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Expanding Literacy for Adolescents

ALL CONTENT AREAS, GRADES 7-12

In this issue …

Every teacher in every subject area is challenged to provide instruction so that students have the literacy skills to comprehend the content. National conversations about school improvement and reform are converging on increasing high school graduation rates for learners in all subgroups. Attention to secondary education at the federal and state levels highlights our important focus on the fundamental need to increase reading and writing comprehension in all content areas.

This issue of *Educator's Voice* addresses two interrelated topics: the unique needs of adolescent readers and writers and proven strategies that increase comprehension of academic subject matter. Articles in this issue are for teachers of content subjects from grades 7 to 12, not just for English language arts teachers. Using these teacher-tested, research-based strategies, teachers across New York will guide more students to greater content comprehension. The result will be more students graduating from high school and going on to succeed in higher education and employment with 21st-century literacy skills.

Dear Colleagues,

I am pleased to share Volume III of *Educator's Voice*, NYSUT's journal of best practices in education. There is no doubt students must understand academic texts in content subjects to succeed in secondary school. New York educators have observed that student performance on high-stakes assessments is frequently more a measure of reading ability than of content understanding.

An important study published in 2007, *Academic Literacy Instruction for Adolescents*, focuses our attention on instruction that will be cognitively and intellectually engaging for students and to highlight literacy as the center within each of the academic disciplines, not the sole responsibility of the reading or English teacher. In *Where We Stand: K-12 Literacy*, the American Federation of Teachers called in 2006 for the identification and development of proven, research-based instructional strategies, practices and materials that enable adolescents to become more literate, with a particular focus on what works in schools with large populations of struggling adolescent readers. In addition, summaries of two significant reports published by the Carnegie Corporation, "*Reading Next*" and "*Writing Next*," begin on page 94. All articles in this issue provide examples of the recommendations from these reports, as noted on the title page of each article.

This edition of *Educator's Voice* is New York's response to the challenges. It contains research-based practices developed by NYSUT members who are increasing student comprehension in content-area instruction. These articles include strategies that apply to all subjects, studies conducted by teachers with higher education partners and reports of action research projects conducted by teams of teachers. While every content area is not addressed directly, the articles provide a wide variety of instructional practices which will help to inform every content teacher.

Enjoy this issue of *Educator's Voice*. We welcome your comments and ideas for future publications.

Sincerely,

Maria Neira

Maria Neira
Vice President, NYSUT

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Educator's Voice

Expanding Literacy for Adolescents

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Literacy Across the Curriculum: A Team Approach to Promoting Critical Thinking

SUMMARY

Can higher-level thinking be taught more effectively through an interdisciplinary approach? A team of eighth-grade teachers in Schenectady County sets out to answer that question.

This article addresses recommendations 1, 2, 4, 6, and 13 of the "Reading Next" and recommendations 1, 3, 4, 9, and 10 of the "Writing Next" reports of the Alliance for Excellent Education and the Carnegie Corporation of New York. (See pages 95-96 and 98)

"The writing assignments ... helped me become a better critical thinker because you could never just state your answer. You had to state it and then explain why you thought what you thought."

— an eighth-grade student at Iroquois Middle School in Niskayuna

As one of our students so succinctly described above, we aim to show how an interdisciplinary team of teachers can develop their students' critical thinking. Our team is made up of four core teachers at Iroquois Middle School: David Ackley, who teaches social studies; Laurie Farina in the area of English language arts; Monica Judd for science; and Randall Roeser in mathematics. We teach a group of approximately 100 eighth-graders and have worked as a professional learning community (DuFour and Eaker 1998) for three years on an action research project with Dr. Eija Rougle, a consultant with the Center on English Learning and Achievement (CELA). Our team meets weekly to discuss students, curriculum and what we can do to help our students achieve. Finding that students needed to improve their critical thinking, three years ago we set out to develop an action research project for our team to build those skills.

This project was inspired and guided by instructional methods used in the Partnership for Literacy program (Langer and Applebee 2006). The partnership's key elements are minds-on instruction, substantive discussions, curricular connections, and strategies that create classrooms rich in

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Monica Judd is a National Board Certified Teacher in Early Adolescence/Science.

Randall Roeser is a National Board Certified Teacher in Early Adolescence/ Mathematics.

Eija Rougle coaches teachers in CELA's Partnership for Literacy. She and co-author Mary Adler have captured lessons from the Partnership in the book Building Literacy Through Classroom Discussion.

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literacy and critical thinking. As a middle school interdisciplinary team, we also paid attention to discipline-based thinking (Langer 1993), as envisioned by professional organizations such as the National Council of Teachers of Mathematics and the National Science Teachers Association.

Our team worked for three years developing the program, and we continue to refine it. Our first year was devoted to discussion among ourselves about how to extend the CELA literacy model to all subject areas. In the second year we began to implement our ideas and engage students in tasks for each discipline that required critical thinking. We also developed a rubric for evaluating the critical thinking in students' writing, but did not use the rubric in a systematic way that year. The following year we made a commitment to meet weekly as a group to keep this goal at the forefront of our lesson planning and instruction. During our weekly meetings, which were most often during a planning period, we evaluated student writing, shared experiences from our classrooms, and reflected on the action research process.

This project sought to create opportunities across the team for students to develop deeper understandings of the content and to think critically. These opportunities came in two forms: writing — in journals, essays, and lab reports — that encouraged individual reflection; and discussions — in pairs, small groups, and whole-class circle formats — that allowed students and teachers to share ideas and learn from each other. During the first two years of our action research, our emphasis was on discussion techniques. In the third year, we decided to complement class discussions with a greater emphasis on writing. This article focuses on the writing component.

We defined critical thinking in terms of Bloom's taxonomy of educational objectives (Bloom 1956). To simplify our communication with students, we compressed Bloom's six categories into three levels: Level 1 (knowledge, comprehension, application); Level 2 (analysis); and Level 3 (synthesis and evaluation). The goal of our action research was for students to "climb the ladder" to exhibit higher levels of

The Partnership for Literacy's key elements are minds-on instruction, substantive discussions, curricular connections, and strategies that create classrooms rich in literacy and critical thinking.

Literacy Across the Curriculum: A Team Approach to Promoting Critical Thinking

> **This was a key instrument for promoting and evaluating students' critical thinking.**

thinking more consistently in their writing over the course of the year.

Action Research Plan

The first week of the school year, we asked students to write about their notions of what it means to be a "critical thinker." With this baseline to direct our instruction, each teacher led discussions explaining critical thinking in their particular subject.

As a next step, we presented our team writing rubric (Fig. 1), developed over the course of a few months based on Bloom's taxonomy mentioned earlier. The format is based on the New York state assessment rubrics used for the eighth grade. This tool is adapted for each assignment, but the structure, essential elements and rater's marks remain the same. This was a key instrument for promoting and evaluating students' critical thinking. Our hypothesis was that a single rubric with common expectations and rater's marks would have a greater impact than isolated efforts by each teacher

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Figure 1: Team 82 Writing Rubric

	LEVEL 1	LEVEL 2	LEVEL 3	RATER'S MARKS
Task Understanding	Demonstrates *little* or *no* understanding of the task.	Demonstrates *partial* understanding of the task.	Demonstrates *thorough* understanding of the task.	Comment if you did not follow directions, did not complete the task or misunderstood the task.
Conceptual Understanding	Demonstrates *little* or *no* understanding of the key concepts or "big ideas" in the task.	Demonstrates *partial* understanding of the key concepts or "big ideas" in the task.	Demonstrates *thorough* understanding of the key concepts or "big ideas" in the task.	Notation in margin: C Example of Level 2 understanding C+ Example of Level 3 understanding
Level of Thinking	Thinking limited to knowledge and comprehension. • facts • descriptions	Demonstrates analytical thinking. • explains • justifies • connects • classifies • compares or contrasts • illustrates • prioritizes • breaks down	Demonstrates synthetic or evaluative thinking. • generalizes • predicts • conjectures • critiques • judges • draws conclusions • recommends	Highlighted text: Yellow Example of Level 2 thinking Pink Example of Level 3 thinking
Evidence	Presents *little* or *no* evidence (facts, details) to support argument.	Presents *some* evidence to support argument.	Presents *extensive* evidence to support argument.	Checkmark on each piece of evidence.
Vocabulary	Uses *little* or *no* vocabulary of the discipline accurately.	Uses *some* vocabulary of the discipline accurately.	Uses *extensive* vocabulary of the discipline accurately.	Box or loop around correct vocabulary usage. Parenthesis around incorrect vocabulary usage.
Mechanics	*Many* errors in grammar, capitalization, spelling and punctuation.	*Some* errors in grammar, capitalization, spelling and punctuation.	*Few or no* errors in grammar, capitalization, spelling and punctuation.	See English editing marks.

and would help students see the similarities in critical thinking among the four disciplines. The Levels of Thinking category of the rubric is most central to our action research interests, and we provided action verbs to help students understand the type of thinking that characterizes each level. Co-author Ackley also posted brief exemplars of writing in American history that correspond to each level, which many students found helpful. The rubric laid out performance expectations in other categories that we consider important to student writing, such as vocabulary, use of evidence, and mechanics. A Levels of Thinking graphic (Fig. 2) posted in classrooms provided a visual cue that helped students know how the team's critical thinking focus cut across the four subjects.

Then the writing began: literary interpretations in English; document-based questions (DBQs) in American history; lab reflections in physical science; reflections on big ideas in math. As a culminating activity in June, all students prepared a portfolio in which they used reflection and revision to polish a writing selection from each subject. They also wrote about their critical thinking, an exercise that allowed us to measure changes in student metacognition — how they thought about critical thinking — since their baseline musings in September.

To keep our task manageable, we selected a representative sample of 12 students whose written work was used to measure the impact of our interventions. These students also participated in an oral debriefing at the end of the year.

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Figure 2: Three Levels of Thinking

Three Levels of Thinking

Level 3 Demonstrates synthetic or evaluative thinking.

generalizes   predicts   conjectures

critiques   judges   draws conclusions

recommends

Level 2 Demonstrates analytical thinking.

explains   justifies   connects

classifies   compares and contrasts

illustrates   prioritizes

breaks down

Level 1 Thinking limited to knowledge and comprehension.

facts   descriptions

* Based on Team 82 Writing/ Thinking Rubric 2009

Literacy Across the Curriculum: A Team Approach to Promoting Critical Thinking

Subject-Specific Cases

American History – David Ackley

Throughout the year, students in Dave's classes were taught how to write in response to DBQs that require students to analyze, interpret, evaluate, and synthesize information from a variety of primary and secondary sources. A document-based question, also

known as data-based question, is an essay or series of short-answer questions constructed by students using their own knowledge, combined with support from several provided sources. A DBQ is one part of the NYS assessment in social studies. One DBQ asked students to discuss ways World War II affected American life at home. An excerpt from one student's essay (Fig. 3) pointed out that women took the place of soldiers who fought in

World War II and describes the responsibilities that women had. The student noted that the war provided women with opportunities not previously available to them, a conclusion drawn by making a connection from previously learned material. The student also conjectured that the war might have been lost if not for the efforts made by women. Dave determined that the student demonstrated Level 3 thinking (highlighted in pink) because she made a connection and a conjecture.

English – Laurie Farina

Laurie adapted the team rubric to specific writing assignments. In the following examples, students read and analyzed *All Summer in a Day* by Ray Bradbury. During the study of this story, students reviewed vocabulary words, read the story, "made their marks on it" (made notes on their copy of the text to further understanding), completed a contrast chart, and read a poem that has thematic connections to Bradbury's story. Students also participated in class discussions where they could rehearse and compare their ideas and refine their thoughts. They were then asked to complete a formal writing assignment analyzing how the author uses the differences between the characters to emphasize the conflict in the story.

Students revealed many higher-level thoughts in this analysis. One student (Fig. 4) used literary vocabulary with

his mention of "contrasts" and employed appropriate evidence from the text. The student touched on the conflict in the story without explicitly stating so, an indication of critical thinking, but did not clearly exemplify the concept of conflict in a story. A second student (Fig. 5) did demonstrate a partial explanation of the conflict of the story, "that the sun only comes out on Venus every seven years." This student also demonstrated critical thinking, especially in her last line, "Maybe the conflict actually was the differences." Laurie's feedback encouraged the author to strengthen this argument in her revision.

Math – Randall Roeser

Randy assigned a Mathematical Reflection related to a "big idea" taught in each unit. Typically, the reflections were given as homework due the next class period. For example, to close a unit on geometric transformations, Randy asked students to respond to the following prompts:
a. Compare congruence and similarity transformations. How are they alike? How are they different?
b. Predict how the rule $(x,y) \rightarrow (2x,y)$ would transform a figure. Would this be congruence, or similarity transformation, or neither? Explain your thinking.

One student's response to part (b) is shown in Fig. 6. The student accurately used several new math vocabulary

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Figure 4: Example

"Writing to Promote Critical Thinking" - Fig. 4

In the short story, "All Summer in a Day", the author uses contrasts to emphasize that the classmates are cruel to Margot. Margot and her classmates live on the planet Venus where it rains everyday. She frequently reflects back on the time that she lived on Earth, where it is often sunny. Her classmates are jealous of the fact that she used to live on Earth. They treat her in a mean way to try to make themselves feel better. Margot is a very shy person, unlike all the other kids who are outgoing. When the kids want to play tag she just stands there refusing to be a part of the game even when she's tagged to be "it." When playing tag, her classmates are having fun as a group and Margot is feeling left out and lonely. While the kids go play out in the sunshine, they, because of her differences, lock Margot in the closet making her feel even lonelier. Even though they are very different people from very different backgrounds they should still be able to be kind to each other.

Although not clearly stated, you have the conflict! Emphasize how the differences between them created this conflict.

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Figure 5: Example

"Writing to Promote Critical Thinking" - Fig. 5

Margot was different from the other children on Venus because she came to Earth much more recently than them and could remember Earth, and more specifically, what the sun looks like, and how it feels. Margot seems more mature and less real than the others. She doesn't laugh or play games or sing songs unless they're about the sun. Margot also looks different. The story said, "She was a very frail girl who looked as if she had been lost in the rain for years and the rain had washed out the blue from her eyes and the red from her mouth and the yellow from her hair. She was an old photograph dusted from an album, whitened away, and if she spoke at all her voice would be a ghost." The conflict was that the sun only comes out on Venus for a few hours every seven years. Since Margot remembered the sun and the other children didn't they resented Margot and when she play their games or sing songs that only made the differences between Margot and her classmates easier to notice. I think the other kids were jealous of Margot. That she remembers the sun and because she may move back to Earth. It was because of this jealousy of her differences that made them lock her in the closet and miss the sun. Or maybe the conflict actually was the differences, and missing the sun was an effect of the differences between Margot and her classmates.

You are right on here. But be sure of your thoughts, no "I think" or "maybe."

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Figure 6: Example

"Writing to Promote Critical Thinking" - Fig. 6

Neither because even though there is a scale factor it only applies to the x-coordinate x-axis which would make the image of the figure a different shape than the pre-image. In a congruent transformation and a similarity transformation the shape doesn't change. So the rule (x,y)-->(2x,y) isn't a congruent transformation or a similarity transformation because there the scale factor 2 would change the shape of the image from the pre-image.

This is good thinking, but I'm wondering how the figure would be transformed.

C+

terms (other than those given in the prompt), as indicated by the circles. Her writing exhibited Level 2 thinking, highlighted in yellow; specifically, she gave a valid explanation for why the resulting figure would be neither congruent nor similar to the original figure. This explanation, combined with her response to part (a), also demonstrated a thorough understanding of the con-

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Figure 7: Example

"Writing to Promote Critical Thinking" - Fig. 7

I think atoms are amazing because their electrons can move so fast they make everything feel solid, like a very fast moving fan blade. Electrons move slower in cold temperatures, so what if something was frozen enough that its electrons would stop? Would that thing break down? Then the electrons in the air would slow down too, along with everything else. What if everything shrank to the size of an atom? What would that feel like?

cepts of congruence and similarity, thus earning the "C+" mark. However, she did not predict how the figure would be transformed (a horizontal stretch that distorts the shape of the figure), which would have been considered Level 3 thinking.

Physical Science – Monica Judd

Critical thinking skills are essential for scientific analysis. Monica used the team rubric to encourage and assess the critical thinking skills of her students in a unit on atoms. To engage the students in this unfamiliar and abstract concept, she used an excerpt from Bill Bryson's thought-provoking book, *A Short History of Nearly Everything* (2004).

After students had read the excerpt for the first time, it was clear they were intrigued by various ideas initiated by the piece. Their questions, however, often did not stray far from Bryson's. After completing the unit on atoms, students became more reflective. They now possessed the vocabulary and understanding to take their own ideas further. As a concluding assignment, Monica asked students to write a new paragraph for Bryson's book. They were to consider what they wanted to share about atoms and to write about it in a way that would capture the reader's interest. The team's writing rubric helped to stretch each student's level of thinking. One student combined his knowledge about the speed of atoms

with his own curiosity (Fig. 7). The higher-level thinking became evident when the student went beyond the concept of the movement of electrons and how temperature affects movement to the idea of air becoming involved and his curiosity about materials condensing (pink highlighting). Monica was pleased to find evidence that students were incorporating their own ideas into this assignment.

Conclusions

We are encouraged by our progress in developing a team model for promoting critical thinking across all subjects. Because we have a common vocabulary, expectations, and ways to give feedback, students are doing more higher-level thinking and are more aware of their own learning. At the end of the year, students were asked to reflect on the process we used to improve their critical thinking skills. Approximately 75% reported that they had noticed more critical thinking in all classes. Comments included, "I had to analyze and look deeper into everything," "The teachers got us to question things" and, rather insightfully, "Teachers were more reluctant to answer questions." When asked, "How have your ideas of what it means to be a critical thinker developed this year?" one student replied, "I realize that everything can be improved, and that my mind wants to do it rather than be lazy and leave it the way it is."

In the end-of-year portfolios and interviews, most students cited the rubric as a helpful tool. They also valued talk; as one of our eighth graders said, "Discussions help a lot. When writing essays you have ideas from other people to put in your essay." We also saw growth in their understanding of critical thinking, which one student described as the "ability to reflect on your writing and on the knowledge you need to be able to figure out an answer to a question."

Based on our experience and the feedback from our students, we continue to refine our definition of critical thinking, the rubric, and our action research methodology. We invite you to follow our journey and add your own insights at our wiki: *http://criticalthinking 8thgrade.wikispaces.com*

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Don't Assign Writing — Teach it!

SUMMARY

Students learn to write when they are *taught* to write in contrast to being *assigned* to write. When teachers and support staff teach students using specific writing strategies that develop fluency and organizational schema related to subject area content, students become writers.

This article addresses recommendations 1, 2, 3, 4, 7, 8, 9 10, and 11 of the "Writing Next" report of the Alliance for Excellent Education and the Carnegie Corporation of New York. (See page 98)

The Challenge

Teaching writing to adolescents can be a formidable challenge. Many content-area teachers have not been prepared in their course work to *teach* writing in their discipline. In addition, many adolescent students arrive in high school without having had sufficient instruction in writing about history, mathematics, or science. Much of their writing has been in language arts classes, with hope or expectation that what they learned in an English class can be transferred to their other subjects. Furthermore, many teachers hesitate to even *assign* writing to their students because of their perceived need to correct poorly written text, which in turn causes many students to either make perfunctory changes or even avoid the writing task completely.

For at least the past 30 years, research on student writing has supported the importance of teaching students to write in contrast to asking them to write (Rothstein, Rothstein, & Lauber, 2007, Langer, 2000, Atwell, 1998, Van Tassel-Baska, 1996, Graves, 1983). In *Writing As Learning* (2007) the authors state this crucial decision between asking and teaching by contrasting the differences. Many of us may recall our own school experiences when a teacher started with the words, "Go home and write an essay about..." Students' hands would go up with questions such as, "How long does it have to be?" "What is an essay?" And finally, "Does this count for a grade?" Fortunately, we've come a little further with the concept of *The Writing Process* (Simmons, 1998, Scarborough, 2001), which has added the concepts of gathering

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Stewart Lyons, United Federation of Teachers
Evelyn Rothstein, Ed.D

information, drafting, self and peer editing, and revising. In addition, many writing approaches and programs now include "strategies" such as getting started, writing to a specific audience, finding a voice, and so forth (Marzano, 2004, 2001, Maxwell, 1996, Smith, 1982).

Teaching Writing vs. Assigning Writing

The National Commission on Writing, in 2003, stated that "the amount of time students spend writing should be at least doubled … and that writing should be *assigned* (our italics) across the curriculum (p.4). The fallacy of this statement is not first focusing on *teaching writing* as a prerequisite to the assignment of writing, although the commission, in a later statement, adds that universities should require all prospective teachers to take courses in how to *teach* (our italics) writing (p. 5). The focus must be on *teaching* writing, meaning that all teachers of literacy-based subject areas need a model or blueprint for writing instruction and that the students learn and internalize this instructional model.

Beginning in the 1980s, when "writing" in schools began to take on the concept of being an integral part of literacy instruction, Evelyn Rothstein developed the model of Writing = Fluency + Organization or W=F+O. This simple "equation" meant that a writer must have words for writing and knowledge of the organizational format of specific types of writing, known as genres. The writer must be fluent and organized in order to write whatever specific genres she/he must write about (2007, Rothstein, Rothstein, and Lauber).

To the concept of W=F+O, Rothstein added 12 strategies that could develop writing skills for all ages and particularly for adolescent learners in every content area. These strategies would be integrated with the subject-area content and would align with four major English language arts standards for building literacy skills:

- Acquiring information and understanding

- Using oral and written language for self-expression

- Presenting opinions and personal perspectives

- Using social interactions to enrich student understanding of diverse peoples and cultures.

The Model for Teaching Writing

The model for the integration of teaching content area is illustrated in the Planning Wheel (Fig. 1) that presents the content of any subject as the central theme and its relationship to writing. The delivering of content is supported by strategies for:

- Building vocabulary (Taxonomies, Defining Format, and Morphology)

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Figure 1:

THE PLANNING WHEEL

- Acquiring knowledge of the subject by studying people of accomplishment related to the subject (Who's Who)

- Making connections between the subject and its global impact (Where in the World?)

