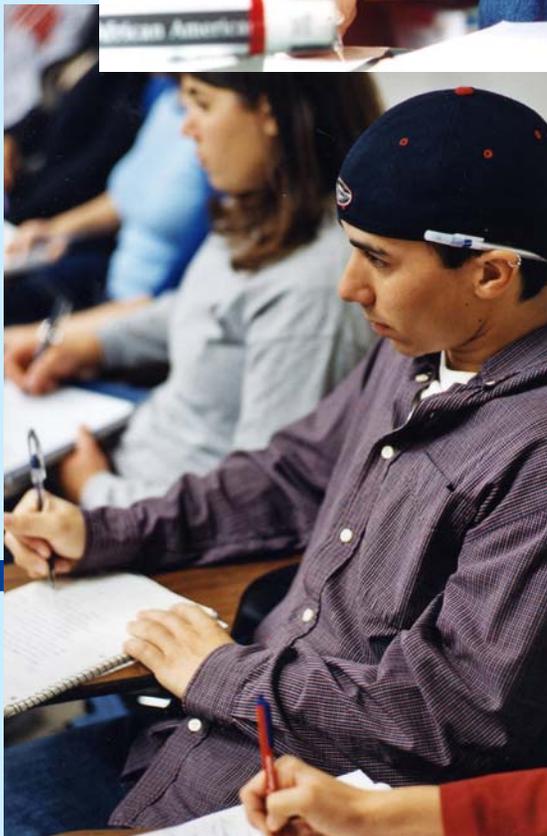


Educating English Language Learners: Building Teacher Capacity

Roundtable Report



National Clearinghouse for English
Language Acquisition
2008

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Introduction

Given the current demographic shifts in the U.S. population, it is likely that all teachers at some point in their careers will encounter students who do not yet have sufficient proficiency in English to fully access academic content in traditional classrooms. Many teachers do not have preparation to provide high-quality instruction to this population of students. This report considers the initial and continuing education of pre-service and practicing teachers as they pertain to teaching students from diverse linguistic backgrounds.

In this report, we present a vision of teacher education and professional development that:

- Is ongoing and integrated throughout the working life of educational personnel;
- Is effective and relevant along a continuum of teacher education for pre-service and in-service teachers within a university setting, as well as staff development tailored to novice teachers, experienced teachers and experts;
- Is effective and relevant for all educational personnel, including paraeducators, teachers, principals, district staff, and SEA staff;
- Is tightly intertwined with disciplinary standards and pedagogical content knowledge;
- Involves collaborative active learning within professional learning communities;
- Is driven by research and data and is continually evaluated and refined;
- Attends to multiple dimensions of diversity and fosters cross-cultural learning; and
- Results in improved student outcomes and a narrowing of the achievement gap for English language learners.

Background

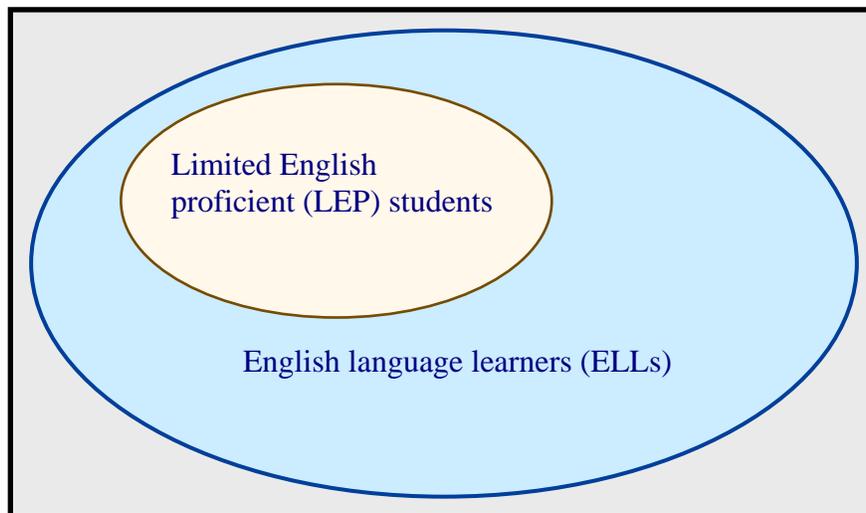
In the Fall of 2007, the U.S. Department of Education’s Office of English Language Acquisition, Language Enhancement, and Academic Achievement for Limited English Proficient Students (OELA) established the following strategic priority:

Develop policy and program recommendations to improve the professional development of English language learner content teachers.

