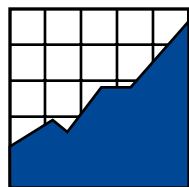


**Standards-based Instructional Strategies
for English Language Learners
with Disabilities**



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ELLs with Disabilities Report 18

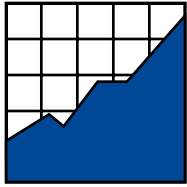
Standards-based Instructional Strategies for English Language Learners with Disabilities

Deb Albus • Martha Thurlow • Ann Clapper

February 2007

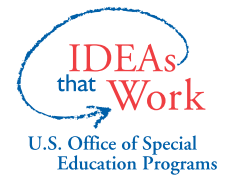
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**N A T I O N A L
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E D U C A T I O N A L
O U T C O M E S**

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NCEO Core Staff

Deb A. Albus	Jane L. Krentz
Jason R. Altman	Kristi K. Liu
Manuel T. Barrera	Ross E. Moen
Laurene L. Christensen	Michael L. Moore
Marjorie I. Cuthbert	Rachel F. Quenemoen
Cynthia L. Jiban	Dorene L. Scott
Christopher J. Johnstone	Martha L. Thurlow, Director

National Center on Educational Outcomes
University of Minnesota • 350 Elliott Hall
75 East River Road • Minneapolis, MN 55455
Phone 612/624-8561 • Fax 612/624-0879
<http://www.nceo.info>

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Introduction

The No Child Left Behind (NCLB) Act of 2001 requires that students with disabilities and English language learners be held to the same content standards and assessed on the same grade level achievement standards as their peers. As a result, educators and advocacy groups for each of these student groups have seen increased attention paid to the instruction of these students and their opportunity to learn grade level academic content. Students in the intersection of these groups who are both learning English and who have disabilities may require even more attention via instructional supports and strategies to help them get there. This raises an important question as to what guidance, in the way of instructional strategies, do states recommend to educators to help these students achieve grade level standards along with their peers?

Given the current emphasis on research-based instructional methods, states and educators need guidance for these students. Yet, there are very few research studies on the instruction of English language learners with disabilities either as a group or by specific learner challenges. Although the literature base that addresses instructional strategies for diverse populations of students with various language proficiency levels and disability types is limited, some foundational work has been done in synthesizing the separate research on English language learners (ELLs) and students with disabilities to best address the needs of these students (Artiles & Ortiz, 2002; Cloud, 2002; Gersten & Baker, 2000; Gersten, Baker, & Marks, 1998; Müller & Markowitz, 2004).

Even though there is a small literature base, it is still important to look at what states are currently recommending, alone or in partnership with regional resource centers or research entities, to address these educational challenges and to share that information. For example, do states suggest instructional strategies in their standards or supplementary instructional documents based on synthesized research on students with disabilities and English language learners? If they make recommendations for strategies, what are they? Are they communicated in a user-friendly way for educators who work with these students, students who may vary greatly in learner characteristics? How are strategies defined? This is an important question because there are different ways to understand what constitutes a strategy in instruction. The term has been used to refer to practices anywhere from “principles of good instruction” to broad educational approaches.

The National Center on Educational Outcomes designed a document review of state standards and supplementary instructional documents to help answer these questions and to share this information across states. We asked these specific questions:

- Do states recommend instructional strategies in reading, mathematics, or science for ELLs with disabilities?
- What is the nature of the instructional strategies being recommended in general, and for ELLs with disabilities?

- How are the strategies communicated to educators?

Method

Steps in this study included (1) collecting standards and supplementary instructional documents, (2) verifying the accuracy and completeness of the state documents, (3) coding the documents, and (4) analyzing the results.

Document Collection

We started by collecting state standards documents and supporting documents (e.g., frameworks, teaching resources, etc.) from the Web sites of all 50 states and the District of Columbia. Because the number of documents collected was quite large (N=742) and time was limited, we decided to limit the scope of our analysis to the 10 largest and 10 smallest ELL populated states (N=20); further, there are unique issues faced by states with very large and very small numbers of English language learners. State standards documents did not tend to have instructional information, and because our time was limited, many of these basic documents were dropped. However for three states that did not have any supporting documents, the standards documents were retained and analyzed. Additional documents were dropped if they focused on writing only, or were lesson plans.

Document Verification

After documents were collected, we contacted state education directors by email and by phone to verify that we had the most recent and comprehensive standards and supporting documents for each state for reading/English language arts (ELA), mathematics, and science. We also asked states to provide the location of any documents not already gathered. Queries focused on documents available for general students, students with disabilities, and English language learners, although the particular focus for the study was English language learners with disabilities. Of the 20 states that were contacted, all but one provided a response to our query to either confirm or provide additional documents. States provided information on eight documents to add to the twenty state review. Our study analysis included a total of 205 documents (see Appendix A).

Definition of Instructional Strategies

Before documents were collected, the project adopted a specific definition of instructional strategy to use consistently across state documents. This helped ensure some standardization. This definition of instructional strategies was informed by a literature review of how strategies are defined in academic literature (Barrera & Liu, 2005):

Instructional Strategy: A set of systematic activities used by a teacher that contains explicit steps to achieve a specific student outcome. This set of steps must be replicable by another individual in order to be considered a strategy.

To further clarify the definition, a list was provided to clarify what an instructional strategy was not:

- A student generated strategy that requires no instruction
- A student learning strategy acquired through instruction
- An approach (i.e., a combination of teaching/learning strategies)
- An assessment activity used to determine placement in or progress through curriculum (e.g., curriculum based measurement)
- A principle of good teaching (e.g., planning activities before instruction, during instruction, after instruction)
- Spur of the moment; spontaneous activities suggested by a “teachable moment” (Barrera & Liu, 2005)

Because the definition of an instructional strategy had been shaped to exclude strategies that are taught for their own sake, some of the metacognitive strategies we found would fit that profile, but not all. If a strategy was being employed to target content it was included. We used this narrowed definition because educational literature supports a very broad interpretation of what constitutes a strategy, and the project required a specific focus.

Coding

One of the authors and another staff member individually coded the state documents. We coded documents for strategies that fit the project definition for instructional strategy, and then coded each of these by grade, content area (i.e., reading, math, and science), academic content (i.e., content skill, concept, and rule), the manner in which it did or did not reference state standards, and whether it was recommended for a certain group (e.g., students with disabilities, ELLs, children at risk, etc.). Then we recoded a fourth of each other’s half of the total documents as an accuracy check. This check was 100% accurate.

A different check was conducted to ensure consensus that each potential strategy met the project criteria. This check resulted in a final list of 69 strategy passages. After this, final coding was added to indicate whether strategy passages had visuals (e.g., formulas, graphics, etc.), whether there was cited research to support use of the strategy, and how strategy steps were presented (e.g., additional description of how steps should be done, model for demonstrating steps, description and model, or neither). Other specific characteristics about strategy passages

were coded to indicate how steps were communicated (e.g., sequential in text, bulleted, number, or none), whether there was any student involvement in the strategy, whether they contained student practice of the strategy (e.g., learning to use the strategy on their own), whether they provided examples, and whether they had visuals. We also noted whether strategy passages had presented alternate ways to do the strategy, or had given optional steps. After we coded these and consensus was reached, an attempt was made to analyze the strategy passages further by what content skill, concept, or rule each was addressing.

Analysis

The analyses for this study were run using NVivo software. Other informal observations of instructional practices were noted during the process of collecting and coding the data, including observations of principles and activities that did not fit the project's definition of a strategy. We discuss these observations following the results from the NVivo analyses.

Results

Overall, we found 69 instructional strategy passages. Of these, we found 1 strategy recommended for use with ELLs with disabilities, 11 for use with ELLs, 36 for students with disabilities, and 21 for use with students generally. By content area, there were 40 reading strategies, 22 math strategies, and 7 additional strategies recommended for combined content areas of science and math.

Six states had documents with at least one identified strategy (California, Illinois, Mississippi, New York, Texas, and Washington). Table 1 shows the number of strategies recommended by each state for each subgroup. Among the largest ELL populated states, Illinois was the only state to recommend an instructional strategy specifically for ELLs with disabilities. This strategy was in reading:

Using this technique, the teacher sits slightly behind the student and reads along with her/him for not more than 10 to 15 minutes (Purcell-Gates, 1996). During this reading, the teacher needs to maintain a reasonable, fluent pace of reading while the student matches the teacher's fluency. The teacher runs a finger smoothly along the print as it is being read and the teacher does not use this reading as a basis for working on other aspects such as comprehension or word knowledge. (Lopez-Reyna, n.d., p.6)

New York and Texas recommended strategies for ELLs, also in reading. Washington recommended instructional strategies for students with disabilities, and did so for both reading and math. California and Mississippi recommended strategies for general students, for both reading

and math. Texas also had instructional strategies recommended for a combination of Math/Science in their sheltered instruction documents for ELLs.

Of the 69 strategy passages, 48 clearly connected the recommended strategy with a specific state standard. All other strategies were in documents that referenced state standards but did not specifically recommend a strategy in support of a particular standard. Rather than say these strategies were not standards-based, we qualified the apparent intent to support standards apart from the clarity of doing so and described the difference as either a direct or indirect reference. Of those states that clearly linked strategies to standards, we note that Washington's most current documents recommended for students with disabilities, with 37 strategies, were no longer linked to the current version of the state's essential academic learning requirements (see Table 1).

Washington had a disproportionate number of strategies that did not specify a grade (N=18). Otherwise, across states that designated grades, the tendency was to see fewer strategies recommended specifically for higher grade levels. Strategies decreased from 6th grade (N=18) to 7th grade (N=8), with only one strategy for 8th grade. Other strategies indicated a range of middle school grades (N=11). These were determined either by being in a document specifying "middle" grades, or by explicitly citing more than one middle range grade in its description.

Tables 2–4 present those strategies that had studies cited to support their use listed in the order they appear in the documents (also see Appendix B for full citation references). On very few occasions, a strategy named in a document was familiar to researchers, but because the document did not indicate a citation, these were not coded as having a research reference. Table 2 presents the reading strategies by state. Of the four states that named at least one strategy, two did not cite research in their documents. Washington, in its document for students with mild disabilities, cited supporting research and usually provided short synopses of the studies with brief descriptions of the grades or ages of the study populations. Although the state confirmed that particular documents were intended to address students up to 6th grade, we found that strategies needed to be considered on a case by case basis, as some of the research studies had only younger grades or ages in the study populations. If a strategy in a document had a cited study population of 5th grade and below, the strategy was not included. If a study did not specify a grade, and a document indicated the strategies were to include grades within our study range, we included the strategy. Also, we note that we are citing the research here only as a description of what states had provided and have not evaluated the quality of the research.

Table 3 shows that three of the six states did not have research cited for mathematics strategies. Compared to reading, mathematics had less formally identified strategies overall. Table 4 presents the recommended strategies for mathematics/science. There was only one state that had research cited for strategies recommended for mathematics/science, and all of these strategies had cited research.