- Developing a repertory of specific writing genres for delivering the content (Composing with Keywords, Metacognition, Reasons, Causes, Results)

- Creating a variety of social interactions to enrich understanding of the subject (Premises, Quotable Quotes, Personifications and Interactions).
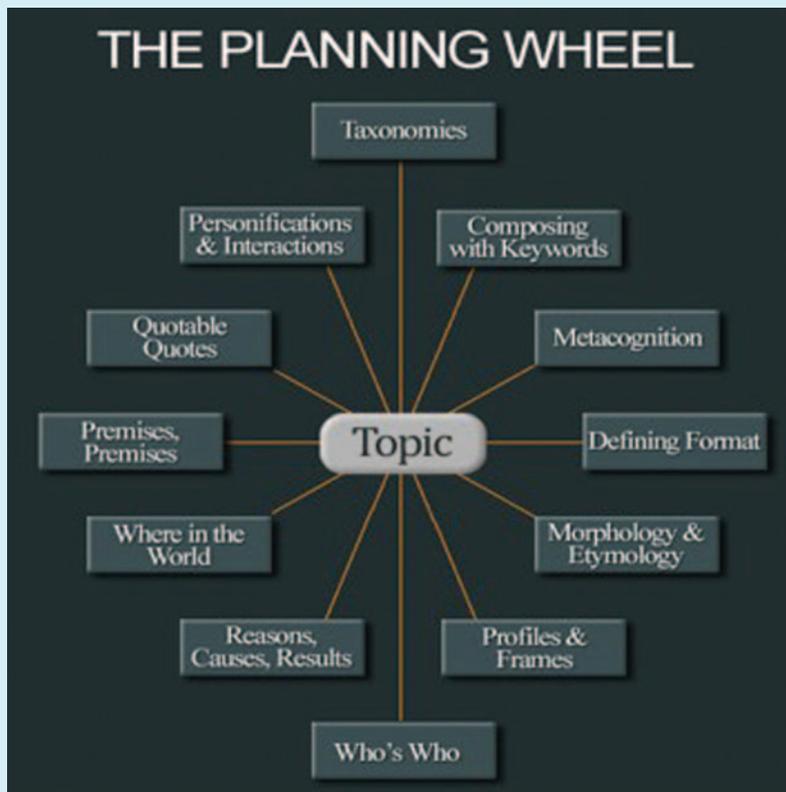
IMPLEMENTING THE MODEL

For the past several years, author Lyons has been teaching a NYSUT-sponsored writing course titled *Writing as Learning* to teachers and School-Related Professionals (SRPs), both urban and suburban, online and face-to-face. The vast majority of participants had never taken a course in the teaching of writing nor had they taken any courses for the purpose of enhancing their own writing development. Many were concerned about their own writing ability and a requirement that they share their writing — not only with the instructor,

but also with their peers. The participants were also concerned about the teaching task ahead of them, which would be to help adolescent learners create and improve their own writing.

A most recent course taught by author Lyons was to 25 SRPs who are teaching assistants, or TAs, in a suburban Long Island school district. Many SRPs are assigned to working with special education or at-risk students, and their knowledge of subject areas and writing in subject areas is essential in helping these students succeed. Yet, few, if any, of the participants in this course had completed college, nor had any of them taken any course on the teaching of writing to adolescents or other students, although they had often been assigned writing tasks during their own school years.

Like many teachers, the TAs were uncertain of their own writing abilities and were hesitant about their ability to assist students in writing. Learning how to teach students to write is a necessary requirement for both SRPs and the teachers they support. SRPs who know strategies for teaching writing have the advantage of both instructing students and sharing their knowledge with colleagues. As a result of this course, several of the SRPs were asked by the district special education supervisor to present a

workshop to other professionals in the district on the strategies and ideas they had learned.

GETTING STARTED: HAVE WORDS, CAN WRITE

Planning Wheel Strategies: Taxonomies, Composing With Keywords, Metacognition

Since *Writing as Learning* begins with the concept of fluency or "having words," participants began by creating Taxonomies — ABC lists of words related to content-area topics. This simple but essential starting point eased any fears of being assigned writing or a writing topic at the start of the course. The participants breathed a sigh of relief when they realized they wouldn't have to write an extended piece, either in class or at home. Nor would they have to hand in their papers or read their papers aloud to the teacher and their peers.

By simply creating a list of the words related to a content area, the participants could work together and share, bringing personal knowledge to the topic, and adding or revising as needed. They quickly realized that by creating their taxonomies, they had "something to say" about their topic.

Don't Assign Writing — Teach it!

Many of us may recall our own school experiences when a teacher started with the words, "Go home and write an essay about..."

Composing With Keywords

The next step in this procedure was for each participant to write a sentence using several words from the Taxonomy related to the topic. Once again, participants gained confidence. Now, they could easily share some of their knowledge, get peer approval, and realize, "By having words, I can begin to write."

Following is an example from a participant who created a taxonomy on The Erie Canal and moved to Composing with Keywords, then Metacognition, and eventually writing a full descriptive piece on that topic.

The task was for the writer to select three words or phrases from the Taxonomy and write a sentence using the selected words.

The words selected : *canal, DeWitt Clinton, transportation and trade*

The sentence: *In July of 1817, DeWitt Clinton ordered the start of a canal which would connect Lake Erie to the Hudson River to increase transportation and trade.*

Metacognition

By having the words of a topic and by having created sentences related to that topic, the writer is now prepared to create a first piece of text. As part of the teaching, the student writer learns that "metacognition" is to think about what he or she already knows, and is then provided with a Frame to inform another person about that knowledge. The Frame is an outline giving the order of the presentation. Because many students have difficulty starting a piece of writing, we provide the student the opening sentence, together with the three transition words and the closing sentence. This Frame helps the student focus on three important aspects of his/her knowledge and can be expanded over time.

The first metacognition piece, illustrated below, was written by one of the TAs in the course. It includes many other words from the Taxonomy (which are bolded).

I know that I know many things about the Erie Canal.

*First, the Erie Canal was the inspiration of DeWitt Clinton, the **governor** of **New York** in 1817, for connecting the **Hudson River** to **Lake Erie**.*

*Next, many people made fun of this idea and started to call this Canal "**Clinton's Ditch**."*

*Finally, the Erie Canal was completed in 1825 at a cost of **seven million dollars.***

Now you know what I know about the Erie Canal.

Following is an excerpt from the final piece or essay, which the writer composed after learning the other strategies of the Planning Wheel, which included Defining Format, Profiles, Who's Who, and Where in the World.

Essay — The Erie Canal

During the early part of the 1800s, New York was in need of getting goods, services, and people across the state faster and cheaper. DeWitt Clinton, who was the governor of New York at the time, wanted to build a canal that would link the Hudson River with Lake Erie. A canal is a human-made waterway built across land. This canal would allow boats to travel from New York City all the way to the Great Lakes.

At each class session, participants reviewed the previously taught strategies which they had incorporated into the writing, and then moved on to learn and use additional strategies.

Results

The success of this concept of teaching writing — not assigning writing — is exemplified by the reflections from the TAs, from the onset of the course to the end, several of which we have quoted, and the student results that follow.

"I have to be honest. When I heard I have to take this course, I felt scared. Writing is not one of my stronger points. After being taught, I could not believe that everything that I wrote was mine. I left with the thought, 'I can do that!'

"Having strategies gave me a formula to follow taxonomies for my words, profiles for organizing information, working in groups and having my peers listen and help and advise— teaching me something new about writing in every class. Now this is what I want to do for my students."

"I could never get my thoughts on paper. I was disorganized. I now like to write!! I now see the possibility for children and I hope that I can teach my students what I was taught."

The introduction of *Writing as Learning* began in the spring of 2009. Currently there are anecdotal records from the SRPs who shared examples of student work during the length of the course. The SRPs, and the teachers with whom they worked, reported significant improvement in student writing, including evidence of student knowledge of content, use of high-level vocabulary, and organization of ideas and concepts. Teachers taking the same course throughout New York and other states have reported similar results. In addition, many SRPs reported on their joy of having students who couldn't write or were fearful about writing hand in

Don't Assign Writing — Teach it!

Writing is how students connect the dots in their education.

papers with well-constructed sentences and interesting content.

By teaching students at all levels to write, we can make a significant change in their lives, giving them the ability to communicate at high levels, share ideas and knowledge, develop pride in what they have to say and how they say it, and have confidence in their own creativity. We firmly agree with the statement from the National Commission on Writing that "the nation's leaders must place writing squarely in the center of the school agenda...because writing is how students connect the dots in their education (p. 3)."

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Vertical Teaming for Critical Thinking

SUMMARY

Through the use of Vertical Teaming, teachers in a Washington County district are finding success helping students of all abilities develop the critical thinking skills they need to survive — and thrive — in tomorrow's world.

This article addresses recommendations 1, 2, 4, 6, and 7 of the "Reading Next" and recommendations 1, 3, 4, and 8 of the "Writing Next" reports of the Alliance for Excellent Education and the Carnegie Corporation of New York. (See pages 95-96 and 98)

"Teaching isn't what it used to be.

Kids aren't what they used to be ..." How many times have we heard that common lament in the faculty room regarding the current state of our youth? Each year Beloit College publishes a "Mindset List"[1] for their incoming freshman (our most recent high school graduates), and the compilation puts a lot of these "changes" in perspective. How so? Well, here are some examples from this year's list:

- The Green Giant has always been Shrek, not the big guy picking vegetables.

- They have never had to "shake down" an oral thermometer.

- They have never used a card catalog to find a book.

- Text has always been "hyper."

- Students have watched wars, coups, and police arrests unfold on television in real time.

- Everyone has known the evening news before the Evening News came on.

- American students have always lived with the anxiety of high-stakes educational testing.

- There has always been a computer in the Oval Office (McBride & Nief, 2009).

This paradigm shift does not even take into account the cultural swing of current students to cell phones, texting, social networking, blogging, Internet access, iPods, apps, and widgets, or the fact that PDA doesn't refer to kissing in the hallways any more, but to a Personal Digital Assistant. Our students are published authors on Wikipedia, Twitter, and blogs; film producers, actors, and directors on YouTube; and musicians creating and recording in their own personal computer studios. No wonder they're different. But are we? And subsequently, how can we change as individual teachers to reflect this kaleidoscopic

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world? Is being able to read and write enough when students are not only being shaped by the onslaught of text and images but also shaping others by what they create and contribute?

In today's world, sending high school students out with basic reading and writing strategies for the English language is not enough for their survival, much less their potential to thrive. So, as educators we first need to agree on what being "literate" means. Typically, literacy has been defined as the ability to read and write (Merriam Webster, 2007) and often in this country has been measured by the ability to comprehend newspaper articles (written at about a fifth-grade reading level), although there has never been a universal definition or standard. Within the last few years a new thinking has emerged, reflected in organizations such as the United Nations Educational, Scientific and Cultural Organization (UNESCO)[2], which has drafted a much broader definition of the term to include:

the ability to identify, understand, interpret, create, communicate, compute and use printed and writ-

ten materials associated with varying contexts. Literacy involves a continuum of learning in enabling individuals to achieve their goals, to develop their knowledge and potential, and to participate fully in their community and wider society (2004).

Our students' participation in the broader media of our society and their individual achievements are directly impacted by an inundation of information from friends, parents, teachers, community, television, magazines, billboards, the Internet, pop-ups, and advertisers. Their world is a blur of incoming data — written, oral, and visual — which influences their self-image and world view. It is now imperative that the "front lines" of education regroup to meet this shape-shifting educational landscape. The question is, how?

First, we must incorporate critical thinking skills and strategies into the literacy standard with an emphasis on the ability to interact, analyze, evaluate, and synthesize the information that students encounter, as well as produce.

Vertical Teaming is the practice of establishing a team of different grade-level teachers in an academic area to communicate, cooperate, design curricular change, and create support structures to encourage high achievement by all students.

Vertical Teaming for Critical Thinking

In today's world, sending high school students out with basic reading and writing strategies for the English language is not enough for their survival, much less their potential to thrive.

We must recognize the pressing need to integrate these essential skills, so we may move forward with a plan to achieve our literacy goals.

Critical thinking has been identified as one of the requisite survival skills of the 21st century. Therefore, as educators, we need to teach students to think critically, gather information, evaluate worth, ponder implications, imagine solutions, and reflect on new ideas and alternate outcomes. According to Richard Hersh, "The kind of learning we need stimulates the imagination and teaches how to construct meaning and make disparate information coherent." We must intentionally instruct our youth not to merely read or passively absorb the words they see, but rather to effectively "chew up," dissect, and reassemble the information they consume — question, challenge, comment, reflect — and become active participants and contributors to the process, partnering with the originator.

Next, we must formulate a strategy. The Critical Thinking Community [3] states, "Critical thinking is the art of taking charge of your own mind. Its value is simple: If we can take charge of our own minds, we can take charge of our lives" (Rusbult, 2001). So how do we teach our youth to "take charge" of their learning? Teachers at Cambridge Central School in Washington County have found success in adopting the critical thinking

standards set forth by the College Board. Teachers created a Vertical Team to teach, reinforce, and broaden those skills.

What is a Vertical Team?

Vertical Teaming is the practice of establishing a team of different grade-level teachers in an academic area to communicate, cooperate, design curricular change, and create support structures to encourage high achievement by all students. Since this model was adopted, teachers from multiple districts in grades 6 through 12 have participated in Vertical Teaming workshops (ranging from one-day sessions to weeklong summer institute seminars). These experiences fostered an understanding of critical thinking skills that could be incorporated by all participants. According to the faculty study group at Drake University (2005):

> Critical thinking is not learned automatically ... students must be taught/learn to think critically, to do some of their own research, and to communicate their new knowledge (Cairns et al).

The acknowledgment that we must take hold of the expected outcomes has led our teachers to work together to form a fluid curriculum. They have developed the materials to offer embedded instruction in the necessary critical thinking skills, to create a "common language" across grade levels,

and to scaffold the framework needed. This new ELA construction has directly impacted our approach to reading and writing, the building blocks of literacy.

Reading and Critical Thinking

Past research by Mayer et al. (1999) has shown that there are three types of readers:

- Those who pass over the words without gathering facts or remembering much information;

- Those who remember many facts and details but are unable to apply what they have read; and

- Those who identify and remember the main ideas and are able to apply what they have read to new situations (cited in Cairns et al, 2005).

Clearly, we hope to teach students to become the third type of reader — selecting information, organizing, and integrating new information with what they already know — before they launch into the world-beyond-high-school. Mayer et al. (1999) discovered that this type of reading "improves short-term memory; organization improves understanding and long term memory; and integration and reflection improves the ability to apply the information" (cited in Cairns et al., 2005). Teachers at Cambridge reviewed this desired outcome and incorporated the skills for close reading through their

Vertical Team. This model teaches students to interact with the text, to comment, to question and to analyze, and provides the key ingredients to move first- and second-level readers to the third stage. It provides classroom practices of modeling, discussion, and Socratic learning to foster these higher-level skills. Students have begun to read more carefully, knowing they will be called upon to discuss and defend their thoughts. It also creates a forum in which traditional texts and readings may be challenged and new thoughts may arise without creating anxiety in students of being labeled "wrong." Students will learn that "with evidence" their interpretations are valid and real.

But the ultimate test occurred this year in a high school self-contained special education English class. When students began to learn how to "close read," think about what they were reading, respond and interact with the text, one student put down her head and refused. "I don't want to," she admonished her teacher. "I'll never use this stuff."

"Untrue" her teacher responded to this expectant teen mom. "You may not choose to read this kind of literature after high school but you will use these skills every day, whether selecting a car seat for your soon-to-be-arriving baby, deciding on your first car or which bank to apply to for a mortgage;

> This model teaches students to interact with the text, to comment, to question and to analyze, and provides the key ingredients to move first- and second-level readers to the third stage.

METHODOLOGY

Steps to Creating a Vertical Team

L

Learn more about Vertical Teaming
ask questions, identify needs, look at successful models and demonstrations

A

Assess regional supports
teacher unions, Teacher Centers, BOCES and professional organizations

D

Develop building and district support
engage teachers, administrators, students, their families, and the community

D

Determine goals and implement a multi-year action plan
including evaluation tools aligned with district efforts

E

Evaluate progress
regularly and systematically, using established benchmarks

R

Reflect on practice
strive for continuous individual and team development

you will need to be able to pay attention to the details you read and hear, discover the similarities and differences, incorporate new information, evaluate fact from fiction, assess the tone, and make an educated decision — that is what we are practicing." The student picked up her head and started participating.

Writing and Critical Thinking

Whether texting, blogging, digging, or tweeting on their own time, or authoring a multi-page research paper at school, students need to be able to bring together an array of information and synthesize it into a cogent argument. This, too, teachers at Cambridge have sought to address through their Vertical Team model. Incorporating the critical thinking skills necessary for successful reading has also warranted a reevaluation of the writing model. Students' development of close reading skills has led them to a higher level of writing. They now interact with texts, questioning, commenting and annotating as they read and they realize that each author has an audience and purpose. It has helped them bring a more focused approach to their own writing; leading them to identify and integrate their purpose and use thoughtful diction and syntax choices to enhance their meaning. These gains have been made using a systematic,

fluid approach: linking concepts and skills through grade levels, building on previous success and mastery, or reteaching and reinforcing previously introduced but yet-to-be-mastered outcomes. This is fundamental to the Vertical Team approach.

This year, we, as teachers, started to critically reflect on this emerging process; we noticed several positive changes in students. Both the 10th- and 11th-grade teachers noticed the following growth in our incoming students:

> Their awareness of diction and syntax, as well as their willingness to take risks and attempt to analyze the author's purpose is refreshing. We're not there yet, but we are beginning to see the fledgling fruits of the process with a lot less plot summary and students really starting to stretch and work their "brain muscle" before they engage in speaking or writing.

They also evidenced this trend last year on the 9th- and 10th-grade final exams.

It wasn't until the end of the year that we could see all the little pieces we had been developing fall into place. For some students it created an almost complete puzzle picture; for others the "edge pieces" were in place and they had the rest to fill in as they developed more skills.

Vertical Teaming: A Developmental Approach

We have found that the developmental nature of Vertical Teaming across multiple grade levels (including elementary school) is crucial to its success with all students. We all have had a variety of student styles and abilities in our classrooms — those who are way ahead of the curve, those who move comfortably with the pack, and those who struggle to keep up. Teachers in a Vertical Team develop critical thinking skills in all learners, at all levels. This challenges the "high level" student to incorporate analytical thought and synthesize material earlier, empowers the average student to acquire skills methodically, and supports the struggling learner, allowing them to benefit from the skills presented and modeled over a longer period of time — the years that they travel through the vertical scaffold. This multi-level approach meets the different needs of different learners, based on their preparedness as they move through the developmental continuum. Most importantly, it does not leave any students on the outside of the process. In short, it promotes differentiated instruction for varied learners while allowing them all to reach for the same educational "brass ring."

Real learning takes time; there is no "quick fix." Hence, this redesigned platform and vertical team was proposed with a three-to-five-year implementation timeline, with the first reporting due at the end of the third year; allowing the incoming (then ninth-grade students) to travel through the 9th and 10th grade curriculums as well as choose between the regular 11th grade with NYS ELA or our school's offering of AP Language and Composition. We are currently in our second year and, due to the purposeful nature of the design, we are looking forward to the next year when the first-year cohort will take their exams. At the close of the first three-year cycle we will look to NYS ELA passing and mastery scores, AP enrollment numbers, and AP scores as compared to SAT or PSAT verbal scores, as well as anecdotal recordings. We believe that we will see, based on current observations and beginning trends, that more students will see themselves as capable learners, participants, and creators willing to engage in higher level courses or perform exceptionally well in regular coursework. We also believe students will incorporate and generalize their critical thinking skills and strategies across curricular areas and content information, allowing them success in multiple areas.

Developing a Professional Community: Supporting Each Other

Our students are not the only ones who need support. The teachers at Cambridge, as they embarked on this path, realized that they too needed advice, feedback, discussion, and sup-

> It provides classroom practices of modeling, discussion, and Socratic learning to foster these higher-level skills. Students have begun to read more carefully, knowing they will be called upon to discuss and defend their thoughts.

Vertical Teaming for Critical Thinking

Artwork by Will Thomas, 11th grade student, Cambridge Central School. Printed with permission of the artist

port to better serve students. In addition to the vertical model, we needed the grade-level-to-grade-level dialogue to resolve dilemmas and share ideas. We worked to develop a network for our teachers with other local districts that share our interest in this model, encouraging dialogue, opening up professional development opportunities, and weaving a strong web of best practices. This summer we hope to continue on this journey by broadening the learning community to include other disciplines within our programs. Critical thinking across the curriculum (as established by Longview Community College in Kansas City) aims for "an application of logical concepts to the analysis of everyday reasoning and problem-solving" (Miller & Connelly, 1996). We believe that if all curricular areas come "on board," even if it is one at a time, and students are applying these skills in multiple areas, we will produce a generation of critical thinkers. It is a challenging but attainable goal.

We are not alone in this effort. There are trailblazers who have gone before us and existing networks we can tap into that will support our work. By connecting with them we can exponentially increase the range of possibilities available to us. In this instance, Cambridge forged a collaborative partnership with New York State United Teachers, the Greater Capital Region Teacher Center and the Washington-

Saratoga-Warren-Hamilton-Essex Board of Cooperative Educational Services (BOCES) to begin to further develop Vertical Teaming capacity throughout our area. This initiative will foster continued Vertical Team development at Cambridge, as well as provide mutual support between Cambridge and neighboring districts within our region.

Conclusion

In each district, in each state, there are unique circumstances that preclude a one-size-fits-all approach. But no matter where we teach or what our community standards are, we must first talk. Then we must collaborate and plan. Finally, it is up to us — the teachers on the front lines — to lead educational reform and institute the changes we are looking for in the classroom itself. And as we see the impact of our implemented strategies on our students, we can participate in a professional learning community to offer support, best practices, and advice as we continue to travel along our own learning paths.

In this media-saturated world, where vast resources of information remain untapped and unbridled in cyberspace, we must prepare our students to navigate, participate, and contribute as effective thinkers. We must arm them with critical thinking skills as the requisite tools of inquiry and functioning in modern society. We must make them

critical readers and writers as they absorb and contribute to this fluid informational landscape. It is imperative that we underscore the importance of literacy as a life skill. Critical thinking has become critical literacy, and is no longer the privilege of the educational elite or academically gifted. It is essential for teachers to supply these tools in the survival kit

we provide every student who crosses our threshold.

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ENDNOTES

[1] The complete 72-item Mindset List can be found at *www.beloit.edu/mindset/*

[2] Information presented at an international expert meeting in June 2003 at UNESCO

[3] The Critical Thinking Community was developed as part of The Center for Critical Thinking, established in 1980 by Dr. Richard Paul. Dr. Paul is considered one of the founders of modern critical thinking and is internationally recognized for his contributions to the field.

... we must first talk. Then we must collaborate and plan. Finally, it is up to us — the teachers on the front lines — to lead educational reform and institute the changes we are looking for in the classroom itself. And as we see the impact of our implemented strategies on our students, we can participate in a professional learning community to offer support, best practices, and advice ...