The National Clearinghouse for English Language Acquisition (NCELA) assisted OELA by forming a panel of experts and convening a *Roundtable on Teacher Education and Professional Development of ELL Content Teachers*. The panel met on January 24, 2008, in Washington, DC, to discuss the substance and format of this report. In addition, the panel members submitted recommendations of the most recent and relevant research on the subject. Panel members’ names and affiliations appear in the Appendix.

Definitions

The term **English language learners (ELLs)** in this report refers to those students who are not yet proficient in English and who require instructional support in order to fully access academic content in their classes. ELLs may or may not have passed English language proficiency (ELP) assessments. The subset of ELLs who have not yet achieved ELP as measured by the particular assessment procedures of their state are often referred to as Limited English Proficient (LEP) students. Students who have passed ELP assessments, however, may still need support in acquiring and using language in the classroom, particularly with the complex academic language that leads to successful high school graduation and higher education opportunities (Francis, Rivera, Lesaux, Kieffer & Rivera, 2006).



Mainstream teachers are the set of teachers at whom this report is directed. ELLs may be taught by teachers who specialize in teaching students who are not yet fully proficient in English, and many ELLs receive all or part of their instruction from teachers with certifications in English for Speakers of Other Languages (ESOL), English as a Second Language (ESL), or bilingual education. In this report, we refer to all other teachers interchangeably as mainstream, content area, or general education teachers.

How To Use This Report

This report is comprised of three volumes:

- I: Teacher Education and Professional Development for Mainstream Teachers of English Language Learners
- II: Annotated Bibliography
- III: State Requirements for Pre-service Teachers of ELLs

Volume I: Teacher Education and Professional Development for Mainstream Teachers of English Language Learners

This volume consists of three chapters. The **Rationale** provides background data and demographics for English language learners and their teachers. The Rationale reports on a variety of large and small scale studies to paint a picture of the current numbers of English language learners and of their educational progress. It also summarizes current research on the education that teachers have received in working with this population, including data regarding preparation prior to and during their teaching careers. The Rationale is of use to all stakeholders interested in the education of English language learners but may be particularly useful to policymakers and other decision makers examining broader trends which establish the need for further teacher development.

The second chapter, **Guide for Program Development**, is intended primarily for university faculty, staff development personnel, state and district administrators, and principals. It discusses the structure of teacher education and professional development programs, including program design, assessment, evaluation, and modes of delivery. The chapter is divided into two sections: University-based Teacher Education, and Professional Development for Practicing Teachers. The first section presents a set of suggestions for teacher education in a university setting (including both pre-service and in-service programs) that are aligned with the standards of the National Council for the Accreditation of Teacher Education (NCATE). The recommendations in the second section are aligned with the National Staff Development Council (NSDC) standards, and the section presents guidelines for professional development programs within school districts.



Throughout the report, practical tools for teachers and for teacher educators and staff developers are set off within the text by the wrench icon.

The final chapter of Volume I is entitled **Guide for Mainstream Teachers of English Language Learners**. This chapter deals primarily with the content of teacher education and professional development programs. Although intended for teacher educators and professional developers who are creating educational content, this chapter's research-based practical suggestions are also useful for classroom teachers.

Included within this chapter are guidelines specific to the four core content areas: English language arts, social studies, science, and mathematics. These short guidelines can serve either as stand-alone resources or in combination with the entire section. Each content area guideline contains information on the vocabulary, language structures and contextual factors relevant to the particular discipline. These are followed by a list of web and print resources appropriate for teachers who wish to pursue further research in their content area. It is important to stress that these guidelines are a beginning point for teachers, and should not become boilerplates for the widely critiqued "one-shot workshop." They should be used in conjunction with the suggestions provided elsewhere in this document—for instance, as an initial reading for a professional learning community.

Volume II: Annotated Bibliography

The annotated bibliography was compiled from research suggested by the Roundtable panel. As supporting material to Volume I, the Bibliography conforms to a similar format. It includes selected abstracted references for the rationale, for teacher education and professional development programs, and for curriculum and instruction.

