<p>Conduct another mini-discussion about participants' responses.</p>	
<p>Journal Writing:</p> <p>What is useful about the strategies?</p> <p>Which strategies do you use as a reader?</p> <p>In what five ways will you integrate them into your content?</p>	<p><i>If people get stuck on the third question, ask them to talk with their neighbor. Some examples of possible responses:</i></p> <p><i>Before beginning a new text, I will ask students to "interview" it: ask questions, make predictions, and make connections.</i></p> <p><i>I will use my direct-instruction time to teach new content and the use of the strategies.</i></p> <p><i>Before answering student requests for help with difficult tasks, I will ask them which fix-it strategies they have tried.</i></p> <p><i>I will always wrap-up my class with a reflection question that asks students to think about their thinking and their use of the strategies.</i></p>
<p>Share with the group.</p>	

These activities give participants a taste of what it feels like to make one's thinking processes transparent (to oneself and others) in order to deepen understanding. To make the learning strategies and metacognition an integrated part of their practice, Transfer School teachers will need to engage in their own study of the strategies, familiarizing themselves with the many different ways to teach them to students in conjunction with content-specific material.

Activity 7 brings participants back to the FEI, asking them to write another demonstration lesson using the Lesson Plan Template (Appendix E). This time they will emphasize learning strategies and metacognition.

Activity 7: Practice and Application

(3 hours)

STEPS	FACILITATOR'S NOTES
Ask participants to write a demonstration lesson using the Lesson Plan Template (Appendix E). Participants should focus on identifying clear content and language objectives for the day, as well as integrating two strategies that students will learn or use during the lesson.	
Ask participants to use the FEI to review their lesson after it is finished, and keep track of their observations during the comparison.	<i>The process of "noticing" is a critical part of this activity, because it helps participants see how one can build simple metacognitive inquiry into an activity to help make thinking processes more transparent.</i>
Ask participants to share their observations with one another.	
Ask for two volunteers to "perform" their lessons. The rest of the group should "assess" the quality of the lessons, using the FEI Rubric (Appendix F).	<i>Hand out copies of the FEI Rubric.</i>
Have volunteers share their self-assessments and their observations. Have the group ask the volunteers questions about the lessons they performed.	<i>The facilitator should model this so the group can see the power of asking good questions.</i>
Journal Writing: What did you learn by engaging in this process? How does it inform your practice? What did you notice about your lesson?	
Share reflections.	

At this stage, participants will have used the Lesson Plan Template and the FEI twice, and each time, they will have explored integrating a significant amount of new learning into their planning work. As a result, the facilitator should not assume that either tool is comfortably familiar to participants. Activity 8 provides members of the group with the opportunity to reflect on and share their learning and concerns. The facilitator should take careful notes, because there may be important issues raised that need to be addressed in follow-up sessions.

Activity 8: Closing Reflections

(45 minutes)

STEPS	FACILITATOR'S NOTES
Journal Writing: How has the work with learning strategies been useful for you so far? How is your thinking about teaching and learning evolving? How might you use your new learning in your practice?	
Share.	
Ask participants to work with a partner to think about how the school might use the strategies to improve teaching and learning for all students in the school.	
Journal Writing: What are your concerns and goals for working with the strategies this year? What will change in your practice this year? What will the challenges be in evolving into an ongoing professional learning community?	
Share the partner work and the journal writing.	

Part 2 of the handbook has provided the reader with a detailed overview of a piece of the fourth component of the Framework for Effective Instruction: learner-centered strategies. The final section continues this study by describing the final aspect of these strategies: higher-order thinking skills.

RECOMMENDED TEXTS FOR FURTHER STUDY OF THE LEARNING STRATEGIES:

Boke, Nick. *Reading to Learn: A Classroom Guide to Reading Strategy Instruction*. The Vermont Strategic Reading Initiative, 2004.

Gallagher, Kelly. *Deeper Reading: Comprehending Challenging Texts*. Portland, ME: Stenhouse, 2004.

Harvey, Stephanie, and Anne Goudvis. *Strategies that Work: Teaching Comprehension to Enhance Understanding*. Portland, ME: Stenhouse, 2000.

Keene, Ellin Oliver, and Susan Zimmerman. *Mosaic of Thought: Teaching Comprehension in a Reader's Workshop*. Portsmouth, NH: Heineman: 1997.



PART 3:

Higher-Order Thinking

- 56% of all college students say that high school left them unprepared for the work and study habits expected in college;
- Knowing what they know today, if college students could do high school over again, 62% would take harder courses.

- Only 18% of college professors feel that most of their students are prepared for the rigors of college-level academic work;
- College professors are dissatisfied with students' writing quality (62%), ability to think critically (66%), work and study habits (65%), and ability to do research (59%).

- 42% of employers are dissatisfied with graduates' ability to think analytically;
- 39% of employers are unhappy with graduates' ability to apply what they learn to solve real-world problems;
- 41% of employers are dissatisfied with graduates' ability to ... understand difficult material.²⁹

In recent years, students, professors, and employers (in addition to politicians, parents, and educators) have expressed concerns about the limitations of the traditional high school model for over-age, under-credited students. Transfer Schools are one of several efforts in New York City designed to address some of these limitations. By providing students with an intensely focused educational experience, Transfer School teachers engage in developing educational programs that prepare students to be successful in school and at work. The complicated task of teaching students to think deeply about academic material and real world issues is at the center of this challenge.

The third and final part of the handbook describes how the Framework for Effective Instruction (FEI) helps practitioners develop curriculum and assessment tools that teach students to engage in the process of “higher-order thinking”: Analyzing, Evaluating, and Creating.³⁰ This section begins with an overview of the theoretical foundation of lower and higher-order thinking

Part 3 of this handbook focuses on how the FEI can help students engage in “higher-order thinking.”

²⁹ Achieve, Inc., 2005.

³⁰ Bloom, 1956; Anderson & Krathwohl, 2001.

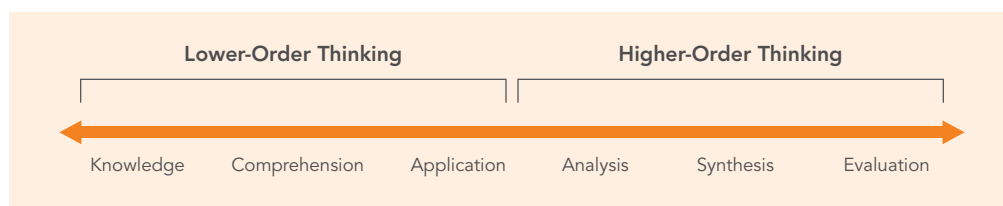
Krathwohl and Anderson's revision of Bloom's Taxonomy achieved some important improvements for educators.

(described in Bloom's *Taxonomy of Educational Objectives*, 1956). It is followed by a description of the FEI's use of the Taxonomy to support curriculum and assessment development that emphasizes higher-order thinking. The section closes with a set of hands-on activities designed to strengthen practitioners' capacity in this critical arena.

THE THEORETICAL FOUNDATION: BLOOM'S TAXONOMY OF EDUCATIONAL OBJECTIVES

Bloom's Taxonomy is a framework for categorizing educational objectives along a continuum. The continuum (displayed in Figure 1, below) consists of six categories of educational objectives that require increasingly complex levels of cognitive processing. The first three domains (Knowledge, Comprehension, and Application) use what Bloom calls "lower-order thinking" processes, while tasks associated with the final three (Analysis, Synthesis, and Evaluation) require "higher-order thinking" processes:

Figure 1: Bloom's Taxonomy of Educational Objectives

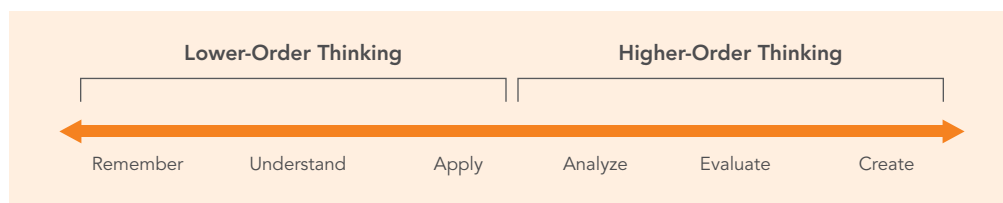


Thinking processes associated with knowledge are less cognitively complex than those associated with comprehension; thinking processes associated with analysis are more cognitively complex than those associated with application; and so on.

In the fifty years since the publication of Bloom's Taxonomy, many researchers and practitioners have developed frameworks that describe the thinking processes necessary for learning, but Bloom's remains one of the most widely known and applied.³¹ A useful recent effort came from David Krathwohl and Lorin Anderson (and their colleagues),³² who revised the Taxonomy in the 1990s, publishing *A Taxonomy for Learning, Teaching, and Assessment: A Revision of Bloom's Taxonomy of Educational Objectives* (2001).

Although less well-known than the original Taxonomy, Krathwohl and Anderson's revision achieved some important improvements:

Figure 2: Bloom's Taxonomy Revised



³¹ Other widely-known taxonomies include Gardner's Theory of Multiple Intelligences, Paul's Model of Critical Thinking, King and Kitchner's Model of Reflective Judgment, Marzano's New Taxonomy of Educational Objectives, and Sternberg's Model of Abilities as Developing Expertise.

³² Krathwohl was one of the original Taxonomy's authors, while Lorin Anderson was mentored by Bloom. They were joined by P.W. Airasian, K.A. Cruikshank, R.E. Mayer, P.R. Pintrich, J. Raths, and M.C. Wittrock.

In the revised Taxonomy:

- The focus is on supporting practitioners in the inter-related work of curriculum planning, instruction, and assessment (the original Taxonomy was primarily created to facilitate the third priority, with little attention to the first two);
- The revision replaces Bloom's nouns with verbs to reflect the active nature of thinking;
- The *Knowledge* category was renamed *Remember*, since knowledge is actually a product of thinking, not a process;
- *Comprehension* became *Understand*, and *Synthesis* became *Create*, in order to better reflect the nature of the thinking described by each category;
- Once *Synthesis* was renamed, its place on the continuum was modified to reflect its use of more complex thinking processes.³³

Given these improvements, the Framework for Effective Instruction (FEI) uses the revised Taxonomy as its reference point, displayed in Figure 3, on the following pages.

Figure 3: Revision of Bloom's Taxonomy of Educational Objectives³⁴

1. REMEMBER: Retrieve relevant knowledge from long-term memory.	
1.1 Recognizing (Identifying)	Def.: Locating knowledge in long-term memory that is consistent with presented material Ex.: Recognize the dates of important events in US history.
1.2 Recalling (Retrieving)	Def.: Retrieving relevant knowledge from long-term memory Ex.: Recall the dates of important events in US history.
2. UNDERSTAND: Construct meaning from instructional messages, including oral, written, and graphic communication.	
2.1 Interpreting (Clarifying, Paraphrasing, Representing, Translating)	Def.: Changing from one form of representation (e.g., numerical) to another (e.g., verbal) Ex.: Paraphrase important speeches and documents.
2.2 Exemplifying (Illustrating, Instantiating)	Def.: Finding a specific example or illustration of a concept or principle Ex.: Give examples of various painting styles.
2.3 Classifying (Categorizing, Subsuming)	Def.: Determining that something belongs to a category (e.g. concept or principle) Ex.: Classify observed or described cases of mental disorders.
2.4 Summarizing (Abstracting, Generalizing)	Def.: Abstracting a general theme or major point(s) Ex.: Write a short summary of the plot of a play.
2.5 Inferring (Concluding, Extrapolating, Predicting, Interpolating)	Def.: Drawing a logical conclusion from presented information Ex.: In learning a foreign language, infer grammatical principles from examples.
2.6 Comparing (Contrasting, Mapping, Matching)	Def.: Detecting correspondence between two ideas, objects, and the like Ex.: Compare themes in two novels by the same author.
2.7 Explaining (Constructing models)	Def.: Constructing a cause-and-effect model of a system Ex.: Explain the cause of important 18th century events in France.
3. APPLY: Carry out or use a procedure in a given situation.	
3.1 Executing (Carrying Out)	Def.: Applying a procedure to a familiar task Ex.: Divide one whole number by another whole number (both multiple digits).
3.2 Implementing (Using)	Def.: Applying a procedure to an unfamiliar task Ex.: Use Newton's Second Law in situations where it is appropriate.

³⁴ From Anderson, Lorin, and David Krathwohl, eds. *A Taxonomy for Learning, Teaching, and Assessing: A Revision of Bloom's Taxonomy of Educational Objectives*. Boston: Allyn & Bacon, 2001. © 2001 by Pearson Education. Reprinted by permission of the publisher.

4. ANALYZE: Break material into its constituent parts and determine how the parts relate to one another and to an overall structure or purpose.

4.1 Differentiating

(Discriminating, Distinguishing, Focusing, Selecting)

Def.: Distinguishing relevant from irrelevant parts, or important from unimportant parts, of related material

Ex.: Distinguish between relevant and irrelevant numbers in a mathematical word problem.

4.2 Organizing

(Finding Coherence, Integrating, Outlining, Parsing, Structuring)

Def.: Determining how elements fit or function within a structure

Ex.: Structure evidence in a scientific experiment into evidence for and against a particular hypothesis.

4.3 Attributing

(Deconstructing)

Def.: Determining a point of view, bias, values, or intent underlying presented material

Ex.: Determine the point of the author in an essay in terms of his or her political perspective.