Collaborative Blog Projects: Learn to Stop Worrying and Love the Blog

SUMMARY

For students who are used to acquiring many reading and writing skills from the Internet, weblogs, or "blogs," can serve many pedagogical uses. Here, the author has students use blogs to create a fictional story based on a text.

This article addresses recommendations 2, 3, 4, 6, and 8 of the "Reading Next" and recommendations 1, 4, 9, and 10 of the "Writing Next" reports of the Alliance for Excellent Education and the Carnegie Corporation of New York. (See pages 95-96 and 98)

Contrary to popular opinion, America's youth are reading more. The Millennial Generation is made up of increasingly sophisticated readers and writers who move daily through a multifaceted network of literacy, constantly inundated with text and media as they surf social networking sites, wikis, and personal weblogs or blogs. Blogs are no longer just about personal journaling; they are popular pedagogical tools that present differentiated content in interesting and — what's equally important — accessible ways.

Ducate and Lomicka (2008) cite studies in which blogs "facilitate knowledge sharing, reflection, and debate" (Williams and Jacobs, 2004), lead to "self-expression and self-empowerment" (Blood, 2002), and promote student ownership and creativity. While blogs may enhance critical thinking and literacy skills (Oravek, 2002), they also have a strong social component; for example, they encourage observation and engagement with real-world events and questions (Blood, 2002). They are simple to use, "an attractive medium for promoting literacy skills" that doesn't require sophisticated technology skills (Ducate and Lomicka, 2008). Finally, they are a perfect start to experimentation with mixed media and text. Reading a blog includes "paying attention to layout, colors, images, and even sound, not just text" (Davies and Merchant, 2006). In fact, Web authors often create special layouts based on favorite colors, images, and life experiences, while their texts utilize different genres of writing: journal entries, poems, explanations of the meaning behind a song or photograph, or even e-mails and letter exchanges.

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Because blogs aren't bound by conventional rules and can exist as sites of experimental creativity, they are often misunderstood, even by this new generation of readers. When I was explaining what a blog was to my heterogeneously mixed English classes of sophomores, juniors, and seniors, few knew what one was. Very few, in fact, had ever blogged before (and I teach in a school of high socio-economic status, of mostly white students, followed by African-Americans, Indians, and Asians). Those who did blog defined the blog as an online personal journal composed of chronological entries, much like a diary.

A quick perusal of blogs at *blogger.com* or *livejournal.com* supports this simple definition, since many bloggers write about their personal thoughts and experiences. Another common conception of the blog is as an impersonal forum in which students write critical responses to educational materials. As Robert Godwin-Jones notes, "... most educational uses of blogs

have involved course blogs in which the instructor leads a discussion on course-related topics" (2006).

Yet, blogs are not just about exploring the self and identity, any more than they are only limited to reader response. Blogs can be used to explore literature in a way that develops literacy skills, a sophisticated understanding of story structure, and a strong sense of social awareness and audience, while also enhancing student ownership and engagement. Godwin-Jones found that educators need to help facilitate literacy skills by "creating language learning media or applications which mirror the kind of online world students experience — student-centered with collaborative opportunities, allowing plenty of space for creative and reflective processes" (2006). A blog project provides the perfect environment to achieve this balance, and this article explains how my own blog project reached my goals — and then some.

> Blogs "facilitate knowledge sharing, reflection, and debate" ... lead to "self-expression and self-empowerment" ... and promote student ownership and creativity.

Collaborative Blog Projects: Learn to Stop Worrying and Love the Blog

Storytelling is ... "a discovery process that advances literacy and language development" ... by providing the opportunity to explore creativity and exercise imagination through language use.

Having Goals is Crucial

I asked my students to use blogs as a medium for writing fiction, rather than non-fiction accounts of their lives or the lives of others. Students interact with a text on an entirely different level when they are asked to create a fictional story based on a text. This project let them choose, interpret and rewrite one character's story from a group of three texts: *A Long Way Gone: Memoirs of a Boy Soldier, First They Killed My Father: A Daughter of Cambodia Remembers,* or *Forgotten Fire* (two memoirs and one fictional text based on historical events, respectively). Each student chose a character from his or her book whose story was only partly told, and used the blog to narrate the conflicts of that story (with an obvious suspension of disbelief, since most characters would not have had access to the Internet). Students could write about aspects of or chapters in their characters' lives "missing" from the book, a traditional teaching assignment. When they used the blog as a medium, however, they were also able to connect their stories with contemporary blogs, particularly those by soldiers and civilians in the Iraq and Afghanistan wars. These blogs often convey thoughts on and feelings about the experience of war; students used them as models and created blogs for fictional characters that shared the emotional, physical, mental, and even spiritual journey someone might face when confronted by war in real life.

Different Genres Help Build Awareness of Story Structure and Audience

Blogs are not just about personal diary entries; they can utilize many different genres, although they do not have to. Regardless of the genres you choose to include in a blog project, the story should be shaped by its dramatic structure — this way, students learn the same narrative components that they would in the production of a written story. Graphic organizers help students structure their story into five components:
(1) a regular diary entry about the narrative's setting; (2) a photo essay that transitioned from the setting to their individual story plot; (3) a diary entry about the climax (more on conflicts later); (4) a letter/e-mail/Instant Message exchange between characters about the climactic conflict, and
(5) a diary entry about the resolution of the conflict. Each component was assigned a set of directions and a rubric that was given to students ahead of time. The directions were clear and concise, and the rubrics allowed students to both be creative and original and to assess their work (and that of others) against content and grade expectations.

Students then began their craft of storytelling. Storytelling, after all, is "a discovery process that advances literacy and language development" (Huffaker, 2005). By providing the opportunity to explore creativity and exercise imagination through language use (Cassell & Ryokai, 2001), this form of storytelling, which is centered on the character's major conflict, requires students to take responsibility for their story by making creative and thoughtful decisions in the ways they communicated their character's thoughts and feelings.

Developing Literacy Skills

The graphic organizers did not just ask students to identify the five different components of the project; they helped them connect these components to several concepts we had discussed when reading our texts: inhumanity, compassion, hope, family, survival, and courage. Students chose one concept and used it to organize their conflict, a methodology similar to Hemingway's theory of the tip of the iceberg, where one organizing theme (or, in this case, a concept) can ground a story and point to its interpretive meaning. Once the story structure, conflict, and concept were determined, my students and I could focus on writing through mini-lessons on finding the right simile or metaphor, choosing vivid verbs, and balancing sensory details with plot narration.

In class, I encouraged students to return again and again to three books; since their stories were expansions and revisions of another author's work, they were encouraged to identify and "mimic" that author's voice, style, and characterization. After they had done this — when they fully understood and became immersed in the author's world — they could move toward constructing their own voice and identity as writers. Thus, each stylistic and content-based choice, from which appositive or participial phrase to use in description, to whether their character is reunited with family, demonstrated their growth as readers, interpreters, writers and storytellers. (See sidebar on following page for student examples.)

Stimulating a Sense of Audience, Social Interaction and Social Awareness

The blog allows communal experience of the writing process and product in a way that such traditional projects do not. In fact, I found the most surprising outcome of this project was not how well the students grew as readers and writers, but the important role that a peer plays in the writing process. Once each entry was completed, students were instructed to read each other's stories and post constructive comments. To keep this peer-review atmosphere as positive as possible, I assigned each student specific blogs

METHODOLOGY

My Expectations

I always begin planning a technology project — especially one that uses the Internet — with certain expectations:

■ I expect that not all students will have access to a computer and the Internet, so I provide them with as much class time as possible.

■ I expect there to be log-in, uploading, and viewing issues that will require patience and some help from my IT person or even tech-savvy students.

■ I expect it to take more time to finish the project than I plan for.

■ I expect certain goals to be accomplished even before I begin the project, and I connect performance indicators from the state to specific standards I want to address.

■ I expect to be frustrated, but I also expect to be rewarded, as my students achieve goals they might not have in a traditional paper assignment.

Collaborative Blog Projects: Learn to Stop Worrying and Love the Blog

What are the students saying?

A sophomore wrote about the concept of courage in *First They Killed My Father* by focusing on a conflict born out of the Cambodian genocide. She described how a man in the resistance offered to help her character, Kim Ung (who was pretending to be with the Khmer Rouge). The author described the old man: "Soft wrinkles like ripples in an ocean had settled around his eyes and lips, showing he was at least fifty years old. His sincere black eyes seemed to bore into me, searching for a soul that he was convinced was there, searching for the courage he must have believed was in me, searching for the signs of agreement that he thought he would find." But Pol Pot's regime had stripped too much away from Kim's sense of humanity and identity. Kim slaps the man's hand away, and tells the guards he is a traitor to the Khmer Rouge, which gets the man killed.

The author created this moment because she understood that to get at the root of inhumanity, she had to reveal a society built on corruption, where "everything is backwards. Kindness is treated as evil. Love is seen as a sin. Intelligence is treated as a threat to the well-being of the people. And an act of cowardice is rewarded as though it is an act of courage." Furthermore, in order to vividly illustrate this conflict, the author's syntax included a simile, sensory details, descriptive language, and a thoughtful use of repetition. This was not uncommon for any grade or ability level, as even the most challenged students found themselves writing beautiful and sophisticated sentences.

These skills apply to the photo essay as well, as a junior described the process, "I used the ideas of antithesis and contrast to empathize the vitality of the healthy, thriving Cambodia of the past with the death and destruction that the Khmer Rouge wreaked upon her." Choosing a picture and the order of pictures was equivalent to the choice of words and the syntactical placement of them.

A different sophomore pointed out, "Words don't always have to be words in English class — they could be images or sounds as well, and they do not always have to be written on paper." In this student's IM exchange, she found that she "could use IM characteristics such as '...' to represent a mysterious silence or awkwardness between the characters, or 'sent at 6:05 pm' after exchanges to indicate the length of time gone by after one's written message."

A well-planned creative project can enable the creative space for a student to explore the thoughts and feelings of a human being whose situation is difficult to imagine, while also improving the understanding of story structure, genre, and literacy skills.

to comment on, ensuring all students would have equal peer responses (please note that as an administrator of my class blog, I had to enable feedback/comments in the settings section).

The students and I interacted with the author and each other in the comments section, providing positive feedback while also suggesting changes. For example, one senior realized that "I didn't remember that my audience may not follow what I was thinking...this came to haunt me" in the comments section; subsequently he went back and cleared up any confusion. By communicating in this way, students helped each other catch problems as minor as incorrectly naming a character, or as major as forgetting to write a component of the project, all before final revisions and grading.

Exploring common topics with other classroom teachers in an Internet project like this one can help to unite different classes (Leu, 2001). My colleague and I chose to split up the classes based on the book they chose to read, group "chemistry," levels, ability, and group size. One sophomore found this new experience to be "difficult" because she realized she needed to be "very descriptive and thorough" for her audience to "understand what message I was trying to convey." Students were pushed to revise and clarify their blogs not

just for a small group of classmates but for a wider, mixed audience. Collaborative Internet projects often invite this productive "difficulty;" as Castek, Barton, and Nierlich argue, "In contrast to pencil-and-paper writing activities, [Internet projects allow] students to enthusiastically [rework] their ideas to help their virtual partners grasp the ideas they [want] to communicate" (2008).

Since students had such a diverse audience, and commenting was mandatory, blog interaction was unlike class discussion — every student participated and every voice was heard. Comments invited discussion and even disagreement; as T. DeVere Wolsey explained, dialogue on the Internet allows students "to negotiate meaning with the literature they read through a social context that specifically calls for thoughtful response" (2004). Although Wolsey and Cathie English separately explored electronic threaded discussion groups about literature, their argument certainly applies to blog commentary. Students, especially the silent ones, benefited as much as "those who normally respond in class, because it asks them to give a more in-depth response" without the pressure of performance (English, 2007). Such interaction breeds positive peer pressure and alternative forms of engagement.

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Ten Steps to Setting up a Class Blog

1. View *21classes.com, Edublogs.org, Learnerblog.com*, or *Classblogmeister.com* and sign up for one. I prefer *21classes* because I have complete control over everything, and all student blogs link to the class page.

2. Check all the settings, especially those pertaining to posting, viewing, and moderating posts and comments.

3. Make your class blog completely private so only your students can read it. If this option is not available and there is a separate blog for each student, you will have to instruct students to use the settings you prefer.

4. You are the moderator, responsible for everything that occurs on the blog. Create groups based on the chemistry of the class, spend time working on constructive feedback, and make sure there's a section for comments on your rubric.

5. Play around with the layout and add personal touches, such as a background color or picture, font, or even a teacher's profile.

6. Set up an introduction, along with directions on your class home page, and post any information, including directions and rubrics/assessment tools. I simply post all information under the News & Assignments section on *21classes*.

7. Add students either by having them sign in themselves, typing in their e-mail, or manually by assigning them a username and password.

8. Add a member's list or blogroll, which allows access to all student blogs through links or a drop-down menu.

9. Every blog has a menu similar to Microsoft Word where you can change font type and size, colors, insert media and add links or documents. Play around!

10. Blogs offer a help section that includes Frequently Asked Questions and sometimes a tutorial. If you're still stuck, try searching YouTube or Google Videos for tutorials on setting up a blog.

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Another social outcome of this project was an increased understanding of — and engagement and empathizing with — fictional and non-fictional characters with whom they might have little in common.

Another social outcome of this project was an increased understanding of — and engagement and empathizing with — fictional and non-fictional characters with whom they might have little in common. As one junior put it, "Although I have a hard time understanding how these children could have become cold-blooded murderers, I recognize that they remain individuals, many of them more scarred by the genocide than their victims. Hopefully, my blog was successful in creating a sense of empathy for the experience of these singular victims of war." A sophomore added, "It made me care more about these people and makes me want to help out" more than just "writing a plain old paper on some war in Africa." The blog allowed them to identify as a wholly different "I:" In an affluent suburban high school, where experiences with difference can be limited, this awareness of social and global problems is increasingly important.

Certainly our students may be more comfortable with Web technologies than we, as educators, are. However, as Castek, Barton, and Nierlich suggest, "Inviting our students to play the role of 'expert' is not always comfortable because it means we must teach differently … [I]t is worth the risk" (2008). I wholeheartedly agree. As an early-career teacher with a broad knowledge of technology, I am inspired daily by late-career colleagues who take this risk, who embrace their lack of knowledge and experience as the beginning of knowledge and experience, and who are not afraid to ask a younger teacher for help. Blog technology has the potential to change and improve all of our classrooms, improving and expanding literacy skills, lifelong learning and social interaction. The risk is worth it, for our students and for ourselves.

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Give Your Students the Gift of Mathematical Literacy

SUMMARY

Understanding mathematical concepts can be difficult for students who are accustomed only to listening to mathematics. But when you teach them to read, write and speak mathematics through the instructional strategies outlined here, their fluency in this new language will empower them.

This article addresses recommendations 1, 2, and 6 of the "Reading Next" and recommendations 1, 4, 8, and 9 of the "Writing Next" reports of the Alliance for Excellent Education and the Carnegie Corporation of New York. (See pages 95-96 and 98)

Did the students really get it?

As the class ended, I thought to myself that the lesson had gone really well. The students were all engaged, they had responded to my questions and asked some of their own. I just knew they all had understood the math concept! Then Dan approached and said, "Can I come for extra help after school today? I didn't understand a thing that you said!" As Dan left, the reality struck: If Dan, a "good" student, didn't get it, what about the others?

Unfortunately, this scenario takes place in far too many mathematics classrooms. As mathematics educators, we are fluent with our language, mathematics. We use it comfortably and do not feel that the words we speak or the symbols we use are at all foreign. We are mathematically literate because we can read, write, speak, and listen to mathematics with understanding. Yet, most students spend a disproportionate amount of time only listening to mathematics, so they do not get enough practice reading, writing, and speaking mathematics. How often do you think students participate in animated mathematical discussions at home with their parents over dinner or in the cafeteria with friends? How many read mathematics for pleasure or blog mathematically? The reality is that the only time most students are immersed in the language of mathematics is during math class.

Framework

The National Council of Teachers of Mathematics (NCTM), the New York State Standards, and the Partnership for 21st Century Skills hold communication — the ability to use language to express mathematical ideas precisely — as a vital skill for all students

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of mathematics. Since mathematics is so often conveyed in symbols, oral and written communication about mathematical ideas is not always recognized as an important part of mathematics education (NCTM Principles and Standards, 2000). Gay states, "Teachers need to be aware that their development of and use of vocabulary in the classroom contributes directly to students' understanding or misunderstanding of mathematical concepts" (2008, p. 221). To do a great job teaching the language of mathematics, teachers need to understand mathematical literacy as more than just vocabulary.

Let's begin with a formative assessment...

1. Simplify: 2 + 4 + 6 + 8 + 10

2. Find the sum of the first five consecutive positive even integers.

3. Evaluate: $\sum_{x=1}^{5} 2x$

4. Find m∠ABC if $\overline{AB} \cong \overline{BC}$.
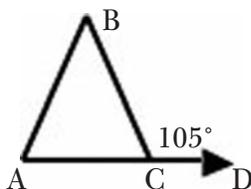
Did you get 30 as a solution to all four? These problems model some of the multiple levels of symbolism within the language of mathematics. Rubenstein notes that "symbolism is a major dimension of the language of mathematics at all learning levels and is a tool for expressing relationships and for problem solving. Accessing and becoming fluent with symbolism is vital for mathematics success." *http://tsg.icme11.org/document/get/853*

Problems 1 and 3 characterize the common image of the symbolic nature of mathematics. The symbols in problem 1 are basic numerals and operations. Above the elementary level no decoding should be necessary. It's almost a "see and say" problem. Students do many worksheets designed at this level, never practicing higher level thinking or literacy skills. Problem 3 uses an advanced symbol which students many times can not even read let alone decode before understanding or manipulating its underlying concept. Problem 2 contains symbolism that can be characterized as "verbal." Again, students not only need to decode each word in the sentence, but must be able to synthesize all the words for mathematical

How often do you think students participate in animated mathematical discussions at home with their parents over dinner or in the cafeteria with friends?

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comprehension of the problem. New York state students must be proficient at this level in order to be successful on mathematics state assessments. Finally, problem 4's symbolism is "visual." This time the student has to decode the diagram. The student should be able to verbalize the relationships shown before finding the calculated solution. This visual symbolism makes geometry challenging for most students. A single symbol or word may be enough to undermine a student's confidence, thus limiting that student's understanding of the mathematical problem.

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Figure 1:

Challenges of Mathematical Words and Symbols

SUM	3.05	COMMUTATIVE
$\frac{2}{3}$	8 – 3	=
Quotient	hypotenuse	π , i, or e

Figure 1 looks at some of the challenges of the words and symbols. (Adapted from Rubenstein, 2001, etc.)

As teachers we also need to use the correct mathematical language and model good literacy pedagogy. Sometimes we think we can make a concept easier for a student to understand if we substitute what we believe to be "easier" words or ideas for concepts. Usually the easier words move the student to a rote procedure instead of conceptual understanding.

Let us illustrate what we mean with examples. The commutative property of addition, $2 + 3 = 3 + 2$, is introduced as early as the second grade. A teacher may think the word commutative "too hard" for a second grader and rename it as the "turn around" property. The next year, the third-grade teacher may call it the "switcheroo" property, and by fourth grade, when the teacher says "commutative," the student has no idea! Witherspoon states, "Only when children are exposed to an appropriate use of the word will they be able to interpret and use it correctly. If a mathematical symbol does not have the same meaning for everyone, it cannot be used as a communication tool" (1999, p. 397).

Let us examine another example. Here the challenge to students can be the fact that many words represent the same concept. In the mathematical statement $8 – 3$, is the " – " read "take away," "minus," "subtract," or "negative"? Is the expression read as the difference of 8 and 3, the sum of 8 and negative 3, or from 8 subtract 3? At the middle level, both examples merge as teachers try to simplify the definition of subtraction of integers, "to subtract means to add the number's opposite," to "keep, change, change."

The simplification removes any operational context for the students.

The fraction $\frac{2}{3}$ is read by most teachers as "2 over 3," effectively negating the concept of division within a fraction. Students then have extreme difficulty with rewriting $\frac{2}{3}$ as either $2 \div 3$ or $3\overline{)2}$. Most students will define, and teachers accept, the definition of the denominator of a fraction as the "number on the bottom." That's *where* the denominator is, not *what* the denominator is.

The practice of speaking a mathematical symbol as if we are reading what we see is characterized in the number 3.05. Most teachers and students read what they see — "3-point-oh-5" instead of "3 and 5 hundredths". We then question why students have no understanding of the decimal place value.

In the case of the "=" sign, too many students understand "here comes the spot to put your answer, *3 + 2 = ___.*" As students advance, they experience confusion when asked, "What number completes the following statement: *7 + 5 + 3 = ____ + 5 + 7.* Most students respond that the "____" would be filled in with 15! Was the concept of equality as balance ever understood by these students?

There is also π, i, and e. These are really not numbers, are they?

One of the major challenges can be the words of mathematics themselves. The word "sum" means total, yet it is a homophone to the word "some," which means less than all. "Quotient" is a math word that has no meaning outside of a math classroom. Math words like "hypotenuse" are hard to pronounce. Math vocabulary must be understood by users. Marzano and Pickering suggest some research-based strategies for effective vocabulary instruction that can be used in mathematics classes, such as: Effective vocabulary instruction does not rely on definitions, students must represent their knowledge of words in linguistic and nonlinguistic ways; effective vocabulary instruction involves the gradual shaping of word meaning through multiple exposures; students should discuss the terms they are learning; and students should play with words among others (Marzano, 2004; Marzano & Pickering, 2005).

Instructional Strategies

Practice Mathematical Language

Have students say the words out loud so they can hear how they sound and so they hear themselves pronounce the words. Words so specific to math need practice. Students need to go beyond hearing math. They need to read, write, and speak mathematics to be literate.

> If a mathematical symbol does not have the same meaning for everyone, it cannot be used as a communication tool.

Give Your Students the Gift of Mathematical Literacy

Restructure the Math Class to Support Math Literacy

Rubenstein (Web reference, p. 1) believes that "teachers at all levels need to be conscious of the challenges that symbolization presents to students and have strategies for supporting students in gaining fluency." A heightened awareness to the complex nature of the language of mathematics, good English practice, and the use of correct and appropriate vocabulary to teach concepts is a good beginning, but other strategies are required. The class must be structured to allow the four domains of literacy an equal share of the time. The domains include Listening (L), Speaking (S), Reading (R) and Writing (W). Figure 2 compares the traditional stand-and-deliver classroom (left) to a literacy, vocabulary-conscious classroom in terms of the

amount of time students spend in each domain.