Volume III: State Requirements for Pre-service Teachers of ELLs

The final volume of the document was written in January, 2008, and was provided to panelists before the January 24, 2008, Roundtable meeting as background material. It was made available on NCELA's website under the title *Teaching ELLs in mainstream classrooms: State-by-State requirements for all pre-service teachers* in February, 2008¹, and was further revised in May, 2008. This volume examines states' requirements for all pre-service teachers in ELL education. As expected, states vary in terms of the preparation required of newly licensed teachers. There are four states which require specific coursework or separate certification. In seventeen states, certification standards refer to the special needs of ELLs. The NCATE standards for teacher certification (NCATE, 2006) are used by seven states; these standards have recently been changed to include reference to the particular needs of ELLs. For eight states, the standards for newly certified teachers contain some reference to "language" as an element of diversity. Finally, fifteen states do not have any requirement that newly certified teachers be prepared in ELL education.

This report serves two broad purposes. It informs federal, state, and local policymakers responsible for the teacher education and professional development of ELL content teachers, and simultaneously offers a functional resource guide for teachers and other

¹ The February, 2008, version is available at http://www.ncela.gwu.edu/policy/legislation/pre-service_reqs.pdf.

practitioners. Its goal is to meaningfully add to—not replace—the extensive literature on the preparation and professional development of ELL content teachers.

**Educating English Language Learners:
Building Teacher Capacity
Roundtable Report**

Volume I

**Teacher Education and Professional
Development for Mainstream Teachers of
English Language Learners**

1. Rationale

Over the last decade, America's schools have experienced a sharp increase in the number of students who are not proficient enough in English to fully access academic content in all of their classes. English language learners (ELLs) tend to be poorer, perform less well on standardized tests, and drop out of high school at rates higher than their English speaking peers. More and more teachers of "mainstream" general education classes, who normally do not have special training in ESOL or bilingual education, are faced with the challenge of educating these children. Even the most committed teachers cannot provide high quality education without appropriate skills and knowledge. This section provides a rationale for increased teacher education and professional development for mainstream teachers by briefly describing key features of the ELL population and the current teacher capacity to address the needs of these learners.

English language learners and their teachers: Background and demographics

There are over five million ELLs enrolled in America's schools. Both the number and the proportion of ELLs are growing rapidly. Raw numbers of ELL students have jumped by 57% over the past ten years (NCELA 2007). These students are more likely to be poor and to come from less educated families than the overall pupil population. Further, their performance on standardized tests and their graduation rates are well below their non-ELL peers.

Almost six in ten (59%) adolescent ELLs qualify for free or reduced price lunch.² This is more than double the proportion of English proficient students, only 28% of whom receive such services (Batalova, Fix, & Murray, 2005). Data taken from the 2000 U.S. Census indicates that the education levels of the parents of ELLs are much lower than those of English proficient students. For parents of ELL children in elementary school, almost half had not completed high school, and a quarter had less than a ninth grade education. For English proficient (EP) children, the proportions are 11% and 2% respectively. For parents of high school ELLs, 35% had not completed high school (compared to 9% of the parents of EP students), and 26% had not completed the ninth grade (compared to 4% for parents of EP students) (Capps et al., 2005).

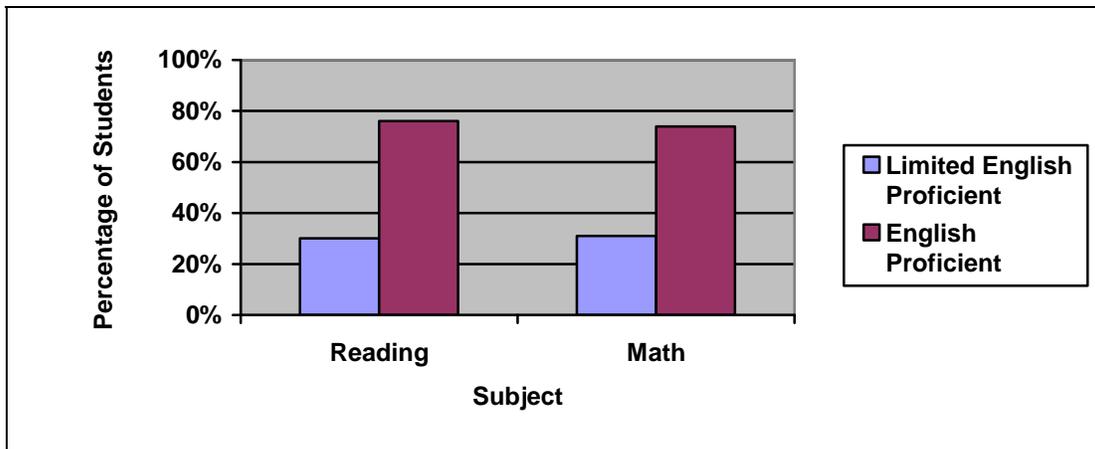
English Language Learners: Demographics

- There are over five million ELLs in the United States.
- This number has risen by 57% over the past ten years.
- Nearly six in ten ELLs qualify for free or reduced price lunch.
- Eighth-grade ELLs' scores are less than half those of English speaking peers on tests of reading and mathematics.
- Students from households which speak a language other than English at home lag twenty points behind in high school completion rates.