5. EVALUATE: Make judgments based on criteria and standards.

5.1 Checking

(Coordinating, Detecting, Monitoring, Testing)

Def.: Detecting inconsistencies or fallacies within a process or product; determining whether a process or product has internal consistency; detecting the effectiveness of a procedure as it is being implemented

Ex.: Determine if a scientist's conclusions follow from observed data.

5.2 Critiquing

(Judging)

Def.: Detecting inconsistencies between a product and external criteria; determining whether a product has external consistency; detecting the appropriateness of a procedure for a given problem

Ex.: Judge which of two methods is the best way to solve a given problem.

6. CREATE: Put elements together to form a coherent or functional whole; reorganize elements into a new pattern or structure.

6.1 Generalizing

(Hypothesizing)

Def.: Coming up with alternative hypotheses based on criteria

Ex.: Generate hypotheses to account for an observed phenomenon.

6.2 Planning

(Designing)

Def.: Devising a procedure for accomplishing some task

Ex.: Plan a research paper on a given topic.

6.3 Producing

(Constructing, Making)

Def.: Inventing a product

Ex.: Write a poem.

Students need to learn to make meaning, and not just memorize facts.

THE FEI'S USE OF BLOOM'S TAXONOMY TO SUPPORT CURRICULUM AND ASSESSMENT DEVELOPMENT

The mission of high school is not to cover as much content as possible, but rather to help students be thoughtful about, and productive with, content. Schools should not focus on acquisition of content (piles of facts) at the expense of making meaning and transferring learning to new situations within school and beyond it. If students are only taught content, they will flounder when confronted with unfamiliar questions or problems (even selected-response problems on standardized tests).

The FEI outlines a process (“Blooming”) that uses the Taxonomy (either the original or the revised) to guide the creation of standards-driven units, lessons, and assessments in an effort to support student learning across the cognitive continuum. The purpose of Blooming is three-fold:

1. **It allows practitioners to categorize the type of thinking that their curriculum requires of students, revealing potential gaps and imbalances.**
2. **It provides a framework for addressing gaps and imbalances.** For example, because the subject is so “content-heavy,” world history classes often emphasize memorizing dates and events (i.e., the least complex of the cognitive processes: remembering). Historians, however, focus their attention on the highest orders of thinking: analyzing and evaluating historical events, and creating hypotheses about their causes and effects. By using Bloom’s Taxonomy as a lens through which to review units and assessments, teachers can ensure that students have access to many opportunities for higher-order thinking as they learn to master new material.
3. **It is a powerful support for offering varied instruction.** For example, within a given unit, some students may need to focus on *understanding* the material, while a second group focuses on *applying* it to a new situation. One student might use the material to strengthen her *remembering* skills, while another might adapt the material in a new way (*creation*). Using Bloom’s allows teachers and students to identify appropriate learning opportunities within a given unit.

This section of the handbook details the “Blooming” process through a discussion of three examples: first, the Blooming of one of the New York State English Language Arts (ELA) Standards; second, a Bloom’s-based rubric for assessing student work products; and third, Blooming a set of potential student work products.

BLOOMING A STANDARD

Transfer Schools work tirelessly to ensure that students master the NY State Standards. The method of Blooming critically supports these efforts, because it guides practitioners through the process of creating standards-driven units and activities that are appropriately scaffolded³⁵ to support student success. The example below uses a hypothetical unit on heroism as a vehicle for demonstrating how “Blooming” standards supports practitioners in teaching students the skills of higher-order thinking embedded in New York State ELA Standard #3.

³⁵ **Scaffolding** is the process of creating lessons and activities that support students in applying new skills and strategies until they are ready to work on them independently. The term was coined by Jerome Bruner in 1975. Bruner, J.S. “The Ontogenesis of Speech Acts.” *Journal of Child Language* 2 (1975): 1–40.

EXAMPLE 1: NEW YORK STATE ELA STANDARD #3

Students will read, write, listen, and speak for **critical analysis** and **evaluation**. As listeners and readers, students will **analyze** experiences, ideas, information, and issues presented by others using a variety of established criteria. As speakers and writers, they will present, in oral and written form and from **a variety of perspectives, their opinions and judgments** on experiences, ideas, information, and issues.

There are multiple ways to Bloom a standard. The key to the process is for practitioners to become adept at thinking about how cognitive processing—at each level of the Taxonomy—will contribute to an overall ability to analyze and evaluate (the heart of this particular standard). The New York State ELA standards are particularly challenging to Bloom because each of the four core standards intentionally encompasses a number of higher-order thinking skills. (In many other states the standards are more numerous, and each standard addresses a segment of lower- and/or higher-order thinking capacities.)

Blooming ELA Standard #3 (as well as #1, 2, and 4) begins with some preliminary decision-making. The ELA teachers of a Transfer School might get together to consider how the existing ELA scope and sequence may (or may not) address Standard #3 in a coherent and comprehensive way. They could begin by

1. Articulating the mediums that students currently use to explore the “experiences, ideas, information, and issues” listed in the standard. Because the language of the standard suggests that students will need to analyze and evaluate in a variety of mediums, it will be important to identify a diverse and extensive set of resources for students to work with over the course of their careers at the school;
2. Determining if the existing sequencing of high school ELA courses leads to increasingly complex opportunities for students to learn about and demonstrate mastery of analysis and evaluation. This would need to be done, at least in part, by looking at the assessments (projects, essays, research, etc.) that students are asked to complete within each course;
3. Making appropriate revisions to the available resources, course offerings, and assessments.

After modifying the curriculum map for the content area to align with the standard, teachers begin to map out the particular scope and sequence of their individual units and courses.

At its heart, this is a “backward design”³⁶ process. Figure 4, on the following page, is a visual representation of a generic set of activities—across Bloom’s Taxonomy—that can be a part of teaching virtually any discipline in order to help students strengthen their ability to analyze and evaluate.

For the Bloomed standard in Figure 4, ELA teachers might begin by asking students to think about a question—such as “What makes someone a hero?”—and then select a range of texts. In this case, it might be Homer’s *The Odyssey*, an episode of the TV show *Heroes*, the film *O Brother, Where Art Thou?* (a comedic retelling of *The Odyssey*), a few critical essays on the nature of the hero

“Blooming” helps ensure that students master educational standards.

³⁶ This term was first used by Wiggins and McTighe (2001), to describe three stages of planning:

1. Determining what is worthy of understanding;
2. Deciding what evidence of understanding will be; and
3. Identifying the learning and experiences that will promote understanding.

The FEI supports teachers in their efforts to move through these stages by using Bloom’s Taxonomy as a guide to ensure that a deep level of understanding is the goal of all planning (higher-order thinking), and as a tool for developing well-scaffolded curricula, so that students are able to tackle higher-order thinking activities.

At the heart of “Blooming” is a backward design process.

in literature, and a set of newspaper articles that characterize “ordinary” people as heroes (the first-responders of 9/11, for example). Then, teachers might begin articulating a series of activities (at each level of Bloom’s Taxonomy) that would frame student learning in order to build their ability to analyze and evaluate the selected texts in light of the original question.

The tasks listed in Figure 4 are a limited set of examples and should not be considered exhaustive or required. Transfer School practitioners will bring their own creative planning techniques to the work, creating richly-textured lesson and unit plans.

Figure 4: “Blooming” New York State ELA Standard #3

REMEMBER	UNDERSTAND	APPLY	ANALYZE	EVALUATE	CREATE
Brainstorm any background knowledge you have related to the topic of study (heroes).	Summarize a selection of the central text (<i>The Odyssey</i>).	Summarize, predict, and make connections while reading the range of selected texts about heroes.	Identify the main points about heroes in the central text (differentiate between the important ideas or information, and supporting and/or “unimportant”—but potentially interesting—ideas in the text).	Evaluate a range of plausible reactions to the hero in the central text based on the ideas presented in the supplemental texts.	Develop an alternative interpretation of heroism in the central text by applying a different bias.
Read one of the texts and list eight points you remember.	Make a prediction about the end of <i>The Odyssey</i> .	Return to Remember: Identify 25 points you remember from the supplemental texts.	Determine the point of view of the author of one of the supplemental texts, as well as the central text.	Judge the quality of the authors’ argument about heroism in two or more of the texts.	Design a heroism rubric for contemporary life: a set of criteria and a standard for measurement.
Practice memorizing 10 points from one of the texts.	Make connections between <i>The Odyssey</i> , one’s self, another text, or the world.	Return to Understand: Compare and contrast the ideas in the range of texts; make connections between them and other knowledge you possess about heroes.	Determine your biases about heroes in reading the central text, and explain how they influence the meaning of the text for you.	Return to Understand: Using the range of texts, extrapolate the ideas of heroism that you find most persuasive.	Return to Apply/Evaluate: Use the heroism rubric to assess the actions of someone in contemporary life.
	Infer the author’s purpose.		Return to Apply: Identify the main points about heroes in three or more of the supplemental texts.	Return to Analyze: Determine the point of view about heroes in several of the texts.	Return to Evaluate: Identify the text with the most compelling description of heroism, and explain your rationale.

“Remembering” activities should enhance students’ memory skills.

Remember

Figure 4 provides only a few examples of remembering tasks, and students are likely to need a fair amount of support in this arena, particularly in a unit as complex as a study of heroism. Practitioners often find that students remember little of what they read. As a result, an activity that asks students to “list eight points they remember from the text” is often unsuccessful. Remembering is the act of retrieving knowledge from long-term memory; however, if students have not been taught how to store knowledge in long-term memory, this task becomes virtually impossible.

The FEI posits that the planning of a series of “remembering” activities should include teaching “remembering skills”. For this particular activity, teachers might guide students through using learning strategies to enhance their memory. As they read, they can underline ideas in the text that they find interesting; keep a running list of facts, ideas, events, and issues that catch their attention (for any reason); place a “sticky note” with a comment next to passages they believe are important; and finally, reread the highlights, underlines, and “sticky notes” several times, and write a reflective note in their own words.

Understand

Just as remembering needs to be taught, understanding (constructing meaning) requires careful attention. The learning strategies described in detail in Part 2 create the gateway to understanding. Lessons and activities that develop understanding teach students to make connections, visualize, question, infer, predict, and determine importance (synthesize is a sub-set of create, and involves higher-order thinking).

For ELA Standard #3, teachers would need to provide students with opportunities to develop an understanding of heroism by studying resources from a number of different genres, such as drama, poetry, nonfiction news, and nonfiction essays. This will require a much more extensive set of activities than those sampled in Figure 4, which provides only a limited sample.

Apply

In Figure 4, students are asked to apply their skills—for remembering and understanding—to the learning of new material about heroes. Part of the goal of this application is to teach another aspect of becoming adept at remembering and understanding: willingly engaging in repetitious practice of the sub-set of skills embedded in these activities. Depending on the subject of the text, it may also be possible to apply newly-learned content to a new situation. In our example, a student may apply the heroism rubric to someone in contemporary life (also an evaluation activity). In a math course, in which students are studying a unit on “parts and wholes” (fractions, decimals, ratios, and percents), the teacher may create activities for students to apply their knowledge to shopping at a discount outlet where clothes are reduced in price (an application that uses decimals and percents).

When students analyze, they explore the relationship between parts and organize them into a whole.

Analyze

For ELA Standard #3, the analysis activities are at the center of the students' learning and should be the focus of teacher assessments. Anderson and Krathwohl (2001) describe analysis as an extension of understanding. In order to effectively summarize something (demonstrate understanding) one must first identify the central ideas (analyze). Students may then begin to judge the merit of each idea. This analysis serves as a prelude to evaluation and creation.

Analysis requires students to break material down into parts and organize them into a coherent whole. This process will allow them to explore the relationship between parts. In Figure 4, one of the analytic activities is the construction of a schematic that would help students distinguish between “main” and “supporting” ideas in the texts about heroes. Many graphic organizers—such as a Venn Diagram, a flow-chart, or a concept map—do this, but rather than providing students with the appropriate one, the FEI suggests beginning by teaching students the process of analysis. This might be done through a study of the “category” of graphic organizers: introduce students to various options, ask them to differentiate between them (analysis), ask them to judge when one or another would be potentially useful (evaluation), and, ultimately, have them select one that they believe will help them distinguish between “main” and “supporting” ideas (application).

Evaluate

Evaluation is the process of using criteria and standards to make judgments:

“The criteria most often used are quality, effectiveness, efficiency, and consistency ... The standards may be quantitative (i.e., Is this a sufficient amount?) or qualitative (i.e., Is this good enough?). The standards are applied to the criteria (e.g., Is this process sufficiently effective? Is this product of sufficient quality?). The category *Evaluation* includes the cognitive processes of *checking ... and critiquing...*”³⁷

Just as practitioners introduce analysis by teaching students to create schematics in order to organize material, evaluation extends the process by requiring the creation of schematics of evaluative criteria (rubrics are the most familiar example of this sort of schematic).

Practitioners can begin the work of teaching students to evaluate by having them:

1. Study criteria and standards related to evaluating a text (understanding);
2. Create their own schematics for evaluation—i.e., rubrics (application/creation);
3. Use the schematics to assess the quality of the texts (evaluation).

³⁷ Anderson & Krathwohl, 2001: p. 83.