Table 1. Reading, Math, and Math/Science Strategies by Clarity of Reference to Standards

Ten Largest and Smallest ELL Populated States With Strategies		Reading Strategies		Math Strategies		Combination (Math /Science)	
		Standards Based¹	Unclear²	Standards Based	Unclear	Standards Based	Unclear
Of 10 Largest							
California (rank 1)	ELLs with Disabilities	-	-	-	-	-	-
	ELLs	-	-	-	-	-	-
	Students with Disabilities	-	-	-	-	-	-
	General Education	-	1	1	7	-	-
Illinois (rank 5)	ELLs with Disabilities	-	1	-	-	-	-
	ELLs	-	-	-	-	-	-
	Students with Disabilities	-	-	-	-	-	-
	General Education	-	-	-	-	-	-
New York (rank 4)	ELLs with Disabilities	-	-	-	-	-	-
	ELLs	-	3	-	-	-	-
	Students with Disabilities	-	-	-	-	-	-
	General Education	-	-	-	-	-	-
Texas (rank 2)	ELLs with Disabilities	-	-	-	-	-	-
	ELLs	-	-	-	1	-	7
	Students with Disabilities	-	-	-	-	-	-
	General Education	-	-	-	-	-	-
Washington (rank 8)	ELLs with Disabilities	-	-	-	-	-	-
	ELLs	-	-	-	-	-	-
	Students with Disabilities	31	-	6	-	-	-
	General Education	-	-	-	-	-	-
Of 10 Smallest							
Mississippi (rank 4)	ELLs with Disabilities	-	-	-	-	-	-
	ELLs	-	-	-	-	-	-
	Students with Disabilities	-	-	-	-	-	-
	General Education	3	1	7	-	-	-
Total Strategy Passages Across States		34	6	14	8	0	7

Note: Dashes indicate no project defined strategies were found.

¹ Standards-based means a document clearly connected a specific state standard to a strategy.

² Unclear means a document mentioned state standards in the text, but there was no direct connection between a specific standard and strategy.

Table 2. Reading Strategies with Cited Research for Top and Bottom ELL Populated States

States	No Cited Research	Has Cited Research	Name of Strategy	Cited Research
California	1	0		
Illinois	0	1	Neurological impress method/ assisted reading	Heckelman (1966); Purcell-Gates (1996)
Mississippi	4	0		
New York	3	0		
Washington	0	31	Sight word categories	Falcon & Simms (1985)
			Synonym match	Pany, Jenkins, & Schreck (1982)
			Semantic feature analysis	Toms-Bronowski (1982)
			Previewing target text	Singh & Singh (1984)
			Teacher modeling of oral reading	Smith (1979)
			Segmenting text	O'Shea & Sindelar (1987)
			Oral reading prompts	Roberts & Smith (1980)
			Oral reading corrective feedback	McCoy & Pany (1986)
			Analyzing main concepts	Sachs (1984)
			TELLS, fact or fiction	Idol-Maestas (1985)
			Visual spatial displays	Darch & Carnine (1986)
			Paragraph restatements	Jenkins, Heliotis, Stein, & Haynes (1987)
			Meta-comprehension training on main ideas	Graves (1986)
			Pre-paragraph questions	Wong, Wong, & LeMare (1982)
			Reading POSSE	Englert & Mariage (1991)
			Writing before reading	Marino, Gould, & Haas (1985)
			Question answer relationships	Raphael & Wonnacott (1985)
			Self recording reading behaviors	Swanson (1981)
			Dissect	Lenz & Hughes (1990)
			Text look-back strategy	Garner, Chou Hare, Haynes, & Winograd (1984)
			Repeated reading criteria	Weinstein & Cooke (1992)
			Story-mapping training	Idol & Croll (1987)
			Cooperative story mapping	Mathes, Fuchs, & Fuchs (1997)
			Identifying & interpreting theme	Williams, Brown, Silverstein, & de Cani (1994)
			Self-questions for identifying main ideas	Chan (1991)
			Paraphrasing strategy instruction	Ellis & Graves (1990)
			Context skill training	Pflaum & Pascarella (1980)
			Main idea pre-questions	Memory (1983)
			Reciprocal teaching	Lederer (2000)
			Detecting faulty arguments	Darch & Kameenui (1987)
			Story retelling	Johnson, Graham, & Harris (1997)
Total	8	32		

Table 3. Mathematics Strategies with Cited Research for Top and Bottom ELL Populated States

States	No Cited Research	Has Cited Research	Name of Strategy	Cited Research
California	8	0		
Illinois	0	0		
Mississippi	7	0		
New York	0	0		
Texas	0	1	Five step problem solving	Braeselton & Decker (1994)
Washington	0	6	Identifying ones and tens concretely with cubes	Peterson, Mercer, & O'Shea, (1988)
			Identifying ones and tens abstractly with worksheet and cards	Peterson, Mercer, & O'Shea, (1988)
			Count-bys for multiplication	McIntyre, Test, Cooke, & Beattie (1991)
			Demonstration plus permanent model (technique for long division)	Rivera & Smith (1988)
			Self instruction strategy for mathematical computation	Leon & Pepe (1983)
			Self regulated strategy for mathematical problem solving	Case, Harris, & Graham (1992)
Total	15	7		

Table 4 Mathematics/Science Strategies with Cited Research for Top and Bottom ELL Populated States

States	No Cited Research	Has Cited Research	Name of Strategy	Cited Research
Texas	0	7	Magnet summaries	Buehl (2001)
			Concept attainment	Bruner, Goodnow, & Austin (1967)
			Feature analysis	Pittleman, Heimlich, Berglund, & French (1991)
			Anticipation guide	Head & Readence (1992); Ericson, Hubler, Bean, Smith, & McKenzie (1987)
			Two column notes	Santa, Dailey, & Nelson (1985); Harrison (1991)
			Frayer model	Frayer, Fredrick, & Klausmeirer (1969)
			Verbal visual word association	Eeds & Cockrum (1985)
Total	0	7		

Analyses were also conducted for each subgroup of students to see whether strategies addressed content skills, concepts or rules, applying a decision tree found in Barrera and Liu's paper (in preparation, 2005). All strategies did not neatly fit into only one of these categories, so a more general description follows. The one instructional strategy recommended for ELLs with disabilities was to improve reading fluency. Across content areas, many of the strategies recommended for English language learners focused on vocabulary related skills and knowledge, predicting while reading, addressing the concept of similarities and differences, and doing semantic feature analysis. Strategies most often recommended for students with disabilities tended to focus on comprehension, read aloud error rates, addressing the concept of tens and ones and finding the main idea. For general education students, there was no tendency toward any specific skills or knowledge area, though for math, strategies from one state all focused on compounding interest, including several ways to calculate interest (e.g., simple and compound), and angle measures. Overall, recommended strategies across all student groups often involved organizing information through graphical means.

Specific Characteristics of Strategies

Other characteristics of recommended strategies include whether visuals or examples of the strategy were provided, whether students were involved in the strategy, and whether the strategy had an additional component of student practice.

Strategies with Visuals and Examples

Among all 40 reading strategies, most had no visuals (N=31). Among the 22 math strategies, almost half had descriptions of visuals (N=10), with slightly fewer with no visuals (N=6). All of the 7 combination strategies in math and science had visuals described and modeled (see Table 5).

In addition to visuals, we investigated whether strategies were presented to educators with examples. Among the 40 reading strategies, 32 (80%) had no examples. For the 22 math strategies, 8 (36%) had no examples. For the combined math and science strategies, all 7 had examples.

Teacher and Student Involvement in Strategies

The majority of strategies involved teacher and student across content areas. Among the 40 reading strategies only 4 (10%) of the strategies lacked any mention of student involvement and these were recommended for students with disabilities. For math, 7 (32%) of the 22 strategies lacked student involvement, and all 7 were for teaching general education. For the combined math and science strategies, 4 involved teachers and students and 3 strategies were not entirely clear in whether they involved students or only the teacher (see Table 6).

Table 5. Strategies with Visuals by Content Area and Subgroup

Content Area	Subgroup	Described	Modeled	Described and modeled	None	Total
Reading	ELLs with disabilities	-	-	-	1	1
	ELLs	-	-	-	3	3
	Students with disabilities	4	3	2	22	31
	General education	-	-	-	5	5
Reading Total		4	3	2	31	40
Math	ELLs with disabilities	-	-	-	-	-
	ELLs	-	-	1	-	1
	Students with disabilities	3	1	-	2	6
	General education	7	4	-	4	15
Math Total		10	5	1	6	22
Math and Science	ELLs with disabilities	-	-	-	-	-
	ELLs	-	-	7	-	7
	Students with disabilities	-	-	-	-	-
	General education	-	-	-	-	-
Math and Science Total		0	0	7	0	7
All Content Areas Total		14	8	10	37	69

Note: Dashes indicate no project defined strategies were found.

Table 6. Teacher and Student Involvement in Strategies by Content Area and Subgroup

Content Area	Subgroup	All Teacher	Teacher and Student	Unclear	Total
Reading	ELLs with disabilities	-	1	-	1
	ELLs	-	3	-	3
	Students with disabilities	4	27	-	31
	General education	-	5	-	5
Math	ELLs with disabilities	-	-	-	-
	ELLs	-	1	-	1
	Students with disabilities	-	6	-	6
	General education	7	8	-	15
Combined	ELLs with disabilities	-	-	-	-
	ELLs	-	4	3	7
	Students with disabilities	-	-	-	-
	General education	-	-	-	-
Total		11	55	3	69

Note: Dashes indicate no project defined strategies were found.

Student Practice Component of Strategy

A small majority of strategies across content areas did not describe a student practice component. For reading, 58% did not describe student practice. In math, 60% did not. In the combined math and science strategies, 100% did not. The following table shows student practice components by subgroup and content area (see Table 7).

Table 7. Student Practice Component by Content Area and Subgroup

Content Area	Subgroup	Student Practice of Strategy		Total
		Did	Did Not	
Reading	ELLs with disabilities	-	1	1
	ELLs	2	1	3
	Students with disabilities	13	18	31
	General education	2	3	5
Math	ELLs with disabilities	-	-	-
	ELLs	1	-	1
	Students with disabilities	3	3	6
	General education	5	10	15
Combined	ELLs with disabilities	-	-	-
	ELLs	-	7	7
	Students with disabilities	-	-	-
	General education	-	-	-
Total		26	43	69

Note: Dashes indicate no project defined strategies were found.

Variations in Description of Strategies

In our search we also found examples of variations for familiar strategies such as “Know, want to know, and learned” (KWL). We include here a number of examples from five states (including states not in our scope of highest and lowest ELL populated states). Of these, Kansas shows variation in the strategy by grade level and Mississippi shows other variations in implementing the strategy. It is important to look at the range of ways that states recommend implementing strategies, as some variations of implementing a strategy could potentially enhance or detract from a strategy’s effectiveness for different students. The examples presented here are not meant to be exhaustive references to this particular strategy within each state or across other states.

Kansas KWL

Kansas described the use of KWL with variations across reading and social studies for different grades. The strategy varied in whether the teacher or students did the recording of information, whether students created their own KWL chart or were provided with one, whether the

information was organized into one collective place or displayed on separate pieces around a room, whether students were asked to review each others' responses, and whether there was class discussion.

For second graders:

KWL: Prior to reading, students brainstorm all the information they know about a particular topic. The teacher records students questions. After reading, students record what they learned. (Kansas State Board of Education, 2000, page 10).

