5 Why Evidence Matters

From Text to Talk to Argument

> *Students cite specific evidence when offering an oral or written interpretation of a text. They use relevant evidence when supporting their own points in writing and speaking, making their reasoning clear to the reader or listener, and they constructively evaluate others' use of evidence.*
>
> *—Description of College- and Career-Ready Students, CCSS Introduction*

The unit is "The American Dream Through the Eyes of the Disenfranchised," and Amanda Swartzlander's eighth-grade students have been reading all sorts of texts in an effort to understand the facets of this complicated topic. Listed on the whiteboard of her blended social studies/ English language arts class are the titles of books students have been reading.

Revolutionary Suicide by Huey P. Newton

Coming of Age in Mississippi by Anne Moody

The Autobiography of Malcolm X

The Jungle by Upton Sinclair

The Grapes of Wrath by John Steinbeck

The Absolutely True Diary of a Part-Time Indian by Sherman Alexie

Persepolis: The Story of a Childhood by Marjane Satrapi

"They read more than just books," Ms. Swartzlander said. "They also read articles and primary documents; they've really been immersed in the study of immigration for the past several weeks." Today, they are going to use what they have learned to participate in a Paideia seminar based on "The New Colossus," the famous poem written by Emma Lazarus, which appears on the base of the Statue of Liberty.

Discussions of short texts, such as poems, work in classrooms of both struggling and advanced readers because they offer a chance to look closely and deeply at evidence—to talk while drawing on specific words and phrases as proof, to read and write with evidence as a guide, and to explore larger projects grounded in research as well as fiction. The idea that learning should be grounded in evidential reasoning is one reinforced constantly throughout the Common Core State Standards (CCSS)—the word *evidence* itself appears numerous times. Indeed, the introduction to the standards proposes that evidence shapes student thinking not just about academic issues but about ethical and civic life itself, that it "is essential to both private deliberation and responsible citizenship in a democratic republic" (p. 3).

> The idea that learning should be grounded in evidential reasoning is one reinforced constantly throughout the CCSS—the word *evidence* itself appears numerous times.

In this chapter, therefore, we explore unique ways to have students collect and think about—and through—evidence. First, we take you into a Paideia seminar with eighth-grade students that follows their discussion of "The New Colossus" from the page to their own talk and writing. Then, we explore how an interdisciplinary inquiry project threads evidential research and reasoning through every aspect of the students' learning, from their initial reading to a final presentation.

Paideia Seminars: A Focus on Evidence

Paideia seminars represent a refinement of what other teachers may know as Socratic seminars, a student-centered discussion approach that good teachers have been using in one way or another as far back as ancient Greece. Paideia seminars in particular have become increasingly popular across the country, especially with the implementation

of the CCSS and their focus on evidence, speaking and listening as core skills, and the need for students to engage texts actively and independently. When we began thinking about using evidence in authentic and meaningful ways, we immediately thought of the Paideia seminar and began investigating schools that used this activity as a regular part of instruction. Our search led us to the city where the National Paideia Center is housed, Asheville, North Carolina. There we spent time in a middle school where the Paideia approach infuses all instruction.

Terry Roberts and Laura Billings, authors of *Teaching Critical Thinking: Using Seminars for 21st Century Literacy* (2011), explain the Paideia seminar concept: It is "a collaborative, intellectual dialogue facilitated with open-ended questions about a text" (p. 9). The purpose of the seminar is to allow students to grapple with the "ambiguity of the text and the force of others' points of view" so that students "come to grips with the ideas and values in the text, the concepts that lie at the heart of the curriculum," by thinking and speaking for themselves rather than paraphrasing the thoughts of the teacher. All of this comes through a flow of language that helps students consider multiple, even contradictory points of view (Roberts & Billings, 2011, p. 10). Again, keep in mind that while the Paideia approach offers very useful specific guidelines for teachers in directing student talk, the underlying philosophy behind these seminars—a philosophy that allows teachers to meet many of the standards in a single class—integrates the same values that many language arts teachers have always held dear, including critical thinking, inquiry, and attention to the nuances of language.

> ACTIVE LEARNING
>
> COLLABORATION
>
> AUTONOMY

Melissa Hedt, literacy coach at Asheville Middle School, explains that the school's major focus this year is on citing evidence from text, and she believes the Paideia seminar is specifically designed for helping students develop this skill. "Students express their own ideas and build upon the ideas of others," she says, "but they know that they will be challenged to support everything they say with evidence from the text."

In Ms. Swartzlander's class, students are not given the poem ahead of time but prepare for the seminar by moving their chairs into a wide circle and folding a stiff sheet of white paper into a name tent. On the side of the tent facing the students, they write individual goals, such as

VOICES FROM THE
CLASSROOM

Paideia Seminar Effective in All Grades

Asheville Middle School principal Cynthia Sellinger has used Paideia seminars in all grade levels for many years and finds them effective in helping even the youngest students delve deeply into texts and become active learners.

"The Paideia seminar is an exciting way for all levels of readers to engage in complex text with multiple levels of meaning. Teachers at the elementary school for example, use seminars with students as young as kindergarteners. Even in kindergarten, a teacher can read a book to the children and pose an opening question as well as core questions to get them thinking and talking. Children learn how to engage in dialogue, and the final assessment involves having them act out the events in the book, like a theater production.

"Of course, you need to provide lots of modeling and lots of support, but even small children absolutely can do it. With first graders we looked at the Pledge of Allegiance, talked about the vocabulary, and then discussed what it meant. Kids can be taught at a very young age to engage in a full literacy cycle and use the text while forming and adjusting their own ideas. If little kids can do it, our middle and high schoolers can be completely successful at participating in a seminar."

"Don't dominate the conversation," "Take notes," "Speak at least three times," or "Ask questions." One student's goal is a bit more specific: "Try not to be sarcastic." Ms. Hedt will facilitate the seminar, and she reminds students of their group goal, "Refer to the text," which is posted at the front of the room. She then reviews the basics:

ACTIVE LEARNING

- No need to raise hands; just wait until a speaker is finished before you begin talking.

- Take notes so you can refer back to what someone has said.

- Ask questions.

INQUIRY

- Speak from uncertainty.

- Don't engage in side conversations.

- Be respectful to each other at all times.

- Remember this is a formal discussion, so address each other by name and make sure your posture, facial expressions, and body language reflect the formal setting.

COLLABORATION

Focusing on Evidence While Reading

Ms. Hedt initiates the process by having students engage in "pretalk" through a simple, open-ended question: "Why do people immigrate?" It doesn't take long for the dialogue to begin.

SCAFFOLDING

INQUIRY

Antonio: People thought they would have better lives in another country. They really didn't know what it would be like, though.