² For the period July 1, 2007 through June 20, 2008, 130% of the federal poverty level for a family of four is \$26,845. Children from households whose annual income is less than this figure are eligible for free lunch. Children from households whose earnings are less than 185% of the federal poverty level (equivalent to \$38,203 for a family of four) are eligible for reduced-price lunch (U.S. Department of Agriculture, 2007).

Measures of school performance indicate that ELLs are not performing as well as their EP peers. The National Assessment of Educational Progress (also known as “The Nation’s Report Card”) collects data on student performance at the fourth-grade and eighth-grade level. At the eighth-grade level, 76% of EP students scored at or above basic in reading; 74% scored at or above basic in mathematics. ELLs’ scores were considerably lower, with only 30% at or above basic in reading and only 31% at or above basic in mathematics.

Figure 1: Eighth-grade Students at or Above Basic in Reading and Mathematics, 2007



SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics (2007a) & (2007b).

These trends extend to performance on high school exit examinations and to graduation rates. A recent study on high school exit examinations for 22 states found gaps in initial pass rates for mathematics as high as 30-40 percentage points between ELLs and EP students, with higher gaps in reading (Center on Education Policy, 2005).

Accurate disaggregated nationwide data on high school graduation rates are difficult to find, but the existing information strongly points to a higher dropout rate for ELLs than non-ELLs. In a study assessing the labor market participation and readiness of linguistic minorities, the National Center for Educational Statistics (U.S. Department of Education, NCES, 2004) examined Census Bureau data and found that young adults from linguistic minority backgrounds were less likely to have completed high school than native English speakers. In the Census Bureau data, a member of a linguistic minority is defined as an individual who speaks a language other than English at home (a definition which includes both individuals of limited English proficiency as well as English-proficient individuals who speak another language at home). The data describe rates of high school completion among 18-24 year olds, including both 4-year completion and completion of high school equivalency tests such as the GED. Of young adults who spoke English at home, 89.9% had completed high school. Young adults from linguistic minority backgrounds lag behind their native English speaking peers, with high school completion rates of only 69.3%. While this number seems unusually high in comparison to commonly cited figures for four-year graduation rates, it includes those who return to school to earn a GED or similar diploma after their age cohort has graduated.

ELLs may receive instruction in a variety of settings, including bilingual or structured English immersion programs, but an increasing number can be found in mainstream classrooms. The proportion of teachers who are charged with the task of providing high quality instruction to these students has also grown substantially. In the ten year period between 1991-2001 the proportion of teachers who taught at least one ELL more than doubled (from 15% to 43% of all teachers) (Zehler et al., 2003). Given the growth of the ELL population over the past ten years, it is probably safe to assume that a majority of American teachers now have at least one ELL in their classes.

Providing quality instruction to English language learners requires teachers who are skilled in a variety of curricular and instructional strategies. Research on teacher training and preparedness, however, suggests that teachers who do not hold bilingual or ESL certification are not well prepared to meet the needs of these children (Alexander, Heaviside & Farris, 1999; Karabenick & Clemens Noda, 2004; Menken & Atunez, 2001; Reeves, 2006; U.S. Department of Education

NCES, 1997, 2001; Zehler et al., 2003; and see also Volume III of this report).

Mainstream Teachers of ELLs

- It is likely that a majority of teachers have at least one English language learner in their classroom.
- Only 29.5% of teachers with ELLs in their classes have the training to do so effectively.
- Only 20 states require that all teachers have training in working with ELLs.
- Less than 1/6th of colleges offering pre-service teacher preparation include training on working with ELLs.
- Only 26% of teachers have had training related to ELLs in their staff development programs.
- 57% of teachers believe they need more training in order to provide effective education for ELLs.