For fifth graders:

Students create their own **KWL** chart prior to reading narrative text about World War II (ex: *Number the Stars* by Lois Lowry). Before beginning to read the text, students combine their **KWL** charts into a large wall chart listing what they know and what they want to know. As they read the text, students list information gleaned from their reading and modify concepts they thought they knew but were clarified through the text. (Kansas State Board of Education, 2000, page 33).

For sixth graders:

(b) provides students with a *KWL Chart* during social studies class before beginning a lesson on World War II. Before beginning to read the text, students complete what they know about World War II onto poster paper, butcher paper, or flip note. Then they complete the *W*-want to know column on different pieces of paper and post their results in the classroom. Teacher (sic) then has the students review each others' responses and allows time for classroom discussion. As they read the text, students take notes on information from the reading and modify concepts they thought they knew but were clarified through the text. (Kansas Department of Education, n.d.).

Pennsylvania KWL

Pennsylvania described **KWL** with the following options including working through the columns as a class or having students work individually:

What is it?

A **KWL Chart** is a three-column chart that helps encompass the before-during-after components of reading a text selection. **K** is what you know. **W** is what you want to know. **L** is what you've learned

How is it done?

1. Create one as a class on the chalkboard or have students work individually on a template or a blank sheet of paper.

2. Create three columns labeled **K, W and L**.
3. A topic is introduced by name or title only.
4. Before reading some text, students complete the **K** column, listing everything they know about the given topic or title. This can be done silently or in unison, with teacher recording the ideas on the class chart.
5. Students are then to complete the **W** column, listing everything they might want to know about the given subject. This is done in unison at first; eventually students do this independently.
6. If done independently, have several students share their **K** and **W** columns aloud with the class before the text is read.
7. After reading the given text, have students complete the **L** column, listing everything they learned from their reading, especially paying attention to **W** questions that were answered by the text. Again, it is best to do this in unison the first few times. (The **L** column serves as a review of what was read and as notes to study later!) (Pennsylvania Department of Education, n.d.)

Oregon KWL

Oregon described KWL as a model and de-emphasized outlining specific strategy steps to be followed. The description instead focused on how KWL may be used to foster inquiry:

The K-W-L Model

The K-W-L (what you know, what you want to know, and what you've learned) charts are another useful tool for getting students into inquiry. Perhaps a teacher is starting something on snow. The teacher could ask students what they already know about it and what they want to know about it. Out of that discussion, questions are raised. Students become engaged in the activity, and that leads them into inquiry. Following this model also allows teachers to identify misconceptions and informally assess whether prior teaching is brought forward to new application.

K-W-L charts are traditionally used at the elementary grades, but are equally effective in middle and high school. Teachers' knowledge of the content area becomes critical in these inquiry strategies. Typically, elementary teachers have been trained as generalists because they must teach all subjects to their students. But when teachers are doing full inquiry at any grade level, they often will find themselves dipping deeper into their knowledge reserves. In the example above, teachers will need to know the science behind snow—at least enough to know where to help their students look for answers. Teachers

can reinforce their content knowledge by seeking out mentors; talking to professionals in the fields of science and mathematics; using other organizations and the Internet as resources; reading widely; and taking advantage of professional development opportunities. Knowing it all, however, is not only impossible, it's unnecessary. An important aspect of inquiry teaching is being able to say to students, "I don't know, let's find out." In a community of learners, teachers and students work side-by-side, collaboratively constructing knowledge. (Oregon Department of Education, n.d., page 31).

New York KWL

New York described KWL as having optional pre-reading activities including brainstorming or thinking aloud, and an additional variation at the end about how to find answers to questions posed and what gaps may still exist about what they know about the topic:

Know-Want to Know-Learned (K-W-L): This practice involves both pre-reading, during reading, and post-reading activities. It moves students from what they already know (or think they know) about a topic to what they have learned through the construction of a chart. Pre-reading activities can include (sic) brainstorming, categorizing, thinking aloud, and generating questions. During the reading the students answer the questions, review and revise their prior ideas, and add to their knowledge about the topic. After reading, the students discuss the learned information, and perhaps raise additional questions about the topic. The chart can be used both as the foundation for reading of selected text(s), as well as for following up on the knowledge attained through the reading. It may also prompt further investigation and spawn group or individual projects. Additional variations of K-W-L charts may include *how* to find out the answers to questions posed, and what may *still* be learned on the topic (*K-W-L-H-S*). Below is an example of a K-W-L-H-S chart on "Rain Forests." (New York State Education Department, n.d., pp 59–60).

Mississippi KWL

Mississippi described KWL and provided some technological variations that involved the potential use of brainstorming/mapping software and recording information into an electronic student portfolio.

25) Utilizes prior knowledge. Have students complete a KWL chart on each genre.

Example:

- Have students create a KWL chart. Use brainstorming/mapping tool to create a KWL chart. See Technology Resource Guide for suggested software. (Mississippi Department of Education, n.d., p.79)

- KWL—one sheet of paper divided into three (3) sections. What I Know, What I want to know, What I learned. (Visual example removed.)
- Use electronic student portfolio for students to record what is known, what I want to know before discussion, and then to identify what I learned after class discussion. See Technology Resource Guide for information on electronic student portfolio. (Mississippi Department of Education, n.d., p. 84).

Information Observations from State Documents

State Standards-Based Instructional Resource Databases

Other results from the analyses from material gathered from all 50 states showed that eight states (Alabama, Louisiana, New Mexico, Ohio, Oregon, South Dakota, Washington and Utah) had created searchable databases for educators to use to find lesson plans and other resources for teaching. All of these were based on state standards, though Alabama’s link was less direct saying the offerings were “correlated” with standards. Other states had more direct links to specific standards as they were part of the search criteria for locating instructional materials. Because of time constraints, we were unable to download all instructional materials in these databases, even though these sites may have had potentially rich information.

Other Instructional Resources

Other state Web practices for instructional guidance included links to outside sources for general principles for teaching in a content area or with specific populations. Although these did not generally reference a state’s own standards, they did organize the information by categories such as by content and student characteristics (e.g., disability type). Some of these sites were focused on students with disabilities (e.g., Access Center), or they offered information on broader instructional topics or information targeting specific needs such as linguistically diverse children with disabilities, students with visual impairments, and others (e.g., the IRIS Center for Faculty Enhancement). However, states appeared to provide these sites more for instructional reference, as states did not attempt to directly link standards to the information at these sites.

Other states such as California have thought about inclusion of all students in instruction, incorporating a chapter on Universal Access into their frameworks. The chapter presented broad principles to use in structuring classes such as being flexible, adapting, and using varied strategies (California Department of Education, 2004). However, the chapter did not go into specifics for English language learners with specific disabilities. Colorado provided brief recommendations for instructing ELLs with disabilities, but also stayed broad in their recommendations such as increasing or decreasing the time used, length of practice, number of examples, and repetition of concepts (META Associates, 2004).

Also noteworthy was the fact that some states had made strides in providing innovative standards-based instructional support for specific groups of students. New Jersey created a Spanish bilingual program for parents of ELLs in science courses, in order to educate parents and students alike in the state science standards and to equip the parents to better help their children succeed in that content. Another state program was found in Hawaii. This program, also involving parents in the education of their children, focused on improving standards-based achievement of native Hawaiian students with disabilities by assisting their families in understanding the state standards, and communicating with them about effective curriculum and instruction.

Limitations

This study had certain limitations. First, due to the large amount of documents collected across states, the decision to focus on the top and bottom 10 states based on ELL population meant that other states' documents would not be included in the current analysis. Second, we needed to restrict the gathering of instructional materials from state developed searchable databases in an effort to keep the project to a manageable size. We note that this restriction removes some of the richness of what states are making available to educators to support standards-based instruction, so conclusions drawn from this study should take this into account.

Also, although this report highlights strategies recommended by states, this study's intent was not to evaluate the quality or appropriateness of the strategies for their reported intended population, grade level or content area. This is true for strategies with and without cited research studies.

Discussion

Role of Research Base

Because of the limited research base on instructional strategies for English language learners with disabilities available in the field, staff were not surprised that citations in state instructional documents to support strategies for these students was very limited. However, the work of those in the field who have synthesized relevant research on English language learners and students with disabilities also was not cited.

This study showed that there was only one research-based instructional strategy, as defined for this study, recommended for English language learners with disabilities found among the 20 states' instructional documents. It was not surprising that we found the most strategies for students with disabilities in reading as there was more reading research available for this group (Fuchs & Fuchs, 1998). Fewer strategies were recommended for mathematics for students with disabilities, which also appears to correspond to less research (Jones, 1997). For the general student population, there were only a few instructional strategies recommended. The guidance

offered for this group, as for English language learners, included more instructional information addressing approaches, instructional activities, and principles of instruction which did not meet the definition of an “instructional strategy” as proposed by the project.

Role of State Standards

The project opted to focus on traditional content areas for this study (i.e., reading, mathematics, etc.). Therefore, although some states addressed other development areas in their standards separately (e.g., becoming responsible group members), the strategies, if any, that were recommended for meeting these academic goals would not have been included in our analysis. However, if a state had addressed these other development areas within the traditional content headings and standards, which were the focus of our study, these were included.

The statement that students would learn to use a variety of strategies was often observed in state standards. However, states rarely addressed what these strategies were. In the verification process, states occasionally made the point that they do not prescribe exactly what instructional strategies teachers are to use, so perhaps the same flexibility is intended for what strategies students are to learn.

Field Reforms and Replicable Strategies

In response to the observation that most of the material fell into approaches, activities and principles, we also noted that educational reform in the math and sciences include more open-ended exploratory and inquiry activities, which could be influencing state materials to varying degrees. Aware of the ongoing debate over mathematics reform especially, we acknowledge that there are differences of opinion about how to best instruct students in these areas. However, we also point out that some research supports more traditional instructional methods, especially for students with disabilities (Darch, Carnine, & Gersten, 1984; Miller & Mercer, 1997).

This debate is important as it reflects back on the conceptualization of instructional strategies that teachers use. For example, the National Committee on Science Education Standards and Assessment, in their *National Science Education Standards* (1996), reads “Emphasizing active science learning means shifting emphasis away from teachers presenting information and covering science topics.” Decentralizing the role of the teacher in instruction changes what recommended instructional strategies might look like. On the one hand, recommending more metacognitive strategies for problem solving fits this shift and has positive benefits in their own right. But do these strategies alone meet the needs of students in progressively learning math and science content?

Because open-ended critical thinking and inquiry activities are not usually described with highly structured replicable steps, there seems to be a poor fit between the reform-based activities as

described and the search for structured replicable strategies. However, this is not to say that there were no research-based strategies supporting critical thinking for students with disabilities that were replicable, but these strategies were found in separate documents from those that would likely be made available to general content teachers. It is our hope that these findings will not be used to generalize the reinforcement of separate learning contexts for these students, as it has been shown that some instructional practices found beneficial for students with disabilities are also beneficial for mainstream students (Jones, 1997; Lock, 1996) and vice versa.