Create a student-centered higher order thinking class

A better understanding of the multiple levels of mathematical representation causes lessons to be far more differentiated, better directed to students' multiple intelligences. In this type of class, concepts are constructed instead of presented. The classroom is student-centered and students are more often engaged in mathematical conversation, both with the teacher and other students, frequently using higher level language, questioning, and thinking skills. Teachers can become better at questioning. Murray suggests: "Developing the fine art of questioning takes planning, practice, reflection, and persistence. Coming up with questions that will push students to discover concepts and learn the related vocabulary demands even more of a teacher" (2004, pg. 41).

Develop language in the math class

Begin with simple changes, such as requiring proficient English skills in the math class. Students can be expected to answer questions in complete sentences. Those sentences should not begin with a pronoun, because it is harder for other students to follow a conversation when the noun has been left out. Instead of a student responding "180 degrees"

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Figure 2:

"Traditional" vs. "Literacy Based"
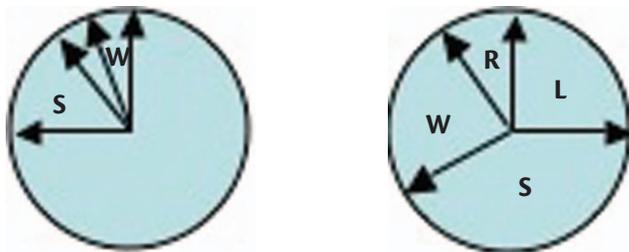
when the teacher asks a question about the angle measures of a triangle, the student should be encouraged to respond, "Since the sum of the angle measures of a triangle is 180 degrees, then...." If students answer a question using non-math words, many teachers hear, understand, and accept those non-math words, but best literacy practice is to tell the student he or she has the right idea, but needs to use the proper mathematical vocabulary. Encourage students to look for the words on the classroom "word wall" or encourage others to help build the best mathematical answer. Literacy activities have to immerse students at all domains and make them take ownership of vocabulary. Just putting up a "word wall' will accomplish very little.

Restructure math worksheets

Restructure worksheets to include problems using vocabulary that students read, and then write mathematical sentences in response. Gay uses concept circles that "encourage students to study words critically, relating them conceptually to one another." (2008, p. 221) Figure 3 shows a concept circle that would work well as a class opener.

Students can respond with a variety of concepts: Even numbers of 2, 4, and 16 would not include 9 because it is odd; perfect squares of 4, 9, and 16 would not include 2; and 2, 4, and 9 as single-digit numbers would not

include 16, a two-digit number. There is yet another concept that could categorize three of the four. Can you figure it out?

Murray provides many strategies to seamlessly promote classroom literacy, including a personal word wall in student notebooks, assigning students a chapter word on which they become the "expert." Students are responsible for that word's meaning through description, example and visual representation. They have to be able to use it in a complete and correct sentence, and maybe even use their body to do vocabulary "charades" *I Have/ Who Has* cards, *Can of Words*, vocabulary as a *Jeopardy!* category during a chapter review, *$250,000 Vocabulary*

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Figure 3:

Name a concept that relates three of the four numbers in the circle shown below. Explain why the fourth number does not belong.
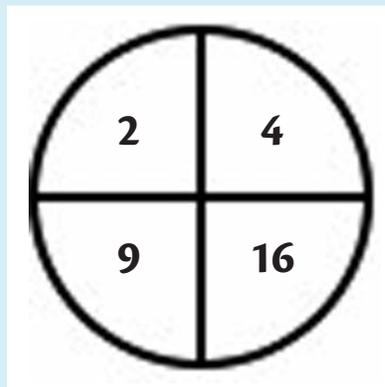
Give Your Students the Gift of Mathematical Literacy

One of the major challenges can be the words of mathematics themselves. The word "sum" means total, yet it is a homophone to the word "some," which means less than all.

Pyramid, Word Swat, and concept circles are just the beginning of classroom strategies that can be used.

Reflective Thoughts

Many mathematics classrooms are moving toward the literacy-based model. There are salient characteristics. Students are empowered by their fluency with the mathematical language, not giving up on problems because there are too many words or too many symbols. They read, write, and speak
mathematics with ease because that is what they have come to expect to do in math class each day. The teachers and students are a stronger community of learners because they use conversation to build mathematical concepts together.

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Physical Education and Literacy — The Odd Couple or a Match Made in Heaven?

SUMMARY

For a group of physical education teachers in central New York, strengthening the connection between physical education and literacy was CHILDSPlay.

This article addresses recommendations 1, 2, 3, and 6 of the "Reading Next" report of the Alliance for Excellent Education and the Carnegie Corporation of New York. (See page 95)

It started out as a simple challenge in our district: How can each content area show its connection to literacy? As physical educators, we are accustomed to challenges, but this one wasn't going to be easy. It would require rethinking how and what we typically teach. Our curriculum is 20 years old and in need of revision. This was the perfect opportunity to meet the challenge and show our connection to literacy. But first, we needed to figure out what the connection to literacy might be.

Physical education and literacy — two words that for too long have been disconnected. But are they really? How many times in your career have you heard a student say, "I just don't like to read," "I'm not good at math," or "I am just not athletic." In spite of all of our best efforts and practices, there are students who lack the confidence and understanding necessary to apply the literacy skills we know they should have. In some cases, we know that a student is missing a critical fundamental component or link in the content sequence. In other cases, we know that a child has the fundamental knowledge and understanding but lacks the practice and experiences that build confidence in application and creativity. Whether you teach math, science, reading, or yes, even physical education, there is one goal that is universal — we want all of our students to use literacy skills in our content area.

Content literacy and the traditional idea of literacy are not mutually exclusive. In fact, the common notion of *educating the whole child* should probably be updated to reflect *attaining the total literacies of the child.*

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It makes sense that all curricula should be connected to literacy and demonstrate its value-added for every student. The connection between literacy in the physical education curriculum and literacy can't be that difficult — can it?

Before we got started, we needed to define two significant concepts:

- What is literacy?
- What is literacy in physical education?

Literacy — the big picture

Regardless of the language spoken, literacy is one of the most powerful words in the world. The success of a country or school is almost always tied directly to the literacy rate. Literacy in its simplest form means the ability to use language to read and write. Teaching literacy has often created a caste system within our schools. Literacy has been the dividing line for subject areas deemed important for their development of literacy skills and those seen as disconnected. Physical education has been one of the disconnected — but is it?

In recent decades, the application of the concept of literacy has been prominent in the set of skills that are critical to societal success. For example, our world's increasing dependence on technology has led to concerns about computer literacy. The financial events of the last year have increased our awareness of the need for fiscal literacy. In fact, the word *literacy* has taken on such global significance that the United Nations has declared 2003-12 the Literacy Decade.

If literacy has come to mean more than just reading and writing, what do we now use to define a word that can encompass all content areas to its mission? The United Nations Educational, Scientific and Cultural Organization — UNESCO — set out to create a more modern definition of literacy that could move the current thinking away from being merely a technical skill toward: *"... a set of practices defined by social relations and cultural processes — a view exploring the range of uses of literacy in the entire spectrum of daily life from the exercise of civil and political rights through*

In recent decades, the application of the concept of literacy has been prominent in the set of skills that are critical to societal success.

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Whether you teach math, science, reading, or yes, even physical education, there is one goal that is universal — we want all of our students to use literacy skills in our content area.

matters of work, commerce and child care to self-instruction, spiritual enlightenment and even recreation." (UNESCO 2003). Now here is an idea physical education teachers can work with!

As a further result of their work, UNESCO, in 2003, drafted the following definition: *"Literacy is the ability to identify, understand, interpret, create, communicate, compute, and use printed and written materials associated with varying contexts. Literacy involves a continuum of learning to enable an individual to achieve his or her goals, to develop his or her knowledge and potential, and to participate fully in the wider society."* (UNESCO 2003). Loaded with action verbs, this definition could open the way for all subject areas to take responsibility for contributing to the literacy of our students. Literacy becomes the tie that binds all teachers and subject areas together. It clearly connects the content-specific literacy to its role in developing the total literacy of the child. Many content areas have already begun to demonstrate and develop their connection to "literacy," and physical education can be no exception.

What, exactly, is physical literacy?

The concept of physical literacy is relatively new in the United States, although it has been around for more than 40 years. Dr. Margaret Whitehead, a philosopher by training, has spent the better part of the last 30 years looking to define physical literacy and its impact on the future of physical education. Her extensive body of work defines physical literacy in terms of:

- physical competencies;
- the ability to read and respond to the environment and to others in interaction;
- the ability to use the body as an instrument of expression/ communication; and
- the ability to articulate/demonstrate knowledge, skills and understanding of health.

While I could go into more detail, Dr. Whitehead's chart on *Attaining and Maintaining Lifelong Physical Literacy* (Whitehead 2006)), shown in Figure 1, clearly illustrates what we need to know about physical literacy.

Figure 1:

Attaining and Maintaining Lifelong Physical Literacy

Stages in attaining and maintaining Physical Literacy					
Fundamental Motor development fostered, supported, encouraged	Development of Physical Literacy as a fundamental goal of Physical Education		Consolidation of aspects of Physical Literacy, achieved via own motivation to participate in selected physical activities as part of life-style	Physical Literacy established, contributing to successful and rewarding physical activity being a part of an individual's life style. Continued 'education' in the way physical competence is maintained and in respect of knowledge and understanding of aspects of health promotion	Personal Physical Literacy modified with age. Continued appropriate activity. Increase of knowledge and understanding in relation to changing capacities and health in older age and to the importance of an active lifestyle
	Fundamentals of Physical Literacy: motor competence and knowledge and understanding, developed	Fundamentals of PL established and contextualised in a range of physical activities. Activity opportunities outside of school introduced			
Pre-school	Elementary School	Secondary School	Immediate post-school	Adulthood	Older age
Personnel influencing the attainment and maintenance of Physical Literacy include:					
Parents, family, significant others	Teachers, parents, family, peers, coaches, club and local facility personnel		Peers, family, work place colleagues, personnel in:- medical fields, clubs, fitness industry, leisure facilities, evening classes (coaches, sports development officers)		Peers, family, personnel in e.g. medical fields, wellness/fitness and leisure contexts
Systems, situations, contexts where Physical Literacy can be encouraged, established and maintained include:					
Home, local environment, pre-school programs Day Care	School Physical Education, extracurricular opportunities Sports/activity clubs. Home, local environment, local facilities		Quality and quantity of local and national facilities and staffing. Government policy and priorities. Employer policies. Context created by medical professions Context created by media		

Whitehead, M.E. *Physical Literacy and its importance to every individual* - NDA (2007) Appendix 1

What does this mean for us as physical educators and classroom teachers?

As a department, we were greatly relieved to discover that creating a physical education program that centered around its connections to literacy did not require throwing out everything we had been doing for the last 20 years. What it did require was a thorough look at what we were doing in our K-12 curriculum, and why.

Our foundation was solid. The five strands that had always been at the core of what we had done remained the same:

■ character development

■ intelligence/cognitive development

■ lifestyle development

■ health-related fitness

■ motor performance.

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CHILDSPlay
Character
Health-Related Fitness
Intelligence
Lifestyle
Development
and
Skilled
Play

What we discovered however, was that the first three strands were often overshadowed by our program's more obvious strengths — physical skills and health-related fitness. Character, intelligence and lifestyle development had to take a more prominent role in our curriculum. The trick would be to develop a balanced program with equal emphasis and accountability in all five strands. We were confident we had all the pieces of the puzzle we needed to revise our program. What we needed was the box top with the picture of the final project!

Discussions began among the 28 members of the K-12 physical education department. What would be different about physical education if it became a core subject? What if we were to develop a PE program that emphasized health-related fitness, moving and learning connections, and character development in addition to the motor skills component we are known for? Not that we shouldn't play team sports and competitive games, but what if they were just a piece of the puzzle? What if we were to focus on developing lifelong active lifestyles? What if we were to expand the concept of physical education to include activities like brain gym, yoga and project adventure? Great questions, intense and at times unsettling discussion, and debate stretched over the course of many months. In the end, the result was

truly **CHILDSPlay** (**C**haracter, **H**ealth-Related Fitness, **I**ntelligence, Lifestyle **D**evelopment and **S**killed **Play**). The simple one-page document shown in Figure 2 clarifies what we are about as professionals and how we view ourselves as members of the greater school community. It has set the stage for re-creation of grade-level benchmarks, revised scope and sequence, and assessments that are developmentally appropriate and understandable for both teachers and students. The creation of essential questions at each level clearly outlines what we want every child to take away from our physical education program. Each level builds upon the one that precedes it. Secondary takes the common foundation of skills and knowledges and expands its reach beyond the doors of the school gymnasium and fields, encouraging students to find ways to independently pursue throughout their lifetime something we hope they all come to value and love as much as we do.

CHILDSPlay and the classroom teacher

The CHILDSPlay Essentials document has opened up dialogues between classroom teachers and PE teachers, led to interdisciplinary activities, and new collaborations — all to the benefit of our students. Brain Gym profiles of kindergartners

Figure 2:

LIVERPOOL CENTRAL SCHOOLS PHYSICAL EDUCATION
CHILDSPLAY-ESSENTIALS

There are 5 general goals upon which the pre K-12 CHILDSPLAY curriculum is based. The final objective of these goals is attainment of physical literacy by all students. These outcomes are interrelated and interdependent. Each general outcome is made up of more specific grade level benchmarks. Essential questions are established for each level. Achievement in each of these outcomes and their grade level benchmarks can be reached through participation in developmentally appropriate instruction and physical activities.

STATE AND NATION PHYSICAL EDUCATION STANDARDS TO BE MET:

NYS STANDARD 2	NYS STANDARD 1B	NYS STANDARD 2	NYS STANDARD 3	STANDARD 1A
NASPE 5 & 6	NASPE 3 & 4	NASPE 2	NASPE 3 & 6	NASPE 1 & 2
Character	**H**ealth related fitness	**I**ntelligence	**L**ifestyle **D**evelopment	**S**killed **Play**
Students will exhibit responsible personal and social behavior that respects self and others…..	Students will achieve and maintain a health enhancing level of physical fitness…..	Students will assume responsibility for their development as lifelong learners………	Students will demonstrate their understanding of the value of physical activity for health, enjoyment, challenge, and social interaction through participation in regular physical activity…..	Students will demonstrate movement skills and understand concepts needed to engage in a wide variety of lifelong health enhancing physical activity…….
Included elements: • Communication • Cooperation • Leadership • Fair play • Social and self responsibility	Included elements: • Personal fitness • Lifetime wellness • Self image • Assessment • Stress management • Personal safety	Included elements: • Learning style • Brain Gym Profile • Multi-intelligence • Metacognitive skills	Included elements: • Effort • Goal setting • Personal challenge • Active living • Decision making	Included elements: • Basic skills & play • Sport related skills • applied skills & play • advanced skills & play
ELEMENTARY LEVEL Why and when is it important to be able to get along with others? Am I a good team mate? What does it mean to be fair? Why is it important to follow directions	ELEMENTARY LEVEL What does it mean to be fit? Why is fitness important? What happens to your body when you exercise? Why is food important to fitness?	ELEMENTARY LEVEL How do you feel after you have done a PACE? When might be a good time to use a PACE? How do I learn best? What kind of things can help me learn easier?	ELEMENTARY LEVEL What do you like about playing with others? What makes for a good group/team member? If you could choose a favorite activity, what would it be? What do you like about playing alone?	ELEMENTARY LEVEL Which hand and foot do you like to throw/kick with? What skills do you need to play your favorite game? What are fundamental motor skills? What does a good mover look like?
MIDDLE LEVEL What do rules have to do with caring for others? What makes a good leader? What makes a good follower? What does self respect mean?	MIDDLE LEVEL How do I know I am fit? How can I improve my own fitness levels? What changes in my body affect my fitness? What can I do outside of school to stay fit?	MIDDLE LEVEL What kind of things distract you from learning? How does stress impact your learning? What can you do to control outside influencers?	MIDDLE LEVEL What can I do outside of school to stay active? How do I set a goal for myself that is attainable? How do I evaluate outside programs as to whether it meets my needs or not? How do I make decisions for myself?	MIDDLE LEVEL How well must I be able to perform a skill to play outside of school? How can I apply movement concepts to improve my performances? How can game strategies improve my performances?
SECONDARY LEVEL How do you deal with a group made up of different skill levels? For what should you be accountable for? What is the difference between commitment and responsibility?	SECONDARY LEVEL Why is it important to know the connection between my age and fitness levels? What fundamental concepts do I need to know to manage my own fitness throughout my lifetime?	SECONDARY LEVEL How do I manage my own learning? What types of careers might best fit my learning style? Why is knowing how you learn important to me now and as I get older?	SECONDARY LEVEL What activities will best fit a healthy lifestyle for me once I graduate? Where can I find places to continue a healthy lifestyle once I graduate? How might my lifestyle goals need to change as I get older?	SECONDARY LEVEL What opportunities can become open to me through participation in physical activity? How do I continue to advance my skills and knowledges of movement as an adult?

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are used by classroom teachers as a tool for student placement; middle-level students are using relaxation techniques in pre-test situations; high school teachers are using Challenge by Choice and full-value contracts for at-risk students.

The CHILDSPlay program has unleashed the "secrets of physical education" to the rest of the school community. The diagrams and assessments paint a clear picture not only of what we want our students to know, but how that knowledge can help other classrooms. We are making assessment information available to all teachers and helping them see where we can contribute. PE teachers are becoming active and confident members of the school improvement teams. Our notion of big-picture literacy has taken conversations that occurred only in the gym and placed them in faculty rooms and classrooms. In our own classrooms, physical educators are now spending more time showing students how skills they have learned in PE can be used in other rooms, at home, and in the world.

The advent of brain research and its support for movement and learning continue to promote the importance of physical activity for all children. Though in its infancy, this research is believed to hold the future of learning theory and strategies for the future.

In our district we have begun to embrace this research through Brain Gym at the elementary level, and a teaching style that all middle-level teachers are embracing, based on metacognitive research of the adolescent brain.

We were so convinced that physical education was an important part of how a child learns that in 2005-06 we applied for a U.S. Department of Education Physical Education Program grant to help us develop CHILDSPlay. We were awarded almost $400,000 over three years to develop and implement this program. This grant allowed us to update and introduce activities and programs that are consistent with our beliefs and support all the elements of the program. It included more than 200 hours of professional development for staff. We developed a turnkey network to insure that all new programs can be be sustained over time. In addition to providing inservice for our physical educators, we have expanded it to all teachers and staff with an interest in learning more about movement and learning. Perhaps one of the biggest initiatives is that physical education staff can now extend their resources and activities beyond just the gym walls. Physical activity is becoming a part of everyone's day — not just on "Gym Day."

A good friend once told me that the difference between an academic class and a physical education class is that in an academic class you are taught a lesson and then given a test. In physical education class you are often given a test that teaches you a lesson. Both of these styles appear to be complementary. The road to literacy truly runs through every classroom, whether it has desks and chairs, or merely lines on the floor.

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Science for the English Language Learner: Strategies to Enhance Comprehension

SUMMARY

Teachers can help their English language learners succeed in science through strategies that increase comprehension for all students.

This article addresses recommendations 1, 2, 4, 6, and 13 of the "Reading Next" and recommendations 1, 3, 4, 9, and 10 of the "Writing Next" reports of the Alliance for Excellent Education and the Carnegie Corporation of New York. (See pages 95-96 and 98)

"How do we help our English language learners better understand science?" is a question we hear often from teacher candidates enrolled in our adolescent graduate programs or alumni who come back to take professional development courses at our college. These teacher candidates take the required courses to equip them with the necessary knowledge, skills, and dispositions to become science teachers of adolescents. However, what these teacher candidates may lack, and they realize this when they enter the field, is the necessary training to work with ELLs to help them master science content. According to the National Center for Educational Linguistics [NCES] (1999b), most mainstream teachers believe that they are not adequately prepared to meet the needs of ELLs in academically demanding subjects, such as science and literacy. The gap in science still persists between mainstream students and ELLs. We offer teacher candidates in our programs our knowledge and experiences as current researchers/teacher educators and former English/ESL and science teachers, respectively. The purpose of this article is to recommend the same strategies we suggest to our teacher candidates, namely Discrepant Events and its substrategies that would help mainstream teachers make science learning supportable for their ELLs. These strategies benefit not only ELLs, but all students as well. They are research-based and tested by the two authors with secondary content area teaching experience.

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The Needs of ELLs in Science

According to the New York State Science Learning Standards, all students, including ELLs, need to "understand and apply scientific concepts, principles, and theories..." (NYS Learning Standards for Math, Science, Technology, 1996, p.1). [They] are expected to acquire skills such as discussing, analyzing, reading, and writing in ways similar to those of a practicing scientist" (Medina-Jerez, Clark, Medina, & Ramirez-Marin, 2007, Science for ELL, para. 2). Most students in science, however, have difficulty comprehending science content (Schoenbach et. al., 1999) and are challenged by the specialized terminology in science. Furthermore, students believe that science is a body of knowledge rather than a way to generate new knowledge or solve problems (National Institutes of Health). Therefore, they attempt to memorize new concepts rather than learn to think like scientists.

Obstacles Facing ELLs in Science

Science content, difficult to master for many mainstream students, can be even more challenging for many ELLs, who come from diverse backgrounds.

Differences in culture, religion, alphabetic system and factors such as prior schooling experiences and first-language literacy levels may impede their success.

One of the biggest obstacles ELLs face is the lack of academic language. According to Cummins (1984), it takes ELLs only 1 to 2 years to acquire conversational language (Basic Interpersonal Communication Skills or BICS), but 5 to 7 years to acquire academic language (Cognitive Academic Language Proficiency or CALP) that would assist them in comprehending content-specific texts. It may take them even longer to learn the technical vocabulary of science, which is specialized and requires advanced levels of literacy. Science vocabulary includes words that have meanings familiar in different contexts (e.g., energy, family). Compound words may be challenging to learn (e.g., endocrine system). Science-specific abbreviations, acronyms, and symbols exist that must be learned (H_2O).

In light of these issues, there needs to be an overall strategy that transcends cultural and linguistic differences; one

> A discrepant event can best be described as an occurrence that appears to be illogical, but upon further examination is found to follow the laws of nature. It makes students wonder how it happened and to want answers to this question.

Science content, difficult to master for many mainstream students, can be even more challenging for many ELLs, who come from diverse backgrounds.

that is motivating and that permits all students in a given setting to conceptualize the principles and theories of science by participating in the critical thinking and problem-solving processes.