Create

Analysis involves breaking material down into its constituent parts, and evaluation is concerned with assessing both the parts and the whole. Creation entails bringing the parts together in a new way, to form a coherent whole (which does not have to be the creation of an original product):

“The creative process can be broken down into three phases: problem representation, in which a student attempts to understand the task and generate possible solutions; solution planning, in which a student examines the possibilities and devises a workable plan; and solution execution, in which a student successfully carries out the plan.”³⁸

In Figure 4, students are asked to articulate an alternative interpretation of the central text by applying a bias different from their own or the author’s. The purpose of this task is to support students’ analytic and evaluative learning, rather than to fully engage them in the creative process. However, its limitations may actually make the creative process more accessible to students. For example, teachers can begin by teaching students to define the problem (imagining how others might respond to *The Odyssey*). Next, the group can decide which strategies will help them solve the problem (perhaps interview one another for their reactions to the text, or identify a position in response to the text that is opposite from their own). Then, they choose one of the strategies to identify an alternative perspective on heroism in *The Odyssey*.

A map such as the one portrayed in Figure 4 provides teachers with a wide range of opportunities for differentiating instruction. This can occur through the use of three different approaches:

1. Have all students engage in the same activity, but have them use different learning strategies, in response to their particular needs;
2. Ask students to focus on the activities that are best-suited for their particular needs and interests at a given moment;
3. Ask all students to undertake the same task, while documenting different strengths and needs in the classroom, which then informs the next stage of curriculum planning.

The first approach is used when teachers want to ensure that all of their students are capable of a certain set of activities. For example, a teacher may want to work with all of her students on strengthening their remembering skills, but she does not require all students to practice these skills in the same way or use the same strategies to remember. They might learn a range of strategies, and then use the ones they are most comfortable with.

The second approach might be used by teachers who ask students to demonstrate their understanding of material but want them to have significant choice about the expression of their understanding. The teacher might ask all students to “evaluate a range of plausible reactions to a text,” but students could choose from a range of products: a debate, an evaluative essay, participation in a round-table discussion, or the creation of a TV talk show.

Creation
brings parts
together in
a new way
to form a
coherent
whole.

³⁸ Anderson & Krathwohl, 2001: p. 85.

Another alternative is to differentiate the type of learning that students are doing, based on their background knowledge and skills. Here, a teacher might organize a lesson around “understanding skills,” and while she works with a small group of struggling readers to gain a clearer understanding of the plot of a text (by reading-aloud together, asking questions, or creating a timeline), another group of more advanced readers might be using the same (or additional) strategies to “compare and contrast the ideas in a range of related texts.”

A third alternative to the second approach is to differentiate the resources available to students. For example, all students in a class may be studying the same focusing question (“What makes someone a hero?”), but some may be reading Homer’s *The Odyssey*, others may be reading Tolkien’s *The Hobbit*, and still others are reading *Holes* by Louis Sachar. Each text is significantly different in terms of the reading demands it places on students, but all students can be engaged in exploring the same rich, focusing question, and can learn strategies for accessing their texts.

An example of the third approach is described on the following page, in the text after Figure 5. Here, students undertake the same task, and the assessment process reveals to the teacher and students where their expertise lies along Bloom’s Taxonomy. Some students might demonstrate an ability to apply knowledge to a new situation, while others may be able to evaluate a complicated array of data. This assessment process provides the teacher with critical data about follow-up activities for students. For example, if all students are asked to determine the point of view represented in a range of texts on a particular topic (an analytic activity), one might predict that some students will do this successfully, demonstrating their readiness to move on to evaluative or creative activities, while others may only be able to describe the events within the texts (a remembering/understanding activity). For this second group, the teacher would need to craft new activities that carefully scaffold the curriculum towards analytic work.

EXAMPLE 2: A BLOOM'S-BASED RUBRIC FOR ASSESSING STUDENT WORK

As practitioners begin to use Bloom’s Taxonomy to plan their curriculum and assessments, it is critical that they develop tools that will allow them to evaluate student mastery at each level.

Figure 5, below, displays a generic rubric that can be used to locate students’ cognitive thinking on the appropriate level of the Taxonomy:

Figure 5: A Rubric of Generic Skills and Actions at Each Level of Bloom's Taxonomy³⁹

1: EMERGING	2: CAPABLE		3: PROFICIENT	4: ADVANCED	5: MASTERY
REMEMBER	UNDERSTAND	APPLY	ANALYZE	EVALUATE	CREATE
Choose	Explain	Demonstrate	Categorize	Appraise	Assemble
Describe	Give example	Generalize	Compare	Assess	Combine
Define	Summarize	Prepare	Classify	Consider	Compose
Identify	Confirm	Dramatize	Differentiate	Critique	Construct
Label	Predict	Solve	Discriminate	Conclude	Design
Memorize	Infer	Model	Dissect	Defend	Develop
Recognize	Show	Construct	Experiment	Judge	Devise
Locate	Match	Calculate	Identify point of view	Prioritize	Formulate
List	Make a connection		Investigate	Rank	Generate
Select			Order/Organize	Recommend	Hypothesize
			Survey	Score	Improve/Revise
			Weigh Evidence	Validate	Originate
					Plan
					Synthesize

For example, at the close of the unit on heroism, students may be asked to write an essay in which they compare the archetypal hero in *The Odyssey* to that portrayed in *O Brother, Where Art Thou?* (analysis-level thinking that requires a thorough understanding of the texts). A student whose essay explores Homer’s conception of a hero might rate a 3, because of the analytic component of the work. A student who creates a summary of the main events in each “hero’s” life would rate a 2, as this is primarily a demonstration of understanding. Within each discipline, this generic rubric can (and should) be modified to fit the specific material of the course of study.

Figure 6, on the following page, moves away from our example of heroism, providing assessment examples from each of the four core content areas.

Practitioners should develop tools to evaluate student learning at each level of Bloom’s Taxonomy.

³⁹ This rubric was developed by DiplomaPlus®. All rights reserved.

Figure 6: Bloom's-Driven Rubric Examples for Each of the Four Core Content Areas

1: EMERGING	2: CAPABLE	3: PROFICIENT	4: ADVANCED	5: MASTERY	
REMEMBER	UNDERSTAND	APPLY	ANALYZE	EVALUATE	CREATE
English Language Arts: Language Analysis: Identify an author's use of language and literary devices appropriate to purpose, audience, and task.					
Identify when the author uses figurative and literal language devices.	Explain how an author uses figurative and literal language devices to appeal to the senses, create images, suggest mood and develop meaning.	Dramatize or illustrate a section of the text based on the literal and figurative language used by the author.	Analyze how an author's choice of words, dialect, or literary devices shapes how a reader understands the text.	Critique the author's choice of words, dialect, or literary devices. Assess the effectiveness of the author's choices.	Compose alternative understandings of the text or other texts by applying different choices of language, dialect, or literary devices.
Math: Quantitative Reasoning: Produce, use, and comprehend quantitative information in real-world situations.					
Recognize appropriate math concepts, facts, and skills related to real-world situations.	Explain how you know these concepts, facts, and skills are appropriate to particular real-world situations.	Apply appropriate math concepts, facts, and skills related to real-world situations.	Use appropriate math concepts, facts, and skills in order to investigate real-world situations.	Use appropriate math concepts, facts, and skills in order to assess real-world situations.	Formulate real-world situations that involve particular math concepts, facts, or skills.
Science: Scientific Investigation: Complete projects that demonstrate understanding of different kinds of scientific investigation, controlled experiment, fieldwork, experimental design, and secondary research.					
Define different types of scientific investigation. Recite or label the steps and characteristics of a scientific investigation.	Explain how different types of investigations can be used to answer scientific questions and investigations.	Conduct a pre-designed scientific investigation, and explain the results.	Conduct a scientific investigation and analyze the results to determine if it satisfactorily addresses the hypothesis.	Evaluate the design and results of an investigation to determine if it satisfactorily addresses the hypothesis.	Develop a hypothesis about a phenomenon that is worthy of investigation.
History: Historical Events: Understand the meaning, implications, and importance of historical events.					
Cite events and ideas that reflect various eras and times. Recognize and describe the attributes of quality timelines.	Make connections between historical eras. Create a timeline of the important events of a particular period of history.	Apply an important concept of an historical era to modern life. Construct interpretative timelines that show the connections between historical events and trends.	Identify and analyze the implications of an historical event.	Evaluate two different perspectives on an historical event including choices to accept some perspectives as the "accepted version" of events.	Construct an original argument about the implications of an historical event.

EXAMPLE 3: "BLOOMING" STUDENT WORK PRODUCTS

Example 1 (on page 67) demonstrates the first step of curriculum development: Blooming a standard. Example 2 provides us with a tool to guide the assessment process. The final stage of work is to determine how students can demonstrate their progress towards mastering new material at each level of the Taxonomy. Below, Figure 7 describes several ways that students can demonstrate their learning, while Figure 8 lists a range of "work products" that students can create. Taken together, these tables can be used to support practitioners as they move from Blooming a standard to designing a course or unit of study that allows for a high degree of differentiation.

Figure 7: How Students Can Demonstrate Mastery at Each Level of Cognitive Processing⁴⁰

REMEMBER	UNDERSTAND	APPLY	ANALYZE	EVALUATE	CREATE
Answer <i>who</i> , <i>what</i> , <i>where</i> , <i>when</i> , and <i>how</i> questions.	Answer <i>how</i> and <i>why</i> questions, and questions that ask students to retell and explain.	Answers to questions like: <i>How is __ an example of __?</i> <i>How is __ related to __?</i>	Answer questions like: <i>What are the parts or features of __?</i> <i>How does __ compare/contrast with __?</i> <i>What evidence can you list for __?</i>	Answer questions like: <i>Do you agree that __?</i> <i>How would you prioritize __?</i> <i>How would you decide about __?</i>	Answer questions like: <i>How would you design a new __?</i> <i>What solutions would you suggest for __?</i> <i>What if __?</i>
Define technical terms associated with the subject.	Summarize and paraphrase a text or event.	Use information, methods, concepts, and theories in new situations.	Identify components of a whole (e.g., Identify a set of main ideas in a text.)	Discriminate between, and assess the value of, evidence, theories, and ideas.	Generalize from given facts.
Recall major facts about the subject.	Make an inference.	Solve problems.	Recognize hidden meaning.	Resolve controversies or differences of opinion.	Create a unique product.
Recognize important ideas associated with the subject.	Predict.	Construct and model.	Find the underlying structure of something; notice patterns.	Develop opinions and judgments; make decisions.	Hypothesize.
List relevant principles and generalizations associated with the subject.	Estimate.	Use information learned in one context to understand a new context.	Classify, categorize, and organize information and ideas.	Recognize subjectivity.	Design and Plan.

⁴⁰ Figures 7 and 8 are by no means exhaustive. They are a compilation of ideas found in the following resources: www.coun.uvic.ca/learn/program/hndouts/bloom.html; Anderson & Krothwohl, 2001; Pohl, M. *Learning to Think, Thinking to Learn: Models and Strategies to Develop a Classroom Culture of Thinking*. Hawker Brownlow, 2000; PowerPoint® presentation by Denise Tarlinton, Queensland Department of Education, 2003. Appendices K and L provide additional examples.

For example, the *Remember* column of Figure 4 (page 68) asks students to complete two tasks: recall eight ideas from a text, and list any background knowledge they have about the subject being addressed in the text. The *Remember* column in Figure 7 suggests that if students are able to recognize the important ideas from the text, or list relevant principles and generalizations associated with the ideas in the text, their “remembering” skills would be sufficient to the task at hand.

The *Remember* column of Figure 8 provides a set of options students might complete to demonstrate their remembering skills. In the example of the hypothetical ELA class studying Heroism, differentiation could occur in two ways: First, all of the students could listen to a recording of *The Odyssey*, while reading along. The ELA students working on improving their written English might work on asking and answering “who, what, where, when, and how” questions about the text (using remembering and understanding skills to write in English). A different group might be engaged in an analytic comparison or an evaluation of elements of the text. Second, if the entire class is working on improving analytic skills, the teacher could offer students a range of options for demonstrating their learning in this arena: some might design a survey or surveys, others might debate key aspects of heroism, and a third group might evaluate the extent to which a text convincingly explores heroism.

Figure 8: Work Products Students Can Complete/Create in Order to Demonstrate Mastery at Each Level of Bloom's Taxonomy

REMEMBER	UNDERSTAND	APPLY	ANALYZE	EVALUATE	CREATE
A quiz or test	A summary	A model	A questionnaire or survey	A critique and recommendation	A design proposal
Lists of associated definitions, facts, principles, ideas, or generalizations	An explanation	A map or diagram	A graph that plots student selected data	A justification of a decision or course of action	A plan
A labeling activity	An outline	An experiment	An investigation into a particular point of view	A list of criteria to assess/judge something	A hypothesis or thesis about a phenomenon
A chart or timeline	An article/book discussion	A real-world project whose completion requires the use of subject-area knowledge (e.g., learn measurement in math class, build a bench out of wood)	A debate, mock trial or moot court	A list of strengths and weaknesses of a procedure or result	A list of adapted and invented problem-solving strategies

After aligning the Bloomed Standards, the ways to demonstrate mastery, and the associated work products, practitioners are in a strong position to flesh out their unit and lesson plans. It should be noted that a single unit would never encompass the full range of activities described in each column of the provided tables. Within a given unit, one or more activities should be chosen from a majority of the columns. Over the course of several units, one should be able to see a broad selection of activities from each level of the Taxonomy. As practitioners develop and revise their scope and sequence, it should also become possible to see how each standard is being Bloomed across several grade levels, ensuring that by graduation the standard has been mastered.