Pixie: When they came to America, they thought they were moving to the land of milk and honey, a place where the streets were paved in gold. But it was not that way at all.

Ms. Hedt: Do you believe immigrants were able to achieve what they thought they would achieve?

Raleigh: It was hard to fit into America if you were an immigrant. That's true even now.

After several students have spoken, Ms. Hedt asks them to turn over the handout on their desks and number the lines of the poem for easier reference. She then reads the poem aloud.

The New Colossus

Not like the brazen giant of Greek fame,

With conquering limbs astride from land to land;

Here at our sea-washed, sunset gates shall stand

A mighty woman with a torch, whose flame

Is the imprisoned lightning, and her name

Mother of Exiles. From her beacon-hand

Glows world-wide welcome; her mild eyes command

The air-bridged harbor that twin cities frame.

"Keep ancient lands, your storied pomp!" cries she

With silent lips. "Give me your tired, your poor,

Your huddled masses yearning to breathe free,

The wretched refuse of your teeming shore.

Send these, the homeless, tempest-tost to me,

I lift my lamp beside the golden door!"

—Emma Lazarus

"What words in the poem do we want to clarify?" Ms. Hedt asks.

Students offer words such as *brazen, teeming,* and *pomp,* and supply the number of the line where the word appears. Ms. Hedt then initiates a discussion of each word by asking questions rather than providing definitions. "Read line 1 again, 'brazen giant.' What do you think brazen means?"

INQUIRY

"Obvious?" one student asks.

"In what way obvious?" Ms. Hedt prompts.

"Like not subtle," he responds.

Ms. Hedt continues. "How about 'teeming' in line 13?"

Suddenly Pixie calls out, "Wait! I know what *teeming* means! Abundance."

"What do you think Lazarus means by 'teeming shore?'" Ms. Hedt counters.

"Well in line 12, it says 'huddled masses,' so 'teeming shores' might mean there are a lot of people, an abundance of people in the old country," another student reasons.

AUTONOMY

After the brief focus on vocabulary, Ms. Hedt tells the group it's time to read the text again. "Who wants to read?" she asks. Students raise their hands, waiting to be called on. "You don't need to raise your hands," Ms. Hedt reminds them. Daniel says, "I'll read," and, without waiting for permission, begins.

Why Use a Sonnet?

While Ms. Hedt does not specifically use the term with her class, you may notice that Emma Lazarus's poem is a sonnet. In Chapter 6, you'll also find a short exercise Barry used to teach sonnets through technology.

Is it important that eighth-grade students encounter sonnets? On the one hand, the intent of teaching the poem for its content is ultimately a richer and more rewarding experience, especially for struggling learners, than memorizing a rhyme scheme or counting out meter. On the other, Ms. Hedt here manages to expose students to a complex text in an accessible manner. Sonnets are mentioned only once in the English language arts standards

> Analyze how a drama's or poem's form or structure (e.g., soliloquy, sonnet) contributes to its meaning. (RL.7.5)

Since both ReLeah and Barry still find discussions of poetic form fascinating but also challenging, we don't necessarily think students will master an understanding of how this form (or any other complex literary structure) underscores meaning by the end of seventh grade. We believe students should be exposed to such poems, interspersed among numerous free-verse poems and a variety of other readings, throughout their schooling. Occasionally these poems should be introduced with the intention of teaching structure explicitly, but even more often as a means of providing rewarding experiences with literature that engages and excites ideas.

When the second reading is complete, Ms. Hedt tells the group to think of another title for the poem. "We'll go around the circle so that everyone can share his or her title," she says. It is the only time each student is required to speak. "There's no hurry. Think about it. Remember if we understand the text completely, it's probably too easy."

ACTIVE LEARNING

The students sit in silence a few minutes while everyone jots down a new title. Ms. Hedt begins with the student on her right.

Sayres:	"Mother of Exiles."
Emily:	"Hope."
Josh:	I'm not sure.
Ms. Hedt:	Do you want us to come back to you?
Josh:	Yes.
Baylee:	"The Welcome Woman."
Nathan:	"Gatekeeper of the Land of Renewal."
Alex:	"The Golden Door."
Collin:	"American Propaganda."

The students continue until everyone has shared a title.

Ms. Hedt:	Would anyone like to explain his or her title?
Collin:	Most Americans don't welcome immigrants, yet the poem on the Statue of Liberty is like an advertisement to get them to move here.

A few other students offer explanations, and, after a pause, Ms. Hedt moves to another question. "What is the tone of the poem? Remember to use evidence."

Logan:	Hopeful.
Ms. Hedt:	Evidence?
Logan:	She is reaching out to the "tired and poor" in line 10 and the "huddled masses" in line 11.
Baylee:	I agree with Logan. Look at line 13: "homeless, tempest-tost."
Raleigh:	Line number 7 is motherly. I think the tone is welcoming.
Jillian:	I think it is more serious, kind of like "This is just how it is."

You can probably already see the value of such a discussion—it promotes inquiry, critical thinking, and close reading. You may also be thinking

that Ms. Hedt's class sounds too good to be true, but the students at Asheville Middle School are not from a privileged background, nor is this an honors class.

Students in a Nashville school that was termed "failing" by the state of Tennessee also participated in a Paideia seminar. The teacher of this class of struggling students pointed out how much she loved the method, not just because it engaged her kids but also because it required less prep time, it worked with any subject, and, in her words, "it meets all 10 reading standards, six of the writing standards, and four of the six speaking and listening standards. All in about 15 minutes."

What's even more impressive are the responses of the Nashville students shortly after the seminar:

- "Better than just listening to the teacher talk"
- "Gave me ideas for my writing"
- "I could see everyone in the class"
- "No one acted goofy—for once we were serious"
- "Felt like a real discussion"
- "We didn't talk over each other"

And, regarding the CCSS? Both of our example classes handily met the first reading standard for eighth-grade literature:

> Cite the textual evidence that most strongly supports an analysis of what the text says explicitly as well as inferences drawn from the text. (RL.8.1)

We often think of citation as something that occurs when students write; through discussion, however, students might learn not only to cite specific lines, but to analyze and internalize meaning as they do so.

Focusing on Evidence While Speaking and Listening

Back in Ms. Hedt's classroom, the discussion continues, with students beginning to talk to each other instead of only to Ms. Hedt. There is

The teacher of this class of struggling students pointed out how much she loved the method, not just because it engaged her kids but also because it required less prep time and it worked with any subject.

COLLABORATION

rarely a silent moment; sometimes two students start to talk at the same time, but one stops as if on cue and lets the other continue. Ms. Hedt, who is keeping a seminar map, often returns to a student who has allowed someone else to speak and asks him what he has to say. Several students are clearly more comfortable talking than others, and soon Ms. Hedt reads off a list of names of students who haven't yet spoken. "I want to hear from everyone, so if you've spoken several times, give others a chance to talk."