Overall Strategy for Teaching Science to ELLs

Discrepant Events

A Discrepant Event (DE) is one that causes an unexpected contradiction in students' prior knowledge and experience of a scientific event in support of conceptual understanding (Wetzel, 2008). Students use problem-solving and critical-thinking skills in order to explain the phenomenon. Inquiry-based instruction that uses such strategies as discrepant events has the potential for developing scientifically literate students (Beerer & Bodzin, 2004).

The use of scientific DEs is an inquiry-based strategy that stimulates the natural, innate curiosity we all possess and thereby begins the process of exploring possibilities as a means of explaining that which appears to defy logic and the natural order of things. To understand how this strategy incorporates other substrategies and transcends cultural and linguistic differences, it is necessary to describe a classroom demonstration of such an activity.

Classroom Demonstration

The teacher places a wooden clothespin (missing one prong) on the tip of her index finger, tip to tip, and asks the class what would happen if she lets go (*see illustration on opposite page*). The overall response would probably be that the clothespin would fall to the floor, which is correct. If the teacher then places a leather belt onto the clothes pin, just under the remnant of the broken or missing prong and balances the clothespin and belt in the same manner, and asks the same question, the likely answer would be the same. However, the clothespin and leather belt remain balanced on the tip of the index finger. The obvious question is why?

The teacher asks students to describe verbally, in detail, what they witnessed and to explain why they think this phenomenon occurred, building on students' background knowledge and science vocabulary. The next step would be to test the validity of those inferences by conducting experiments. The class is divided into smaller groups of four or five for the purpose of discussing what they believe is taking place. Each group records its inferences in the form of a graphic organizer and shares them with the teacher and entire class as a means of attempting to explain the event. The teacher introduces scientific terminology, principles and theories through

the use of visuals and manipulatives. Skills involving making observations, performing critical thinking, making predictions (hypotheses), and communicating ideas through the use of appropriate terminology are practiced by the students themselves.

Generally, the overall reactions of students — secondary students as well as our own graduate teacher candidates — who witness these activities are awe, surprise, and bewilderment. Our practicing teachers who have used DE in their classrooms attest to their effectiveness with all students, including diverse populations, because they tap their curiosity and interest and lead to meaningful inquiry.

Substrategies Used in DE

The type of apparent illogical occurrence in DE lends itself to the use of a variety of instructional substrategies that promote science learning in ELLs, such as (a) activation and building of prior knowledge and vocabulary, (b) visuals, (c) manipulatives, and (d) small-group work. A brief description of each substrategy, including examples of our teacher candidates' perspectives on using the strategy, is presented below.

Activation and Building of Background Knowledge and Vocabulary

Many ELLs lack background knowledge to make sense of new concepts and

vocabulary in science. It is important to activate students' prior knowledge and build on it to help them connect to new knowledge. For example, the teacher in the scenario just described can activate students' prior knowledge of concepts and words that they may be familiar with in other contexts, such as torque, in relation to vehicles, and then apply them to the context at hand (rotating force). The teacher could also activate background knowledge of words that contain prefixes, suffixes, and root words or Spanish cognates, such as gravity, with which Spanish-speakers may be familiar. When ELLs have background knowledge and vocabulary, they will be able to use other strategies.

Our student, Melissa, calls for the need to encourage the development of students' background knowledge or schemata:

Increasing schemata allows students to scaffold the newly introduced material. Teachers can do this in a number of ways, such as starting discussions about the text material prior to reading, viewing media clips to initiate a topic, or using computers and the Internet to set the stage for new theories.

Visuals

Visuals, in general, clarify content for ELLs and make it easier for them to remember science content. The visuals

Visuals, in general, clarify content for ELLs and make it easier for them to remember science content.

used in the DE scenario include, among others, pictures, drawings, videos, PowerPoint, and graphic organizers. Graphic organizers are visual representations of concepts. They allow ELLs to represent large amounts of information in a linguistically simple way (Reiss, 2008) and to organize the information in a conceptually easy way.

Our student, Carey, states:

Using visual aids, pictures, and diagrams will allow those visual learners to get a firm grasp on the key concepts involved by creating a mental image of things and seeing what [they] look like in action.

Manipulatives

Manipulatives can help ELLs express their understanding of math concepts while building their language skills (Lee, Silverman, & Montoya, 2002). They allow students to learn experientially. When students learn by doing, such as conducting experiments, they retain the information better. Manipulatives also appeal to kinesthetic learners who need more hands-on approaches. As an assessment, they provide the means for students to demonstrate their knowledge without necessarily being required to use language.

Small-Group Work

Small-group work and cooperative learning support the Vygotskian notion that learners construct knowledge through interaction with their peers. Vygotsky (1978) suggested that learning takes place when the child's knowledge and adult structures approach each other in a zone of proximal development. Teachers need to stretch students' knowledge across the zone of proximal development toward a higher level of learning. The cooperative learning environment incorporates the learning contexts needed for learning implied by Vygotsky. In the cooperative learning setting, peers can learn when they engage in discussions and verbal interaction, when they are listened to and when they receive a response as a way of creating knowledge rather than merely finding who has what knowledge.

Collaboration on tasks is especially important when it applies to ELLs. Working with native speakers on hands-on tasks promotes ELLs' language development (Rigg & Hudelson, 1986). Small group experimentation is beneficial for ELLs because it allows them to practice concept development and oral communication in social interaction with native-speakers.

Carey agrees with the benefit of students working together to accomplish tasks:

Students get to try exercises or activities by themselves or with a partner for help and get the needed repetition to master the terms or concepts involved.

Use of Multimodalities in DE

"Classroom teaching for diverse students is most effective when it incorporates all senses, all intelligences, and all learning styles" (Lincoln & Beller, 2004, p. 30). DE and the substrategies discussed above accomplish this objective. Technology, in the form of PowerPoints, slide shows, etc., could also be used to stimulate their academic growth. With limited English proficiency, ELLs need alternative ways to process information and also demonstrate their knowledge. Multimodal teaching ensures that diverse students' needs are met.

Conclusion

The strategy of Discrepant Events piques students' curiosity and motivates them to participate in exploring science content. The strategy can benefit all students, but is particularly effective for ELLs, who may lack language and content knowledge, because it provides them with hands-on,

concrete, real-life experiences. The substrategies of activation and building of background knowledge and vocabulary, visuals, manipulatives, and small-group work can support ELLs when they participate in Discrepant Events.

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Engaging English Language Learners with Limited or Interrupted Formal Education

SUMMARY

Carol Antolini, who teaches Students with Limited or Interrupted Formal Education (SLIFE), participated in a research project on a new instructional model for this population. Here, the researchers who developed the model and mentored Carol describe the model, the implementation process and the results, while Carol reflects on her experience.

This article addresses recommendations 1, 2, 3, 5, and 6 of the "Reading Next" and recommendations 6, 7, 8, and 9 of the "Writing Next" reports of the Alliance for Excellent Education and the Carnegie Corporation of New York. (See pages 95-96 and 98)

Her head on the desk, no thought of joining in the lesson, would Maria ever engage? ... Carol found the key and Maria found her school success — a new instructional model shows the way.

A Profile of SLIFE

In the past decade, the United States has witnessed high growth in immigrants around the country. While high rates of immigrants tend to be traditionally concentrated in urban areas and in states such as New York, Florida, Texas, and California, in recent years many other states have become home to new immigrants. As the immigrant population has grown, schools in these states are educating more English Language Learners (ELLs) — students whose first language is not English. South Carolina, for instance, experienced an increase of more than 700 percent in K-12 school children whose first language was not English (NCELA, 2005). Some of the older ELLs have missed schooling in their home country, whether due to the unavailability of schooling or for other reasons such as war, civil unrest or migration. Other ELLs have not attained grade-level knowledge and native language literacy skills, whether because of the inadequacy of resources, quality of instruction, the lack of education beyond the primary years, or other factors (DeCapua, Smathers, & Tang, 2009).

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New York state refers to this subpopulation of ELLs as SIFE — Students with Interrupted Formal Education. According to DeCapua, et al., this term ignores the fact that many ELLs actually have not had interrupted education but rather, limited education, and are called SLIFE — Students with Limited or Interrupted Formal Education. They are living in urban, suburban and even rural school districts around the country; many are Latinos from such countries as Mexico and the Dominican Republic; others are from Southeast Asia, Somalia and other areas of Africa. All of them face a triple challenge in our schools: developing English language proficiency, mastering grade-level subject matter, and developing and/or improving literacy skills (DeCapua, Smathers, & Tang, 2007). Although they can be found at all grade levels, they create educational challenges when they enter high school with little time to face their triple challenge. However, we found that limited exposure to formal education, particularly to Western-style education, the prevalent model shaping our schools, may prevent them from benefiting from the instruction provided. As teachers actively engaged in this model, we

share a set of assumptions about education — assumptions that are not shared by all of our learners (DeCapua & Marshall, 2009; Rothstein-Fisch, Trumball, Isaac, Daley, & Pérez, 2003).

Carol's SLIFE class includes students ages 15 to 21 who had completed between third grade and eighth grade in Haiti, the Dominican Republic, El Salvador, and Guatemala. Although the students came from different countries and spoke different languages, they shared certain characteristics that Carol needed to consider in designing her instruction. If we revisit our list of assumptions, we find that, for the most part, SLIFE do not see school as a preparation for life; many of them, like the students in Carol's class, already have adult responsibilities and jobs. They look for school to have some immediate benefit in their lives rather than preparing them for the future. Another important characteristic is that they are members of collectivistic cultures, in which group loyalties and responsibilities are central to people's lives (Triandis, 1995). Mainstream U.S. culture, in contrast, places a high

Teachers and learners assume that:

1. The goals of K-12 instruction are:

■ to prepare the learner for life after schooling

■ to produce an independent learner

2. The learner has an urge to compete and excel as an individual.

3. The learner brings along age-appropriate preparation for literacy development and academic tasks.

(Marshall, 1998)

> Given the difference between the assumptions of teachers and students, it is apparent the wants and needs of SLIFE are not provided in our educational system, and what we do provide is not relevant to them.

importance on each person's wants, needs, and accomplishments. This individualism is reflected in the assumption that learners bring an urge to compete and excel as individuals. SLIFE generally do not share the goal of becoming an independent learner but are instead focused on maintaining interconnectedness with the teacher and with each other, and on helping others. They do not bring with them the urge to succeed as individuals but rather to succeed as a group working together (Oyserman & Lee, 2008).

Additionally, the students are at least two years behind their grade in literacy and academics, and frequently more, especially at the high school level, which makes reading and understanding the concepts and information of the required secondary school curriculum very difficult. Finally, they are largely unfamiliar with the types of tasks required in school, such as comparing and contrasting, identifying true and false statements, classifying, defining, and so on (Freeman & Freeman, 2002).

Given the difference between our assumptions and those of the SLIFE, we see that what they want and need is not provided to them by our educational system, and what we do provide is entirely new (Au & Kawakami, 1994). If we are to succeed with SLIFE, we must shift our paradigm and find ways to engage them. A key

point in this shift is to understand and accept that they come to high school with many life experiences, what Moll & Greenberg (1990) call "funds of knowledge," and have spent years developing such knowledge. Once we recognize and welcome their knowledge, we can explore the conditions, processes and activities that will help them reach their potential.

The Mutually Adaptive Learning Paradigm — MALP

In response to these needs, the Mutually Adaptive Learning Paradigm (MALP) (Marshall, 1998; DeCapua & Marshall, 2009) was developed. This model combines four elements of the students' way of viewing learning while introducing them to what is new. We summarize our model as follows:

1. Accept Conditions SLIFE Need — If the culturally based conditions of SLIFE for learning are met, they are more likely to become engaged in the classroom (Gay, 2000; Nieto, 2004). The two major conditions needed are: (1) feelings of interconnectedness; and (2) lessons with immediate relevance. In MALP, teachers focus on creating curriculum that includes items closely linked to the students' world, and that draws upon their funds of knowledge. Instruction should be infused with interpersonal elements, such as activities designed to build relationships and projects encouraging collaboration.

2. Combine Familiar and New Processes — Teachers need to prepare and execute learning experiences that combine elements familiar to the student with new ones. Familiar processes are: (1) learning through oral transmission rather than through the written word; and (2) collaborating with others rather than solely focusing on individual achievement. In MALP, the teacher includes group work but also requires each student to be accountable for some aspect of the activity, and uses both oral and written modes together throughout her teaching.

3. Focus on Academic Tasks that are New — it is important that teachers create higher-order thinking activities that teach these skills without introducing new language or content. A more effective way to move toward finding meaning and success in academic tasks is to make the task itself the only unfamiliar component of the activity. Too often, new subject matter, challenging language, and cognitively demanding academic tasks are introduced simultaneously (DeCapua & Marshall, 2009).

It is the combination of all three components that creates a MALP classroom. Taken together, the elements provide the students a firm, supportive learning environment as well as a way to transition to our educational system.

Implementing MALP

We implemented our model in a high school SLIFE program. Carol, who taught both ESL and social studies, enthusiastically agreed to work with us. Carol impressed us as open and responsive, and interested in taking on a new challenge as part of her strong dedication to these, her most at-risk students.

After training in MALP, she began to change her teaching approach. We periodically observed Carol's classes and provided feedback about the implementation of this new model, using our MALP Checklist, a sample of which is included in Appendix A. In addition, Carol would e-mail us with reactions from students and updates on their activities in and out of class. She would run ideas by us before teaching a lesson to be sure she was using the model effectively. As might be expected, there were bumps along the way, as Carol dealt with student absences, students enrolling months into the school year or students leaving school for a job. Because of these issues, the data we collected were largely anecdotal; our notes on the students' in-class performance and our interactions with Carol became the most important aspects of our research, rather than any formal assessments or other quantitative measures.

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Follow the three guidelines of MALP:

1. Accept Conditions SLIFE Need
- ■ feelings of interconnectedness
- ■ lessons with immediate relevance.

2. Combine Familiar and New Processes
- ■ learning through oral transmission rather than through the written word
- ■ collaborating with others rather than solely focusing on individual achievement.

3. Focus on Academic Tasks that are New
- ■ create higher-order thinking activities without introducing new language or content.

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Benefits and challenges of the higher ed/school partnership

A partnership between researchers from institutions of higher education and classroom teachers on the front lines of delivering high school instruction can yield powerful results. Through our collaboration on this project, the teacher benefited from extensive and targeted professional development that she can now share with other teachers. She saw concrete change in her students' performance and motivation that she could directly correlate with the changes she was making in her teaching. For the researchers, this partnership enabled them to guide the implementation of their instructional model and provide time-sensitive feedback along the way. This formative assessment helped to improve the model and inform subsequent lessons.

At the same time, the best intentions of all were thwarted by circumstances. Scheduling time for consultations and reflections posed logistical challenges as the teacher and the researchers all had full teaching loads. Some data collection depended upon the teacher's ability to recall lessons in detail for those not directly observed by the researchers. Finally, the partnership remained limited to one teacher in the program, so that she became an island of new implementation without the support of other teachers and the ability to exchange ideas with them. Addressing these challenges in future research would result in a more extensive study with full implementation of the instructional model.

During the five-month period of this study, a strong mentoring relationship developed between Carol and the researchers. After this most encouraging exploratory work, our next step will be to implement the model in math and science classes in the SLIFE program. We are seeking to work with districts that have a program for SLIFE and are interested in implementing MALP.

Initially, Carol felt her students could do very little in a high school setting; she was discouraged and disheartened, and not sure how to reach them. Because Carol was expected to teach the regular social studies curriculum, one unit she needed to focus on was the Civil War. For this unit, she was interested in having students relate to this time period in U.S. history, but she realized it was a leap for them.

Her challenge was to develop her unit based on the MALP instructional model and to address relevant New York State Learning Standards for Social Studies, specifically, Standard 1: History of the United States and New York. Following this standard, Carol developed lessons that addressed connections and interactions of people and events, Standard 1.2, and historical analysis, Standard 1.4. For Standard 1.2, Carol incorporated the following performance indicator: Investigate key turning points in New York state and United States history and explain why these events or developments are significant. For Carol's SLIFE class, the Civil War was the relevant turning point.

Using the MALP guidelines, Carol planned her instruction so that students could demonstrate learning in accordance with this indicator:

■ *making connections between the social studies content and their own lives — increasing immediate relevance;*

- *processing input from teacher, Web sites and Venn diagrams on social studies content, connecting oral language and literacy;*

- *sharing input on social studies content with fellow students — combining group and individual contributions.*

For Standard 1.4, Carol turned to the following indicator: Describe historic events through the eyes and experiences of those who were there. The students studied the perspectives of Abraham Lincoln, northerners and southerners, blacks and whites, and the Union and Confederate soldiers. In each case, Carol designed activities that had the students put themselves in the place of the people of that time.

Again, using the MALP guidelines, Carol designed learning activities to develop and build new academic tasks so that students could demonstrate learning through this indicator:

- *the use of secondary sources, such as Internet sites;*

- *comparing and contrasting data with graphic organizers.*

She hoped they would be able to describe the everyday life of a Civil War soldier, then compare and contrast it with their own lives today. She began by introducing basic information:

Figure 1:

Sample Student Bar Graph
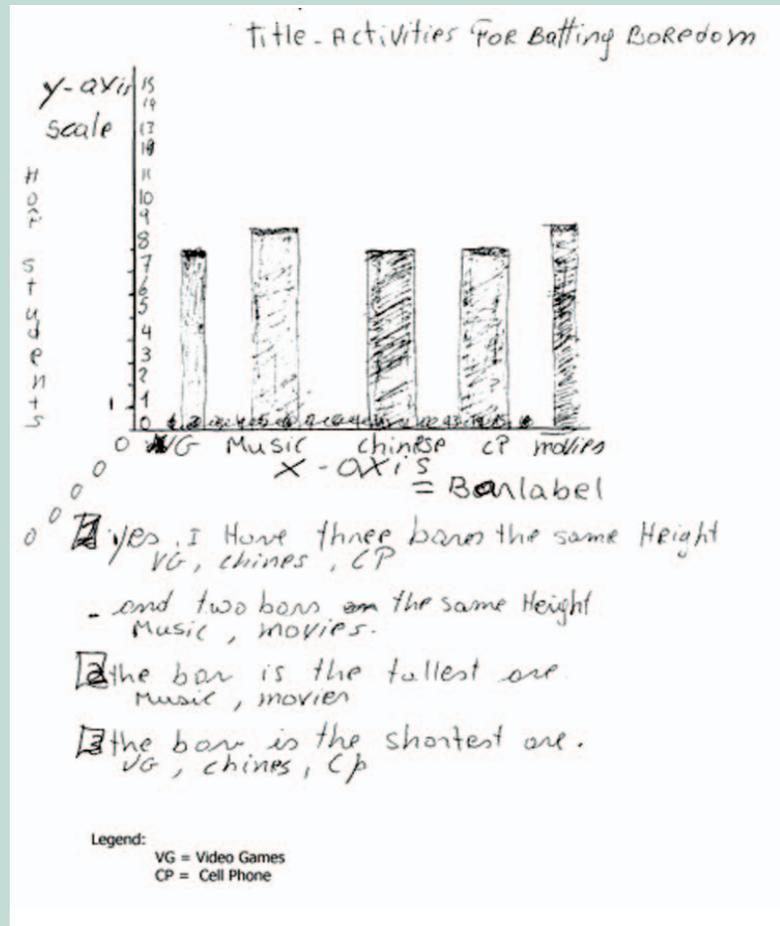
Thursday I started with the Civil War. I introduced the topic using the time frame of 1860 and 2008. I used a PowerPoint presentation. Then on Friday we did a T-chart for 1860 and 2008. Along with that, I printed out pictures where the students were able to tell me something for each picture.

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Figure 2:

Carol with Class Venn Diagram

They did really well. For the two years we compared presidents, flags, number of countries, what the countries looked like for each year, voting rights, freedom of blacks/slaves, North/South, Civil War/Iraq War, a black person living in New York vs. a black person living in Florida."

To develop their literacy skills, Carol had the students tell her their sentences, which she wrote on chart paper and had students read them back to her. They then used these sentences as a basis for creating their filmstrip stories.

"It [the chart paper] is now hanging in the classroom. As we were doing this, it came to me to do filming of the idea. They will have pictures to cut out representing 1860 vs. 2008, paste them, and then write a sentence for each picture."

Carol continued the unit by having the students think about their own free time. She started with a Venn diagram and the students, working in groups, listed some of the things they did to overcome boredom on one side of the diagram. Carol then collected their worksheets to find out the five most common activities they had come up with. Based on this, she developed a questionnaire for them to ask each other about favorite pastimes. After they had gathered their data by keeping tally of who liked doing what, Carol worked with them to make graphs based on the information they had collected. Under the graph, the students wrote sentences about the data (See Figure 1). This literacy practice was meaningful for them because it directly related to information they had collected orally and then presented in graph form.

Following the bar graph activity in Figure 1, Carol returned to the Venn diagram and, using the Internet, helped the students to identify ways Civil War soldiers dealt with boredom. To the students' surprise, with slight

differences accounted for by the 150 years between themselves and the soldiers, there were many similarities. Next, as a group, they completed the diagram, which in turn led to lessons on comparison and contrast.

Carol followed the ABCs of MALP:

- She planned for interconnectedness and immediate relevance in her lessons;

- She made sure to move smoothly from the oral to the written, using the students' own language as the starting point;

- She included both group and individual elements in the data collection; and

- She directly taught the new academic tasks but scaffolded them with familiar language and content.

An important tool Carol used to ensure that she had included all these elements was the MALP Checklist (see Appendix A), which she used to design and evaluate her lesson plans. The checklist consists of six essential questions, each relating to one of the criteria for a successful MALP lesson. She asked herself each question and wrote the responses based on the lesson or lessons that she was planning for a given unit.

Preliminary Results

Even from this small sample of students and from the limited time period of the study, we saw change. Students became more comfortable and familiar with Western-style academic tasks. They were able to create and analyze graphs, charts and other organizers, and use critical thinking skills such as comparison/contrast. Most importantly, Carol noted their increased facility with print as they began to use print as a resource and started to use academic-style discourse. By the end of the study, these students were engaging in research and in creating PowerPoint presentations of their findings. The students also gained in self-confidence from working on these projects individually and in groups and strengthened their interpersonal skills in a school setting as they helped each other with their work.

"I know, I know!" Maria eagerly raises her hand in response to Carol's question. Unlike the early days of the school year, she no longer retreats into her own world with her head on the desk. She has increasingly become engaged in learning, volunteering answers and sharing her work with her peers.

Carol gained a great deal of insight and satisfaction from implementing the model. She gained an understanding of cultural dissonance and how it affects learning by SLIFE. She came to believe they could indeed, with the right approach, master academic content. Carol also

The students also gained in self-confidence from working on these projects individually and in groups and strengthened their interpersonal skills in a school setting as they helped each other with their work.