Appendices J and K provide additional support for practitioners, detailing a list of questions one might ask at each level of Bloom's, and listing additional work products students might create in order to demonstrate mastery.

Within a given unit, one or more activities should be chosen from the majority of the levels of Bloom's Taxonomy.

PRACTICE AND APPLICATION ACTIVITIES

The following pages describe a series of activities designed to provide practitioners with an opportunity to practice and apply their new knowledge (of the FEI application of Bloom's Taxonomy) to their own lesson planning. The activities will be most effective in a group setting, with a designated facilitator to manage the process. However, individual teachers who want to improve their practice can also work on the exercises independently or with a colleague, in a more informal arrangement. In order for this series of activities to make the most sense, it will be important to have read all three sections of the handbook.

Activity 1: Building Background

(60 minutes)

STEPS	FACILITATOR'S NOTES
Ask everyone to look at Figure 4 in the handbook (page 68), and then put it aside and list five things they remember about it.	
Share.	
Look back at Figure 4: What do you notice about our collective list and/or the things you personally remembered?	
Ask one of the group members to volunteer to share her/his lesson plan.	<i>It's best if this is one of the plans created during either the FEI sessions or the Learning Strategy sessions.</i>
As a group, use Bloom's Taxonomy to identify the level of thinking required in each activity.	<i>Photocopy the plan for everyone, and place it on an overhead projector.</i>
Ask: What did you notice as we were doing this activity? What did it make you think about, with regard to your own lessons?	

Working with Bloom's Taxonomy is one of the most challenging aspects of the FEI. It often takes participants quite some time to feel comfortable with the Taxonomy, and even longer to make it their own. Activity 1 provides practitioners with a concrete and personalized experience with the framework, which often feels overly abstract and inaccessible. Activities 2 and 3 build on this introduction by guiding participants through the work of "Blooming" a standard, first as a group and then individually or with a partner.

Activity 2: Practice Blooming a Standard

(45 minutes)

STEPS	FACILITATOR'S NOTES
Suggest to people that they refer to Figures 4, 6, and 8, as well as Appendices I and J as we undertake this activity.	<p><i>Choose a standard to work on with the group. Science is often great because it is a natural fit for higher-order thinking; writing or reading are also good choices because they reach across the disciplines.</i></p> <p><i>Photocopy the standard and provide each member of the group with a copy. Also, photocopy several copies of Appendix I (page 114) for everyone (a blank Bloom's template).</i></p>
Ask participants to begin brainstorming how to Bloom the standard.	<p><i>Place the Bloom's template on the overhead projector, with the standard above it.</i></p>
After the brainstorming has ended, ask people to revise, modify, and move around items on the template in order to ensure that the table is an accurate breakdown of the standard.	<p><i>It will be particularly difficult for people to complete the Apply and Analyze categories.</i></p>
Share reactions to this process: What is the most challenging aspect of the work?	<p><i>This is a metacognition question.</i></p>

Activity 3: Practice Blooming a Standard

(45 minutes)

STEPS	FACILITATOR'S NOTES
Ask participants to work either alone or with a partner from their discipline, and have them Bloom two key standards.	
Come together as a group to share observations about what it was like to undertake this process.	
Journal: What would it be like to make this sort of process the driver for your curriculum planning work?	<i>People may feel that this process is unrealistic because of its laborious nature. There are two things to think about here: once a standard is Bloomed, it's done and can be used by an entire department or faculty for years; and, the process becomes less laborious as people become more practiced with the Taxonomy.</i>

Activities 4 and 5 involve looking at, and classifying, questions. Activity 4 takes participants through Regents⁴¹ questions from several disciplines, asking them to think about the level of cognitive processing that the questions require. Activity 5 uses a similar process for questions articulated by the participants themselves. Both activities are designed to provide Transfer School teachers with the opportunity to continue becoming familiar with the Taxonomy.

⁴¹ In order to receive a high school diploma, students in New York State must pass the following five Regents Examinations: Comprehensive English, Global History and Geography, Mathematics, Science, and US History and Government.

Activity 4: Blooming Test Questions

(30 minutes)

STEPS	FACILITATOR'S NOTES
Pass out the compiled Regents Questions and look at the first one as a group.	<i>Compile four or five questions from a Regents Test for each discipline.</i>
Ask people to identify the level of cognitive processing they believe the question requires.	
Ask people to explain their thinking.	<i>There is not necessarily one answer to this question, and the conversation about it is of critical importance.</i>
Work with another question (from a different discipline) in the same way.	
Have participants work through the rest of the questions in groups of three.	<i>Give each group "sticky notes". Each group should have a different color.</i>
Ask each group to write their decisions on the "sticky notes" and post them on the Taxonomy.	<i>Post the Taxonomy's categories on poster-paper.</i>
Ask: Where are the differences and overlaps?	<i>This is an analysis question.</i>
Ask: What did you notice about this activity?	<i>This is a metacognitive question.</i>

Activity 5: Blooming Reading Questions

(30 minutes)

STEPS	FACILITATOR'S NOTES
Ask participants to read the first two pages of the article and write three questions about it on the "sticky notes".	<i>Provide participants with an article of interest (on any topic), and four "sticky notes".</i>
Ask them to take their "sticky notes" and place them on the Bloom's categories on the poster-paper at the front of the room.	<i>Some participants may have trouble with this assignment, saying they don't have any questions. This usually means they aren't confused about the text (i.e., they've achieved the second level of Bloom's Taxonomy—understanding.) Work with them individually to identify their reactions to the text, and get at the questions underneath their reactions. These are more likely to end up being higher-level questions.</i>
Ask the group to go up to the Taxonomy and note trends in the questions themselves, and in their placement on the Taxonomy.	<i>This is an analysis activity.</i>
Ask: How/when can you use this sort of activity in your classroom?	<i>This is an application question.</i>

The power of Activity 5 is in its elegant simplicity: the task of asking questions (one of the literacy strategies) becomes an authentic vehicle for exploring complicated ideas. Over time, this is the type of activity that will be exciting for Transfer School practitioners to create, and the opportunities are endless, as the literacy strategies discussed in Part 2 are the gateway to analysis, evaluation and creation.

Activity 6, on the following page, asks participants to apply their learning about cognitive processing to the design of another lesson (application and creation).

Activity 6: Practice and Application

(3 hours)

STEPS	FACILITATOR'S NOTES
<p>Ask participants to write a demonstration lesson using the Lesson Plan Template (Appendix E) and the Bloom's Planning Template (Appendix I). Participants should focus on designing activities that teach students to use higher-order thinking skills.</p>	<p><i>Help participants see that this assignment is about teaching students to think at high levels, not about completing the activity.</i></p>
<p>Ask participants to use the Bloom's generic rubric (Appendix K) to assess the activities in their lesson, and to keep track of their observations as they assess.</p>	<p><i>Observations are a critical part of this activity, as they help participants see how they can build simple metacognitive inquiry into an activity, rendering thinking processes more transparent.</i></p>
<p>Ask participants to share their observations.</p>	<p><i>This is a metacognitive activity.</i></p>
<p>Ask for two volunteers to "perform" their lessons. The rest of the group should "assess" the quality of the lessons using Bloom's rubric.</p>	
<p>Have volunteers share their self-assessments and their observations. Have the group ask the volunteers questions about the lessons they performed.</p>	<p><i>The facilitator should model this so the group can see the power of asking good questions.</i></p>
<p>Journal Writing: What did you learn by engaging in this process? What are your strengths in using this sort of tool?</p>	<p><i>This is an analysis question</i></p>
<p>Share reflections.</p>	

At this stage, participants will have used the Lesson Plan Template three times (and will have worked with the Bloom's rubric as well). Again, the facilitator should not assume that either tool feels comfortable or familiar to participants at this point in the process, though they should at least be understood and familiar. Activity 7 provides members of the group with the opportunity to reflect on, and share, their learning and concerns. As in Parts 1 and 2, the facilitator should take careful notes, as there may be important issues raised that need to be addressed in follow-up sessions.

Activity 7: Closing Reflection

(60 minutes)

STEPS	FACILITATOR'S NOTES
<p>Journal Writing:</p> <p>How has the work with Bloom's Taxonomy been useful for you so far?</p> <p>How is your thinking about teaching and learning evolving?</p> <p>How might you use this in your practice?</p>	
<p>Share.</p>	
<p>Ask participants to work with a partner to think about how the school might use the Taxonomy to improve teaching and learning for all students in the school.</p>	
<p>Journal Writing:</p> <p>What are your concerns and hopes for working with Bloom's this year?</p> <p>What will change in your practice this year?</p> <p>What will the challenges be in evolving into an on-going professional learning community?</p>	
<p>Share both the partner work and the journal writing.</p>	

This final section of the handbook completes the description of the fourth component of the Framework for Effective Instruction: learner-centered strategies. Taken together, Part 2 and Part 3 provide the reader with a strong overview of this aspect of the teaching and learning process outlined in the FEI. This is by far the most complex component of the FEI, requiring teachers to remain patient as they begin the work of retooling their practice so that students remain at the center of their planning, instructional, and assessment activities.

RECOMMENDED TEXTS FOR FURTHER STUDY OF HIGHER-ORDER THINKING:

Anderson, Lorin, and David Krathwohl, eds. *A Taxonomy for Learning, Teaching, and Assessing: A Revision of Bloom's Taxonomy of Educational Objectives*. Boston: Allyn & Bacon, 2001.

Bloom, Benjamin, ed. *Taxonomy of Educational Objectives: The Classification of Educational Goals: Handbook 1, Cognitive Domain*. New York: Longman, 1956.

Marzano, Robert, and John Kendall. *The New Taxonomy of Educational Objectives*. Thousand Oaks, CA: Corwin Press, 2007.

*Blooming is
complex work.
It takes time
and patience
but is ultimately
worth the effort.*



Appendices

APPENDIX A: LESSON PREPARATION AND DELIVERY RUBRIC	<i>88–89</i>
APPENDIX B: OVERVIEW OF THE WORKSHOP MODEL	<i>90–91</i>
APPENDIX C: ADAPTATION OF THE SHELTERED INSTRUCTION OBSERVATION PROTOCOL (SIOP)	<i>92–97</i>
APPENDIX D: LESSON PLAN REFLECTION	<i>98–100</i>
APPENDIX E: FEI LESSON PLAN TEMPLATE	<i>101</i>
APPENDIX F: FEI RUBRIC	<i>102–108</i>
APPENDIX G: SAMPLE QUESTIONS AND ACTIVITIES/PRODUCTS AT EACH LEVEL OF BLOOM’S TAXONOMY	<i>109–111</i>
APPENDIX H: TOPIC/DETAIL/RESPONSE AND FACT/QUESTION/RESPONSE: DETERMINING IMPORTANCE ACTIVITIES	<i>112–113</i>
APPENDIX I: BLOOM’S TAXONOMY PLANNING TEMPLATE	<i>114–115</i>
APPENDIX J: THINKING AT EACH LEVEL OF BLOOM’S TAXONOMY	<i>116</i>
APPENDIX K: A RUBRIC TO ASSESS DISCIPLINE-NEUTRAL SKILLS AND ACTIONS AT EACH LEVEL OF BLOOM’S TAXONOMY	<i>117</i>

Appendix A: Lesson Preparation and Delivery Rubric⁴²

The document below is a useful tool for assessing teachers' overall lesson preparation and delivery within the FEI.