Universal Design in State Documents

Some states addressed different levels of access to grade level content, from making a specific science lesson accessible to as many students as possible (Universal Design), to increasing access to the broader curriculum as a whole (Universal Access). As these principles are about making instruction accessible across groups of general students, there is a difference between what is meant by this and a focus on meeting the individual needs of students. This tension is not new, as it has been discussed previously in the conversations surrounding mainstreaming and differentiating instruction. We recognize the challenges of mainstream teachers in addressing group and individual needs of students, namely routine and specialized adaptations (Fuchs & Fuchs, 1998). But, even with this dual goal of meeting individual and group needs, instructional strategies are not necessarily bound by a certain educational setting.

Increasing the application of Universally Designed instruction principles may reduce the number of struggling students requiring individual attention. But, this review of documents did not see universal design explicitly applied at the instructional strategy level and given the differences in focus between group and individualized instruction this is not surprising.

Strategy Variations

It may be that one string of steps for implementing a strategy may be more successful with students with certain characteristics. The variations of KWL included in this report illustrate the differences in how states recommend implementing the strategy. One could easily think of other examples of how a teacher may tailor the steps for this strategy such as including the use of native language, or adjusting the amount of time spent on each section of the strategy.

Improved understanding about successful strategies and their variations would require more research focused specifically on how they are implemented across students with different characteristics, whether individually or in groups. As teachers already tailor strategies, providing a structure for analysis and evaluation of these variations may (1) be key to reconciling the observed differences between replicable strategy steps of scientific experimentation to the ‘real world’ of actual classroom use, and (2) provide teachers with more information about how best

to tailor strategies. It may be that new conceptualizations of instructional strategy definitions could develop over time providing more flexibility. For example, instructional strategies may become conceptualized as a decision tree of replicable steps based on research based modifications, thus merging the requirements for scientific experimentation with the tailoring strategies employed by teachers across diverse student populations.

Conclusion

More research on instructional strategies is needed with students across a range of language and cultural backgrounds with diverse types of disabilities. More synthesizing of research already conducted with diverse student populations is also needed, in order to provide better and broader delivery of information on how to help English language learners with disabilities access and attain grade level content.

For researchers and educators, in addition to ensuring quality of research, it is important that all potentially influential factors in study designs be considered in evaluating its translation to classroom practice. Therefore those conducting research need to provide an adequate description of the population (e.g., language background and proficiency level(s), grade level, specific disability(ies), pertinent instructional context characteristics, etc.), the method and time devoted to strategy implementation, and the tasks and outcome measures expected to show growth. This is important, for example, because if positive results for a strategy are solely based on a multiple choice test measure in the study design, will using the strategy in a classroom show equally positive results on performance assessments? Also, can the outcomes be directly linked in support of attaining a specific state standard?

For a state or district involved in recommending specific strategies to educators, the following suggestions, based on the review of instructional documents in this study, may be useful: Clearly cite research that supports the strategy; make direct connections to specific state standards; give concise details about the populations of students for whom the strategy was found useful; describe clearly the steps for the strategy and how they were implemented in addition to variations that may be supported by the literature; include visuals where useful; and incorporate examples. For states that link to other Web resources for instructional strategies, investigate options in guiding users to make connections between the content and specific state standards.

Finally, providing information on effective instructional strategies to parents should not be overlooked as another means of supporting students in reaching standards. It is important to make sure that parents too are familiar with state standards and what their children are expected to know and do.

References

Artiles, A., & Ortiz, A. (2002). English language learners with special education needs: Contexts and possibilities. In A. Artiles & A. Ortiz (Eds.), *English language learners with special education needs: Identification, assessment and instruction* (pp. 3–30). McHenry, IL: Center for Applied Linguistics and Delta Systems Co., Inc.

Barrera, M., & Liu, K. (2005) Defining instructional strategies. Unpublished manuscript.

California Department of Education. (2004, August). Chapter 6: Universal access. *Mathematics framework for California Public Schools (K-12)*. Field Review Draft. Retrieved October 25, 2004, from <http://www.cde.ca.gov/be/st/>.

Cloud, N. (2002). Culturally and linguistically responsive instructional planning. In A. Artiles & A. Ortiz. (Eds.), *English language learners with special education needs: Identification, assessment and instruction* (pp. 107–132). McHenry, IL: Center for Applied Linguistics and Delta Systems Co., Inc.

Darch, C., Carnine, D., & Gersten, R. (1984). Explicit instruction in mathematics problem solving. *The Journal of Educational Research*, 77, 6, 351–359.

Fuchs, D. & Fuchs, L. (1998). Researchers and teachers working together to adapt instruction for diverse learners. *Learning Disabilities Research & Practice*, vol.13, no.13, pp.126–137.

Gersten, R., Baker, S., & Marks, S. (1998). *Teaching English-language learners with learning difficulties: Guiding principles and examples from research-based practice*. Reston, VA: Council for Exceptional Children. (ERIC Document Reproduction Service No. ED427448).

Gersten, R., & Baker, S. (2000). What we know about effective instructional practices for English learners. *Exceptional Children*, 66, 454–470.

Jones, E. (1997). Mathematics instruction for secondary student with learning disabilities. *Journal of learning disabilities*, vol. 30, no. 2, pp.151–163.

Kansas State Department of Education. (n.d.). Communication arts: Standard 2 literature. Retrieved November 1, 2004, from http://www.usd250.k12.ks.us/curriculum/sixth/sixth_comm.asp

Kansas State Board of Education. (2000). Literacy instruction now knowledge (LINK) for teachers implementing state standards: Kansas curricular standards for reading and writing. Retrieved November 1, 2004, from <http://www.ksde.org/outcomes/links.pdf>

Lock, R. (1996, winter). Adapting mathematics instruction in the general education classroom for students with mathematics disabilities. LD Forum: Council for Learning Disabilities. University of Texas: Austin.

Lopez-Reyna, N. (n.d.). Chapter 7: Instructional strategies for English language learners with disabilities. Retrieved October 28, 2004, from <http://www.isbe.net/spec-ed/PDF/BMChapter7-7-12.pdf>

META Associates (2004). Systemic planning for English language learners with exceptional needs (ELLEN): 3-TIER MODEL. Colorado Department of Education. Retrieved September 27, 2005, from http://www.cde.state.co.us/cdesped/download/pdf/ELL_3Tier.pdf

Miller, S.P., & Mercer, C.D. (1997). Educational aspects of mathematics disabilities. *Journal of Learning Disabilities*. January/February, Vol. 30, No. 1, pp. 47–56.

Mississippi Department of Education. (n.d.). Reading instructional intervention supplement: Benchmarks, informal assessments, strategies, grades 4–8, 1999. Retrieved November 2, 2004, from http://www.mde.k12.ms.us/ACAD/ID/Curriculum/02_docs/48reading.PDF

Müller, E., & Markowitz, J. (2004, March). “Synthesis brief: English language learners with disabilities” project forum at NASDSE. Product PFR-0401. Retrieved March 25, 2005, from: <http://www.nasdse.org/publications.cfm>

National Committee on Science Education Standards and Assessment. (1996). *National science education standards*. National Academy of Science. Retrieved October 13, 2005, from <http://books.nap.edu/html/nses/html/2.html>

New York State Education Department. (n.d.). English language arts standards and limited English proficient/English language learners: Applications and practices. In *The teaching of language arts to limited English proficient/English language learners: A resource guide for all teachers*. pp. 59–60. Retrieved November 4, 2004 from <http://www.emsc.nysed.gov/ciai/biling/resource/res.html>

Oregon Department of Education. (n.d.). Science teaching and learning to standards: Oregon teacher resources, 2002–2003. Retrieved November 5, 2004, from <http://www.ode.state.or.us/teachlearn/subjects/science/resources/sci-tls200203.pdf>

Pennsylvania Department of Education. (n.d.). Before-during-after (BDA) reading strategies. Retrieved November 5, 2004, from http://www.pde.state.pa.us/reading_writing/cwp/view.asp?a=196&q=97891

Appendix A

Strategy References Cited in State Documents

Arizona

Arizona Department of Education (n.d.). Mathematics standard articulated by grade level: grade 7. Retrieved October 25, 2004 from <http://www.ade.state.az.us/standards/contentstandards.asp>

Arizona Department of Education (2003). Mathematics standard articulated by grade level: Grade 6. Retrieved October 25, 2004 from <http://www.ade.state.az.us/standards/contentstandards.asp>

Arizona Department of Education (2003). Mathematics standard articulated by grade level: Grade 8. Retrieved October 25, 2004 from <http://www.ade.state.az.us/standards/contentstandards.asp>

Arizona Department of Education (2003). Reading standard articulated by grade level: Grade 6. Retrieved October 25, 2004 from <http://www.ade.state.az.us/standards/contentstandards.asp>

Arizona Department of Education (2003). Reading standard articulated by grade level: grade 7. Retrieved October 25, 2004 from <http://www.ade.state.az.us/standards/contentstandards.asp>

Arizona Department of Education (2003). Reading standard articulated by grade level: Grade 8. Retrieved October 25, 2004 from <http://www.ade.state.az.us/standards/contentstandards.asp>

Arizona Department of Education (2004). Science standard articulated by grade level: Grade 6. Retrieved October 25, 2004 from <http://www.ade.state.az.us/standards/contentstandards.asp>

Arizona Department of Education (2004). Science standard articulated by grade level: Grade 7. Retrieved October 25, 2004 from <http://www.ade.state.az.us/standards/contentstandards.asp>

Arizona Department of Education (2004). Science standard articulated by grade level: Grade 8. Retrieved October 25, 2004 from <http://www.ade.state.az.us/standards/contentstandards.asp>

California

California Department of Education (1997). Program guidelines for students who are visually impaired. Retrieved October 25, 2004 from <http://www.hobel.org/lwved/id35.htm>

California Department of Education (1999). The California reading initiative and special education in California: Critical ideas focusing on meaningful reform. Retrieved October 25, 2004 from <http://www.hobel.org/lwved/id35.htm>

California Department of Education (1999). Reading/language arts framework for California public schools: Kindergarten through grade twelve. Retrieved October 25, 2004 from <http://www.cde.ca.gov/be/st/>

California Department of Education. (2000). Mathematics framework for California public schools: Kindergarten through grade twelve. Retrieved October 25, 2004 from <http://www.cde.ca.gov/be/st/>

California Department of Education (2003). Earth science. Retrieved October 25, 2004 from <http://www.cde.ca.gov/be/st/>.

California Department of Education (2003). Grade eight: Focusing on physical sciences. Retrieved October 25, 2004 from <http://www.cde.ca.gov/be/st/>.

California Department of Education (2003). The Science content standards for grades six through eight. Retrieved October 25, 2004 from <http://www.cde.ca.gov/be/st/>.

California Department of Education (2003). Science framework for California public schools: Kindergarten through grade twelve. Retrieved October 25, 2004 from <http://www.cde.ca.gov/be/st/>

California Department of Education (2003). Science framework for California public schools: Kindergarten through grade twelve [brochure]. Retrieved October 25, 2004 from <http://www.cde.ca.gov/be/st/>

California Department of Education (2003). Universal access to the science curriculum. Retrieved October 25, 2004 from <http://www.cde.ca.gov/be/st/>.