"The New Colossus" Seminar Map
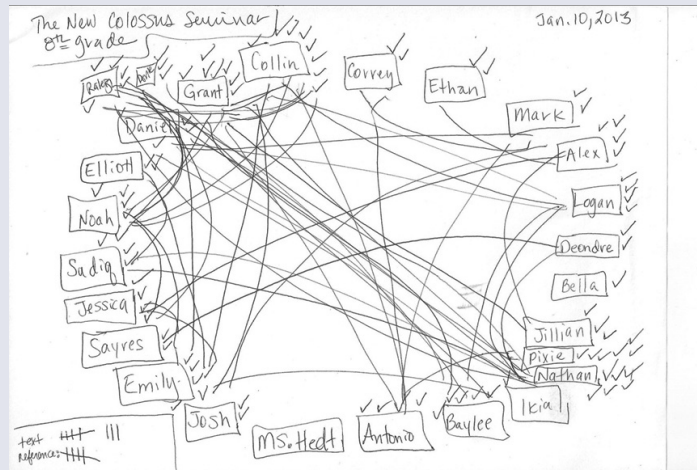
Then Antonio asks, "Why is this a poem?" and Ms. Hedt waits for someone to respond.

Ms. Hedt: What is a poem?

Logan: A short text explaining what you want to say.

Antonio: But isn't this just their opinion?

Pixie: The immigrants' or the authors'?

Antonio: Can poems just be based on opinions?

Ms. Hedt lets the question hang in the air and, when no one responds, says they will talk more about the definition of poetry later. For now, she urges them to return to the text. "Why is the New Colossus a woman?"

"Women are more welcoming," someone offers.

Grant: I agree. More inviting.

Ms. Hedt: What about the title?

Raleigh: It's intimidating. Colossus is something big.

Nathan: Not really intimidating. It's like a friendly giant will take you in.

Daniel: The New Colossus is at odds with how America wanted to be seen. America wanted to seem welcoming like immigrants were being given a new chance to start their lives over, but it was intimidating and large. The immigrants would end up working in huge cities and factories, especially compared to the small villages in Europe that they came from.

Ms. Hedt: Will you write that down, Daniel? And write the word "juxtaposition," because I want to talk about that later.

Ms. Hedt: Why is this poem titled "The New Colossus"?

Grant: A new country, but big.

Ms. Hedt: Who is the New Colossus welcoming?

Elliott: People from places like Ireland who were in a bad way.

Ms. Hedt: What does the text say about those people?

Elliott: They were poor.

Pixie: The poem is welcoming the poor because they will work for little.

Noah: I agree that it welcomes Europeans. The golden door is a door into America for immigrants.

Ms. Hedt: What is the golden door?

Donte: Streets paved with gold, like in the Bible.

Ms. Hedt: Why the golden door?

Donte: That means it doesn't get any better than this.

Jessica: Riches are expressed as gold.

Nathan: I have a question. Wasn't Lady Liberty a gift from France?

Collin: That says to me that the poem is a false thing. We didn't build the statue so it wasn't our lady welcoming people in.

Raleigh: You are very disillusioned about America, Collin.

Ms. Hedt glances pointedly at Raleigh but says nothing.

In the last part of the seminar, in response to a question from Ms. Swartzlander, the students talk about how the poem was written in English but most immigrants couldn't read English, so it didn't really matter what was written on the base of the statue. When Ms. Hedt asks what they think might have been a better inscription, Jessica suggests, "Something simple, like 'hello' or 'welcome,'" and then adds that it should have been written in several languages. Many other students agree.

Here, again, it's easy to see how closely Ms. Hedt's students adhere to elements of the CCSS; for instance, compare the discussion we just described to this criteria in the first speaking and listening standard:

> Come to discussions prepared, having read or researched material under study; explicitly draw on that preparation by referring to evidence on the topic, text, or issue to probe and reflect on ideas under discussion. (SL.8.1a)

Remember that Ms. Hedt, here, is drawing on reading—preparation—that students completed earlier, but provides this poem as a means of introducing big ideas. Her students had no problem making that connection.

Focusing on Evidence While Writing

AUTHENTIC ASSESSMENT

The activity ends with a quick-write where students respond to three questions:

1. What does the poem say about the American Dream?

2. What are your own ideas about the American Dream?

3. What did you hear someone else say that made you think?

AUTONOMY

In looking at the students' writing later, we found a wide variety of responses, but it was clear that every student did listen and engage in thinking. Amazingly, each student also provided evidence from the text in one or more of his or her responses, such as these:

- Your circumstances shouldn't suffocate your opportunities. This poem shows the glorified version of the American Dream. In it Lady Liberty says, "Give me your tired, give me your poor" which exudes a sense of kindness and acceptance, but people who immigrate don't get what they expect.

- The American Dream as reflected in this poem is a free land where everybody has a place, a dichotomy to the "huddled masses."

- This poem gives possibility to the American dream and the statue symbolizes that. The poem calls out to the poor, the suffering, and the homeless. People immigrate to America because they think they will be able to find a job easily and get lots of money to help them and their family. Instead, they are ripped off and scammed, people treat them poorly, and sometimes they get deported.

- It says that the American dream was to be rich and to prosper because it talks about how much Americans prosper, for example: "I lift my torch beside the golden door" which suggests that America is the land of gold.

Again, these student comments demonstrate just how relevant such discussions can be in meeting the CCSS, including this writing standard:

Draw evidence from literary or informational texts to support analysis, reflection, and research. (W.8.9)

Focusing on Evidence Through Self-Reflection

FEEDBACK

ACTIVE LEARNING

AUTHENTIC
ASSESSMENT

After students finish writing, Ms. Hedt thanks them for their insights and respect toward each other. She then asks students how they would rate themselves on their common goal, "Refer to the text," using a 1–5 scale, 5 being the best. "Hold up fingers to show your evaluation," she instructs. Most students hold up four fingers. "So we agree; we were about a 4? What about your personal goals? On the back of your name cards, write a number between 1 and 5 regarding how you think you did with your personal goals."

Raleigh, whose goal had been "Try not to be sarcastic," gives herself a 4. She writes, "I wasn't sarcastic. I talked a lot, but I don't believe I overwhelmed the conversation with my opinions." Jillian, on the other hand, gives herself a 2 for her personal goal, "Speak from uncertainty," because "I didn't put myself out there."

Ms. Hedt tells us that this self-reflective piece is one of the most important parts of the seminar because students learn how to evaluate their goals and think about their own learning. These types of goals, called mastery goals, are different from performance goals, the goals most often present in schools. Daniel Pink, author of *Drive* (2011), explains the difference: "Getting an A in French class is a performance goal; being able to speak French is a learning goal" (pp. 121–122). When students set mastery goals, they see the task as relevant and meaningful rather than something they do for an extrinsic reward. As an added bonus, mastery goals also tap into engagement.