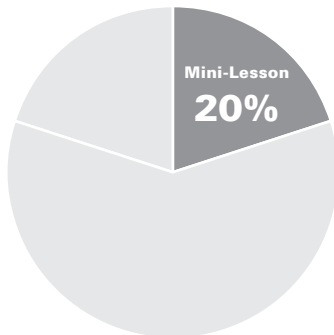
	5: Mastery	4: Advanced	3: Proficient	2: Capable	1: Emerging
Standards	<ul style="list-style-type: none"> Students self-assess their attainment of the standards. Uses portfolios to assess and document student mastery of standards 	<ul style="list-style-type: none"> Regularly derives learning goals from standards Uses standards-attainment tracking system 	<ul style="list-style-type: none"> Makes a connection between the standards and the lesson of the day Assesses students on standards 	<ul style="list-style-type: none"> Explains and models standards for students Students are aware of the standards 	<ul style="list-style-type: none"> Teacher is aware of standards. References standards on some assignments and/or rubrics With help, sees connections between standards and classroom activities Displays standards on board/wall configurations in the classroom
Planning Backwards	<ul style="list-style-type: none"> Displays benchmark papers as a regular part of wall configurations 	<ul style="list-style-type: none"> Provides students with benchmark papers prior to beginning of the assignment Teaches to the assessment Includes outcomes/goals orientation 	<ul style="list-style-type: none"> Provides students with rubrics or scoring criteria prior to beginning of the assignment Assessments reliably identify desired results prior to starting lesson design Prioritizes learning goals 	<ul style="list-style-type: none"> With help, follows planning template Activities may not align with learning objectives Assessments are not consistently reliable measures of learning objectives Includes larger enduring concepts but does not prioritize 	<ul style="list-style-type: none"> Is familiar with steps of Planning Backwards Can identify where "I'm doing some of this already" Teaches discrete facts and skills without links to larger enduring concepts Includes activity or coverage orientation Lacks alignment

⁴²This rubric was created by Diploma Plus®

Workshop	<ul style="list-style-type: none"> • Mini-lessons derive from student needs, conferences, and reflection • Students anticipate, participate in, and facilitate rituals • Work periods are differentiated to meet student needs and interests 	<ul style="list-style-type: none"> • Regularly confers with students during work periods • Consistently implements workshop • Frequent student:student interactions • Work periods are increasingly differentiated to meet student needs and interests 	<ul style="list-style-type: none"> • Mini-lessons derive from action research (assessments of student needs, not teacher-driven objectives) • Experiments with conferencing during work periods • Independently develops lessons • Incorporates all major elements of workshop class structure • Students start to anticipate and participate in rituals 	<ul style="list-style-type: none"> • Uses coach-provided tools to implement workshop • Does one element of the workshop more consistently than others • Limited repertoire of workshop elements 	<ul style="list-style-type: none"> • Is familiar with Workshop Class Structure • Can identify where "I'm doing some of this already" • Class feels teacher-centered • Students have limited stamina for independent work or reflection
Literacy Strategies	<ul style="list-style-type: none"> • Advocates, models, and teaches strategies to others • Independently integrates, creates own tools, and experiments with combinations of literacy strategies in the classroom 	<ul style="list-style-type: none"> • Consistently models strategies • Students independently identify and use appropriate strategies 	<ul style="list-style-type: none"> • Develops own lessons with one or more strategies modeled for students • With help, students practice and reflect upon how targeted strategies help comprehension 	<ul style="list-style-type: none"> • Uses coach-provided tools to integrate strategies in the classroom • Explains and models literacy strategies to students • Students are aware of some strategies 	<ul style="list-style-type: none"> • Is able to list some common literacy strategies • Classroom posters are visible • Recognizes own use of strategy • Explains how strategies help students make meaning
Bloom's Taxonomy	<ul style="list-style-type: none"> • Provides tasks at all levels • Students have stamina for high level tasks 	<ul style="list-style-type: none"> • Provides tasks at all levels • Students write questions at all levels 	<ul style="list-style-type: none"> • With help, can "Bloom" a task, but usually doesn't scaffold from level to level • Students are aware of Bloom's Taxonomy 	<ul style="list-style-type: none"> • Most tasks are lower-order • Teacher generates all questions 	

Appendix B: Overview of the Workshop Model⁴³

MINI-LESSON: 20% Class Time



The teacher presents and models a specific concept, skill, material, habit of mind, or learning strategy, helping students draw on their prior knowledge and answering any questions they have. Near the end of the mini-lesson, he or she explains what students are expected to do during the work period.

Explain lesson objective

- Targeted learning strategy
- Targeted competency
- Targeted content or skills

Build background

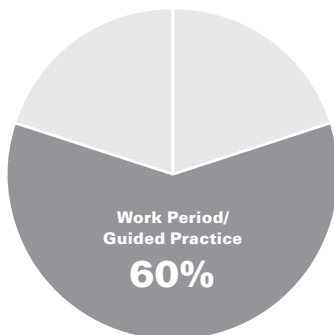
Introduce key vocabulary

Model targeted skill, competency, or strategy

Use techniques such as:

- Whole class mini-lesson and activity
- Think aloud
- Read aloud
- Reciprocal teaching

WORK PERIOD/GUIDED PRACTICE: 60% Class Time



Students read, write, or work independently, with the focus on the concept presented during the mini-lesson. The teacher either conferences with individuals and groups or circulates, providing feedback and help to students.

Students practice and apply mini-lesson

- Can be small group, paired, or individual practice

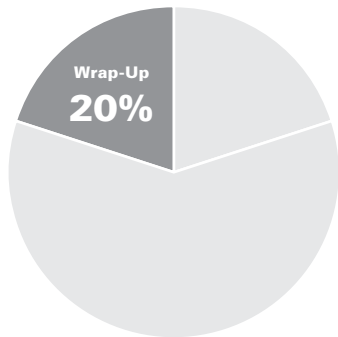
Use techniques such as:

- Reading groups
- Investigation or experiments
- Learning journals

Teacher monitors, assesses, and provides feedback

- Conference with students
- Other assessments (e.g., tasks, products, tests, etc.)

WRAP-UP: 20% Class Time



Several students share with the whole class how they applied the concept from the mini-lesson, what they learned, and the thinking that led them to understand the content. The teacher and other students respond.

Teacher checks for understanding using techniques such as:

- Students report about what they learned
- Students read selections from journals
- Class examines samples of student work
- Class discusses how the learning strategies enhanced the understanding of the content

Teacher summarizes or clarifies the lesson and assigns homework

Appendix C: Adaptation of the Sheltered Instruction Observation Protocol (SIOP)⁴⁴

Directions: Circle the number that best reflects what you observe in a sheltered instruction lesson. You may give a score from 0 to 4, with 4 being a well-developed lesson plan and 0 being a poorly developed or undeveloped lesson plan. Cite under “Comments” specific examples of the behaviors observed. This reflective tool helps assess how lesson delivery matches teachers’ preparation, and if the lesson achieves its objectives. See page 23 to see how lesson delivery fits into the FEI Adaptation of the SIOP.

I. PREPARATION		<i>Comments</i>	
1	4	Clearly defined content objectives for student	Are the objectives aligned to the Curriculum Frameworks?
	3		
	2	Content objectives for student implied	
	1		
	0	No clearly defined content objectives	
2	4	Clearly defined language objectives for student	Are the objectives aligned to the Curriculum Frameworks? Did you use the English Language Proficiency Benchmarks and Outcomes as a reference?
	3		
	2	Language objectives for student implied	
	1		
	0	No clearly defined language objectives for student	
3	4	Content concepts appropriate for age and educational background level of students	Is the content aligned to the grade curriculum? What level of Bloom’s thinking is addressed? What question words do you recognize that make you think that?
	3		
	2	Content concepts somewhat appropriate for age and educational background level of students	
	1		
	0	Content concepts inappropriate for age and educational background level of students	
4	4	Supplementary materials used to high degree, making the lesson clear and meaningful (e.g., graphs, models, or visuals)	What visual representation can I use to make these content concepts clear?
	3		
	2	Some use of supplementary materials	
	1		
	0	No use of supplementary materials	
5	4	Adaptation of content (e.g., text, assignment) to all levels of student proficiency	Have you given each student an opportunity to demonstrate all levels of Bloom’s? Do students have access to reading level-appropriate texts? Is there an opportunity to show proficiency at different Bloom’s levels through oral communication or demonstration?
	3		
	2	Some adaptation of content to all levels of student proficiency	
	1		
	0	No significant adaptation of content to all levels of student proficiency	

⁴⁴ SIOP model adapted by Lew Gitelman and Catherine Carney.

6	4	Meaningful activities that integrate lesson concepts (e.g., surveys, letter writing, simulation, or constructing models) with language practice opportunities for reading, writing, listening, and/or speaking	Are students practicing skills and content that will help get them ready for assessment? Will these meaningful activities allow for a variety of appropriate assessments?
	3		
	2	Meaningful activities that integrate lesson concepts, but provide little opportunity for language practice	
	1		
0	No meaningful activities that integrate language practice with opportunities for reading, writing, listening, and/or speaking		
II. INSTRUCTION			Comments
Building Background			
7	4	Concepts explicitly linked to students' background experiences	What links are we making to prior content knowledge? What links are we making to concepts and skills that we know the student has mastered? What opportunity do students have to make links from their background to the concept?
	3		
	2	Concepts loosely linked to students' background experiences	
	1		
0	Concepts not explicitly linked to students' background experiences		
8	4	Links explicitly made between past learning and new concepts	What <i>explicit</i> links are we making to concepts and skills that we know the student has mastered? Are these links transparently modeled? What opportunity do students have to make <i>explicit</i> links from their background to the concept?
	3		
	2	Few links made between past learning and new concepts	
	1		
0	No links made between past learning and new concepts		
9	4	Key vocabulary emphasized (e.g., introduced, written, repeated, and highlighted for students to see)	How is the vocabulary being introduced and then incorporated into the thinking of the lesson? Where may we see evidence of this vocabulary being used effectively in an analysis, evaluation, and/or creation of information?
	3		
	2	Key vocabulary introduced but not emphasized	
	1		
0	Key vocabulary not introduced or emphasized		
Comprehensible Input			
10	4	Speech appropriate for students' proficiency level (e.g., slower rate and enunciation, and simple sentence structure for beginners)	How aware are you of the rate of your speech in the classroom? Do students have a safe signal to let you know when they need you to "slow down" and/or repeat what you have said?
	3		
	2	Speech sometimes inappropriate for students' proficiency level	
	1		
0	Speech inappropriate for students' proficiency level		

11	4	Explanation of academic tasks clear	How were instructions given: orally? With written, active, or visual aids? What kind of “check in” for student comprehension was done to ensure that students understand?
	3		
	2	Explanation of academic tasks somewhat clear	
	1		
0	Explanation of academic tasks unclear		
12	4	Uses a variety of techniques to make content concepts clear (e.g., modeling, visuals, hands-on activities, demonstrations, gestures, or body language)	Does the teacher <i>model</i> the task? In how many ways does the teacher <i>model</i> the task?
	3		
	2	Uses some techniques to make content concepts clear	
	1		
0	Uses few or no techniques to make content concepts clear		
Strategies			
13	4	Provides ample opportunities for students to use strategies	Does the teacher <i>model</i> a strategy? More than one? Do students have an opportunity to use and discuss the impact of different strategies?
	3		
	2	Provides students with inadequate opportunities to use strategies	
	1		
0	Provides no opportunity for students to use strategies		
14	4	Consistent use of scaffolding techniques throughout lesson, assisting and supporting student understanding (e.g., think-alouds)	If there are <i>explicit</i> connections (identification of points to scaffold) made for the students, how are they made?
	3		
	2	Occasional use of scaffolding techniques	
	1		
0	No use of scaffolding techniques		
15	4	Teacher uses a variety of question types, including those that promote higher-order thinking skills (e.g., literal, analytical, and interpretive questions)	What level of Bloom’s thinking is addressed? What question words do you recognize that make you think that? Who is asking the questions?
	3		
	2	Teacher infrequently poses questions that promote higher-order thinking skills	
	1		
0	Teacher does not pose questions that promote higher-order thinking skills		

16	4	Frequent opportunities for interaction and discussion between teacher/student and among students, which encourage elaborated responses about lesson concepts	Does this interaction allow for the students' voices to be the most important in the room? Does this interaction allow for individual student goal setting?
	3		
	2	Interaction mostly teacher-dominated with some opportunities for students to talk about, or question, lesson concepts	
	1		
	0	Interaction primarily teacher-dominated with no opportunities for students to discuss lesson concepts	
17	4	Grouping configurations support language and content objectives of the lesson	What considerations did you make when grouping students? Are the groupings different from the last time you did similar group work? How was the room arranged?
	3		
	2	Grouping configurations unevenly support the language and content objectives	
	1		
	0	Grouping configurations do not support the language and content objectives	
18	4	Consistently provides sufficient wait time for student responses	How long was "sufficient wait time" today?
	3		
	2	Occasionally provides sufficient wait time for student responses	
	1		
	0	Never provides sufficient wait time for student responses	
19	4	Ample opportunities for students to clarify key concepts in L1 as needed with aide, peer, or L1 text	<i>Remember:</i> Even in a Structured English Immersion (SEI) classroom, Native Language should be used to clarify ideas for students.
	3		
	2	Some opportunity for students to clarify key concepts in L1	
	1		
	0	No opportunity for students to clarify key concepts in L1	
Practice/Application			
20	4	Provides hands-on materials and/or manipulatives for students to practice using new content knowledge	Did you have a variety of activities for students to choose from?
	3		
	2	Provides few hands-on materials and/or manipulatives for students to practice using new content knowledge	
	1		
	0	Provides no hands-on materials and/or manipulatives for students to practice using new content knowledge	

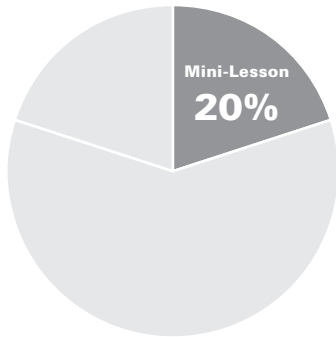
21	4	Provides activities for students to apply content and language knowledge in the classroom	Is there time and opportunity to articulate what content and language is being applied (the “meta” conversation)?
	3		
	2	Provides few activities for students to apply content and language knowledge in the classroom	
	1		
22	4	Uses activities that integrate all language skills (i.e., reading, writing, listening, and speaking)	Do the activities in class provide time for students to practice listening, speaking, reading, and writing? What will you practice tomorrow?
	3		
	2	Uses activities that integrate some language skills	
	1		
23	4	Content objectives clearly supported by lesson delivery	How long was your mini-lesson? Did the students get to practice applying/analyzing/synthesizing this content knowledge?
	3		
	2	Content objectives somewhat supported by lesson delivery	
	1		
24	4	Language objectives clearly supported by lesson delivery	Did you explain and model this language? Did the students get to practice this language?
	3		
	2	Language objectives somewhat supported by lesson delivery	
	1		
25	4	Students engaged approximately 90% to 100% of the period	How do you know the students were engaged? What would the students say about how interested/engaged they were in the lesson?
	3		
	2	Students engaged approximately 70% of the period	
	1		
	0	Students engaged less than 50% of the period	
Strategies			