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Appendix A: Sample of Carol's completed MALP checklist for Civil War lessons

MALP Checklist of Six Key Questions for Teachers

1. How am I helping students develop and maintain interconnectedness?
- Students talk about their lives outside of school (ESL 4.4)
- Students and teacher learn more about each others' interests (ESL 4.4)
- Teacher and students share what they do when they are bored (ESL 4.4)

2. How am I making this lesson immediately relevant to my students?
- Finding out what soldiers did and seeing if any students do the same (SS 1.2; ESL 1.4)
- Adding more ideas to own list based on soldiers' information (SS 1.2; ESL 1.3)

3. How am I scaffolding the written word through oral interaction?
- Students read from own chart as teacher writes on class chart (ESL 1.7)
- Teacher's oral explanation of pictures of soldiers in free time (SS 1.2; ESL 1.2)
- Students contribute orally what they found on website (SS 1.2; ESL 1.7)
- Students read from the Venn diagram responding to questions about themselves and soldiers (SS 1.2; ESL 1.5)

4. How am I incorporating both group responsibility and individual accountability?
- Class collectively creates chart of activities with each student making contributions (ESL 1.13)
- Pairs work together to identify what soldiers did to combat boredom (SS 1.2; ESL 1.13)
- Each member of pair adds information to personal Venn diagram (ESL 1.13)

5. What new academic tasks am I introducing?
- Gathering data from secondary sources (SS 1.4; ESL 1.2)
- Comparing and contrasting data (SS 1.4; ESL 1.4)
- Analyzing data from graphs (ESL 3.1)

6. What am I doing to make the new tasks accessible to my students?
- Language on Web site accessible through photos and captions (ESL 1.16)
- Language scaffolded by use of L1 among students (ESL 1.14)
- Content scaffolded by relevant personal information (ESL 1.16)
- Content scaffolded by graphic organizers (ESL 1.16)

Note: Relevant NYS Social Studies and ESL standards in parentheses

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learned to create projects to engage the SLIFE class, build literacy, enhance critical thinking, and tap into knowledge that she hadn't accessed before or assumed that they didn't have.

Although this intervention targeted SLIFE, Carol has begun using the approach in all of her classes. We believe that many other students are somewhere along the continuum between SLIFE and highly academically oriented ELLs and that they, too, can benefit from this instructional model.

Content teachers necessarily focus their instruction on the standards and core curriculum for their subject area and grade level. However, if teachers only focus on content, they may not succeed in reaching SLIFE. MALP provides an instructional framework for teachers to plan and implement activities, ensuring that all students can access the content they present. Without attention to relevance and interconnectedness, teachers risk losing their students before they even begin to teach. And ignoring the challenges of the written word, individual accountability and academic tasks may result in students who cannot reach their potential in performance on subject-area assessments. Although MALP is essential for Students With Limited or Interrupted Formal Education, it can be beneficial for all students and thereby useful for all content teachers.

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Recognizing the Needs and Talents of the Heritage Language Learner

SUMMARY

Heritage Language Learners have different needs from those of the traditional student studying languages other than English. Using a multiple case study design, the authors determined how middle-level teachers are modifying instruction to address the unique needs and talents of the HLL.

This article addresses recommendations 1, 2, 3, 4, 5, 10 and 11 of the "Reading Next" and recommendations 1, 10, and 11 of the "Writing Next" reports of the Alliance for Excellent Education and the Carnegie Corporation of New York. (See pages 95-96 and 98)

Heritage Language

Learning is a recent field of inquiry, drawing from research on second language acquisition, primary literacy instruction, and bilingual education. Lynch (2003) conducted a review of the literature on second language acquisition and bilingual education and compared those recommendations to the needs of HLLs. Often, the heritage speakers have learned basic language as their primary language, but do not have formal education in this language. His findings recommend that effective heritage language instruction blend native and second language teaching methods.

Literature overwhelmingly suggests separate classes for HLLs and non-HLLs, particularly at the beginning levels (Anderson, 2000; Peyton, Ranard, & McGinnis, 2001; Roca, 2000; Roca & Colombi, 2003; Salaberry & Lafford, 2006; Webb & Miller, 2000). In smaller schools, or in large schools with a small number of HLLs, it is not always possible to have a separate course for HLLs. In smaller LOTE departments, both the HLLs and the non-HLLs are enrolled in the same class. The recommendations for working with HLLs are still valid, but may need adjustment based on the heterogeneous composition of the class.

A study of Chinese HLLs found that students felt their language use was restricted in the classroom due to the inclusion of non-HLLs (Weger-Guntharpe, 2006). For the formal study to have an impact on proficiency, instruction must be targeted to address HLL talents and needs. Teachers must know the abilities and

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interests of students (Romero, 2000; Lacorte & Canabal, 2003). Matsunaga (2003) suggested HLL students be grouped homogeneously for oral proficiency activities, but heterogeneously for reading activities. As HLLs have learned basic oral skills (listening and speaking) from their family, literacy (reading and writing) is an area where students' needs outweigh their talents. Therefore, teachers of beginning level language classes should focus on activities to promote reading and writing to help HLLs increase their language proficiency.

Heritage Language Proficiency as a Special Talent

If one were to view proficiency in a second language as a special talent, it may be appropriate to address Heritage Language Learners in a method similar to the way gifted and talented students are instructed. HLLs enter the formal study of a LOTE with prior knowledge. They know vocabulary and basic sentence structure in the language of study, and some HLLs have been translating for non-English speaking relatives, so they are aware of the intricacies of language. HLLs are already able to function to some degree in American culture and the culture of the target language, as their family incorporates the two languages and cultures. They have the special talent of navigating the world in two languages.

As Lowe (2002) states, "Bilingual children will need particular provision in school but may or may not, ultimately, have the potential to become highly proficient linguists" (p. 143). HLLs learn the dialect spoken in the home, and are accustomed to the norms and traditions of that particular culture. In order to be successful in the formal study of language, students must learn a wider vocabulary base of the language of study. The formal study of a language includes the study of products, practices, and perspectives of countries where the language is spoken

> As HLLs have learned basic oral skills (listening and speaking) from their family, literacy (reading and writing) is an area where students' needs outweigh their talents.

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Recognizing the Needs and Talents of the Heritage Language Learner

> Curriculum compacting is one way to address potentially gifted students in the regular classroom.

(National Standards in Foreign Language Education Project, 1999). The challenge for teachers of HLLs is to bridge the gap between the home language and the standard dialect, while increasing grammatical precision and literacy skills.

Curriculum compacting is one way to address potentially gifted students in the regular classroom. "Curriculum compacting has three major objectives: (1) to create a more challenging learning environment, (2) to guarantee proficiency in the basic curriculum, and (3) to buy time for more appropriate enrichment and/or acceleration activities (Renzulli & Reis, 1986, p. 232). Curriculum compacting "relieves gifted students of the boredom that often results from unchallenging work" (Renzulli, Smith, & Reis, 1982, p. 193). Reis, Burns, & Renzulli (1982) identified the steps in curriculum compacting, which included the identification of learning objectives, pretesting students who may already possess mastery of those objectives, and the development of enrichment or acceleration of materials for students who demonstrate mastery.

The Study

The current study explored the instructional practices of traditional LOTE classrooms with Heritage Language Learners. Fifteen teachers completed a survey to determine how they would differentiate instruction for HLLs in the traditional middle-level Spanish classroom. In addition, seven classes were observed to determine instructional practices and differentiation strategies used with HLLs and non-HLLs.

Two instruments were developed for this study. The Instructional Scenarios Questionnaire (ISQ) described units of study and asked respondents what instructional activities they would assign to described HLLs. Responses were both open-ended and Likert scale. The ISQ was piloted and then sent to a Jury of Experts to establish content validity. Fifteen teachers of Spanish completed the ISQ. The Instructional Practices Record (IPR) was developed to record observations during classroom observations. The IPR required the observer to note the language-learning skill for each activity, and then to record the participation by an HLL and non-HLL in the class. The researcher and two additional teachers piloted the IPR to establish inter-rater reliability. Five middle-level teachers were selected by convenience for classroom observations.

Results of the study

On the first part of the ISQ, teachers were asked to describe activities for two HLLs in different units. Fifty-two out of 117 responses (44%) describe activities that represent modification strategies that meet the needs of the HLLs described in the scenarios. Figure 1 shows the frequency of modification strategies described by teachers in the open-ended scenarios.

On the second part of the ISQ, teachers were asked to consider an HLL and a non-HLL in the same instructional unit and determine the likelihood with which they would assign a specific activity to each student. Teachers overwhelmingly suggested the same activities for each student.

Twenty-seven activities were observed during seven classroom observations. No differentiation was observed in 25 activities (93%). Both of the modified activities focused on grammatical acuity through listening skills. In five of the seven classes, there was no observation of differentiation strategies. HLLs and non-HLLs participated in the same activities, and the teachers did not provide any additional vocabulary, resources, or support. The results of the classroom observations indicate that teachers do not modify instruction to meet the needs of HLLs.

Figure 1:

Frequency of modification strategies reported by teachers
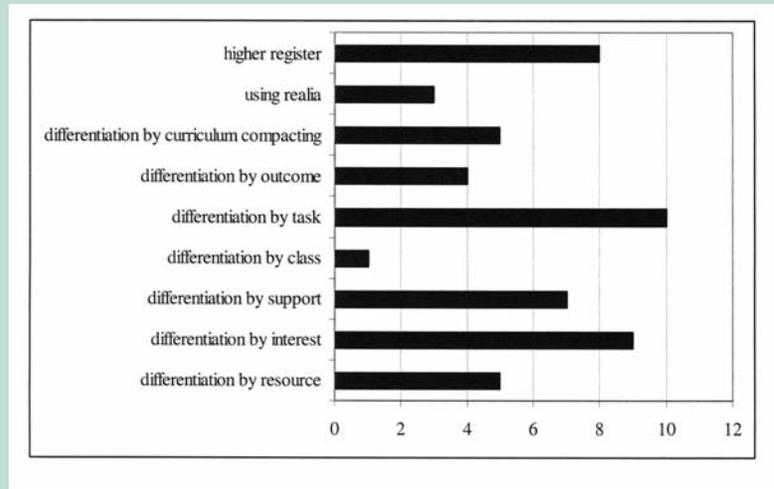
According to Languages Other Than English Checkpoint A: Resource Guide (The University of the State of New York, 2001), the students at the beginning level of LOTE study should be able to "understand the main idea and some details of simple informative materials written for native speakers" (p. 4). The realia suggested in the ISQ were selected because they represent authentic materials that are not commonly used in beginning level courses but would be appropriate for students who have the degree of proficiency suggested in the scenario. Table 1 indicates the total responses to both the HLL and non-HLL scenarios for these activities because the activities involving use of realia were seldom recommended for modification.

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Table 1:

Frequency of Anticipated Use of Suggested Realia Activities

Suggested activity	Very likely	Probably	Possibly	Not likely
1. read an article from the Spanish newspaper *El País* and answer related questions	3	10	13	4
2. read listings from a travel brochure about places in town	11	10	4	4
3. read the poem *La calle* by Octavio Paz and write a similar poem in Spanish	6	4	13	7

Note: One respondent did not provide an answer to the question about a travel brochure.

when we understand it. If this is true, 'comprehensible input,' messages we understand, will be the way to improve HLLs as well" (Cho, Shin, & Krashen, 2004, p. 7). Since Krashen (1981) recommends "optimal input includes structures that are 'just beyond' the acquirer's current level of competence (p. 103)", the teachers are doing a disservice to the HLLs by not providing them with increasingly more complex reading and writing tasks.

Curriculum Compacting for HLLs

Using methods adapted from instruction of gifted and talented students, the Curriculum Compactor (Reis et. al., 1993) may be used to help teachers plan accelerated and enriched activities for HLLs. Two responses to the ISQ described techniques consistent with Curriculum Compacting. Teachers were asked to describe a way to assess prior knowledge and then describe some activities that would expand the vocabulary and grammar topics. Table 2 shows the Curriculum Compacting strategies suggested to address family member vocabulary.

The data did not support that the teachers are incorporating authentic reading and writing tasks into their instructional practice. The teachers did not report assigning authentic reading or writing tasks. As these were skills often recommended for inclusion in an HLL curriculum, the data did not show evidence that the teachers were implementing these suggested strategies to address the needs of HLLs. At the beginning level of language study, reading and writing tasks are often limited to short notes and advertisements involving basic vocabulary and grammar structures. The HLLs need exposure to extended readings and formal writing experiences. "Language acquisition theory tells us that we acquire language

Conclusion

Two important findings emerged from this study: (1) The teachers recognized the need to modify curriculum for HLLs; and (2) The teachers were not modifying the curriculum for HLLs. When asked to describe strategies to help specific students, the teachers stated activities that enrich instruction and advance the students' proficiency. By viewing heritage language proficiency as a special talent, teachers will be able to modify instruction in a manner similar to the way it is modified for potentially gifted and talented students. Those teachers who have a systematic method of planning for modification of HLLs may be better prepared to plan appropriate activities for these students. Teachers of LOTE who continually assess each HLL's prior knowledge of grammar and vocabulary will be able to plan instruction that not only addresses student needs but also enriches their language talents. The Curriculum Compactor may be used to help teachers better plan learning activities that celebrate HLL talents, address their needs, and consistently augment language proficiency.

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Table 2:

Curriculum compacting strategies suggested by respondents

Respondent	Assessment of prior knowledge	Activity to expand vocabulary	Activity to expand grammar
1	Write a description of your family in Spanish. How many members are there? Who are they and what are they like.	Describe in Spanish what each family member does for a living (professions)? Where does each work or go to school?	
2	Review family vocabulary and see what he remembers (immediate and extended family). Incorporate 'tener.'	Teach about pets and family activities, description of each family member.	He can create a family tree and pick five out of 20 members to write about including the physical description of that person and their likes/dislikes.

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ELL Instruction That Works for All

SUMMARY

While Sheltered Instruction was developed for use with English language learners, a recent action research project on Long Island reminds us that it has the potential to improve achievement for all students.

This article addresses recommendations 1, 2, 4, 5, and 6 of the "Reading Next" and recommendations 1, 4, 5, and 7 of the "Writing Next" reports of the Alliance for Excellent Education and the Carnegie Corporation of New York. (See pages 95-96 and 98)

It is the first day of school and you are faced with a classroom full of questioning minds. Your students are sizing you up and wondering if this teacher will in fact make a difference in their lives. You are the one taking the first test. Will you pass or fail? Do you think about how you can empower them even if they do not speak English well? Do you know how to engage them despite their struggles with comprehension? Can you respond to their learning needs, especially if they had limited formal schooling? Will all of your students — including English Language Learners — be engaged and empowered? The goal of this article is to document how the Sheltered Instruction Observation Protocol (SIOP) model and effective multilevel literacy strategies were used to engage and empower struggling ELLs in a Long Island high school.

Background: The Instructional Context

Freeport Public Schools on Long Island includes eight buildings (five elementary, two middle schools, and one high school). The overall district enrollment is more than 6,500, consisting of approximately 10% white, 39% African-American, 49% Hispanic, and less than 2% of other racial groups such as Asian/Pacific Islander and Native American. Twelve languages are spoken by roughly 18% of the school population. Given these essential statistics, this action research project was designed to address the following questions: Who are our struggling students? How can we get to know them and really know what they

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understand about how language works? What do they already know and how can their knowledge base help determine the appropriative level of instruction?

Theoretical and Research-Based Context

Sheltered Instruction

The SIOP Model is organized around eight components essential for making grade-level content accessible for ELLs and for helping them develop academic and language skills: preparation, building background, comprehensible input, strategies, interaction, practice/application, lesson delivery, and review/assessment. These are further divided into a total of 30 strategies. The purpose of the original SIOP project described in this article was to establish specific guidelines for professional development to support the implementation of Sheltered Instruction (see www.siopinstitute.net). The SIOP Model has been used for observation, self-assessment, and lesson planning purposes in Freeport since 2004.

The SIOP instructional model is an all-inclusive lesson planning and delivery model that is ideal for every student, not just for ELLs. The use of this comprehensive model results in effective content-based ESL teaching practices that, when implemented systematically, ensure success for all learners.

Three Rules to Engagement

To ensure that all students are fully engaged in the reading, writing, or listening process they need to understand the Three Rules to Engagement: "Before, During, and After." Building student background knowledge and establishing the expectations for active involvement are essential when presenting new material. Each step of the Three Rules to Engagement process requires that students do something physical; read, write, move, act out, or express in some capacity to demonstrate that they understand the objectives of the lesson. Being mentally engaged in a lesson is not sufficient; being actively engaged is the primary goal. We believe that in addition to activating students' background knowledge, it is

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What is Sheltered Instruction?

More and more teachers in New York state are turning to the Sheltered Instruction Observation Protocol (SIOP) model, (Echevarria, Vogt, & Short, 2008) for research-based best instructional practices for English Language Learners. The goal of Sheltered Instruction is "to teach content to students learning English through a developmental language approach" (Echevarria, Vogt, & Short, 2010, p. 15). Sheltered Instruction offers the adaptations and modifications of the mainstream, grade-appropriate curriculum that makes learning achievable for ELLs. The SIOP model was a result of a 7-year research project (1996-2003) conducted for the Center for Research on Education, Diversity and Excellence (CREDE) (Echevarria et al., 2008). But the SIOP Model is not just a reinvention of the wheel. It is a model of best practices designed with ELLs in mind, but relevant for all students!

ELL Instruction That Works for All

METHODOLOGY

The Eight Components of SIOP

1. Preparation

2. Building Background

3. Comprehensible Input

4. Strategies

5. Interaction

6. Practice & Application

7. Lesson Delivery

8. Review & Assessment

essential to consider their learning styles and to adjust one's teaching style to the needs of the students (Dunn & Honigsfeld, 2009). We ask ourselves, "What do my students need to achieve the goal of the lesson?" Since we believe that one size of a lesson does not fit all students, the SIOP project teachers provided differentiated lessons to meet the needs of all of our students.

SIOP Implementation Through Multilevel Literacy Activities

During the summer of 2009, two teachers joined one of the authors in a collaborative effort to implement key SIOP components and to study the effectiveness of using the SIOP model for instruction with ELLs, general education and special education students in high school English language arts. Among the educators involved in the project were an ESL teacher (Laurie Trujillo), a reading/English teacher (Ellen Okin) and a reading/ESL teacher (Maryclaire Dumas-Landisi). The project involved 48 students enrolled in an English language arts summer enrichment class, whose goal was to expand the students' literacy knowledge base and skills.

Prior to the summer project Dumas-Landisi experienced success with her high school age ELLs utilizing the SIOP Model. She hypothesized that

all of the students taking ELA enrichment class in summer school would benefit from the use of the SIOP model. When she asked Okin and Trujillo to become involved in the research project, both of the teachers were willing to administer the pretest, mid-term and post-test and to focus their instruction using appropriate SIOP strategies.

What SIOP Strategies Were Used?

Critical elements of the eight SIOP components were implemented throughout the summer school program. However, the key to the success of the participating students was the use of multilevel activities. The application of scaffolded multilevel lessons provided the students with the support they needed at the appropriate proficiency level to complete their literacy tasks successfully.

At the beginning of the summer program, the three collaborating teachers systematically focused on activating the students' prior knowledge through a range of brainstorming activities on familiar topics such as family, friends, and school. To generate extensive vocabulary lists and subtopics for further exploration, PowerPoint slides were shared with pictures, Smart Board technology was used to facilitate student interaction, and activities were recorded on large chart papers to actively engage the students in comprehension-building

activities. The basis for the students' future writing assignments was formed at this juncture. The primary purpose of the instruction, established with the students, was to engage them in writing about topics that elicited personal connections. These background-building activities were essential in developing further lessons and establishing the vocabulary baseline of the participating students.

One specific SIOP-inspired strategy which led to student writing success is the Touchdown Method — T3DC, which helps students refine their writing skills. Developed by Dumas-Landisi, T3DC stands for (T)topic sentence, (3)3 detail sentences, and (C)conclusion sentence. The students worked with a variety of leveled, scaffolded, graphic organizers that were instrumental in using this strategy to develop their writing skills.

Throughout the summer school project the students most in need of support frequently worked together using the Touchdown Method in cooperative learning groups to develop an introductory paragraph that supported the topic chosen. This collaborative approach responded to students' needs at varying stages of literacy development. Teachers provided some students with elaborate sentence starters and pre-taught key vocabulary words to assist them in

their writing. Other students independently created a topic sentence, three detail sentences and a conclusion sentence using scaffolded outlines. The groups completed their graphic organizers, used the Smart Board, or wrote on large chart paper and then presented their paragraphs to the class.

Students at a higher readiness level received a graphic organizer with sentence starters and fill-in-the-blanks passages using the Touchdown Method format. These students worked in pairs or independently to complete the graphic organizers as a tool to create an essay on a topic of interest. At the most advanced level, the students worked with a blank Touchdown graphic organizer template, which required them to fill in the blanks without the use of teacher-provided or collaboratively developed sentence starters.

These multi-level, scaffolded activities were repeated often until it was evident that the teachers could relinquish some of the responsibility to the students and have the students write independently without the use of a graphic organizer or template.

Once the students developed their knowledge of the format of writing they were introduced to another scaffolding strategy, the SLAMS rules

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The Touchdown Method — T3DC

I. Introduction Paragraph
T - Topic Sentence
D - Detail Sentence
D - Detail Sentence
D - Detail Sentence
C - Conclusion Sentence

II. Body Paragraphs
Body #1
T - Topic Sentence
D - Detail Sentence
D - Detail Sentence
D - Detail Sentence
C - Conclusion Sentence

Body #2
T - Topic Sentence
D - Detail Sentence
D - Detail Sentence
D - Detail Sentence
C - Conclusion Sentence

Body #3
T - Topic Sentence
D - Detail Sentence
D - Detail Sentence
D - Detail Sentence
C - Conclusion Sentence

III. Conclusion Paragraph

T - Topic Sentence
D - Detail Sentence
D - Detail Sentence
D - Detail Sentence
C - Conclusion Sentence

ELL Instruction That Works for All

SLAMS

Sentences
Write in
complete
sentences

Lines
Fill in all
of the lines

Answer
Answer all
of the questions

Mechanics
Correct all writing
mechanics:
Spelling
Punctuation
Capitalization
Grammar

Support
Support
with details

rubric (Crowell & Kolba, 1998). This acronym is a strategy used to develop writing skills, by reminding students to:

Write in complete **S**entences, Fill in all of the **L**ines, **A**nswer the question, Attend to **M**echanics (spelling, punctuation, capitalization & grammar), and **S**upport with details.