When the seminar was over, we asked students if they demonstrated this level of respect toward each other in all of their classes. "Heck, no!" one student called out, and others laughed, but Ms. Swartzlander told us that their respectful behavior and thoughtful dialogue did, indeed, transfer to other classes. "Teachers say that when they have a class discussion, students really listen and use words related to dialogue, such as 'piggy-backing' on what someone else has said."

"These seminars also put into practice what we try to teach students about listening to and respecting the views of others," Ms. Hedt added.
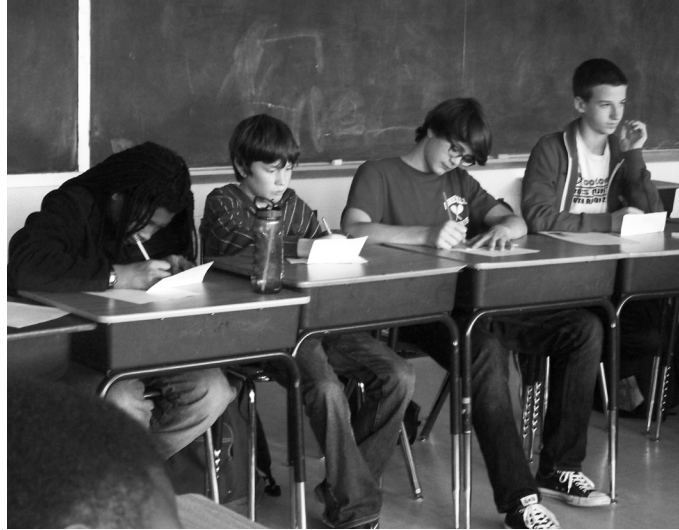
Paideia Seminars and Struggling Students

We know that Paideia seminars and similar activities often give advanced students a chance to shine, but how do students who struggle respond to this approach? According to Roberts and Billings (2011), "understanding" occurs when students engage in "intellectual striving or focused, structured thinking. When engaged in a seminar, the individual participant is witness both to the thinking process of other individuals and to the collective thinking process of the group. Both of these can serve as educative models for increasingly clear, coherent, sophisticated thinking" (p. 10).

Asheville Middle School Students Reflecting on Their Goals in a Paideia Seminar

What's more, "With struggling students, the seminars allow us to demystify text. It becomes less intimidating to them," Ms. Hedt noted.

Ms. Swartzlander said that students who have difficulty with typical school tasks often aren't given enough time in class to think through an issue or hear others' views, so it may be hard for them to clarify their own responses. "The seminar sparks thinking, and students know that there is no right answer, so it gives them the freedom to experiment with their own ideas." She also noted that students grow in maturity as well as in skills. "Students practice expressing themselves but also learn how to hold onto their thoughts and listen to others."

AUTONOMY

While we observed that some students were more reluctant to speak than others, it was clear to us that every student was engaged. In fact, the entire seminar was a good example of Brian Cambourne's Conditions of Learning, where engagement is the bull's-eye in the learning process.

One condition in particular, "approximation," was particularly evident during the seminar, especially for students who had experienced years of discouragement or even failure in school-related tasks. Cambourne (1995) explains that when learners "approximate" learning, they feel

VOICES FROM THE
FIELD

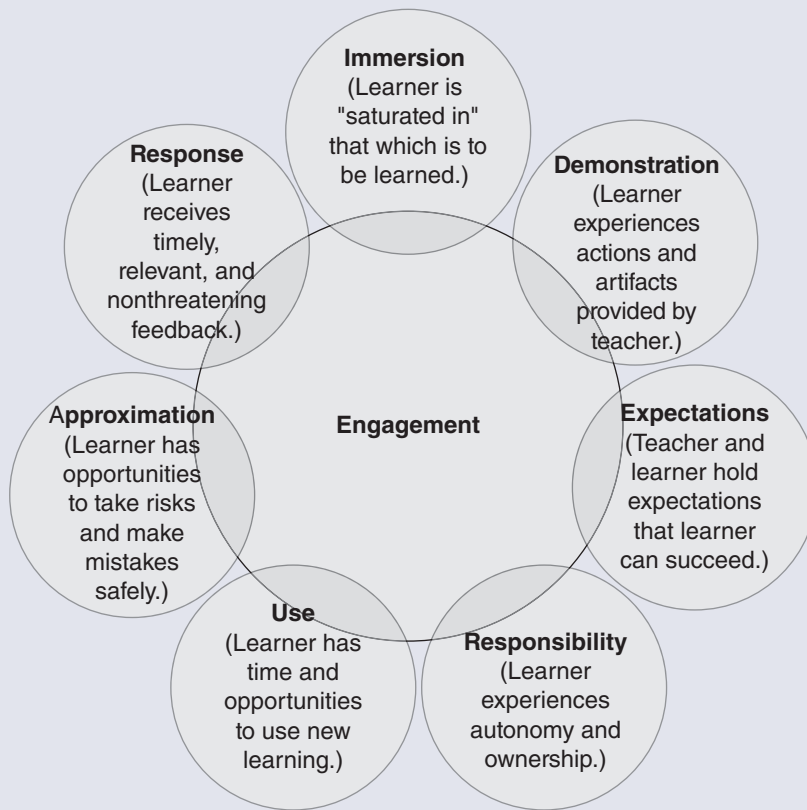## Roberts and Billings on the Advantages of Paideia Seminars

After several years of consistent seminar experience, it is not unusual for a group of participants to exhibit individually and collectively many of the following attributes (Roberts & Billings, 2011):

- Dialogue that is more nearly balanced in terms of the talkative and the quiet participants
- Dialogue in which more participants look at the person speaking and rarely talk while another is speaking
- Participants yielding to another as a way of sharing talk time
- Participants paraphrasing the comments of others
- Participants making clear and accurate statements, using appropriate pace, volume, vocabulary, and grammar
- Participants offering relevant and detailed comments in terms of sequence, purpose, and point of view
- Participants referring regularly to the text or another relevant source
- Participants considering another point of view while acknowledging their own bias
- Participants asking authentic questions
- Participants taking notes either on the text or on the comments of others

CHALLENGE AND SUCCESS

safe to take risks and make mistakes. During the seminar, every student's comment was valued. Such reinforcement helps struggling students believe that they have something worthwhile to contribute, and that very belief will contribute to success. Research on self-efficacy, students' belief in their ability to accomplish a task, creates a determination to succeed and, in fact, becomes a factor in that success (Guthrie, 2008). Paideia seminars and other authentic forums that encourage students to wrestle with learning in a safe and supportive environment go a long way not only toward meeting the CCSS, but also toward engaging even the most disinterested student.