26	4	Pacing of the lesson appropriate to the students' ability level	How quickly was your lesson paced today? Which student(s) needed more time? What area of your lesson needs more attention—the mini-lesson, the guided practice, or the share?
	3	Pacing generally appropriate, but at times too fast or too slow	
	2		
	1	Pacing inappropriate to the students' ability level	
	0		
III. REVIEW/ASSESSMENT			<i>Comments</i>
27	4	Comprehensive review of key vocabulary	What does vocabulary review look like for the whole class? For individuals? Is there reflection on the process built-in? Is there a clear articulation of the purpose of the review?
	3	Uneven review of key vocabulary	
	2		
	1	No review of key vocabulary	
	0		
28	4	Comprehensive review of key content concepts	What does content review look like for the whole class. For individuals? Is there reflection on the process built-in? Is there a clear articulation of the purpose of the review?
	3	Uneven review of key content concepts	
	2		
	1	No review of key content concepts	
	0		
29	4	Regularly provides feedback to students on their output (e.g., language, or content work)	Are teachers using conference time to provide individual feedback? Are teachers using workshop notebooks to provide individual feedback? Is there reflection on the process built-in? Is there a clear articulation of what the student should do with the feedback?
	3	Inconsistently provides feedback to students on their output	
	2		
	1	Provides no feedback to students on their output	
	0		
30	4	Conducts assessment of student comprehension and learning of all lesson objectives (e.g., spot checking, or group response) throughout the lesson	Is there reflection on the process built-in? How did the students do on the assessment? What kinds of adjustments will you make to your lesson next time?
	3	Conducts some assessment of student comprehension and learning of all lesson objectives	
	2		
	1	Conducts no assessment of student comprehension and learning of all lesson objectives	
	0		

Appendix D: Lesson Plan Reflection⁴⁵

The Lesson Plan Reflection below provides brief instructions for delivering a mini-lesson followed by questions to assess the implementation.

MINI-LESSON: 20% Class Time



The teacher presents and models a specific concept, skill, material, habit of mind, or learning strategy, helping students draw on their prior knowledge and answering any questions they have. Near the end of the mini-lesson, he or she explains what students are expected to do during the work period.

Explain lesson objective

- Targeted learning strategy
- Targeted competency
- Targeted content or skills

Build background

Introduce key vocabulary

Model targeted skill, competency, or strategy

Use techniques such as:

- Whole class mini-lesson and activity
- Think-aloud
- Read-aloud
- Reciprocal teaching

Questions to Consider for Teaching and Learning: Lesson Preparation

- Did I make a list of the supplies I need?
- Does my lesson have clear objectives?
- Did I plan meaningful activities that will get the students to those objectives?
- What core concepts, knowledge, and habits of mind did I expect the students to reach as a result of this lesson?
- What competencies did I target?
- What big ideas and residual knowledge did I expect students to take away from this lesson?
- What difficulties did I anticipate students having, and how did the lesson address these difficulties?
- What extension or homework did I plan to reinforce the targeted skills, knowledge, and habits of mind?
- What did I plan for the students to do to demonstrate mastery?
- How did the observed lesson build on the previous one?

Questions to Consider for Teaching and Learning: Building Background

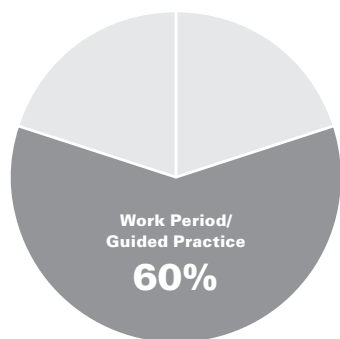
- Did I ask students what they already know about this topic to generate interest/honor their experiences/allow them to teach others/provide context?
- Did I provide new information?
- Did I link new learning with what they already know?
- Did I emphasize vocabulary that might be a problem for them so when they get to it they don't become frustrated?

Questions to Consider for Teaching and Learning: Comprehensible Input

- Is my lesson understandable?
- Did I make the directions simple, clear, and to the point?
- Did I do things in more than one way (i.e., say it, write it, draw a picture, model it, demonstrate, etc. Don't just tell them what to do, show them what to do.)

⁴⁵ This Reflection on Diploma Plus® Overview of the Workshop Model was created by Wobberson Torchon, Lashaun Robinson, and Lew Gitelman. All rights reserved.

WORK PERIOD/GUIDED PRACTICE: 60% Class Time



Students read, write, or work independently, with the focus on the concept presented during the mini-lesson. The teacher either conferences with individuals and groups or circulates, providing feedback and help to students.

Students practice and apply mini-lesson

- Can be small group, paired, or individual practice

Use techniques such as:

- Reading groups
- Investigation or experiments
- Learning journals

Teacher monitors, assesses, and provides feedback

- Conference with students
- Other assessments (e.g., tasks, products, tests, etc.)

Questions to Consider for Teaching and Learning: Strategies/Rigorous Instruction

- Did I give the students opportunities to learn new ways of doing something?
- Did they practice reading strategies?
- Did they have an opportunity to talk not just about what they read but about how they read it?
- Did the lesson provide the students opportunities to think critically and make choices?
- Did the students have opportunities to analyze, synthesize, and evaluate information?
- Did the students have opportunities to transfer their knowledge by making connections?
- Did the students think about their thinking?
- Did I emphasize my instruction on process or skills?

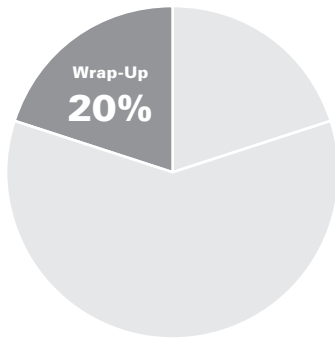
Questions to Consider for Teaching and Learning: Interaction

- Did they talk to each other? (50%) Did they talk to me? (30%) Did I talk to them? (20%)
- Did I allow enough time for responses and between activities for things to sink in?

Questions to Consider for Teaching and Learning: Practice/Application

- Did I provide manipulatives and hands-on materials?
- Did I give students opportunities to apply what they learned and do it themselves?
- Did I provide activities that integrated reading, writing, listening, and speaking?

WRAP-UP: 20% Class Time



Several students share with the whole class how they applied the concept from the mini-lesson, what they learned, and the thinking that led them to understand the content. The teacher and other students respond.

Teacher checks for understanding using techniques such as:

- Students report about what they learned
- Students read selections from journals
- Class examines samples of student work
- Class discusses how the learning strategies enhanced the understanding of the content

Teacher summarizes or clarifies the lesson and assigns homework

Questions to Consider for Teaching and Learning: Lesson Delivery

- Did my lesson support my objectives?
- Were students interested and engaged?
- Was the lesson too slow/too fast?
- Was there too much to do or not enough?
- What knowledge of my students prompted me to select the strategies I used?
- Where in the lesson did I model the skills expected?
- How did walking around to assist small groups influence the progression of the lesson?
- How did the use of technology enhance the delivery and understanding of the lesson?
- How did groups' "share out" impact the learning of all in the classroom?
- How did my questions scaffold the learning of my students?
- How many opportunities did I provide my students to demonstrate their knowledge?
- Did I, or the students, do most of the talking?
- What did students do when they encountered difficulties in the lesson?
- Did the students use prior knowledge to construct new knowledge?
- What protocol did I use for classroom discussions?

Questions to Consider for Teaching and Learning: Review/Assessment

- Did I ask students questions to check for their understanding and how they came to understand it?
- Did students ask questions to clarify their own understanding?
- Did I provide ample time at the end of the lesson to review everything we did?
- Did I provide feedback to the students on how they did?
- Did I conference with them individually to check on progress?
- What did I use to assess understanding and objective mastery?

Appendix E: The FEI Lesson Plan Template

Desired Results for the Day	
Day's Objective:	
Content/Skill Standards Addressed:	Learning/Language Strategies Addressed:
Assessment Evidence (Question(s) to assess student understanding of the day's content, skills, and learning strategy)	
Mini-Lesson (20% of Period)	
Purpose:	
Build Background:	
Key Vocabulary:	
Instructional Steps:	
Work Period/Guided Practice (60% of Period)	
Independent Work (steps and directions)	
Wrap-Up (20% of Period)	
Assessment of Day's Objectives:	(See day's objective above.)
Reflection Questions:	
Homework:	

Appendix F: FEI Rubric⁴⁶

The FEI rubric is used to assess the quality of lessons. See Activity 1: Building Background (page 24) for an activity using the FEI Rubric.

	3: ADVANCED	2: IN PROGRESS	1: BEGINNING
Lesson/Unit Preparation	<ul style="list-style-type: none"> Identifies a higher-order focusing question that guides the unit and its lessons Clearly defines content objectives for the unit/lesson Clearly defines language objectives Clearly defines “strategy-use” objectives Several activities and tasks are planned at each level of Bloom’s Taxonomy Adapts content to all levels of student proficiency (e.g. multiple texts, visual and auditory resources) Tightly links the unit’s/lesson’s focusing question and objectives with formative and summative assessments Creates the final summative assessment(s) before writing lesson plans Creates rubrics for assessments as well as classroom practices (such as group work and discussion) Plans nightly homework to reinforce targeted objectives 	<ul style="list-style-type: none"> Inconsistently uses the higher-order focusing question as a guide Content objectives are implied or over-generalized Language objectives are implied or over-generalized “Strategy-use” objectives are implied or over-generalized A few activities and tasks are located on the upper levels of Bloom’s Taxonomy Adapts content to approximately two levels of student proficiency (e.g., limited additional resources) Links some aspects of the unit’s/lesson’s focusing question and objectives with formative and summative assessments Outlines the final summative assessment(s) before writing lesson plans Provides rubrics some of the time; uses rubrics inconsistently Beginning to link homework to targeted objectives 	<ul style="list-style-type: none"> Focusing question is not higher-order and/or is not consistently used as a guide Content objectives are not stated Language objectives are not stated “Strategy-use” objectives are not stated Almost all activities and tasks are located on the lower levels of Bloom’s Taxonomy No adaptations of content Misses links between the unit’s/lesson’s focusing question and objectives with formative and summative assessments Creates the final summative assessment(s) at the end of the unit Has not made the use of rubrics part of classroom practice Inconsistently assigns homework and/or inconsistently links homework to targeted objectives

	3: ADVANCED	2: IN PROGRESS	1: BEGINNING
Building Background	<ul style="list-style-type: none"> • New concepts are explicitly linked to students' prior knowledge about the topic, their previous experience, or analogous concepts • Critical background information is introduced • Key vocabulary in the text is previewed and explicitly taught • Begins class with a do-now and mini-lesson that helps students access prior knowledge/ experience and/or presents critical new information/vocabulary • Provides students with models of high quality projects and assignments 	<ul style="list-style-type: none"> • Few or loose links are made between new concepts and students' prior knowledge, previous experience, or analogous concepts • Critical background information is referenced but not taught • A seemingly random selection of vocabulary is identified but not taught; or, too much vocabulary is introduced at one time • The do-now and mini-lesson usurp too much of the learning time (more than 20%) and are not limited to building background • Models are used some of the time, but not consistently 	<ul style="list-style-type: none"> • Links are not made between new concepts and students' previous learning • The introduction of critical background information is overlooked (student knowledge-base is assumed) • Vocabulary knowledge is assumed or is addressed informally while reading a text • No do-now or mini-lesson is given, or there is inconsistent use of the do-now and mini-lesson • Models are not used effectively
Ensure Understanding	<ul style="list-style-type: none"> • Uses several different media to teach concepts (e.g., visual, auditory, written, hands-on creation, body language/gestures, and translation into students' first language) • Academic language/terms/concepts are appropriately adapted and modified to meet students' academic comprehension capabilities • Instruction relies on a number of consistent rituals and routines that are familiar to students, increasing their independence • Academic speech is appropriate for students' academic language proficiency (e.g., monitoring the rate of speech, enunciation, and complexity of vocabulary/idiom use; and sentence structure and length) • Provides sufficient wait time for all students to process verbal information • Provides opportunities for students to clarify key concepts (in first language if needed) • Checks on student understanding throughout the lesson (i.e., through conferences, "walk-arounds", dip-sticking, or full group sharing) • Anticipates confusion around difficult concepts and prepares multiple access points for the material 	<ul style="list-style-type: none"> • Relies heavily on a combination of written and verbal media to teach concepts • Academic language/terms/concepts are not consistently adapted; students have a number of clarifying questions after academic tasks are explained • Rituals and routines are beginning to be developed: they are not used consistently or are too few in number • Academic speech is becoming more appropriate for students' academic language proficiency, but there is inconsistency • Inconsistently provides sufficient wait time; more often, calls on students who process verbal information quickly • Provides some opportunities for students to clarify key concepts • Regularly checks understanding of a few students (e.g., asks the class questions and calls on one or two students with hands raised) • Anticipates and prepares for confusion some of the time, and/or brainstorm 	<ul style="list-style-type: none"> • Relies heavily on verbal communication and note-taking to teach concepts • Academic language/terms/concepts are often either over-simplified or unexplained; students have significant confusion about the nature of assigned academic tasks • Rituals and routines are under-developed; students are dependent on the teacher to initiate and explain all academic tasks • Academic speech is frequently too technical, rapid, and complex for students' academic language proficiency • Does not provide sufficient wait time for students who need more time to process verbal information • Provides few or no opportunities for students to clarify key concepts • Assumes understanding much of the time, does not make checking for understanding a repeated part of every lesson • Does not have well-developed ways to address student confusion; is surprised by, or sometimes even irritated by, the confusion