Students were provided with a writing sample and a rubric that clearly defined the expectations of a proficient writer using the SLAMS rules. To introduce this activity, the Smart Board was used to display a paragraph written by a group of students from another class. Each student had a copy of the paragraph and a SLAMS rubric template. They were asked to work in cooperative learning groups, refer to the rubric and check off each of the rules to see if the objectives were being met. Students took turns presenting their findings and interacted with the Smart Board to show their understanding of the rules and objectives of the lesson. Subsequent activities involved students working on their own writing, in pairs as well as individually, using the SLAMS rubric.

The primary purpose for utilizing these and other tiered activities was to allow students to work at varying levels to achieve success. Fisher and Frey (2008) suggest that teachers:

"Use scaffolding to provide students with the level of support they need to complete the task or assignment successfully. As students become more proficient, the amount of support provided decreases, until they can work independently. The gradual release of responsibility model explicitly moves instruction from the teacher ('I do it'), to guided instruction with the whole class ('We do it'), to students working together with teacher supervision ('You do it together'), and, finally, to students being responsible for their own work ('You do it alone')" (Echevarria & Hasbrouck, 2009).

How Do We Know These Strategies Work?

The summer school SIOP project included three formal modes of assessment: a pre-test, a midterm, and a post-test that were developed by the three teachers. The students were given the pre-test to evaluate what they already knew about reading and writing strategies and formats. This test proved to be a valuable source of information about their entry level of skills and the background knowledge needed to read for information and comprehension as well as to write coherently and fluently. The pre-test data provided an essential guide for the teachers to align instruction with student needs and to identify the most appropriate SIOP strategies.

The pre-test results indicated that only 3 of 48 students received a score higher than 50%; 27 received less than 30%; and 18 out of 48 students received a score between 30% and 49%. It was clear that most students were lacking in basic skills relating to the reading and writing process. To address this problem, a series of lessons was created that follow the SIOP model with lessons scaffolded to address student levels identified in the pre-test.

Halfway through the summer program, the students were given a midterm exam. The results of this test indicated significant improvement in reading and writing comprehension. In the mid-point test, 31 of the 48 students received a grade of 50% or higher; 12 earned grades between 40% and 50%; and only 5 received less than 40% on the midterm. End-of-summer scores showed further improvement. Forty of the 48 students received grades higher than 80%; 6 students received a score between 70% and 80% and only 2 out of 48 students received a score between 50% and 60%. The effectiveness of SIOP strategies was apparent. The three collaborating teachers collected the data, identified the appropriate SIOP strategies to address the areas of weakness, and provided instruction while continuing to reinforce and build upon the strengths of the students.

The three SIOP project teachers reported that all the participating students were continuously engaged in each of the lessons. There was no significant difference in how the ELLs responded compared to the ELA enrichment students. The lessons focused on background knowledge and connection-making at each student's level, as an integral part of the process. All lessons were tiered to accommodate all levels. Directions were clearly explained and repeated as often as necessary. Based on the stated objectives and the informal observations of the three teachers, the summer school principal, the parents and students, this summer school SIOP project was successful and will continue in the future.

Summary of Results

The results of the eighth-grade New York State ELA assessment indicated that Freeport students demonstrated a need to improve reading comprehension, writing skills, and listening skills. The purpose of this action research was to determine the impact of the use of the SIOP Model and strategies on the students' ability to read with greater understanding, write with fluency, and listen effectively. The conclusion, based on student data and informal observations, is that SIOP strategies had a positive influence on student achievement.

METHODOLOGY

Definitions

ELA
English Language Arts
Enrichment Class

ELL
English Language Learners

ESL
English as a Second Language

SIOP
Sheltered Instruction
Observation Protocol

SLAMS Rules
Write in complete Sentences,
Fill in all of the Lines, Answer
the Question, Attend to
Mechanics, (Spelling,
Punctuation, Capitalization
& Grammar)

T3DC
The Touchdown Writing
Method - Topic Sentence, 3
Detail Sentences &
Conclusion Sentence

**Passing the Baton:
A Connection-Making Process**

The authors conclude that there are two batons to pass with this project. One baton is the responsibility for learning passing from teacher to student. Once students have clearly developed their basic reading and writing skills, learned via the multi-layered activities embedded within SIOP strategies, they can apply these new strategies across the curriculum in all subject areas. The goal is to encourage, empower, energize and fully engage all students in their own learning. The other baton is to content-area teachers who work with all levels of students. While the SIOP model was developed for use with ELL students, the results of this action research project indicate that the strategies have promise for improving student achievement for all students. The second baton can also be passed from colleague to colleague, in professional learning communities and in future professional development activities.

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Functional Literacy in a Life Skills Curriculum

SUMMARY

Combining systematic phonics instruction and a language arts life-skills-based curriculum brings a veteran special education teacher success in educating students with developmental disabilities.

This article addresses recommendations 1, 5, 6, and 10 of the "Reading Next" report of the Alliance for Excellent Education and the Carnegie Corporation of New York. (See page 95)

Studies have shown a wide range of reading ability levels in children with Down syndrome — a developmental disability causing mild to moderate cognitive delays — as well as the need for additional instruction in reading (Fowler, Doherty, & Boyton, 1995). Teaching students with DS who have moderate cognitive delays to read utilizing a phonics method can promote independence in reading as they sound out unfamiliar words encountered in both the school and community settings. However, it has been shown that the lack of generalization and application of decoding to new contexts may be the result of a need for instruction targeting phonemic awareness skills over a longer duration (Kennedy & Flynn, 2002).

I have found that I needed to spend more time focusing on sound symbol relationships in order to see measurable reading success in my students.

Essentially, two years of instruction at least three times per week for 45 minutes in the area of phonemic awareness was needed to produce a measurable difference in the students' reading scores on standardized measures. While there is limited research on the effect of phonemic awareness training for students with DS or moderate mental retardation, much of the research has indicated that literate children with a moderate developmental disability do possess measurable levels of phonemic awareness (Cupples & Ianco, 2000; Fletcher & Buckley, 2002; Kennedy & Flynn 2003; Morgan, Moni, & Jobling, 2006; Van Bysterveldt, Gillon, & Moran, C., 2006). A large body of empirical research has noted the benefits of teaching phonemic awareness to students without special needs. Studies have found a positive association between phonemic awareness and reading for all students, yet there remains the need for continued

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research in the area of teaching phonics to students with DS and its relationship to their acquisition of literacy (Fowler, Doherty, & Boynton, 1995; Buckley, Bird, & Byrne, 1996; Cupples & Ianco, 2000; Conners, 1992; Fletcher & Buckley, 2002; Joseph & Seery, 2004). Although all individuals with Down syndrome experience cognitive delays, the delays range from mild to moderate in severity. This article will focus on instructional strategies for students with a moderate developmental delay.

Teaching students with moderate developmental disabilities to read was a challenging task to look forward to when I began the 2003 school year. As I met my first group of eager freshman in Lewiston-Porter High School's new 8:1:1 (eight students, one teacher, and one teacher aide or teaching assistant) life skills classroom, all but one of the students could read little more than their own name when they walked into school on the first day of classes. During the next six school years, however, five of the six students with Down syndrome and moderate mental retardation learned to read and write at the first-through-third-grade levels.

A combined approach utilizing systematic phonics instruction and a language arts life-skills-based curriculum provided the students with the understanding of the sounds in our language as well as common sight words they would see in restaurant-related jobs, at home when cooking in the kitchen, or on packages at the grocery store. The phonemic awareness instruction occurred three times each week as whole group lessons, and instruction was differentiated based on a student's ability to recognize letters and sounds. The different ability groups were instructed simultaneously. PowerPoint slides shown in Table 1 were developed to target Level 1 and Level 2 during the lesson, and teacher aides provided one-to-one assistance to students working in Level 1. Level 1 of the phonics program involved constructing three-letter words with short vowel sounds, such as *cat, cot, cut, tip*, etc. Level 2 students construct three- and four-letter words with short vowel sounds, digraph blends (**sh**ip, **sh**op, **ch**ip, **ch**op), and blends (**fl**op, **fl**at, **fl**ip) as well as words with welded sounds (s**ink**, s**ank**, s**unk**). Level 3 students begin to learn how to sound out multi-syllabic words containing short vowel

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Do I have to teach them how to read?

Every middle and high school has some students who have not yet mastered the basics of reading. They may be English language learners, students with cognitive disabilities, or students with brain injuries. These students may receive support in a resource room, through Academic Intervention Services, or in special education.

But when they are in a regular classroom they may need assistance with vocabulary. While the strategies outlined here appear to be for elementary-age beginning readers, you will find students at this reading level in many content classrooms.

Functional Literacy in a Life Skills Curriculum

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Table 1:

Slide show segment for teaching phonics in our classroom, along with the teacher instructions for the class:

Slide 1	Slide 2	Slide 3	Slide 4
	cat	sunk	

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Table 2:

Lesson format for 45-minute class:

5 minutes	Teacher reviews the letters, digraphs, welded sounds using a chant: "a-apple-ah," "b-bell-bah," etc.
20 minutes	Students are asked to construct 10 words using plastic alphabet letters. Using PowerPoint slides, the teacher can point to each word and sound them out with the class.
10 minutes	Teacher and students read the list of words as a whole group. Students each have a turn reading the list of words aloud.
10 minutes	Teacher keeps the list of words on the screen, reading one at a time. Students write the word read next to each number on their paper.

sounds. A differentiated approach to phonics instruction can be applied to any elementary classroom or instructional situation where you are teaching students with varying phonemic awareness abilities. Students may use plastic alphabet letters or a dry erase board and markers to construct the words they will be asked to read and write during the lesson.

- Show a blank slide (Slide 1) and tell students in the first group to make the word "cat." The teacher aides will sound out the word until students have spelled it correctly. Instruct students in the second group to make the work "sunk." Sound out the word until students have made the word.

- Move on to Slide 2 and ask the class to sound out the word. The teacher should point to each letter as the sound of the letter is made.

- Show Slide 3 and ask the students to sound out the word as you point to each letter and say its sound.

- Project blank Slide 4 and have students complete the second group of words. Repeat this procedure until all 10 words have been constructed.

A chart indicating the lesson time frame and activities is included in Table 2. After students have constructed their words, each student will read the group of words aloud. A PowerPoint slide should be shown with all of the Level 2 words listed. The teacher will point to each word and assist students as they

read the list of words. Students then complete a brief assessment as the teacher reads the words in random order and students copy the correct word on to their paper from the projected list of words. If students have more than two words incorrect, the lesson should be repeated for mastery. Level 1 students should work one-on-one with an assistant, if needed, and have their words written on Post-it notes to read from. When they take their test, they will be read a random word from the lesson. They will be asked to select the correct Post-it note containing the word and place it next to the number on their test paper. Then, the student will write the word on their paper.

It is important for students with developmental disabilities to recognize functional words within the community; however students also need instruction utilizing a direct approach in phonemic awareness that can be generalized within their community and classrooms. In addition to explicit phonemic awareness instruction, a balanced literacy program that includes the use of materials already in place in the school environment, such as trade books and magazines, will afford students a rich literary experience grounded in everyday practice as they move from a logographic stage of reading to include the alphabetic and orthographic stages of

reading development. With these thoughts in mind I began a search for a life-skills-based curriculum that would enable students to learn to utilize the oven, microwave, and other small appliances in our classroom kitchen. A program called "Cooking to Learn 2 — Integrated Reading and Writing Activities" by Coxson and Nilson was added to our classroom instructional routine. Directions and comprehension questions are included for each lesson, both with and without illustrations. For students in class who struggle with reading, the worksheets are scanned and used with *Read and Write Gold*, a computer software program that will highlight and read each word aloud for the students. Table 3 illustrates the differentiation provided by this "hands-on" method to increase functional sight word awareness.

Table 3: Food and Cooking Items to Make a Morning Surprise

Each section of the lesson includes picture cues for students. Table 4 outlines specific steps in the instructional process involved in completing the recipe-based lesson. One page contains illustrations of each direction for emergent readers; the other page has no illustrations for students with a basic reading skill level.

> A differentiated approach to phonics instruction can be applied to any elementary classroom or instructional situation where you are teaching students with varying phonemic awareness abilities.

Functional Literacy in a Life Skills Curriculum

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Table 3:

Food and Cooking Items to Make a Morning Surprise

METHODOLOGY

Table 4:

Step-by-Step directions for making Macaroni and Cheese

Table 4: Step-by-Step Directions for Making Macaroni and Cheese

At the end of each cooking lesson, there are comprehension questions for students to complete, a cloze activity, as well as a reflective thinking writing assignment, which asks students to recap what they did in class as shown in Table 5. The comprehension questions, as illustrated in Table 6 are also differentiated. Emergent writers may give a one- or two-word answer, which is scribed by a teacher and traced by the student. Other students give shortened answers, which the teacher should say aloud in a complete sentence and write on an overhead so that students can see examples of how writers leave spaces between words, write in a left-to-right pattern, and read the information they are writing.

Table 5: Sample Cloze Activity and Comprehension Questions

Table 6: Differentiated Comprehension Question Activities

In all aspects of the instructional program, teaching assistants have been an integral part of the success our students experienced in the acquisition of literacy. The TAs attend trainings with the teacher to learn important skills implemented in the classroom, and the Lewiston-Porter School District has provided the School-Related Professional in the high

school with laptops and computer training as well. This has proven extremely helpful in my ability to use assistive technology that the TAs must be familiar with if emergent readers are to be active participants in the phonics and cooking lessons. A close-knit, professional learning community where TAs and special education teachers share ideas and input is a necessary condition to begin collaborating on instructional strategies and implementation.

A lack of reading opportunities that fails to immerse the child in a literacy-filled environment and explicit reading instruction that does not continue beyond basic skills in reading perpetuate the marginalization of individuals with disabilities. There are major implications for developing a sound, research-based literacy program for students with developmental disabilities. Students will have the ability to be readers and function more independently in the community if they can sound out and comprehend unfamiliar words. Employment opportunities will increase, and the students' abilities to manage their lives without assistance will improve as well.

Students in the 8:1:1 class at Lewiston-Porter High School took great pride in reading selections for their parents at our classroom dinners and selecting books to read for pleasure, both at school and home.

METHODOLOGY

Table 5:

Sample Cloze Activity and Comprehension Questions

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Table 6:

Differentiated Comprehension Question Activities

Functional Literacy in a Life Skills Curriculum

Generalizing the skill of decoding and learning to think about the messages that words and sentences are conveying will create additional opportunities for independence for special-needs students with moderate developmental disabilities.

Witnessing the joy of the mothers and fathers of students who, until high school, had not heard their children read independently, is something I will never forget. Not only were students able to read directions for life skills purposes such as cooking, they enjoyed reading stories, notes from their parents, and birthday invitations from classmates. Generalizing the skill of decoding and learning to think about the messages that words and sentences convey creates additional opportunities for independence for special-needs students.

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Glossary

ACRONYMS AND TERMS

action research
Research, usually informal, designed to answer a specific question or for direct application to behavior or to a situation, conducted by teachers in their classrooms.

AP
Advanced Placement; College Level Course and Examination administered by The College Board

BICS
Basic Interpersonal Communication Skills

blog
Short for weblog. A type of Web site, usually maintained by an individual, with regular entries of commentary, descriptions of events, or other material such as graphics or video. Used as a verb, it refers to maintaining or adding content to a blog.

Bloom's Taxonomy
A classification of levels of intellectual behavior important in learning, developed by psychologist Benjamin Bloom in 1956. Bloom identified six levels within the cognitive domain, including knowledge, comprehension, application, analysis, synthesis, and evaluation.

BOCES
Board of Cooperative Educational Services

Brain Gym
A nonprofit organization committed to the principle that intentional movement is the door to optimal living and learning. Its mission is to support self-awareness and ease of living and learning through safe, simple, and effective movement. Brain Gym movements, exercises, or activities refer to the original 26 Brain Gym movements, sometimes abbreviated as the 26. These activities recall the movements naturally done during the first years of life when learning to coordinate the eyes, ears, hands, and whole body.

CALP
Cognitive academic language proficiency

CELA
Center on English Learning and Achievement, University at Albany, language research center *www.albany.edu/cela*

CHILDSPlay
Character, Health-Related Fitness, Intelligence, Lifestyle, Development and Skilled Play - elements of a P-12 physical education curriculum

cloze activity
A method of measuring a person's reading comprehension by measuring the ability to restore omitted portions of an oral or written message by reading its remaining context.

critical thinking
The logical thought processes of the scientific method, including divergent and analytical thinking.

curriculum compacting
Instructional strategy, developed for gifted and talented students, that includes eliminating repetition of work that has already been mastered and streamlining of lessons while documenting student proficiency on instructional objectives and listing specifically what enrichment activities are offered in place of repetitive class work. The process of compacting includes three phases: defining goals and outcomes, identifying candidates for compacting, and providing acceleration and enrichment options.

decode
To analyze spoken or graphic symbols of a familiar language to ascertain their intended meaning.

DBQ
Document-based question

DE
Discrepant Event: An event that causes an unexpected contradiction with one's prior knowledge

DS
Down syndrome

ELA
English language arts: NYS Learning Standards

ELL
English language learner

graphic organizers
Visual and graphic representations of information that show both units of information and the relationship between these units. Also known as concept maps, story maps, advance organizers, story webs, semantic maps, and cognitive organizers, they are often used to teach text structure, to aid comprehension, support writing organization and planning and to help students understand vocabulary.

HLL
Heritage language learner: Student who has basic oral skills in a language other than English and participates in LOTE instruction in that language.

inquiry

Instructional strategy based on seeking information by questioning rather than presenting.

life skills classroom

A structured learning environment that focuses on the skills of daily living.

LOTE

Languages other than English: NYS Learning Standards

MALP

Mutually adaptive learning paradigm

manipulative

An object designed so a student can learn some concept by manipulating it. The use of manipulatives provides a way for children to learn concepts in developmentally appropriate, hands-on ways. Examples include blocks, letter tiles, and shapes.

metacognition

Awareness and knowledge of one's mental processes such that one can monitor, regulate and direct them to a desired end.

MST

Math, Science and Technology: NYS Learning Standards

multimodality

Learning or instruction that uses more than one sense.

NASPE

National Association for Sport and Physical Education

NCES

The National Center for Education Statistics: primary federal entity for collecting and analyzing data related to education.

NCTM

National Council of Teachers of Mathematics

NSTA

National Science Teachers Association

PDA

Personal digital assistant (archaic: public display of affection)

PLC

Professional Learning Community

PSAT

Preliminary Scholastic Aptitude Test: administered by The College Board

realia
Objects from real life used in classroom instruction by educators to improve student understanding of other cultures and real-life situations. Often used by a teacher of a foreign language to strengthen students' associations between words for everyday objects and the objects themselves.

rubric
A set of criteria and standards linked to learning objectives that is used to assess performance. In education, a scoring tool for evaluation of subjective assessments.

SAT
Scholastic Aptitude Test, administered by The College Board. A standardized exam used as admission test by many U.S. colleges and universities.

schema
An underlying organizational pattern or structure; conceptual framework.

Sheltered Instruction Instructional model for English language learners that teaches content through a developmental language approach.

SIFE
Students with Interrupted Formal Education

SIOP
Sheltered Instruction Observation Protocol

SLIFE
Students with Limited or Interrupted Formal Education

text (verb)
To send text-based messages using phone or PDA.

Twitter
A free social networking and microblogging service that enables its users to send and read messages known as tweets. Tweets are text-based posts of up to 140 characters displayed on the author's profile page and delivered to subscribers, who are known as followers.

Vertical Teaming
Practice of establishing a team of different grade-level teachers in an academic area to communicate, cooperate and design curricular change to encourage high student achievement.

Wikipedia
Web-based, collaborative, multilingual encyclopedia project. The name is taken from wiki (a technology for creating collaborative Web sites, from the Hawaiian word meaning "quick"). Wikipedia's 14 million articles have been written collaboratively by volunteers around the world, almost all of which can be edited by anyone with access to the site.

Expanding Literacy for Adolescents

RESOURCES FOR EDUCATORS AND LITERACY PROVIDERS IN ALL CONTENT AREAS, GRADES 7-12

Editor's Note:

Reprinted with permission are the executive summaries of two cutting-edge reports on improving adolescent literacy — ***Reading Next: A Vision for Action and Research in Middle and High School Literacy*** and ***Writing Next: Effective Strategies to Improve Writing of Adolescents in Middle and High Schools.*** A collaboration of the Alliance for Excellent Education and the Carnegie Corporation of New York, these two reports offer a series of recommendations for improving student achievement. We commend them to your attention.

Reading Next: A Vision for Action and Research in Middle and High School Literacy

EXECUTIVE SUMMARY

The Issue

American youth need strong literacy skills to succeed in school and in life. Students who do not acquire these skills find themselves at a serious disadvantage in social settings, as civil participants, and in the working world. Yet approximately 8 million young people between fourth and 12th grade struggle to read at grade level. Some 70 percent of older readers require some form of remediation. Very few of these older struggling readers need help to read the words on a page; their most common problem is that they are not able to comprehend what they read. Obviously, the challenge is not a small one.

Meeting the needs of struggling adolescent readers and writers is not simply an altruistic goal. The emotional, social, and public health costs of academic failure have been well documented, and the consequences of the national literary crisis are too serious and far-reaching for us to ignore. Meeting these needs will require expanding the discussion of reading instruction from *Reading First* — acquiring grade-level reading skills by third grade — to *Reading Next* — acquiring the reading skills that can serve youth for a lifetime. Fortunately, a survey of the literacy field shows that educators now have a powerful array of tools at their disposal. We even know with a fair degree of certitude which tools work well for which type of struggling reader. However, we do not yet possess an overall strategy for directing and coordinating remedial tools for the maximum benefit to students at risk of academic failure, nor do we know enough about how current programs and approaches can be most effectively combined.

The Approach

To help address this problem, a panel of five nationally known and respected educational researchers met in spring 2004 with representatives of Carnegie Corporation of New York and the Alliance for Excellent Education to draw up a set of recommendations for how to meet the needs of our 8 million struggling readers while simultaneously envisioning a way to propel the field forward. The resulting paper was reviewed and augmented by the Adolescent Literacy Funders Forum (ALFF) at its 2004 annual meeting. Although this report originally was targeted to the funding community, it offers information that will also prove invaluable to others, including researchers, policy-makers, and educators.

The Recommendations

The 15 Elements of Effective Adolescent Literacy Programs

This report delineates 15 elements aimed at improving middle and high school literacy achievement right now.