Cambourne's Conditions of Learning

Immersion
(Learner is "saturated in" that which is to be learned.)

Demonstration
(Learner experiences actions and artifacts provided by teacher.)

Response
(Learner receives timely, relevant, and nonthreatening feedback.)

Engagement

Expectations
(Teacher and learner hold expectations that learner can succeed.)

Approximation
(Learner has opportunities to take risks and make mistakes safely.)

Use
(Learner has time and opportunities to use new learning.)

Responsibility
(Learner experiences autonomy and ownership.)

What to Do When Students Struggle

While we hope we have convinced you to at least try a seminar in your class, you may not find that every student will be successful every time. When Ms. Hedt and Ms. Swartzlander read all of the responses from their students, they were especially interested in one from a girl we'll call Dana, a quiet student who kept her eyes down during much of the activity. She had given herself a 1 out of 5 on her personal goal "Speak at least three times." She wrote, "I really didn't have anything to say, and also the poem really didn't make sense to me."

HOW TO Hold Discussions in Large Classes

If you counted the students included on Ms. Hedt's seminar map, you probably noticed that her class, by some standards, is small or medium sized—around 24 students. Some teachers balk at holding discussions because their class sizes are larger, increasing to perhaps 35 or 40 students. The reality of such class sizes requires many teachers to be flexible and creative in their discussion methods. For large classes, consider these discussion tips:

- Use an inner circle and an outer circle. Only students in the inner circle may speak, but every 5 to 10 minutes students should switch from one circle to the other. To keep the students in the outer circle attentive, have them take notes as they listen.

- For a more specific version of the inner/outer circle strategy, assign each student in the outer circle to a particular student in the inner circle (and keep the pairings when the circles switch). The outside student can write down positive comments about the points made by the student who is speaking and share these at the end of class.

- Hold discussions with half of your class while the other students work quietly on a worthwhile task, such as gathering evidence from a text to use in their own discussion. Change discussion prompts so that students do not just repeat what they've overheard earlier.

- Employ a think/pair/share strategy in which students work in pairs for one minute, then discuss for five minutes with one partner speaking and the other recording. Repeat the process so each partner has an opportunity to speak or record.

DIFFERENTIATION

Ms. Hedt and Ms. Swartzlander talked about how they would help Dana and decided that they would meet with her individually to discuss the poem and try to find out if she had trouble with the literal comprehension of the poem or with its deeper meaning. "We will also go through other reading response work samples from this student (journal entries, comprehension questions, assessments) to look for trends in her understanding of

text or trends in the types of text with which she struggles. We may need to do more work with this type of poetry in a historical context, and we probably will, not only with her but with the entire class," Ms. Hedt said.

SCAFFOLDING

AUTHENTIC ASSESSMENT

"We will also make sure that the next Paideia seminar is successful for Dana by talking with her about her participation and helping her prepare for the next discussion," Ms. Swartzlander added. "I can make sure she comprehends the next seminar text even before it is given to the group. I might even give her one of the seminar questions and work with her to draft a response she could bring with her to the seminar."

CHALLENGE AND SUCCESS

DIFFERENTIATION AND SCAFFOLDING

We found it interesting that a simple self-reflection turned into a formative assessment that allowed teachers to pinpoint which students were having difficulty and then take specific action to make sure they were successful the next time around.

AUTHENTIC ASSESSMENT

Problem- and Project-Based Learning: *Using* Evidence

Considering the culture of Asheville Middle School, it was no surprise to find that the eighth-grade teachers were involved in an interdisciplinary project that would include at least one Paideia seminar and conclude with a "Future Fair." The meeting was led by science teacher Jeff Dewhirst, who was organizing a project regarding the depletion of fossil fuels. His idea was that every student in the eighth grade would complete

ACTIVE LEARNING

What If a Student Doesn't Understand the Seminar Text?

1. Analyze why the student had difficulty by helping her define her problems with the text.

2. Look for trends in the student's other work that may indicate a specific problem, such as decoding, vocabulary, or background knowledge.

DIFFERENTIATION

SCAFFOLDING

3. Provide extra practice with a different, similar text.

4. Scaffold understanding for the next seminar by providing the text to the student and going over it with her.

5. Give her one of the seminar questions and help her prepare a response.

CHALLENGE AND SUCCESS

a project and every teacher in the eighth grade would be responsible for facilitating some aspect of the project. He noted at the beginning of the planning meeting that the initiative would address four Common Core State Standards specifically and touch on many more as well:

> Conduct short as well as more sustained research projects based on focused questions, demonstrating understanding of the subject under investigation. (W.7)

> Gather relevant information from multiple print and digital sources, assess the credibility and accuracy of each source, and integrate the information while avoiding plagiarism. (W.8)

> Delineate and evaluate the argument and specific claims in a text, including the validity of the reasoning as well as the relevance and sufficiency of the evidence. (R.8)

> Analyze how two or more texts address similar themes or topics in order to build knowledge or to compare the approaches the authors take. (R.9)

In our experience with this type of problem- or project-based learning, we have found that most projects can be crafted to address virtually every standard in the CCSS, leading us to become more certain than ever that collaborative, inquiry-based activities are a key component to CCSS success. Furthermore, teachers report that such projects have a positive effect on struggling learners as they increase engagement, encourage deeper thinking, and often result in higher test scores. A significant advantage of such projects is that they offer multiple means of drawing on *evidence* from across disciplines to undergird student thinking—from research to text-based questioning to scientific or mathematical reasoning.

John Barrell, author of *Problem-Based Learning: An Inquiry Approach* (2007), found that disengaged or struggling students "become far more interested and involved because we are presenting them with opportunities to make choices, take more ownership of their own learning, and to express themselves in different fashions." (p. 9). He also contends that when students engage in problem-based learning, they are better able to make judgments based on well-researched evidence.

AUTONOMY

MULTIPLE
LEARNING
METHODS

Defining the Problem: A Key to Engagement

If you think about it, we probably don't use the word "problem" enough in education—at least, not in the context of teaching and learning (obviously, we're not talking here about discussions of poorly behaved students that take place in the teacher's lounge!). Math and science teachers present their students with problems, but how often in language arts or social studies do we think of starting a lesson with a problem? Yet the value of such an approach is clear—a problem is a mystery, an unknown that demands thought and creativity in the pursuit of a solution.

INQUIRY

The problem for the project we describe in the following section, as outlined by Mr. Dewhirst, involved alternative energy sources for the future. "Sustainability is the major theme," he said as he went over several learning goals related to the project.

- Students will understand which energy resources are fossil fuels and how they are created.

- Students will understand the implications of the depletion of nonrenewable energy resources.