	3: ADVANCED	2: IN PROGRESS	1: BEGINNING
Lerner-Centered Strategies	<ul style="list-style-type: none"> • Explicitly teaches key learning strategies in-depth in full class and small groups, based on student need • Provides opportunities for students to practice and apply the learning strategies over a long period of time • Teaches a broad range of explicit methods for applying the learning strategies to master new concepts • Students use their own judgment to make choices about the learning strategy to employ for various academic tasks • Students construct interpretations of text in a variety of ways (e.g., in readers' response notebooks, "sticky notes", pairs, discussion) 	<ul style="list-style-type: none"> • Explicitly teaches key learning strategies but with less depth, and not based on student need • Provides students with a small window to practice and apply the learning strategies, but not a coherent "course of study" • Teaches a limited number of explicit methods for applying the strategies to master new concepts • Informs students of the strategy they should use for a given academic task • Students construct interpretations of text in one or two ways 	<ul style="list-style-type: none"> • Does not teach key learning strategies, or explains superficially • Does not provide time to practice and apply learning strategies • Does not teach explicit methods for applying the strategies • Students construct interpretations of text primarily alone or in full class discussion
Metacognitive Thinking Skills	<ul style="list-style-type: none"> • Students think and talk concretely about their learning process: how they learn, and weakness/strengths in their learning process • Students have a solid awareness of their working schema • Students organize their own plan for expanding their schema related to academic concepts • Students monitor their learning and apply a range of "fix-it" strategies when they become confused • Students have the opportunity to make mid-course corrections to their approach to an academic task, if need be • Teacher builds students' confidence and willingness to engage in an exploration of their knowledge and thoughts • Students set their own goals to improve their learning skills 	<ul style="list-style-type: none"> • Students talk somewhat vaguely about their learning process • Students are learning to identify what they know, but not as working schema • Organizes and plans how students will expand their schema, and informs the students • Students monitor their learning, but don't have "fix-it" strategies for times of confusion, or have a limited array of strategies to use • Teacher provides some opportunities for mid-course corrections, but these are usually not initiated by students • Teacher is beginning to build student confidence around using metacognitive thinking skills • Teacher sets most of the learning goals for students 	<ul style="list-style-type: none"> • Students are not asked to think or talk about their learning process • Students have little awareness of how to figure out what they know • Organizes and plans for students, but does not make this process transparent to the students • Students are not learning how to monitor their learning (e.g., they are surprised by low test/quiz grades) • Teacher informs students when they need to "re-do" work after it is complete • Teacher does not focus on building student confidence in this area • Teacher sets the learning goals, or does not have individualized learning goals

	3: ADVANCED	2: IN PROGRESS	1: BEGINNING
Higher-Order Thinking Skills	<ul style="list-style-type: none"> • “Blooms” the unit’s content objectives and standards • Explicitly teaches Bloom’s Taxonomy • Consistently uses scaffolding techniques to support student success with higher-order thinking • Poses higher-order questions each day (e.g., analytic and interpretive, rather than literal) • Students have frequent opportunities to analyze, evaluate, and create • Students pose and explore their own higher-order questions • Students can identify the level of thinking required by various academic tasks, and can apply appropriate strategies for each level • Students have the stamina to undertake higher-order thinking tasks 	<ul style="list-style-type: none"> • “Bloom’s” some aspects of the unit’s objectives/standards • Refers to the Taxonomy at times • Sometimes uses scaffolding techniques that are effective; other times overlooks the need for them • Poses some higher-order questions each day, but focuses more time on lower-order questions • Students have some opportunities to analyze, evaluate, and create, usually during assessments • Teacher presents students with questions to explore • Students are unsure of the level of thinking required, but they do realize there are different levels • Students have some capacity to undertake higher-order thinking tasks, but become frustrated with sustained exploration 	<ul style="list-style-type: none"> • Does not use Bloom’s Taxonomy for planning • Does not refer to the Taxonomy explicitly • Is unsure/unable to use scaffolding effectively • Higher-order questions are posed infrequently • Students are generally asked to remember, understand, and apply new learning • Exploration is not a central feature of the class • Students do not realize there are different levels of thinking (and different strategies for learning at each level) • Students quickly resist and give up on higher-order thinking tasks
Create Opportunities for Interaction	<ul style="list-style-type: none"> • 50–60% of each day, students have the opportunity to interact with one another in the completion of academic tasks (e.g., small groups, pairs, discussion, and reciprocal teaching) • Student groupings are flexible and determined by changing student needs • Teacher/student interaction is frequent, and often 1:1 • 1:1 teacher/student interaction is primarily focused on what and how students are learning (rather than on behavior and motivation) • Rituals and routines for interaction are well-established, and used by students • Furniture arrangement is flexible: it supports individual and collaborative work, more than teacher-centered work 	<ul style="list-style-type: none"> • Students interact with one another for less than 40% of the day • Student groups are mostly static, assuming consistent student needs; or, student groups are informally determined without accounting for needs • Teacher/student interaction sometimes occurs in 1:1 conversations • 1:1 teacher/student interaction primarily focuses on confusion, behavior, and motivation • Rituals and routines for interaction are unevenly used by students • Furniture arrangement allows for some flexibility, but not on a daily basis 	<ul style="list-style-type: none"> • Student interaction is limited: students generally work alone, or with the teacher • Student groups are not a feature of the classroom • Teacher/student interaction mostly occurs during whole group instruction or discussion • 1:1 teacher/student interaction focuses almost entirely on behavior modification • Rituals and routines for interaction are mostly absent in the classroom • Furniture is most often arranged so that the teacher is at the center of most interaction (e.g., rows)

	3: ADVANCED	2: IN PROGRESS	1: BEGINNING
Practice/Apply New Learning	<p>Devotes 60% of class time to...</p> <ul style="list-style-type: none"> • Asking students to use their learning in new ways • Providing opportunities for students to explore their own, higher-order questions — • Provides students with choice regarding ways to practice and apply new learning • Makes manipulatives and hands-on materials available to students • Changes the momentum, level, or kind of instruction based on learners' needs, styles, or interests • Learning resources are always available to students, and their use is supported by routines and rituals (e.g., computers, paper, atlases, work folders, missed assignments, dictionaries, or reference books) • Student work is prominently displayed and accessible as a learning resource • High-quality examples of finished projects and tasks are available as learning resources 	<p>Devotes less than 50% of class time to...</p> <ul style="list-style-type: none"> • Asking students to repeat/practice their learning; occasionally requiring application • Providing opportunities for students to explore the teacher's higher-order questions — • Sometimes provides students with choice • Sometimes provides manipulatives and hands-on materials • Makes some changes to pace and level of instruction; rarely changes kind of instruction • Learning resources are assigned to students when the teacher determines they are needed, and their use is supported by some rituals and routines • Some student work is displayed, but not necessarily as a learning resource • High-quality examples are inconsistently available to students 	<p>Devotes less than 40% of class time to...</p> <ul style="list-style-type: none"> • Asking students to repeat/practice their new learning; application is rarely required • Providing opportunities for students to explore the teacher's lower-order questions — • Rarely provides students with choice • Rarely provides manipulatives and hands-on materials • Rarely changes the pace, level, and kind of instruction • Few learning resources are available to students beyond a textbook and/or photocopies • Student work is not visible • High-quality examples are rarely available to students

3: ADVANCED	2: IN PROGRESS	1: BEGINNING
<p>Devotes 20% of class time to ...</p> <ul style="list-style-type: none"> • Reviewing key concepts and vocabulary at the end of each lesson • Assessing the development of higher and lower-order thinking skills • Assessing the development of metacognitive thinking skills • Assessing student capacity to use learning strategies to tackle academic tasks • Assessing student capacity to explore the unit's focusing question — • Provides opportunities for students to demonstrate learning in a range of formats (e.g., presentations, discussions, research papers, journals, essays, artwork, interviews, etc.) • Uses a "Ticket-to-Leave" to assess progress in using strategies, metacognitive skills, and higher-order thinking skills • Provides regular substantive feedback to students on their output • Confers with each student during class at least once a week to assess progress • Focuses conferences on both <i>how</i> students are learning and <i>what</i> they are learning • Maintains a system for tracking progress revealed during weekly conferences • Modifies planned lessons based on needs identified during conferences 	<p>Devotes less than 10% of class time to ...</p> <ul style="list-style-type: none"> • Reviewing some of the key material • Assessing the development of thinking skills • Assessing the development of metacognitive thinking skills • Assessing student capacity to use learning strategies • Assessing student capacity to explore the unit's focusing question — • Primarily relies on written forms of assessment • Primarily uses the "Ticket-to-Leave" to assess content knowledge • Provides somewhat timely and substantive feedback on output • Focuses conferences on students who are struggling • Focuses conferences on content students are struggling with • Mentally/anecdotally tracks students' progress on non-written work • Makes some adjustments to lesson plans based on student needs 	<p>Inconsistently/rarely devotes class time to ...</p> <ul style="list-style-type: none"> • Reviewing material • Assessing the development of cognitive and metacognitive thinking skills • Assessing student capacity to use learning strategies • Assessing student capacity to explore the unit's focusing question — • Exclusively relies on written forms of assessment • Does not use the "Ticket-to-Leave" consistently • Does not provide prompt and/or substantive feedback on output • Does not confer with students during class time • Only tracks progress on written work • Rarely adjusts plans based on student needs

Review and Assessment

	3: ADVANCED	2: IN PROGRESS	1: BEGINNING
Reflect on Lessons/Units	<ul style="list-style-type: none"> • Sets one or two "SMART" goals⁴⁷ for instructional improvement • Takes stock of progress towards meeting goals after completing lessons/units • Makes mid-course corrections as needed and/or suggested by others • Solicits feedback from coaches, peers, and supervisors • Documents progress towards meeting improvement goals (e.g., videotape, student evaluations, supervisor evaluations, or personal reflections) • Seeks out strong models (e.g., research, peers, or videos) to support achievement of goals 	<ul style="list-style-type: none"> • Sets either too many goals, or goals that aren't "SMART" • Sometimes takes stock of progress specific to meeting goals • Makes some mid-course corrections • Prefers to work autonomously • Anecdotally documents progress towards meeting improvement goals • Uses resources sporadically and inconsistently; relies on anecdotal support 	<ul style="list-style-type: none"> • Does not set long-term goals • Does not take stock of progress • Is somewhat resistant/unable to make mid-course corrections • Is guarded about receiving support and feedback • Does not document progress towards meeting improvement goals • Does not rely on resources to support improvement efforts

⁴⁷ SMART Goals are goals that are Specific, Measurable, Attainable, Realistic, Time-Bound.

Appendix G: Sample Questions and Activities/Products at Each Level of Bloom's Taxonomy⁴⁸

KNOWLEDGE		
Useful Verbs	Sample Question Stems	Potential Activities and Products
tell	What happened after...?	Make a list of the main events.
list	How many...?	Make a timeline of events.
describe	Who was it that...?	Make a facts chart.
relate	Can you name the...?	Write a list of any pieces of information you can remember.
locate	Describe what happened at...?	List all the __ in the story.
write	Who spoke to...?	Make a chart showing...
find	Can you tell why...?	Make an acrostic.
state	Find the meaning of...?	Recite a poem.
name	What is...? Which is true or false...?	
COMPREHENSION		
Useful Verbs	Sample Question Stems	Potential Activities and Products
explain	Can you write in your own words...?	Cut out or draw pictures to show a particular event.
interpret	Can you write a brief outline...?	Illustrate what you think the main idea was.
outline	What do you think could have happened next?	Make a cartoon strip showing the sequence of events.
discuss	Who do you think...?	Write and perform a play based on the story.
distinguish	What was the main idea...?	Retell the story in your words.
predict	Who was the key character...?	Paint a picture of some aspect of the story you like.
restate	Can you distinguish between...?	Write a summary report of an event.
translate	What differences exist between...?	Prepare a flow chart to illustrate the sequence of events.
compare	Can you provide an example of what you mean...?	Make a coloring book.
describe	Can you provide a definition for...?	
APPLICATION		
Useful Verbs	Sample Question Stems	Potential Activities and Products
solve	Do you know another instance where...?	Construct a model to demonstrate how it will work.
show	Could this have happened in...?	Make a diorama to illustrate an important event.
use	Can you group by characteristics such as...?	Make a scrapbook about the areas of study.
illustrate	What factors would you change if...?	Make a papier-mâché map to include relevant information about an event.
construct	Can you apply the method used to some experience of your own?	Take a collection of photographs to demonstrate a particular point.
complete	What questions would you ask of...?	Make up a puzzle game using the ideas from the study area.
examine	From the information given, can you develop a set of instructions about...?	Make a clay model of an item in the material.
classify	Would this information be useful if you had a ...?	Design a market strategy for your product using a known strategy as a model.
		Dress a doll in national costume.
		Paint a mural using the same materials.
		Write a textbook about __ for others.