1. Direct, explicit comprehension instruction, which is instruction in the strategies and processes that proficient readers use to understand what they read, including summarizing, keeping track of one's own understanding, and a host of other practices.

2. Effective instructional principles embedded in content, including language arts teachers using content-area texts and content-area teachers providing instruction and practice in reading and writing skills specific to their subject area.

3. Motivation and self-directed learning, which includes building motivation to read and learn and providing students with the instruction and supports needed for independent learning tasks they will face after graduation.

4. Text-based collaborative learning, which involves students interacting with one another around a variety of texts.

5. Strategic tutoring, which provides students with intense individualized reading, writing, and content instruction as needed.

6. Diverse texts, which are texts at a variety of difficulty levels and on a variety of topics.

7. Intensive writing, including instruction connected to the kinds of writing tasks students will have to perform well in high school and beyond.

8. A technology component, which includes technology as a tool for and a topic of literacy instruction.

9. Ongoing formative assessment of students, which is informal, often daily assessment of how students are progressing under current instructional practices.

10. Extended time for literacy, which includes approximately two to four hours of literacy instruction and practice that takes place in language arts and content-area classes.

11. Professional development that is both long term and ongoing.

Resources

12. Ongoing summative assessment of students and programs, which is more formal and provides data that are reported for accountability and research purposes.

13. Teacher teams, which are interdisciplinary teams that meet regularly to discuss students and align instruction.

14. Leadership, which can come from principals and teachers who have a solid understanding of how to teach reading and writing to the full array of students present in schools.

15. A comprehensive and coordinated literacy program, which is interdisciplinary and interdepartmental and may even coordinate with out-of-school organizations and the local community.

Since implementation of only one or two of these elements is unlikely to improve the achievement of many students, this report recommends that practitioners and program designers flexibly try out various combinations in search of the most effective overall program. Furthermore, any combination should include three specific elements: professional development, formative assessment, and summative assessment. No literacy program targeted at older readers is likely to cause sig-

nificant improvements without these elements, because of their importance to ensuring instructional effectiveness and measuring effects. However, they should not be seen as sufficient in themselves to address the wide range of problems experienced by older, struggling readers; rather, they act as a foundation for instructional innovations.

Balancing Purposes

This report also stresses that improving the literacy achievement of today's and tomorrow's youth requires keeping action balanced with research. The report outlines a balanced vision for effecting immediate change for current students and building the literacy field's knowledge base. Stakeholders should select programs and interventions according to the inclusion or exclusion of the fifteen elements-thereby creating a planned variation-and evaluate implementation using a common process to allow for comparisons across programs. In line with this recommendation, outcomes and procedures for evaluation are detailed to promote cross-program comparisons. By collecting data according to the recommended design, public and private funders, districts, and researchers will be able to disaggregate students and

describe the different sources of their difficulty and the differentiated effects of programs and program components. Such disaggregation will provide a rich base for experimental research.

The Relevance

We believe that if the funding, research, policymaking, and education communities embrace these recommendations, the literacy field will make significant strides toward the goal of meeting the needs of all students in our society, while also strengthening our understanding of exactly what works, when, and for whom. We will thereby strengthen the chances for striving readers to graduate from high school as strong, independent learners prepared to take on the multiple challenges of life in a global economy.

For the complete *Reading Next* report, go to *www.all4ed.org/publication_material/reports/reading_next*

CITATION FOR *READING NEXT*

Biancarosa, C., & Snow, C. E. (2006). *Reading next: A vision for action and research in middle and high school literacy:* A report to Carnegie Corporation of New York (2nd ed.). Washington, DC: Alliance for Excellent Education. Reproduced with permission.

Writing Next: Effective Strategies to Improve Writing of Adolescents in Middle and High Schools

EXECUTIVE SUMMARY

A Writing Proficiency Crisis

Writing well is not just an option for young people-it is a necessity. Along with reading comprehension, writing skill is a predictor of academic success and a basic requirement for participation in civic life and in the global economy. Yet every year in the United States large numbers of adolescents graduate from high school unable to write at the basic levels required by colleges or employers. In addition, every school day 7,000 young people drop out of high school (Alliance for Excellent Education, 2006), many of them because they lack the basic literacy skills to meet the growing demands of the high school curriculum (Kamil, 2003; Snow & Biancarosa, 2003). Because the definition of literacy includes both reading and writing skills, poor writing proficiency should be recognized as an intrinsic part of this national literacy crisis.

This report offers a number of specific teaching techniques that research suggests will help fourth- to 12th-grade students in our nation's schools. The report focuses on all students, not just those who display writing difficulties, although this latter group is deservedly the focus of much attention. The premise of this report is that all students need to become proficient and flexible writers. In this report, the term low-achieving writers is used to refer to students whose writing skills are not adequate to meet classroom demands. Some of these low-achieving writers have been identified as having learning disabilities; others are the "silent majority" who lack writing proficiency but do not receive additional help. As will be seen in this report, some studies investigate the effects of writing instruction on groups of students across the full range of ability, from more effective to less effective writers, while others focus specifically on individuals with low writing proficiency.

Recent reports by the National Commission on Writing (2003, 2004, 2005) have helped to bring the importance of writing proficiency forward into the public consciousness. These reports provide a jumping-off point for thinking about how to improve writing instruction for all young people, with a special focus on struggling readers. *Reading Next* (Biancarosa & Snow, 2004), commissioned by Carnegie Corporation of New York, used up-to-date research to highlight a number of key elements seen as essential to improving reading instruction for adolescents (defined as grades 4-12). *Writing Next* sets out to provide guidance for improving writing instruction for adolescents, a topic that has previously not received enough attention from researchers or educators.

Resources

While *Reading Next* presented general methods and interventions that several of America's most respected adolescent literacy experts found to be useful for improving reading instruction, *Writing Next* highlights specific teaching techniques that work in the classroom. It does so by summarizing the results of a large-scale statistical review of research into the effects of specific types of writing instruction on adolescents' writing proficiency. Although several important reviews of research on writing instruction exist (e.g., Langer & Applebee, 1987; Levy & Ransdell, 1996; MacArthur, Graham, & Fitzgerald, 2006; Smagorinsky, 2006), the special strength of this report is its use of a powerful statistical method known as meta-analysis. This technique allows researchers to determine the consistency and strength of the effects of instructional practices on student writing quality and to highlight those practices that hold the most promise.

The Recommendations
Eleven Elements of Effective Adolescent Writing Instruction

This report identifies 11 elements of current writing instruction found to be effective for helping adolescent students learn to write well and to use writing as a tool for learning. It is important to note that all of the elements are supported by rigorous research, but that even when used together, they do not constitute a full writing curriculum.

1. Writing Strategies, which involves teaching students strategies for planning, revising, and editing their compositions.

2. Summarization, which involves explicitly and systematically teaching students how to summarize texts.

3. Collaborative Writing, which uses instructional arrangements in which adolescents work together to plan, draft, revise, and edit their compositions.

4. Specific Product Goals, which assigns students specific, reachable goals for the writing they are to complete.

5. Word Processing, which uses computers and word processors as instructional supports for writing assignments.

6. Sentence Combining, which involves teaching students to construct more complex, sophisticated sentences.

7. Prewriting, which engages students in activities designed to help them generate or organize ideas for their composition.

8. Inquiry Activities, which engages students in analyzing immediate, concrete data to help them develop ideas and content for a particular writing task.

9. Process Writing Approach, which interweaves a number of writing instructional activities in a workshop environment that stresses extended writing opportunities, writing for authentic audiences, personalized instruction, and cycles of writing.

10. Study of Models, which provides students with opportunities to read, analyze, and emulate models of good writing.

11. Writing for Content Learning, which uses writing as a tool for learning content material.

The *Writing Next* elements do not constitute a full writing curriculum, any more than the *Reading Next* elements did for reading. However, all of the *Writing Next* instructional elements have shown clear results for improving students' writing. They can be combined in flexible ways to strengthen adolescents' literacy development. The authors hope that besides providing research-supported information about effective writing instruction for classroom teachers, this report will stimulate discussion and action at policy and research levels, leading to solid improvements in writing instruction in grades 4 to 12 nationwide.

For the complete *Writing Next* report, go to: *www.all4ed.org/publication_material/reports/writing_next*

CITATION FOR *WRITING NEXT*

Graham, S., & Perin, D. (2007). *Writing next: Effective strategies to improve writing of adolescents in middle and high schools -* A report to Carnegie Corporation of New York. Washington, DC: Alliance for Excellent Education. Reproduced with permission.

Additional Resources

American Federation of Teachers

http://aft.org/topics/reading/index.htm

International Reading Association

www.reading.org/General/Default.aspx

Founded in 1956, IRA is a nonprofit, global network of individuals and institutions committed to worldwide literacy. With more than 70,000 members, it supports literacy professionals through a wide range of resources, advocacy efforts, volunteerism, and professional development activities.

Members promote high levels of literacy for all by: improving the quality of reading instruction, disseminating research and information about reading, and encouraging the lifetime reading habit.

IRA/resources on Adolescent Literacy

www.reading.org/Resources/ResourcesByTopic/Adolescent/Overview.aspx

IRA/resources on Reading Comprehension K-12

http://www.reading.org/Resources/ResourcesByTopic/Comprehension/Overview.aspx

National Council of Teachers of English

www.ncte.org/

NCTE is devoted to improving the teaching and learning of English and the language arts at all levels of education.

NCTE/National Day on Writing

To draw attention to the remarkable variety of writing we engage in and help make better writers from all walks of life aware of their craft, NCTE established Oct. 20, 2009, as the National Day on Writing and will build an archive of writing submissions throughout 2010 in the National Gallery of Writing. To learn more about how to participate, go to *www.ncte.org/action/dayonwriting*.

NCTE Resources for Reading in the Content Areas:

The following reports are located at *www.ncte.org/search?q=adolescent+literacy*

NCTE/Consultants and Services on Content Area Literacy

Read Write Think: Lesson Plan: Astronomy Poetry: Combining Poetry ...

Read Write Think: Lesson Plan: ABC Bookmaking Builds Vocabulary in ...

Making Meaningful Connections to Content Areas

Reading Corner

Resolution on Federal Support for Programs in English and Reading

Speaking and Workshop Topics Books by Amy Benjamin

Literacy Coaching Clearinghouse

NCTE Resources on Adolescent literacy

The following reports are located at *www.ncte.org/search?q=reading+in+the+content+areas*

Pathways for Advancing Adolescent Literacy

NCTE Professional Development Supporting Teacher Effectiveness and Improving Student Achievement

Pathways for Advancing Adolescent Literacy is a yearlong professional development program that helps teachers, schools, and districts address the unique needs of adolescent learners with content on key areas such as gradual release of responsibility, 21st-century literacy, closing the achievement gap, content area literacy, and assessment.

NCTE/Pathways for Advancing Adolescent Literacy

Consultants and Services on Adolescent Literacy

Adolescent Literacy and the Effect of Standards

Adolescent Literacy at Risk? The Impact of Standards

NCTE Principles of Adolescent Literacy Reform

Adolescent Literacy: Turning Promise into Practice

National Education Association

www.nea.org

NEA Resources on Reading
www.nea.org/home/18272.htm

NEA Reading Resources from Other Organizations

www.nea.org/home/18700.htm

NEA Adolescent Literacy in the Content Areas Online Discussion
http://knowledgeloom.org/adlit/index.jsp

National Institute for Literacy

www.nifl.gov/

This federal agency provides leadership on literacy issues, including the improvement of reading instruction for children, youth, and adults.

NIFL resources on adolescent literacy and literacy in content areas

The following reports and more can be found at *www.nifl.gov/adolescence/adolescence.html*

Applying Research In Reading Instruction for Adults 2005

What Content Area Teachers Should Know About Adolescent Literacy

Adolescence — The National Institute for Literacy

Adolescent Literacy — State of the Science

Adolescent Teaching Approaches — National Institute for Literacy

NIFL Resources on Working With Adolescent English Language Learners in Content Areas

The following reports and more are linked at *www.nifl.gov/cgibin/nifl/combined_search.cgi?mode=site_search&keyword=english+language+learners*

Supporting Adult English Language Learners' Transitions to Postsecondary School

Reading and Adult English Language Learners: A review of the Research

Managing Programs for Adult English Language Learners

Discussion Summary — Working with English Language Learners

Practical Strategies for Working with Literacy-Level Adult English Language Learners

Additional Resources

NYS Education Department

Academic Literacy Instruction for Adolescents: A Guidance Document from the Center on Instruction, 4-12

www.centeroninstruction.org/files/Academic%20Literacy.pdf

This document, developed by the Center on Instruction's Reading, Special Education and ELL Strands, makes recommendations for improving literacy-related instruction in the content areas or across the entire school day, interventions for students reading below grade level, and recommendations for supporting literacy development in adolescent English language learners.

NYS Center on Instruction

www.centeroninstruction.org/resources.cfm?category=reading&subcat

The Center on Instruction, a partnership of five organizations, provides resources and expertise to the Regional Comprehensive Centers in reading, mathematics, science, special education, and English language learners. The center has added a new resource, Adolescent Literacy Resources: An Annotated Bibliography, to its Web site. This array of research summaries and policy documents on reading and reading comprehension for students in grades 4-12, while not exhaustive, includes discussions of all the current important research issues in adolescent literacy and the development of state- and district-level policies to support improvements in adolescent literacy outcomes.

NYS Striving Readers Grant

www.ed.gov/programs/strivingreaders/index.html

The Striving Readers program grants are designed to raise the literacy levels of adolescent students in Title I-eligible schools and to build a strong, scientific research base for identifying and replicating strategies that improve adolescent literacy instruction. This year, New York state is the recipient of a Striving Readers grant. An essential component of the grant is that a supplemental literacy intervention program must be implemented with fidelity and complete adherence to an intervention program design during the 2010-11, 20011-12, and 2012-13 school years.

NYS Reading Resource Center

Articles Related to Comprehension
http://nysrrc.monroe.edu/?q=node/188

Academic Literacy Instruction for Adolescents

NYS Articles Related to Vocabulary

http://nysrrc.monroe.edu/?q=search/node/adolescent%20literacy

NEW! NYS Guidance for Locally Required Summer Reading Assignments

www.emsc.nysed.gov/ciai/ela/summerreading09.html
The State Education Department has long encouraged students to read during the summer. If your school district is requiring a student to complete a reading assignment over the summer, there are a few requirements to consider.

2010 Statewide Summer Reading Program

www.nysl.nysed.gov/libdev/summer/
The New York Statewide Summer Reading Program is an annual program that brings children and families into local public libraries for reading and activities.

For more information on NYS English language arts, visit *www.emsc.nysed.gov/ciai/ela.html*

U.S. Department of Education

www.free.ed.gov/subjects.cfm?subject_id =80&toplvl=78&res_feature_request=1

NEW! Free Federal Resources for Educational Excellence: Reading Resources

This U.S. Department of Education Web site includes links to dozens of free reading resources, including how to help your child become a reader and improving adolescent literacy.

NEW! Library of Congress Resource

www.loc.gov/rr/rarebook/digitalcoll/ digitalcoll-children.html

Children's Literature: Digitized Print Materials

This Web site provides 50 digitized texts of rare books, including: *The Arabian Nights, A Child's Garden of Verses, Ballad of the Lost Hare, A Christmas Carol, Humpty Dumpty, The Grasshopper Stories, Mother Goose Finger Plays, The Pied Piper of Hamelin, The Rocket Book, The Secret Garden, Stories from Hans Andersen, The Three Bears, Three Little Pigs, The Wonderful Wizard of Oz,* and others.

Other Resources

Reading to Achieve: A Governor's Guide to Adolescent Literacy (2005)
www.nea.org/home/18700.htm

This report from the National Governors Association Center for Best Practices lays out the compelling case of why we should care about adolescent literacy. It describes five strategies that governors and states should pursue to improve adolescent literacy. It also describes resources for adolescent literacy initiatives, gives examples of promising state and local adolescent literacy practices, lists contacts for more information on promising practices, and identifies potential funding sources for these kinds of programs.

Reading Rockets
www.readingrockets.org

This PBS series promotes and encourages children's literacy. The Web site offers interviews with authors, issues for teachers, summer reading lists, and wide-ranging activities and information for the educator are posted and updated regularly. You can e-mail the site with questions and suggestions and sign up for online newsletters and announcements.

Additional Resources

¡Colorín Colorado!

www.colorincolorado.org

The first major Web site created specifically for Spanish-speaking parents to help their children learn to read includes resources for teachers and librarians to reproduce and distribute to parents: information on how parents can use stories, discussions, songs, rhymes and games in either Spanish or English to increase literacy in children.

SCANS Skills

http://wdr.doleta.gov/SCANS

A high-performance workplace requires workers who have a solid foundation in the basic literacy and computational skills, the thinking skills, and in the personal qualities that make workers dedicated and trustworthy. High-performance workplaces also require competencies: the ability to manage resources, to work amicably and productively with others, to acquire and use information, to master complex systems, and to work with a variety of technologies. This, the SCANS final report, provides a blueprint for groups at the national, state, and local levels.

ELL Student Success: The Path to College

www.colorincolorado.org/ article/29256

For English language learners, the challenges of going to and applying to college can be overwhelming. ELL teachers can play an important role in this process. This section features a number of articles with great ideas for ways that ELL educators can support their students as they consider their future plans.

Guide to Reading Comprehension Assessments for Adolescents

This guide draws together evidence on nine of the most commonly used, commercially available reading comprehension assessments for use with adolescents. It provides a critical view into the strengths and weaknesses of each. Authors Lelia Morsy, Michael Kieffer, and Catherine Snow focus on the utility of assessments for the purposes of screening groups of students to identify those who struggle and diagnosing their specific needs. Available at *www.carnegie.org/literacy/ tta/pdf/tta_Morsy.pdf.*

Other Resources

Torgensen, J.K., Houston, D.D., Rissman ,L. M., Decker, S. M., Roberts, G., Vaughn, S., Wexler, J., Francis, D. J., Rivera, M. O., & Lesaux, N. (2007). *Academic literacy instruction for adolescents: A Guidance Document from the Center on Instruction.* Portsmouth, NH: RMC Research Corporation, Center on Instruction. *www.centeroninstruction.org.*

Wood, Karen, D., Dickinson,Thomas, S., (2000). *Promoting literacy in grades 4-9: A Handbook for Teachers and Administrators.* Boston: Allyn and Bacon.

Instruction in the 21st Century

Integrating Technology into P–16 Education

Educator's Voice is a series dedicated to highlighting research-based classroom and school-wide strategies that make a difference in instructional practice in literacy. NYSUT proudly invites articles from all constituents and seeks real classroom stories about effective practices that are based on research. You are invited to submit a proposal for an article for the next volume, which will be published in Spring 2011. Authors must be active or retired members of a NYSUT affiliate, including United University Professions and the Professional Staff Congress. If there are multiple authors, at least one author must be a current or retired NYSUT member.

Volume IV of NYSUT's Journal of Best Practices in Education, *Educator's Voice*, will focus on the theme of "Integrating Technology into P–16 Education." The Editorial Board especially encourages articles that are co-authored by teams of teachers and teachers working with higher education department faculty in schools. Special attention will be given to articles that provide explicit connection between research findings and practical applications in classrooms, including action research projects. The Editorial Board seeks research-based instructional strategies that can be used by teachers to support elementary, secondary, and college students to increase achievement through the effective use of technology.

Audience: Classroom teachers, SRPs, union leaders, parents, administrators, researchers, legislators and policymakers.

Deadline for proposals: May 28, 2010.

Please note: Submission of a proposal to write an article is not a guarantee of publication. Decisions will be made by the Editorial Board.

For more information, editorial guidelines and electronic application forms, go to:
www.nysut.org/educatorsvoice
and click on
Submission Guidelines

Instruction in the 21st Century
Integrating Technology into P–16 Education

EDITORIAL GUIDELINES

Theme: A decade into the 21st century, teachers and school systems continue to expand their ability to use technology as an instructional tool and to strengthen technology skills as a subject to be taught to students. Volume IV of *Educator's Voice* invites articles that focus on a variety of aspects of technology in education.

Educator's Voice Vol. IV will include research-based articles about the use of technology in P–16 instruction. Examples include applications of technology hardware and software that increase students' abilities in critical thinking, problem solving and information collection, synthesis and analysis. Articles that promote commercial technology products will not be considered for publication.

Audience: Teachers at all levels, union leaders, parents, administrators, researchers, legislators and policymakers.

Article Length: 1,800-1,900 words.

Writing Style: Authors are encouraged to write in a direct style designed to be helpful to both practitioners and to others committed to strengthening education. Use of educational jargon is strongly discouraged.

Manuscript   APA style.

Requirements: Footnotes at end of article. Pictures may be submitted and if used, permission will be required. Guidelines for photos will be provided.

Article Submission: Finished article saved in Word, and e-mailed to *kgraham@nysutmail.org*. One hard copy of your article, double spaced, mailed by Aug. 31, 2010, to:

NYSUT Research & Educational Services
Attn: Kathleen Graham Kelly
800 Troy-Schenectady Road,
Latham, NY 12110

Rights: Submission of a proposal is not a guarantee of publication. Publication decisions are made by the Editorial Board. NYSUT retains the right to edit articles.

The author will have the right to review changes made and if not acceptable to both parties the article will not be included in the *Educator's Voice*. NYSUT may also retain the article for use on the NYSUT Web site, *www.nysut.org,* or for future publication in *New York Teacher*.

EDITORIAL GUIDELINES (CONT'D)

Educator's Voice – Volume IV will feature articles related to the use of technology in schools: articles may describe teachers' use of technology in instruction or programs for students related to technology. Teams of authors, interdisciplinary teams of teachers, and higher education partners working in schools are encouraged to submit articles that describe uses of technology strategies that cross content areas and individual classes. NYSUT invites articles from all constituents and seeks real classroom stories about effective practices that are based on research. Authors are strongly encouraged to address points listed below. In the article, tell your stories in a straightforward way, considering the following:

■ A specific real-life description of the practice, strategy, or approach as used in the classroom.

■ The research base that supports the practice, including research findings with citations and their relationship to your classroom practice.

■ The link to New York state standards, including ELA and others.

■ A description of the students impacted and the school context.

■ The evidence of success that indicates the strategy achieved the goal.

■ Evidence of broader impact on other students, teachers, the school building, and the district.

■ Involvement of parents in the strategy.

■ Possible implications and involvement of the wider school community, businesses, the medical profession, school libraries, public libraries, museums, and community colleges.

■ Implications for policymakers.

■ Quotes and testimonials from students, teachers and parents.

Instruction in the 21st Century
Integrating Technology into P–16 Education

AUTHOR SUBMISSION FORM — VOL. IV

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NYSUT Education & Learning Trust

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