- Students will evaluate renewable energy sources.

- Students will examine challenges in developing renewable energy sources.

MULTIPLE
LEARNING
METHODS

Note that each of these goals demands more than a lecture approach—there's a difference between students who *know about* energy resources and those who *understand* energy resources. Reaching understanding means active thinking, and that thinking would require individual research, reading, and gathering of evidence. What's more, the problem presented here has clear links to many areas of teaching—Mr. Dewhirst envisioned a learning experience in which each discipline would be responsible for a specific area of learning during this two-week project.

Science: Providing Content Knowledge

Since this project was based in science, teachers in the science department took the lead and discussed their responsibilities to provide content knowledge, make sure students had a conceptual understanding of key vocabulary, and guide student research.

VOICES FROM THE
CLASSROOM

How to Scaffold Inquiry Projects

"In teaching Terry Trueman's Stuck in Neutral *to two groups of resistant senior students, I stumbled on an inquiry-based project. We had just finished reading the novel together in class, and I wanted to challenge students to think about the payoffs of reading. I simply wrote a question on the whiteboard: 'What is the point of completing a task?' I was shocked at what resulted over the span of the next 45 minutes. The essence of the group's collective response to my question was as follows: 'We complete tasks in order to make progress—to grow.' Thinking they were on to something, I challenged them further. 'In what ways do we grow as a result of completing tasks?' And then I was shocked again. 'We grow most by helping others grow,' a student chimed in. And that was the start of an inquiry-based task.*

"Our discussion continued with two driving questions: (1) What life lessons exist within Trueman's novel? (2) In what ways can we share those lessons with others to help them grow? Their responses included:

- Love
- Empathy
- Bullying
- Relationships
- Death
- Divorce
- Cognitive disabilities
- Self-esteem
- Interpersonal communication

"Will science head up the seminars—and when will they be conducted, at the beginning or the end of the unit?" Ms. Hedt asked.

"Maybe both," Mr. Dewhirst said. "The first one might introduce students to the subject, and the last one would be more in-depth because they would know more about the topic by then."

SCAFFOLDING

"*We came up with questions for each of the categories. For example, regarding 'divorce' the questions included:*

- How often does divorce happen today?

- What is the history of divorce in the United States?

- How do U.S. divorce rates compare to divorce rates around the world?

- How does divorce affect people (especially children of divorced parents)?

"*These responses and questions became the basis of our inquiry-based task. As the project gained momentum, so did my students' needs. I created a number of graphic organizers to help them as they began the project.*

"*In the end, this project was one of the best choices I have made in over 13 years in the secondary classroom. The trick is that it wasn't my creation. The project literally took shape as my students and I discussed our purpose for reading a novel. The project was their idea. The 'guts' of the project belonged to them, giving the students a real sense of ownership and purpose.*

"*Ultimately, I enjoyed watching my 'resistant' students willingly and energetically engage a variety of authentic audiences in discussions about topics of their creation. One group made a presentation to other teachers about the importance of interpersonal relationships; three different groups presented to three different groups of freshmen about the importance of fostering/maintaining positive self-esteem, the negative causes and outcomes of bullying, and the importance of giving and receiving love. In each instance, I can honestly say my students were accomplishing* their *original purpose for completing a task—growing personally by helping others grow.*"

—Nick Yeager, English teacher, Barrington, Illinois

"It will be difficult to find texts that the students can wrestle with because most articles on this topic are not objective; they advocate for one side or another. That may be a huge challenge," another science teacher noted. The technology teacher suggested that they consider infographs where students examine data and draw their own conclusions. She also agreed to help teachers find online articles that weren't biased.

MULTIPLE LEARNING METHODS

TECHNOLOGY USE

HOW TO Teach Students to Conceptualize Vocabulary

As we discuss in Chapter 8, vocabulary study means much more than providing a list of words for every unit or project. When Mr. Dewhirst at Asheville Middle School says he wants students to "conceptualize" vocabulary, he means that the wants them to understand the multiple facets of meaning represented by the words or terms, to internalize how such vocabulary is used by experts, and to be able to use important words as vehicles for conceptualizing and formulating ideas. Mr. Dewhirst wants students to make key words a permanent part of their vocabulary banks—to own the meanings.

Science teachers will use the following principles of vocabulary study to help their students conceptualize words related to sustainability:

1. Preteach vocabulary with "friendly" definitions, and point out how words provide foundational, background information.

2. Use words in context multiple ways, multiple times.

3. Make key words the cornerstones of student discussions.

4. Provide graphic organizers that will allow students to explore relationships among words that are important to understanding sustainability.

5. Provide texts that use words in clear and understandable ways.

6. Create flexible lessons and assessments that allow each student to work toward mastery of all terms rather than taking a single quiz and moving on.

"But this would be a chance for us to teach students how to determine the validity of articles and credibility of sources," Mr. Dewhirst pointed out. The group agreed that students should be given infographs as well as various articles that were both objective and one-sided.

RELEVANCE

All teachers expressed enthusiasm about having students engage in research that would be meaningful to them rather than having them go through a traditional research-paper process for some artificial end.

Language Arts/Social Studies: Engaging in Writing and Reading

In the blended language arts/social studies classes, teachers would help students write an essay based on their research. "It should be an argumentative essay," Ms. Swartzlander noted. "Our kids need to work on defending their positions and citing evidence to support their arguments. This will be a perfect opportunity for them to practice those skills." She pointed out that two standards would guide their instruction:

> Write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence. (W.1)

> Draw evidence from literary or informational texts to support analysis, reflection, and research. (W.9)

AUTHENTIC ASSESSMENT

The writing assignment needed to dovetail with the research the students would be doing on fossil fuels and renewable resources in science, so after a bit of discussion everyone agreed on a simple prompt: *Explain why the renewable resource you chose will most likely replace fossil fuels in the future.*

INQUIRY

Although students would be reading informational text on the topic in science, teachers wanted them to read fiction as well as nonfiction so they could:

> Determine central ideas or themes of a text and analyze their development; summarize the key supporting details and ideas. (R.2)

> Analyze how and why individuals, events, and ideas develop and interact over the course of a text. (R.3)

They began brainstorming titles of books that would fit into the unit, especially dystopian novels because they would challenge students to think about the problems of the future.

"I like the idea of including series instead of single books," the reading teacher noted. "This may encourage students to get hooked and read several books instead of just the 'required' one."

SCAFFOLDING

HOW TO Start a Writing Assignment With Evidence

The first reading standard emphasizes that students should "cite specific textual evidence when writing or speaking to support conclusions drawn from the text" (R.1). It's a reasonable expectation and one that many teachers work toward daily in their classes, but we'd also suggest that this standard could be turned on its head. What if we instead proposed that students should draw conclusions from the text based on specific textual evidence developed while writing or speaking?