California Department of Education (2004). VI Guidelines - Services & Resources. Retrieved October 25, 2004 from <http://www.hobel.org/lwved/id35.htm>

California Department of Education (2004). The California reading/language arts framework: An instructional blueprint for teaching the English-language arts standards, Speaker's notes. Retrieved October 25, 2004 from <http://www.hobel.org/lwved/id35.htm>

California Department of Education (2004). Chapter 3: Grade four areas of emphasis. Retrieved October 25, 2004 from <http://www.cde.ca.gov/ci/ma/cf/>.

California Department of Education (2004). Chapter 3: Preface to grades eight through twelve. Retrieved October 25, 2004 from <http://www.cde.ca.gov/ci/ma/cf/>.

California Department of Education (2004). Chapter 4: Instructional strategies. Retrieved October 25, 2004 from <http://www.cde.ca.gov/ci/ma/cf/>.

California Department of Education (2004). Chapter 6: Universal access. Retrieved October 25, 2004 from <http://www.cde.ca.gov/ci/ma/cf/>.

California Department of Education. (2004). Chapter 8: Professional development. Retrieved October 25, 2004 from <http://www.cde.ca.gov/ci/ma/cf/>.

California Department of Education. (2004). Chapter 9. The use of technology. Retrieved October 25, 2004 from <http://www.cde.ca.gov/ci/ma/cf/>

California Department of Education. (2004). Draft document introduction to mathematics framework for California public schools (K-12). Retrieved October 25, 2004 from <http://www.cde.ca.gov/be/st/>

California Department of Education (2004). Draft mathematics framework for California public schools (K-12). Retrieved October 25, 2004 from <http://www.cde.ca.gov/ci/ma/cf/>.

California Department of Education. (2004). Draft mathematics framework, Appendix A: Sample instructional profile. Retrieved October 25, 2004 from <http://www.cde.ca.gov/ci/ma/cf/>.

California Department of Education. (2004). Draft mathematics framework, Appendix F: Design principles. Retrieved October 25, 2004 from <http://www.cde.ca.gov/ci/ma/cf/>.

California Department of Education (2004). Introduction to grades eight through twelve. Retrieved October 25, 2004 from <http://www.cde.ca.gov/ci/ma/cf/>.

California Department of Education (2004). Mathematics content standards. Retrieved October 25, 2004 from <http://www.cde.ca.gov/ci/ma/cf/>

Colorado

Colorado Department of Education (n.d.). Reading and writing from concepts to classroom, standard one. Retrieved October 24, 2004 from http://www.cde.state.co.us/index_stnd.htm

Colorado Department of Education (n.d.). Reading and writing from concepts to classroom, standard two. Retrieved October 24, 2004 from http://www.cde.state.co.us/index_stnd.htm

Colorado Department of Education (n.d.). Reading and writing from concepts to classroom, standard three. Retrieved October 24, 2004 from http://www.cde.state.co.us/index_stnd.htm

Colorado Department of Education (n.d.). Reading and writing concepts to classroom, standard four. Retrieved October 24, 2004 from http://www.cde.state.co.us/index_stnd.htm

Colorado Department of Education (n.d.). Reading and writing concepts to classroom, standard five. Retrieved October 24, 2004 from http://www.cde.state.co.us/index_stnd.htm

Colorado Department of Education (n.d.). Reading and writing concepts to classroom, standard six. Retrieved October 24, 2004 from http://www.cde.state.co.us/index_stnd.htm

Colorado Department of Education (n.d.). Specific Disability Information. Retrieved October 25, 2004 from now updated site: <http://www.cde.state.co.us/cdesped/dircorner.asp>

Colorado Department of Education (n.d.). Systemic Planning for English Language Learners With Exceptional Needs (ELLEN). Retrieved April 4, 2005 from http://www.cde.state.co.us/cdesped/download/pdf/ELL_3Tier.pdf

Colorado Department of Education (2000). Colorado model content standards for mathematics suggested grade level expectations. Retrieved October 25, 2004 from http://www.cde.state.co.us/index_stnd.htm.

Colorado Department of Education (2000). Colorado model content standards for reading and writing suggested grade level expectations. Retrieved October 25, 2004 from http://www.cde.state.co.us/index_stnd.htm.

Colorado Department of Education (2001). Introduction: Grade Level Expectations for Science. Retrieved October 25, 2004 from http://www.cde.state.co.us/index_stnd.htm.

Colorado Department of Education (2002). Eighth Grade Assessment Framework. Retrieved October 25, 2004 from <http://www.cde.state.co.us/cdeassess/standards/stanbrowser.htm>

Colorado Department of Education (2002). Seventh grade assessment framework. Retrieved October 25, 2004 from http://www.cde.state.co.us/index_stnd.htm.

Colorado Department of Education (2002). Sixth grade assessment framework. Retrieved October 25, 2004 from http://www.cde.state.co.us/index_stnd.htm.

Colorado Department of Education (2003). Reading Assessment Frameworks (Grades 3-10). Retrieved October 25, 2004 from http://www.cde.state.co.us/index_stnd.htm.

http://www.cde.state.co.us/cde_english/download/CABE/EnhancingEnglishLanguageLearning.doc.

Colorado Department of Education (2004). Standards from concept to classroom: Standard #1. Retrieved November 23, 2004 from <http://www.cde.state.co.us/action/conceptclass.htm#>

Colorado Department of Education (2004). Standards from concept to classroom: Standard #2. Retrieved November 23, 2004 from <http://www.cde.state.co.us/action/conceptclass.htm#>

Colorado Department of Education (2004). Standards from concept to classroom: Standard #3. Retrieved November 23, 2004 from <http://www.cde.state.co.us/action/conceptclass.htm#>

Colorado Department of Education (2004). Standards from concept to classroom: Standard #4. Retrieved November 23, 2004 from <http://www.cde.state.co.us/action/conceptclass.htm#>

Colorado Department of Education (2004). Standards from concept to classroom: Standard #5. Retrieved November 23, 2004 from <http://www.cde.state.co.us/action/conceptclass.htm#>

Colorado Department of Education (2004). Standards from concept to classroom: Standard #6. Retrieved November 23, 2004 from <http://www.cde.state.co.us/action/conceptclass.htm#>

Franco, L. (2004). Enhancing English language learning in content classes. Retrieved October 25, 2004 from http://www.cde.state.co.us/cde_english/download/CABE/EnhancingEnglishLanguageLearning.doc

Connecticut

Connecticut State Board of Education (2001). Connecticut mastery test, third generation language arts handbook. Retrieved October 25, 2005 from <http://www.sde.ct.gov/sde/cwp/view.asp?a=2609&q=319358>

District of Columbia

District of Columbia Public Schools (n.d.). Instructional strategies all teachers can use to help prepare students to demonstrate higher levels of achievement. Retrieved October 27, 2004 from <http://www.k12.dc.us/dcps/curriculum/curriculum1.html>

District of Columbia Public Schools (n.d.). Introduction to standards. Retrieved October 27, 2004 from <http://www.k12.dc.us/dcps/curriculum/curriculum1.html>

District of Columbia Public Schools (n.d.). Steps for designing a standards-based unit. Retrieved October 27, 2004 from <http://www.k12.dc.us/dcps/curriculum/curriculum1.html>

District of Columbia Public Schools (n.d.). Using a pacing chart. Retrieved October 27, 2004 from <http://www.k12.dc.us/dcps/curriculum/curriculum1.html>

Delaware

Delaware Department of Education (n.d.). 2003-2004 teleconference series. Retrieved November 22, 2004 from <http://www.doe.state.de.us/ProfDev/TeleconPDBrochure%202003-04.pdf>

Delaware Department of Education (n.d.). English language arts. Retrieved November 22, 2004 from <http://www.doe.state.de.us/englangarts/standards.htm>

Delaware Department of Education (n.d.). English language arts curriculum framework new directions for education in Delaware: Introduction. Retrieved November 22, 2004 from <http://www.doe.state.de.us/englangarts/standards.htm>

Delaware Department of Education (1995). Mathematics content standards – introduction. Retrieved November 22, 2004 from http://shs.smyrna.k12.de.us/delaware_state_standards.htm

Delaware Department of Education (1995). Mathematics content standards 1-4 for grades K-10. Retrieved November 22, 2004 from http://shs.smyrna.k12.de.us/delaware_state_standards.htm

Delaware Department of Education (1995). Mathematics content standards 5 - 8 for grades K-10. Retrieved November 22, 2004 from http://shs.smyrna.k12.de.us/delaware_state_standards.htm

Delaware Department of Education (1995). Mathematics content standards 9-10, grades K-10. Retrieved November 22, 2004 from http://shs.smyrna.k12.de.us/delaware_state_standards.htm

Delaware Department of Education (1995). Mathematics content standard - appendix. Retrieved November 22, 2004 from http://shs.smyrna.k12.de.us/delaware_state_standards.htm

Delaware Department of Education (1995). Science curriculum framework content standards, volume 1, 1995. Retrieved November 22, 2004 from <http://www.doe.state.de.us/englangarts/standards.htm>

Delaware Department of Education (1995). Science language arts curriculum framework: Introduction. Retrieved November 22, 2004 from <http://www.doe.state.de.us/englangarts/standards.htm>

Delaware Department of Education (1995). Science curriculum framework, standard one: Nature and application of science and technology. Retrieved November 22, 2004 from http://shs.smyrna.k12.de.us/delaware_state_standards.htm

Delaware Department of Education (1995). Science curriculum framework, standard two: Materials and their properties. Retrieved November 22, 2004 from http://shs.smyrna.k12.de.us/delaware_state_standards.htm

Delaware Department of Education (1995). Science curriculum framework, standard three: Energy and its effects. Retrieved November 22, 2004 from http://shs.smyrna.k12.de.us/delaware_state_standards.htm

Delaware Department of Education (1995). Science curriculum framework, standard four: Earth in space. Retrieved November 22, 2004 from http://shs.smyrna.k12.de.us/delaware_state_standards.htm

Delaware Department of Education (1995). Science curriculum framework, standard five: Earth's dynamic systems. Retrieved November 22, 2004 from http://shs.smyrna.k12.de.us/delaware_state_standards.htm

Delaware Department of Education (1995). Science curriculum framework, standard six: Life processes. Retrieved November 22, 2004 from http://shs.smyrna.k12.de.us/delaware_state_standards.htm

Delaware Department of Education (1995). Science curriculum framework, standard seven: Diversity and continuity of living things. Retrieved November 22, 2004 from http://shs.smyrna.k12.de.us/delaware_state_standards.htm

Delaware Department of Education (1995). Science curriculum framework, standard eight: Ecology. Retrieved November 22, 2004 from http://shs.smyrna.k12.de.us/delaware_state_standards.htm

Florida

Florida Department of Education (n.d.). Florida's applied technology—preparing all learners for tomorrow's work force, appendix 4A: Instructional strategies for a 21st century applied technology classroom. Retrieved October 18, 2004 from <http://www.firn.edu/doe/bin00051/title.htm>

Florida Department of Education (n.d.). Florida's applied technology—preparing all learners for tomorrow's work force chapter 2: Goal 3 standards as common processes and abilities for the content areas. Retrieved October 18, 2004 from <http://www.firn.edu/doe/bin00051/title.htm>