⁴⁸ Reprinted with permission from <http://www.teachers.ash.org.au/researchskills/dalton.htm>. Additional resources by Joan Dalton are available at www.plotpd.com.

ANALYSIS

Useful Verbs	Sample Question Stems	Potential Activities and Products
analyze	Which events could have happened...?	Design a questionnaire to gather information.
distinguish	If ... happened, what might the ending have been?	Write a commercial to sell a new product.
examine	How was this similar to...?	Conduct an investigation to produce information to support a view.
compare	What was the underlying theme of...?	Make a flow chart to show the critical stages.
contrast	What do you see as other possible outcomes?	Construct a graph to illustrate selected information.
investigate	Why did ... changes occur?	Make a jigsaw puzzle.
categorize	Can you compare your ... with that presented in...?	Make a family tree showing relationships.
identify	Can you explain what must have happened when...?	Put on a play about the study area.
explain	How is ... similar to ...?	Write a biography of the study person.
separate	What are some of the problems of...?	Prepare a report about the area of study.
advertise	Can you distinguish between...?	Plan a party. Make all the arrangements and record the steps needed.
	What were some of the motives behind...?	Review a work of art in terms of form, color, and texture.
	What was the turning point in the game?	
	What was the problem with...?	

SYNTHESIS

Useful Verbs	Sample Question Stems	Potential Activities and Products
create	Can you design a ... to ...?	Invent a machine to do a specific task.
invent	Why not compose a song about...?	Design a building to house your study.
compose	Can you see a possible solution to...?	Create a new product. Give it a name and plan a marketing campaign.
predict	If you had access to all resources how would you deal with...?	Write about your feelings in relation to...
plan	Why don't you devise your own way to deal with...?	Write a TV show, play, puppet show, role-play, song or pantomime about...
construct	What would happen if...?	Design a record, book, or magazine cover for...
design	How many ways can you...?	Make up a new language code and write material using it.
imagine	Can you create new and unusual uses for...?	Sell an idea.
propose	Can you write a new recipe for a tasty dish?	Devise a way to...
devise	Can you develop a proposal that would...?	Compose a rhythm or put new words to a known melody.
formulate		

EVALUATION

Useful Verbs	Sample Question Stems	Potential Activities and Products
judge select choose decide justify debate verify argue recommend assess discuss rate prioritize determine	Is there a better solution to...? What is the value of...? Can you defend your position about...? Do you think... is a good or a bad thing? How would you have handled...? What changes to... would you recommend? Do you believe that...? Are you a ... person? How would you feel if...? How effective are...? What do you think about...?	Prepare a list of criteria to judge a... show. Indicate priority and ratings. Conduct a debate about an issue of special interest. Make a booklet about five rules you see as important. Convince others. Form a panel to discuss views (e.g., "Learning at School"). Write a letter to... advising on changes needed at... Write a half-yearly report. Prepare a case to present your view about...

Appendix H: Topic/Detail/Response and Fact/Question/Response: Determining Importance Activities

The purpose of the following activities is to teach students strategies to identify the important ideas in a text. See Activity 6 in Part 2 to see how the following can be used with participants.

Topic/Detail/Response:

1. Read the text.
2. Mark the ideas that strike you as interesting and important. Continue reading and if the idea continues to surface, keep underlining it. If new important ideas arise, mark these as well. (If you are not able to write on the text, take a “sticky note” and identify the page number and the beginning and end of the important idea.)
3. Place these topics in the Topic column below. If an idea comes to you that is not explicitly written in the text, add these to the column as well.
4. Go back over the text, identify details that support the topics, and list them in the center column.
5. Respond to the topic and detail in the right-hand column. Some starter questions:
 - What do these make you think of?
 - What do you think about these ideas?
 - What message do you think the author is sending with regard to these ideas?
 - Do you think these are the most important ideas in the text, or are they of a more personal interest to you?
 - Why do you think these particular topics jumped out at you?

TOPIC	DETAIL	RESPONSE

Fact/Question/Response

1. Read the text.
2. If you are able to write on the text, underline an idea that strikes you as interesting and important. Continue reading and if the idea continues to surface, keep underlining it. If new, important ideas arise, mark these as well. (If you are not able to write on the text, take a “sticky note” and identify the page number and the beginning and end of the important idea.) These facts will be placed in the Fact column below. If an idea comes to you that is not explicitly written in the text, add these to the column as well.
3. In the center column, list any questions you have about the critical facts. Starter Questions: Why is this important? How does this relate to the other facts in this problem/text? Is this fact a distraction or is it important?
4. In the final column, respond to the facts and questions. Starter questions: Do you think these are the most important ideas in the text, or are they of a more personal interest to you? Why do you think these particular topics jumped out at you?


FACT	QUESTION	RESPONSE

Appendix I: Bloom's Taxonomy Planning Template⁴⁹

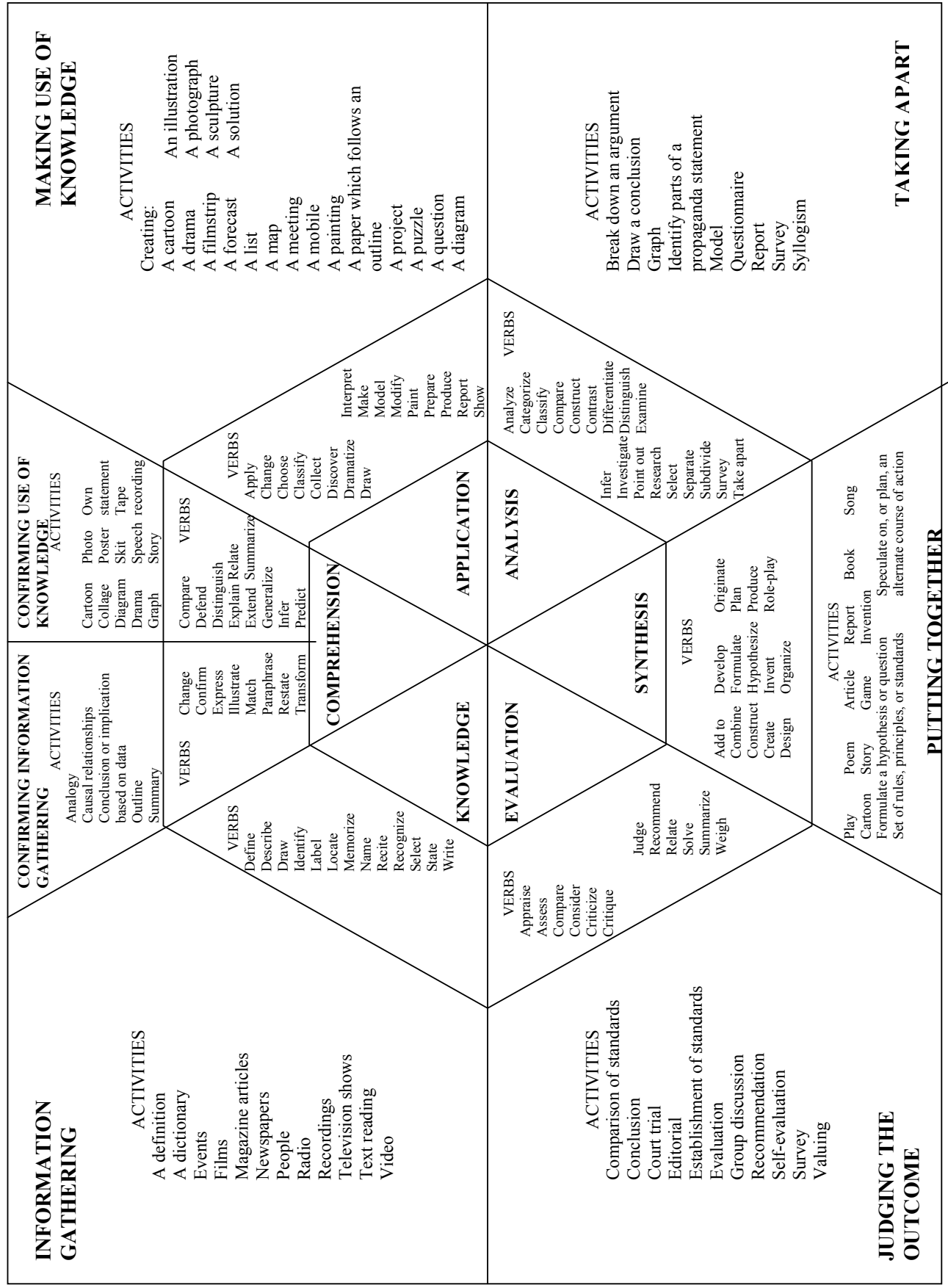
	TEACHER ROLE	STUDENT ROLE	STUDENT ACTIONS	PRODUCTS	LEARNING ACTIVITIES	
Higher-Order Thinking	<p>Creating Putting together ideas or elements to develop an original idea or engage in creative thinking</p>	<ul style="list-style-type: none"> Facilitate Extend Reflect Analyze Evaluate 	<ul style="list-style-type: none"> Design Formulate Plan Take risks Modify Create Propose 	<ul style="list-style-type: none"> Designing Constructing Planning Producing Inventing Devising Making 	<ul style="list-style-type: none"> Fine Arts performance Story/Poem Essay on your feelings about... Plan New game Song Media product Advertisement 	
	<p>Evaluating Judging the value of ideas, materials, and methods by developing and applying standards and criteria</p>	<ul style="list-style-type: none"> Clarify Accept Guide 	<ul style="list-style-type: none"> Judge Dispute Compare Critique Assess Argue Decide Select Justify Question 	<ul style="list-style-type: none"> Checking Hypothesizing Critiquing Experimenting Judging Testing Detecting Monitoring 	<ul style="list-style-type: none"> Debate Panel Report Evaluation Investigation Verdict Conclusion Persuasive speech Letter to Editor Persuasive essay 	
	<p>Analyzing Breaking information down into its component elements</p>	<ul style="list-style-type: none"> Probe Guide Observe Evaluate Act as a resource Question Organize Dissect 	<ul style="list-style-type: none"> Discuss Argue Debate Calculate Investigate Inquire Question Examine 	<ul style="list-style-type: none"> Comparing Organizing Deconstructing Attributing Outlining Structuring Integrating 	<ul style="list-style-type: none"> Questionnaire/survey Database Abstract Report Graph Spreadsheet Checklist Letter to Editor Outline Biography 	

⁴⁹ Adapted by Antonia Rudenstine. Original template created by Kurwonghab State School.

Lower-Order Thinking

	TEACHER ROLE	STUDENT ROLE	STUDENT ACTIONS	PRODUCTS	LEARNING ACTIVITIES
<p>Applying Using strategies, concepts, principles, and theories in new situations</p> 	<p>Show Facilitate Observe Evaluate Organize Question</p>	<p>Solve problem Calculate Compile Complete Illustrate Construct</p>	<p>Implementing Carrying out Using Executing</p>	<p>Illustration Simulation Model Presentation Interview Performance Written explanation</p>	
<p>Understanding Understanding given information</p>	<p>Demonstrate Listen Question Compare Contrast Examine</p>	<p>Explain Describe Outline Restate/translate Demonstrate Interpret</p>	<p>Interpreting Exemplifying Summarizing Inferring Paraphrasing Classifying Comparing Explaining</p>	<p>Recital Summary Explanation Sequence Example Quiz/test List Label Outline</p>	
<p>Remembering Recalling or recognizing specific information</p>	<p>Direct Show Tell Examine Question Evaluate</p>	<p>Respond Remember Absorb Recognize Memorize Define Describe Retell</p>	<p>Recognizing Listing Describing Identifying Retrieving Naming Locating Finding</p>	<p>Quiz/test Definition Fact Concept map Chart Label List Timeline Reproduce</p>	

Appendix J: Thinking at Each Level of Bloom's Taxonomy



Adapted from "Task Oriented Question Construction Wheel Based on Bloom's Taxonomy," ©2004 St. Edward's University Center for Teaching Excellence.

Appendix K: A Rubric to Assess Discipline-Neutral⁵⁰ Skills and Actions at Each Level of Bloom's Taxonomy⁵¹

1: EMERGING	2: CAPABLE		3: PROFICIENT	4: ADVANCED	5: MASTERY
Remember	Understand	Apply	Analyze	Evaluate	Create
Choose	Explain	Demonstrate	Categorize	Appraise	Assemble
Describe	Give an example	Generalize	Compare	Assess	Combine
Define	Summarize	Prepare	Classify	Consider	Compose
Identify	Confirm	Dramatize	Differentiate	Critique	Construct
Label	Predict	Solve	Discriminate	Conclude	Design
Memorize	Infer	Model	Dissect	Defend	Develop
Recognize	Show	Construct	Experiment	Judge	Devise
Locate	Match	Calculate	Identify point of view	Prioritize	Formulate
List	Make a connection		Investigate	Rank	Generate
Select			Order/Organize	Recommend	Hypothesize
			Survey	Score	Improve/Revise
			Weigh Evidence	Validate	Originate
				Plan	Synthesize

⁵⁰ **Discipline-Neutral** means that these skills and actions can be demonstrated in any discipline.

⁵¹ This rubric was developed by Diploma Plus®. All rights reserved.

Notes

New York City Department of Education
Office of Multiple Pathways to Graduation
52 Chambers Street
New York, NY 10007
ompg@schools.nyc.gov

schools.nyc.gov/Offices/OMPG

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