Photograph by Creatas

To imagine this approach in the classroom, think of how you might teach a poem, novel, or passage of informational text from this starting point:

- First, have students read the text, circling or highlighting what they believe might be key words or phrases throughout the passage.

Several teachers also mentioned Jeanne DuPrau's novel *The City of Ember,* a story about a futuristic world where electricity and fire have been lost. They wanted a novel for students who may not be reading on grade level, but they were concerned that this novel might be too "easy"—and that students might only watch the movie and not read the book. They decided to continue looking for other novels at various reading levels and report back at their next meeting.

DIFFERENTIATION

"We also should include nonfiction," an English teacher noted as he clicked through websites.

MULTIPLE LEARNING METHODS

"How about having kids look up the websites of environmental groups and determine which ones seem most legitimate? They could start by evaluating their mission statements," someone else suggested.

- Through discussion, explore these words or phrases, developing connections, questions, and themes of the text drawn from this evidence.

- Have students work alone or in pairs to turn one of these connections or themes into a statement about the overall meaning of the text (a thesis statement).

- Share these thesis statements as a group or with other pairs and refine them.

- Organize the original words and phrases students circled or highlighted—as well as others that are relevant—into groups that address aspects of the thesis.

- Use this material to craft an essay, technology-based product, or an oral presentation.

This is essentially the approach that Ms. Swartzlander's students took in understanding "The New Colossus." Look back at their conversation and you'll notice that attention to the simple word "teeming" led to a deeper understanding of the themes of the poem, an understanding that could easily have led to a writing assignment about the concept of abundance. Ms. Swartzlander's students could move in that direction not only through a teacher-presented theme, but through a simple moment of noticing the evidence itself and following it with a thoughtful conclusion.

"Or Chief Seattle's Letter to All the People. It has that famous line about the earth not belonging to man but man belonging to the earth."

The discussion continued until they agreed that their next step would be to individually create a list of texts and then meet to decide on the final choices.

Math: The Nuts and Bolts

While English teachers were creating lists of texts, the math teachers said they were willing to participate, but they didn't seem very sure about their role in the project. "We can't really give up two weeks of class time for this," they reasoned. Mr. Dewhirst reassured them that they didn't need to spend every minute of class on this project but that

BOOKS

Dystopian Novels for an Inquiry Unit on Creating a Sustainable Future

Ashfall and ***Ashen Winter*** (series) by Mike Mullin

When Yellowstone's supervolcano erupts, Alex's town is suddenly plunged into darkness. The ash that covers everything forces Alex to leave in search of his family, who was away when the disaster occurred. The second book in the series, *Ashen Winter,* follows Alex as he continues his journey for his family and his own survival.

Birthmarked (trilogy) by Caragh O'Brien

This series, beginning with the novel *Birthmarked,* explores genetic engineering, birth defects, and environmental issues such as water rights in the story of a teenage midwife who must deliver every 10th baby to a protected enclave for unknown reasons.

Divergent (Book 1) and ***Insurgent*** (Book 2) by Veronica Roth

In the dystopian world Roth has created, society is divided into working "factions," and all 16-year-olds must select the faction where they will spend the rest of their lives. Civil war creates a bleak background for universal themes such as love, loyalty, and the inevitable corruption of politics in the second book.

The House of the Scorpion by Nancy Farmer

Raised in a tiny country between the United States and the former nation of Mexico, Matteo, the main character of this novel, discovers that he is actually a clone of the country's leader, El Patrón. Embedded in this fast-paced story are deft questions about human rights, science, and our environmental future.

Life as We Knew It (series) by Susan Beth Pfeffer

When an asteroid hits the moon, the world suffers unimaginable environmental catastrophes from tsunamis to earthquakes. The plot centers on a family in Pennsylvania whose members try to find a way to survive. The following two books in the series, *The Dead and the Gone* and *This World We Live In,* explore the courage and determination it takes to live when everything that was once normal is now gone.

The Maze Runner (series) by James Dashner

In a strange, enclosed world where 60 teen boys find themselves, they must learn to grow their own food and create their own supplies. In the two sequels that follow, *The Scorch Trials* and *The Death Cure,* the plot unfolds in a planet devastated by sun flares.

Oryx and Crake by Margaret Atwood

Not exactly a young adult novel, this story alternates between scenes of the final human to survive a deadly virus and the technology-driven world he lived in before the virus was released. Recommended for mature high school students.

Ship Breaker by Paolo Bacigalupi

Set in a futuristic world where oil is almost nonexistent, this novel provides one adventure after another as Nailer, a teenage boy, works as a scavenger on grounded oil tankers.

Son by Lois Lowry

In this final book in the series that begins with *The Giver,* readers enter a futuristic world where evil and good stage a terrifying battle.

it would enrich the experience and learning for students if math classes would take an aspect of it so that the initiative was truly interdisciplinary. "You could graph data that the students find in their research on energy," he suggested. "Or perhaps you could help students with a scale drawing, maybe a model of a futuristic vehicle or a town run on alternative energy such as solar, geothermal, or wind."

MULTIPLE
LEARNING
METHODS

"Will kids actually build the model?" one of the math teachers asked dubiously, and a discussion ensued about how they could provide materials so that students could, indeed, create a simple model. The models could easily be designed around the specific geometric principles the teachers had been working on with students, someone pointed out, and scale drawings could involve reminders about ratios, fractions, and even some algebraic equations.

"We're always telling the kids that math is everywhere," one math teacher noted. "We want them to see math as evidence, as well. This project sounds like a good chance for us to prove that math is relevant."

"We'll bring a plan to our next meeting," one of the other math teachers said. "We'll figure out how to make math an integral part of this."

The Project Realized: Envisioning the Future Fair

AUTHENTIC
ASSESSMENT

The final phase of the project would be the fair itself, where students would present their findings to a real audience such as other students, local green industries, or politicians. "Is there a call to action, or will they just disseminate information?" the assistant principal asked.

"I just want them to become informed about the realities of their future, to think about solutions, and to use evidence to back up their thinking," Mr. Dewhirst replied.

MULTIPLE
LEARNING
METHODS

RELEVANCE

Other teachers discussed how such a fair could bring opportunities for service learning or internships in the future. "Who knows? Maybe adults will learn something from these kids," someone else added.

The project would start in less than a month, so each content area was tasked with bringing more definitive plans to the next meeting. They also formed a subcommittee of teachers from various disciplines to work on the Future Fair. The teachers presented the idea to their principal,

who was impressed both by the interdisciplinary nature of the project as well as by the collaborative work between the teachers in her school. Principal Sellinger, with fingers crossed, said she *thought* she might be able to find some money in the budget to defray the costs.