Florida Department of Education (n.d.). Grade level expectations for the sunshine state standards language arts grades 6-8. Retrieved October 18, 2004 from <http://www.firn.edu/doe/curric/prek12/frame2.htm>

Florida Department of Education (n.d.). Grade level expectations for the sunshine state standards mathematics grades 6-8. Retrieved October 18, 2004 from <http://www.firn.edu/doe/curric/prek12/frame2.htm>

Florida Department of Education (n.d.). Grade level expectations for the sunshine state standards science grades 6-8. Retrieved October 18, 2004 from <http://www.firn.edu/doe/curric/prek12/frame2.htm>

Florida Department of Education (n.d.). Sunshine state standards grade level expectations language arts introduction. Retrieved October 18, 2004 from <http://www.firn.edu/doe/curric/prek12/frame2.htm>

Florida Department of Education (n.d.). Sunshine state standards grade level expectations mathematics, introduction. Retrieved October 18, 2004 from <http://www.firn.edu/doe/curric/prek12/frame2.htm>

Georgia

Georgia Department of Education (n.d.). 6 English/language arts. Retrieved October 27, 2004 from <http://www.georgiastandards.org/>

Georgia Department of Education (n.d.). 6 mathematics. Retrieved October 27, 2004 from <http://www.georgiastandards.org/>

Georgia Department of Education (n.d.). 6-8 science descriptions. Retrieved October 27, 2004 from <http://www.georgiastandards.org/science.asp>

Georgia Department of Education (n.d.). 7 English/language arts. Retrieved October 27, 2004 from <http://www.georgiastandards.org/>

Georgia Department of Education (n.d.). 7 mathematics. Retrieved October 27, 2004 from <http://www.georgiastandards.org/>

Georgia Department of Education (n.d.). 8 English/language arts. Retrieved October 27, 2004 from <http://www.georgiastandards.org/>

Georgia Department of Education (n.d.). 8 mathematics. Retrieved October 27, 2004 from <http://www.georgiastandards.org/>

Georgia Department of Education (n.d.). Determine the Probability. Retrieved October 27, 2004 from <http://www.georgiastandards.org/training.asp>

Georgia Department of Education (n.d.). Draft Georgia performance standards 6th grade earth science sample 1. Retrieved October 27, 2004 from <http://www.georgiastandards.org/science.asp>

Georgia Department of Education (n.d.). Draft Georgia performance standards 6th grade earth science sample 2. Retrieved October 27, 2004 from <http://www.georgiastandards.org/science.asp>

Georgia Department of Education (n.d.). Draft Georgia performance standards 7th grade life science sample 2. Retrieved October 27, 2004 from <http://www.georgiastandards.org/science.asp>

Georgia Department of Education (n.d.). Georgia learning connections activity title: Probability game. Retrieved October 27, 2004 from <http://www.georgiastandards.org/training.asp>

Georgia Department of Education (n.d.). Georgia performance standards 7th grade life science sample 1. Retrieved October 27, 2004 from <http://www.georgiastandards.org/science.asp>

Georgia Department of Education (n.d.). Mathematics Grades 6-12 reading standard: Reading across the curriculum. Retrieved October 27, 2004 from <http://www.georgiastandards.org/>

Georgia Department of Education (n.d.). Training for the new Georgia performance standards day 1: Standards-based education and the new GPS participant's guide curriculum/special education directors. Retrieved October 27, 2004 from <http://www.georgiastandards.org/training.asp>

Illinois

Birnbaum, B. W. (n.d.). Chapter 9: Technology for English Language Learners with Disabilities. Retrieved October 28, 2004 from <http://www.isbe.net/spec-ed/PDF/BMChapter7-7-12.pdf>

Illinois State Board of Education (n.d.). Introduction: Design for Performance Standards. Retrieved October 28, 2004 from <http://www.isbe.state.il.us/ils/Default.htm>.

Lopez-Reyna, N. (n.d.). Chapter 7: Instructional Strategies for English Language Learners with Disabilities. Retrieved October 28, 2004 from <http://www.isbe.net/spec-ed/PDF/BMChapter7-7-12.pdf>

Nemmer Fanta, J. (n.d.) Chapter 8: Accommodations and Modifications for English Language Learners. Retrieved October 28, 2004 from <http://www.isbe.net/spec-ed/PDF/BMChapter7-7-12.pdf>

Kentucky

Kentucky Department of Education (n.d.). Sample 6th Grade Mathematics Curriculum Map. Retrieved November 1, 2004 from <http://www.education.ky.gov/NR/rdonlyres/enkdibzfqtyalcmbnsn4kdxqo47ujexnmsswa4fc6zz3-paftynnb5tkbe3drst7lz4mgseksmqgedlrcdqhuqs462bnb/CMMath6thSample.doc>

Kentucky Department of Education (n.d.). Transformations volume 1 goal 1: Use basic communication and mathematics skills. Retrieved date from where? <http://www.education.ky.gov/KDE/Instructional+Resources/Curriculum+Documents+and+Resources/Transformations/Transformations+-+Download+Page.htm>

Kentucky Department of Education (2004). Combined curriculum document English language arts draft: Inquiry, speaking listening observing, technology as communication. Retrieved November 1, 2004 from <http://www.education.ky.gov/KDE/Instructional+Resources/Curriculum+Documents+and+Resources/Teaching+Tools/Combined+Curriculum+Documents/default.htm>

Kentucky Department of Education (2004). Combined curriculum document mathematics middle level draft. Retrieved November 1, 2004 from <http://www.education.ky.gov/KDE/Instructional+Resources/Curriculum+Documents+and+Resources/Teaching+Tools/Combined+Curriculum+Documents/default.htm>

Kentucky Department of Education (2004). Combined curriculum document reading middle level draft. Retrieved November 1, 2004 from <http://www.education.ky.gov/KDE/Instructional+Resources/Curriculum+Documents+and+Resources/Teaching+Tools/Combined+Curriculum+Documents/default.htm>

Kentucky Department of Education (2004). Combined curriculum document science middle level draft. Retrieved November 1, 2004 from <http://www.education.ky.gov/KDE/Instructional+Resources/Curriculum+Documents+and+Resources/Teaching+Tools/Combined+Curriculum+Documents/default.htm>

Maine

Maine Department of Education (n.d.). Schema Elaboration Indicators Glossary. Retrieved November 2, 2004 from <http://www.state.me.us/education/esl/toolkit/toc.htm>

Maine Department of Education (n.d.). Standards to Classroom Alignment. Retrieved November 2, 2004 from <http://www.state.me.us/education/esl/toolkit/toc.htm>

Mississippi

Mississippi Department of Education (n.d.). Literature connections. Retrieved November 2, 2004 from <http://www.mde.k12.ms.us/acad/id/curriculum/math/mathframe.htm>

Mississippi Department of Education (1999). Reading instructional intervention supplement (benchmarks, informal assessments, strategies) grades 4-8. Retrieved November 2, 2004 from <http://www.mde.k12.ms.us/ACAD/ID/Curriculum/LAER/outline.html>

Mississippi Department of Education (2000). Compensatory mathematics. Retrieved November 2, 2004 from <http://www.mde.k12.ms.us/acad/id/curriculum/math/index.htm>

Mississippi Department of Education (2000). Mathematics instructional intervention supplement (benchmarks, informal assessments, strategies). Retrieved November 2, 2004 from <http://www.mde.k12.ms.us/acad/id/curriculum/math/index.htm>

New Hampshire

New Hampshire Department of Education (1995). K-12 Mathematics curriculum framework: Problem solving. Retrieved November 3, 2004 from <http://www.plymouth.edu/math/curricula/46table1>.

New Hampshire Department of Education (1995). Mathematics curriculum addendum: Connecting math and science. Retrieved November 3, 2004 from <http://www.plymouth.edu/math/curricula/46table1.html>

New Hampshire Department of Education (1995). Mathematics curriculum addendum: Daily challenge number puzzles. Retrieved November 3, 2004 from <http://www.plymouth.edu/math/curricula/46table1.html>

New Hampshire Department of Education (1995). Mathematics curriculum addendum: Egg dropping. November 3, 2004 from <http://www.plymouth.edu/math/curricula/46table1.html>

New Hampshire Department of Education (1995). Mathematics curriculum addendum: Fraction lesson. Retrieved November 3, 2004 from <http://www.plymouth.edu/math/curricula/46table1.html>

New Hampshire Department of Education (1995). Mathematics curriculum addendum: Geometry and food structures. November 3, 2004 from <http://www.plymouth.edu/math/curricula/46table1.html>

New Hampshire Department of Education (1995). Mathematics curriculum addendum: How much taller is a fourth grader than a first grader? Retrieved November 3, 2004 from <http://www.plymouth.edu/math/curricula/46table1.html>

New Hampshire Department of Education (1995). Mathematics curriculum addendum: Multiplication and division as arrays and shares. Retrieved November 3, 2004 from <http://www.plymouth.edu/math/curricula/46table1.html>

New Hampshire Department of Education (1995). Mathematics curriculum addendum: Patterns with fractals. Retrieved November 3, 2004 from <http://www.plymouth.edu/math/curricula/46table1.html>

New Hampshire Department of Education (1995). Mathematics curriculum addendum: Probability. Retrieved November 3, 2004 from <http://www.plymouth.edu/math/curricula/46table1.html>

New Hampshire Department of Education (1995). Mathematics curriculum addendum: Thoughts and episodes. Retrieved November 3, 2004 from <http://www.plymouth.edu/math/curricula/46table1.html>

New Hampshire Department of Education (1995). Mathematics curriculum addendum: You remember what you eat. Retrieved November 3, 2004 from <http://www.plymouth.edu/math/curricula/46table1.html>

New Hampshire Department of Education (1995). Mathematics curriculum framework: Connections. Retrieved November 3, 2004 from <http://www.plymouth.edu/math/curricula/46table1.html>

New Hampshire Department of Education (1995). Mathematics curriculum framework: Data analysis, statistics and probability. Retrieved November 3, 2004 from <http://www.plymouth.edu/math/curricula/46table1.html>

New Hampshire Department of Education (1995). Mathematics curriculum framework: Discrete mathematics grades 4-6. Retrieved November 3, 2004 from <http://www.plymouth.edu/math/curricula/46table1.html>

New Hampshire Department of Education (1995). Mathematics curriculum framework: Discrete mathematics grades K-12. Retrieved November 3, 2004 from <http://www.plymouth.edu/math/curricula/46table1.html>

New Hampshire Department of Education (1995). Mathematics curriculum framework: Functions, relations and algebra. Retrieved November 3, 2004 from <http://www.plymouth.edu/math/curricula/46table1.html>

New Hampshire Department of Education (1995). Mathematics curriculum framework: Geometry, measurement and trigonometry. Retrieved November 3, 2004 from <http://www.plymouth.edu/math/curricula/46table1.html>

New Hampshire Department of Education (1995). Mathematics curriculum framework: Mathematics of change. Retrieved November 3, 2004 from <http://www.plymouth.edu/math/curricula/46table1.html>

New Hampshire Department of Education (1995). Mathematics curriculum framework: Numbers, operations & number theory. Retrieved November 3, 2004 from <http://www.plymouth.edu/math/curricula/46table1.html>