We recognize, as did Principal Sellinger, that teams of teachers don't always work together without friction. Yet the advantages of teachers working in community have been widely documented and credited with the impressive success of students from countries such as Finland and Singapore (Darling-Hammond, 2010). In the United States, studies have confirmed that when teachers collaborate on projects such as the one at Asheville Middle School, the advantages include

- increased student achievement,

- increased student learning gains,

- increased teacher-student respect, and

- increased student self-efficacy (McLaughlin & Talbert, 2006).

These advantages can be accrued by any school willing to devote the time to collaborate and develop a problem-based project. Not all projects need to be as time-consuming as the Future Fair, either; though we encourage this sort of full-blown and exciting opportunity for student learning, we also advocate projects that take only a day or two to complete. Many districts now require that students in each grade engage in some sort of inquiry project as a way of tapping into the type of deep learning advocated by the CCSS. For individual teachers or small teams, just start with your curriculum and look at topics that will lend themselves to active learning. Don't forget to delineate the standards you will be covering should anyone doubt the benefit of this approach.

The Advantages of Project-Based Learning

William Bender, author of *Project-Based Learning* (2012), cites two significant advantages of project-based learning: (1) students' motivation and interest increase, and (2) student achievement increases. When we review our standards for motivation and engagement, we understand

> Many districts now require that students in each grade engage in some sort of inquiry project as a way of tapping into the type of deep learning advocated by the CCSS.

why these advantages are evident. Project- or problem-based learning encompasses all of the components that create engaged learning: activity, autonomy, relevance, collaboration, technology use, multiple learning methods, opportunities for challenge and success, differentiation and scaffolding, inquiry, and feedback.

Real-world projects demand research and are often based on ideas drawn from reading or discussion. School projects should be no different. Students not only need to approach learning by following a chain of evidence from start to finish; they often thrive in environments where they are asked to solve problems, to discuss with proof, and to construct creative outcomes based on factual information. Evidence is the starting place; text, talk, and argument are the vehicles, but engagement and learning are the outcomes.

Evidence is the starting place; text, talk, and argument are the vehicles, but engagement and learning are the outcomes.

Examples of Problem-Based Learning

Following are some examples of problem-based learning that we've seen in various schools and at various grade levels:

ACTIVE LEARNING

- Students studied the campaign platforms of local or state candidates and chose a candidate they wanted to support. They then created campaign literature, slogans, and debating points. The culminating event was an evening forum where students made speeches in support of their candidates. The community and media were invited to attend, and several candidates showed up to lend a hand—and gain a bit of free publicity.

TECHNOLOGY USE

- Students interviewed residents of an assisted living facility and created a book of stories about their lives, along with video clips of the interviews, which are shown on holidays in the dining hall.

MULTIPLE LEARNING METHODS

- Students created awareness about recycling in their community by creating public service announcements and a lively website. They wrote a grant for recycling bins and a large billboard, which they created with the help of art students. The final component of the project involved having students create an original product out of recycled materials.

- A community was considering investing in an incinerator as an alternative to landfills. Students researched the advantages and disadvantages of incinerators and contacted other communities that had made the move to incinerating trash. They wrote informative (and a few argumentative) essays that were published in the local newspaper prior to city officials making the final decision.

RELEVANCE

- Students in an English class who were reading picture books to a first-grade class began researching why it is so difficult to get such books published. Each student wrote a children's book and submitted it to a publishing company.

CHALLENGE AND SUCCESS

- Students in a small Appalachian community wanted to know what life was like there during the Depression. They researched old news stories and interviewed older citizens who had lived during that time, creating their own "Foxfire" book, along with primary documents such as photographs, recipes, and diary entries.

COLLABORATION

- School officials in a large high school stated that they were removing all of the drink and snack machines from the campus. Students in a science class researched the nutritive value of certain snacks and fruit-based drinks and used their data to make a presentation to school administrators. Their goal was to convince decision makers to leave the machines and replace "junk" snacks with healthier alternatives.

RELEVANCE

- A journalism class researched injuries associated with certain sports, along with an analysis of the long-term effects of such injuries. They included quotes from players, coaches, doctors, and parents. They wrote articles based on their findings, and the local newspaper printed one article a week in the sports section.

INQUIRY

Final Thoughts

We are excited about the possibilities in the CCSS that students should cite and use evidence as well as "constructively evaluate others' use of evidence." And, as we found at Asheville Middle School, incorporating evidence in learning doesn't mean that every student must participate

HOW TO Structure Problem-Based Learning

While there are various ways of conducting problem-based learning projects, most include the following components:

- **Provide an "anchor" that offers background to generate interest.** Students may be given a scenario from a novel or a movie to create interest. For the renewable resources project, for example, teachers may provide students with a scenario about a future where all fossil fuels are depleted or with a compelling piece of informational text or video to help build background knowledge.

- **Give students choice in some aspect of the project.** Allow students to choose the texts they will read, an aspect of the project they want to research, the type of writing or product they want to produce, or even the makeup of their groups.

- **Generate a problem statement or driving question.** Consider using a scenario to make the project more engaging and relevant, such as this one: "You are a scientist who has just been told that fossil fuels will run out before anyone thought possible. You are responsible for finding the most efficient alternative energy source and convincing world leaders that your choice is more advantageous than any other."

- **Provide opportunities for students to raise questions, become familiar with the problem, and explore multiple facets of the issue.** Provide plenty of time for whole-class discussion, individual

in the tired and obsolete research paper. Seminars, inquiry learning, and interdisciplinary projects, all of which require authentic research, ramp up engagement while evening the playing field between "struggling

conferences, seminars, or research activities as well as multiple texts on the topic.

- **Teach students to conduct rigorous investigation and research.** Ensure that during this process students have ample time and sufficient technology to conduct a rigorous investigation. Field trips, guest speakers, Skyped interviews, and videos are also useful for research. Students must also be taught how to evaluate the credibility of sources.

- **Help students analyze findings and draw conclusions.** Provide students with a system for organizing and analyzing their findings. Model how to draw conclusions from data and offer extra scaffolding for those needing more help.

- **Provide ongoing feedback and revision from teachers and peers.** Make time for individual conferences with students or groups where students bring their research and explain their conclusions. Provide sufficient time for groups to work together with specific instructions on how to offer feedback to each other. Consider providing whole-group feedback at the beginning of each class.

- **Engage in reflection.** At the end of every work period, have students self-reflect about their day's work in their learning logs or fill out exit cards where they can ask questions or make comments.

- **Assess in authentic ways.** Consider alternative assessments for problem-based learning such as portfolios, presentations, or performance assessments rather than traditional pen-and-paper tests.

learners" and more advanced students. In 21st century classrooms, evidence can be the dynamic hub around which all reading, writing, and discussion revolve.