New Hampshire Department of Education (1995). Mathematics curriculum framework: Reasoning. Retrieved November 3, 2004 from <http://www.plymouth.edu/math/curricula/46table1.html>

New Hampshire Department of Education (2004). 7-10 mathematics addendum full file. Retrieved November 3, 2004 from <http://www.plymouth.edu/math/curricula/46table1.html>

New Hampshire Department of Education (2004). Draft K – 8 New Hampshire and Rhode Island local and NECAP mathematics grade level expectations (GLEs). Retrieved November 3, 2004 from <http://www.plymouth.edu/math/curricula/46table1.html>

New Hampshire Department of Education (2004). NECAP mathematics grade-level expectations. Retrieved November 3, 2004 from <http://www.plymouth.edu/math/curricula/46table1.html>

New Hampshire Department of Education (2004). Reading Local GLEs gr5-8. Retrieved November 3, 2004 from <http://www.ed.state.nh.us/education/doe/organization/curriculum/ELA/ELA.htm>

New Hampshire Department of Education (2004). Reading TSNEs 5-8. Retrieved November 3, 2004 from <http://www.ed.state.nh.us/education/doe/organization/curriculum/ELA/ELA.htm>

New Hampshire Department of Education (2004). Science curriculum framework: Curriculum strands. Retrieved November 3, 2004 from <http://www.ed.state.nh.us/education/doe/organization/curriculum/Science/ScienceFrameworks.htm>

New Hampshire Department of Education (2004). Science curriculum framework strand: Earth-space science. Retrieved November 3, 2004 from <http://www.ed.state.nh.us/education/doe/organization/curriculum/Science/ScienceFrameworks.htm>

New Hampshire Department of Education (2004). Science curriculum framework strand: Life science. Retrieved November 3, 2004 from <http://www.ed.state.nh.us/education/doe/organization/curriculum/Science/ScienceFrameworks.htm>

New Hampshire Department of Education (2004). Science curriculum framework strand: Physical science. Retrieved November 3, 2004 from <http://www.ed.state.nh.us/education/doe/organization/curriculum/Science/ScienceFrameworks.htm>

New Hampshire Department of Education (2004). Science curriculum framework strand: Science, technology and society. Retrieved November 3, 2004 from <http://www.ed.state.nh.us/education/doe/organization/curriculum/Science/ScienceFrameworks.htm#CurriculumStrands>

New Hampshire Department of Education (2004). Science curriculum framework strand: Unifying themes and concepts. Retrieved November 3, 2004 from <http://www.ed.state.nh.us/education/doe/organization/curriculum/Science/ScienceFrameworks.htm#CurriculumStrands>

New Mexico

New Mexico Public Education Department (n.d.). Language arts framework. Retrieved November 4, 2004 from where <http://www.nmlites.org/standards/language/index.html>

New Mexico Public Education Department (n.d.). Language arts standards glossary. Retrieved November 4, 2004 from <http://www.nmlites.org/standards/language/index.html>

New Mexico Public Education Department (n.d.). Language arts standards principles. Retrieved November 4, 2004 from <http://www.nmlites.org/standards/language/index.html>

New Mexico Public Education Department (n.d.). Mathematics standards framework. Retrieved November 4, 2004 from <http://www.nmlites.org/standards/math/index.html>

New Mexico Public Education Department (n.d.). Mathematics standards principles. Retrieved November 4, 2004 from <http://www.nmlites.org/standards/math/index.html>

New Mexico Public Education Department (n.d.). New Mexico curriculum framework: Language arts. Retrieved November 4, 2004 from <http://www.nmlites.org/standards/language/index.html>

New Mexico Public Education Department (n.d.). New Mexico science content standards, benchmarks, and performance standards. Retrieved November 4, 2004 from <http://www.nmlites.org/standards/science/index.html>

New Mexico Public Education Department (n.d.). The mathematics standards. Retrieved November 4, 2004 from <http://www.nmlites.org/standards/math/index.html>

New Mexico State Board of Education (1999). Final standards policy. Retrieved November 4, 2004 from <http://www.nmlites.org/standards/policy/index.html>

New York

New York State Education Department (n.d.). Chapter five, English language arts standards and limited English proficient/English language learners: Applications and practices. Retrieved November 4, 2004 from where <http://www.emsc.nysed.gov/ciai/biling/resource/res.html>

New York State Education Department (n.d.). English language arts resource guide. Retrieved November 4, 2004 from where. <http://www.emsc.nysed.gov/ciai/pub/pubela.html>

New York State Education Department (n.d.). Learning standards for ELA: Student work. English Retrieved November 4, 2004 from where. <http://www.emsc.nysed.gov/ciai/pub/pubela.html>

New York State Education Department (n.d.). Learning standards for MST: Student work standard one. Retrieved November 4, 2004 from <http://www.emsc.nysed.gov/ciai/mst.html>

New York State Education Department (n.d.). Learning standards for MST: Student work standard three. Retrieved November 4, 2004 from <http://www.emsc.nysed.gov/ciai/mst.html>

New York State Education Department (n.d.). Learning standards for MST: Student work standard four. Retrieved November 4, 2004 from <http://www.emsc.nysed.gov/ciai/mst.html>

New York State Education Department (n.d.). Mathematics, science and technology resource guide. Retrieved November 4, 2004 from <http://emsc33.nysed.gov/guides/mst/>

New York State Education Department (n.d.). Mathematics, science and technology resource guide, Part I.1 best practices 5 guiding principles. Retrieved November 4, 2004 from <http://emsc33.nysed.gov/guides/mst/>

New York State Education Department (n.d.). Mathematics, science and technology resource guide, Part I.2 scope and sequence. Retrieved November 4, 2004 from <http://emsc33.nysed.gov/guides/mst/>

New York State Education Department (n.d.). Mathematics, science and technology resource guide, Part I.3 scope and sequence. Retrieved November 4, 2004 from <http://emsc33.nysed.gov/guides/mst/>

New York State Education Department (n.d.). Mathematics, science and technology resource guide, Part I.4 teaching and learning strategies. Retrieved November 4, 2004 from <http://emsc33.nysed.gov/guides/mst/>

New York State Education Department (n.d.). Mathematics, science and technology resource guide, Part II.1 seedlings. Retrieved November 4, 2004 from <http://emsc33.nysed.gov/guides/mst/>

New York State Education Department (n.d.). Standard 3 ideas of uncertainty. Retrieved November 4, 2004 from <http://www.emsc.nysed.gov/ciai/mst/mathstandards/mathstand.html>

New York State Education Department (n.d.). Standard 3 mathematical reasoning. Retrieved November 4, 2004 from <http://www.emsc.nysed.gov/ciai/mst/mathstandards/mathstand.html>

New York State Education Department (n.d.). Standard 3 mathematical modeling/multiple representation. Retrieved November 4, 2004 from <http://www.emsc.nysed.gov/ciai/mst/mathstandards/mathstand.html>

New York State Education Department (n.d.). Standard 3 mathematical operations and relationships. Retrieved November 4, 2004 from <http://www.emsc.nysed.gov/ciai/mst/mathstandards/mathstand.html>

New York State Education Department (n.d.). Standard 3 measurement. Retrieved November 4, 2004 from <http://www.emsc.nysed.gov/ciai/mst/mathstandards/mathstand.html>

New York State Education Department (n.d.). Standard 3 number sense and numeration. Retrieved November 4, 2004 from <http://www.emsc.nysed.gov/ciai/mst/mathstandards/mathstand.html>

New York State Education Department (n.d.). Standard 3 patterns and function. Retrieved November 4, 2004 from <http://www.emsc.nysed.gov/ciai/mst/mathstandards/mathstand.html>

South Dakota

South Dakota Department of Education (n.d.). Goals and indicators for communications/language arts. Retrieved November 8, 2004 from <http://doe.sd.gov/contentstandards/>

South Dakota Department of Education (n.d.). Goals and rationale for communications/language arts. Retrieved November 8, 2004 from <http://doe.sd.gov/contentstandards/>

South Dakota Department of Education (n.d.). South Dakota mathematics goals. Retrieved November 8, 2004 from <http://doe.sd.gov/contentstandards/>

South Dakota Department of Education (n.d.). A Technical Guide for Implementing South Dakota Science Standards. Retrieved November 8, 2004 from <http://doe.sd.gov/contentstandards/science/techguide/index.asp>

Texas

Texas Education Agency (n.d.) Sheltered instruction in the middle school, A Focus on Strategies: A Pivotal Component of the Sheltered Instruction Observation Protocol (SIOP) Model. Retrieved September 30, 2005 from <http://www.tea.state.tx.us/curriculum/biling/teares-sims.html>

Texas Education Agency (1997). Chapter 110. Texas Essential Knowledge and Skills for English Language Arts and Reading Subchapter B. Middle School. Retrieved November 8, 2004 from <http://www.tea.state.tx.us/teks/#chapters>

Texas Education Agency (1997). Chapter 111. Texas Essential Knowledge and Skills for Mathematics Subchapter B. Middle School. Retrieved November 8, 2004 from <http://www.tea.state.tx.us/teks/#chapters>

Texas Education Agency (1997). Chapter 112. Texas Essential Knowledge and Skills for Science Subchapter B. Middle School. Retrieved November 8, 2004 from where <http://www.tea.state.tx.us/teks/#chapters>

Texas Education Agency (2004). Sheltered Instruction in the Middle School Math and Science Module, handouts Retrieved September 30, 2005 from <http://www.tea.state.tx.us/curriculum/biling/teares-sims.html>

Vermont

New Hampshire Department of Education, Rhode Island Department of Education, and Vermont Department of Education (2004). Mathematics GLE resource materials, definitions and examples for grades K – 8: Functions and algebra. Retrieved November 9, 2004 from http://www.state.vt.us/educ/new/html/pgm_curriculum/mathematics.html

New Hampshire Department of Education, Rhode Island Department of Education, and Vermont Department of Education (2004). Mathematics GLE Resource Materials Definitions and Examples for Grades K – 8: Number

and Operations, Resource material prototype. Retrieved November 9, 2004 from http://www.state.vt.us/educ/new/html/pgm_curriculum/mathematics.html

New Hampshire Department of Education, Rhode Island Department of Education, and Vermont Department of Education (2004). Mathematics GLE resource materials, definitions and examples for grades K-8: Resource material prototype. Retrieved November 9, 2004 from http://www.state.vt.us/educ/new/html/pgm_curriculum/mathematics.html

Vermont Department of Education (n.d.). Grade Expectations for Grades 5-6. Retrieved November 9, 2004 from http://www.state.vt.us/educ/new/html/pgm_curriculum/science.html

Vermont Department of Education (n.d.). Grade Expectations for Grades 7-8. Retrieved November 9, 2004 from http://www.state.vt.us/educ/new/html/pgm_curriculum/science.html

New Hampshire Department of Education, Rhode Island Department of Education, and Vermont Department of Education (2004). Mathematics GLE resource materials definitions and examples for grades K – 8: Data, statistics, and probability, Resource material prototype. Retrieved November 9, 2004 from http://www.state.vt.us/educ/new/html/pgm_curriculum/mathematics.html

Washington

Washington State Office of Superintendent of Public Instruction (1996). Essential academic learning requirements: Science. Retrieved November 10, 2004 from <http://www.k12.wa.us/curriculumInstruct/science/ealrs.aspx>

Washington State Office of Superintendent of Public Instruction (1997). Directions for communicating through mathematics. Retrieved November 10, 2004 from <http://www.k12.wa.us/SpecialEd/pubdocs/adaptations/comTD.pdf>

Washington State Office of Superintendent of Public Instruction (2001). Adaptations are essential: Early years mathematics. Retrieved November 10, 2004 from <http://www.k12.wa.us/SpecialEd/pubdocs/adaptations/begin.htm>

Washington State Office of Superintendent of Public Instruction (2001). Adaptations are essential: Early years, reading. Retrieved November 10, 2004 from <http://www.k12.wa.us/SpecialEd/pubdocs/adaptations/begin.htm>

Washington State Office of Superintendent of Public Instruction (2003). Adaptations are essential: Middle years reading. [Compact disc]. Olympia, WA: Author.

Washington State Office of Superintendent of Public Instruction (2003). Adaptations are essential: Middle years reading. Retrieved November 10, 2004 from <http://www.k12.wa.us/SpecialEd/pubdocs/adaptations/reading.pdf>

Washington State Office of Superintendent of Public Instruction (2004). Science essential academic learning requirements: A recommended grade by grade sequence for grade level expectations within grade bands. Retrieved November 10, 2004 from http://www.k12.wa.us/CurriculumInstruct/EALR_GLE.aspx

Washington State Office of Superintendent of Public Instruction (2004). Science K–10 grade level expectations: A new level of specificity. Retrieved November 10, 2004 from http://www.k12.wa.us/CurriculumInstruct/EALR_GLE.aspx

West Virginia

West Virginia Department of Education (n.d.). Strategic instruction model. Retrieved November 22, 2004 from <http://www.learningstrategieswv.org/>

West Virginia Department of Education (n.d.). Toolkit for connecting classroom best practices and limited English proficient students. Retrieved November 22, 2004 from <http://wvconnections.k12.wv.us>

West Virginia Department of Education (2004). Connecting West Virginia content standards and objectives to individualized education program (IEP) development: A technical brief Retrieved November 22, 2004 from <http://wvde.state.wv.us/ose/StandardsBasedIEPs.pdf>

Wyoming

Wyoming Department of Education (2003). Wyoming language arts content and performance standards. Retrieved November 22, 2004 from <http://www.k12.wy.us/eqa/nca/pubs/standards.asp>

Wyoming Department of Education (2003). Wyoming mathematics content and performance standards. Retrieved November 22, 2004 from <http://www.k12.wy.us/eqa/nca/pubs/standards.asp>

Wyoming Department of Education (2003). Wyoming science content and performance standards. Retrieved November 22, 2004 from <http://www.k12.wy.us/eqa/nca/pubs/standards.asp>

Appendix B

Strategy References Cited in State Documents

Braselton, S. & Decker, B. C. (1994). Using graphic organizers to teach word problems. *The Reading Teacher*, 48(3), 276–281.

Bruner, J., Goodnow J. J., & Austin, G. A. (1967). *A study of thinking*. New York: Science Editions.

Buehl, D. (2001). Classroom strategies for interactive learning. International Reading Association, Inc. Second Edition.

Case, L.P., Harris, H.R., & Graham, S. (1992). Improving the mathematical problem-solving of students with learning disabilities: Self-regulated strategy development. *Journal of Special Education*, 26(1), 1–19.

Chan, L. K. S. (1991). Promoting strategy generalization through self-instructional training in students with reading disabilities. *Journal of Learning Disabilities*, 24(7), 427–433.

Darch, C., & Carnine, D. (1986). Teaching content area material to learning disabled students. *Exceptional Children*, 53, 240–246.

Darch, C., & Kameenui, E.J. (1987). Teaching LD students critical reading skills: A systematic replication. *Learning Disability Quarterly*, 10(2), 82–91.

Eeds, M., & Cockrum, W. A. (1985). Teaching word meanings by expanding schemata vs. dictionary work vs. reading in context. *Journal of Reading*, 28, 492–497.

Ellis, E. S., & Graves, A.W. (1990). Teaching rural students with learning disabilities: A paraphrasing strategy to increase comprehension of main ideas. *Rural Special Education Quarterly*, 10(2), 2–10.

Englert, C. S., & Mariage, T.V. (1991). Making students partners in the comprehension process: Organizing the reading “POSSE.” *Learning Disability Quarterly*, 14, 123–138.

Ericson, B., Hubler, M. Bean, T., Smith, C. C., & McKenzie, J. V. (1987). Increasing critical reading in junior high classrooms. *Journal of Reading*, 30, 430–439.

Falcon, S. C., & Simms, R.B. (1985). A word-category approach to teaching sight words. *Reading Improvement*, 20, 126–137.

Frayer, D. Fredrick, W.C., & Klausmeier, H. J. (1969). *A schema for testing the level of concept mastery* (Working Paper No. 16), University of Wisconsin Center for Educational Research.

Garner, R., Chou Hare, V., Haynes, J., & Winograd, P. (1984). Inducing use of a text look-back strategy among unsuccessful readers. *American Educational Research Journal*, 21(4), 789–798.

Graves, A. W. (1986). Effects of direct instruction and metacomprehension training on finding main ideas. *Learning Disabilities Research*, 1(2), 90–100.

Harrison, S. (1991). Tools for learning science. In C. Santa & D. Alvermann (Eds.), *Science Learning: Processes and Applications*. Newark, DE: IRA.

Head, M. H., & Readence, J. E. (1992). Anticipation guides: Enhancing meaning through prediction. In *Reading in the Content Areas: Improving Classroom Instruction*, E.K. Dishner, T.W. Bean, J.E. Readence, and D.W. Moore (Eds.), 227–233. Dubuque, Iowa: Kendall/Hunt.

Heckelman, R. G. (1966). Using the neurological impress remedial technique. *Academic Therapy Quarterly*, 1, 235–239.

Idol, L., & Croll, V. J. (1987). Story-mapping training as a means of improving reading comprehension. *Learning Disability Quarterly*, 10, 214–229.

Idol-Maestas, L. (1985). Getting ready to read: Guided probing for poor comprehenders. *Learning Disability Quarterly*, 8, 243–253.

Jenkins, J. R., Heliotis, J.D., Stein, M.L., & Haynes, M.C. (1987). Improving reading comprehension by paragraph restatements. *Exceptional Children*, 54(1), 54–59.

Johnson, L., Graham, S., & Harris, K. R. (1997). The effects of goal setting and self-instruction on learning a reading comprehension strategy: A study of students with learning disabilities. *Journal of Learning Disabilities*, 30(1), 80–91.

Lederer, J. M. (2000). Reciprocal teaching of social studies in inclusive elementary classrooms. *Journal of Learning Disabilities*, 33, 91–106.

Lenz, B. K., & Hughes, C.A. (1990). A word identification strategy for adolescents with learning disabilities. *Journal of Learning Disabilities*, 23, 149–153, 163.

Leon, J. A., & Pepe, H. J. (1983). Self-instructional training: Cognitive behavior modification for remediating arithmetic deficits. *Exceptional Children*, 54–60.

- Marino, J. L., Gould, S. M., & Haas, L. W. (1985). The effects of writing as a prereading activity on delayed recall of narrative text. *Elementary School Journal*, 86(2), 199–205.
- Mathes, P. G., Fuchs, D., & Fuchs, L. S. (1997). *Cooperative story mapping*. *Remedial and Special Education*, 18 (1), 20–27.
- McCoy, K. M., & Pany, D. (1986). Summary and analysis of oral reading corrective feedback research. *Reading Teacher*, 39, 548–554.
- McIntyre, S. B., Test, D. W., Cooke, N. L., & Beattie, J. (1991). Using county-bys to increase multiplication facts fluency. *Learning Disability Quarterly*, 14, 82–87.
- Memory, D. M. (1983). Main idea prequestions as adjunct aids with good and low-average middle grade readers. *Journal of Reading Behavior*, 25(2), 37–48.
- O’ Shea, L. J., & Sindelar, P. T. (1983). The effects of segmenting written discourse on the reading comprehension of low- and high-performance readers. *Reading Research Quarterly*, 18, 458–465.
- Pany, D., Jenkins, J. R., & Schreck, J. (1982). Vocabulary instruction: Effects on word knowledge and reading comprehension. *Learning Disability Quarterly*, 5, 202–214.
- Peterson, S., Mercer, C., & O’ Shea, L. (1988). Teaching learning disabled students place value using concrete to abstract sequence. *Learning Disabilities Research*, 4(1), 52–56.
- Pflaum, S. W., & Pascarella, E. T. (1980). Interactive effects of prior reading achievement and training in context on the reading of learning-disabled children. *Reading Research Quarterly*, 16(1), 138–158.
- Pittleman, S. D., Heimlich, J. E., Berglund, R. L., & French, M. P. (1991). *Semantic feature analysis: Classroom applications*. Newark, DE: International Reading Association.
- Raphael, T. E., & Wonnacott, C.A. (1985). Heightening fourth-grade students’ sensitivity to sources of information for answering comprehension questions. *Reading Research Quarterly*, 20, 282–296.
- Rivera, D., & Smith, D. D. (1988). Using a demonstration strategy to teach middle school students with learning disabilities how to compute long division. *Journal of Learning Disabilities*, 21, 77–81.
- Roberts, M., & Smith, D. D. (1980). The relationship among correct and error oral reading rates and comprehension. *Learning Disability Quarterly*, 3, 54–64

- Sachs, A. (1984). The effects of previewing activities on oral reading miscues. *Remedial and Special Education, 5*, 45–49.
- Santa, C. A., Dailey, S. C., & Nelson, M. (1985). Free-response and opinion-proof: A reading and writing strategy for middle grade and secondary teachers. *Journal of Reading, 28*(4), 346–352.
- Singh, N., & Singh, J. (1984). Antecedent control of oral reading errors and self-correction by mentally retarded children. *Journal of Applied Behavior Analysis, 17*, 111–119.
- Smith, D. D. (1979). The improvement of children's oral reading through the use of teacher modeling. *Journal of Learning Disabilities, 12*, 39–42.
- Swanson, L. (1981). Modification of comprehension deficits in learning disabled children. *Learning Disabilities Quarterly, 4*, 189–202.
- Toms-Bronowski, S. (1982). *An investigation of the effectiveness of semantic mapping and semantic feature analysis with intermediate grade level children* (Program Report No. 83-3). Madison, WI: Wisconsin Center for Education Research.
- Weinstein, G., & Cooke, N. L. (1992). The effects of two repeated reading interventions on generalization of fluency. *Learning Disability Quarterly, 15*(1), 21–28.
- Wong, B. Y. L., Wong, R., & Le Mare, L. (1982). The effects of knowledge of criterion task on comprehension and recall normal achieving and learning disabled children. *Journal of Educational Research, 76*, 119–126
- Williams, J. P., Brown, L. G., Silverstein, A. K., & de Cani, J. S. (1994). An instructional program in comprehension of narrative themes for adolescents with learning disabilities. *Learning Disability Quarterly, 17*, 205–221.