Recent estimates of the numbers of teachers who have participated in professional development in ELL education are difficult to identify. The most recent National Center for Education Statistics (NCES) *Schools and Staffing Survey* which has relevant data (U.S. Department of Education, NCES, 1997, data from 1993-94) reported that of those teachers who had ELLs in the classroom, only 29.5% received training in working with this population.

Twenty states currently require that new teachers have some ELL preparation. States' requirements vary considerably, with some peripherally mentioning ELLs in their standards for pre-service teachers, and others (Arizona, California, Florida, and New York) requiring specific coursework or separate certification on the needs of ELLs (see Volume III of this

report). In a survey of postsecondary institutions offering ELL teacher preparation, Menken & Atunez (2001, in conjunction with the American Association of Colleges for Teacher Education) found that less than one-sixth of all postsecondary institutes required ELL-oriented content in their preparation of mainstream teachers (Menken & Atunez 2001).

At the state and district levels, staff development opportunities for practicing teachers are similarly underrepresented. A 2001 NCES study of staff development reported that ELL

education was the least likely topic of focus (U.S. Department of Education, NCES, 2001). While 80% of those surveyed had participated in staff development that related to their state or district curriculum, only 26% had staff development relating to ELLs. Zehler et al. (2003) found that of teachers who had at least three ELLs in their classroom, 62% reported attending training related to ELLs within the past five years. However, the median amount of training was 4 hours.

Surveys of attitudes and feelings of preparedness indicate that teachers are uneasy with their lack of knowledge in this area. In the 2001 NCES survey, only 27% of teachers felt that they were “very well prepared” to meet the needs of ELLs, while 12% reported that they were “not at all prepared” (U.S. Department of Education, NCES, 2001). In a separate survey of over 1,200 teachers, 57% indicated that they needed more information to work effectively with ELLs (Alexander, Heaviside & Farris, 1999, p.10). In research conducted with 279 teachers in a school district with a minimal number of ELLs, Reeves (2006) found that 81.7% believed that they did not have adequate training to work effectively with ELLs, and 53% wanted more preparation. Given the steady increase in the ELL population it is safe to assume that a growing number of teachers see the need for—and feel the lack of—professional development.

Smaller scale attitudinal surveys of teachers have often focused on teacher attitudes toward and knowledge about ELLs as a proxy for preparedness, reasoning that if teachers do not have accurate information about the cultural, linguistic and learning characteristics of ELLs then they are not well prepared to teach them. Teachers of ELLs often hold beliefs that have either been disproven or are seriously contested.³ For example, Reeves (2006) found that 71.1% of teachers surveyed believed that ELLs should be able to learn English within two years. In a survey of 729 teachers in a school district in which almost one third of students were ELLs, Karabenick & Clemens Noda (2004) found that a majority (52%) believed that speaking one’s first language at home inhibited English language development. Nearly one-third (32%) thought that if students are not able to produce fluent English, they are also unable to comprehend it. The authors also reported that many mainstream teachers do not “distinguish between oral communication proficiencies and cognitive academic language capabilities” (p. 63). Several researchers, including those above (and see also Bartolomé, 2002; Lee & Oxelson, 2006; Phuntsog, 2001), have found that culturally sensitive and comprehensive training of educators leads to a shift in these attitudes toward ELLs.

Given the fact that the training of teachers lags behind the realities of the classroom, these misconceptions and feelings of unpreparedness are unsurprising. The recent increase in ELLs in U.S. classrooms has been rapid, and teacher education and professional development has not yet caught up with the demographic shift. There is a pressing need for education for teachers at all stages in their careers which aims to prepare or upgrade teachers’ knowledge and skills in order to close the achievement gap between linguistic minority students and their native English speaking peers.

³ There are a number of useful texts which provide counterevidence for these and other “myths” in a format accessible to mainstream teachers – see particularly Lightbown & Spada (2006, Ch. 7), McLaughlin (1993), and Samway & McKeon (1999).

2: Guide for Program Development

Because of both the changing demographics of America's schools and the disparity between the needs of ELLs and the knowledge and skills of their teachers, teacher education and professional development are critical for mainstream teachers of this underserved population. This section of the report focuses primarily on the structural components of teacher education and professional development, including modes of delivery, program design, and assessment and evaluation. The content of teacher education and professional development will be taken up in greater depth in the following chapter, *Guide for Mainstream Teachers of English Language Learners*. The material included in this section is a result of a review of the literature on ELL teacher education and professional development, and incorporates guidance and practical suggestions provided by our expert panelists. To achieve a high level of applicability, we have approached the topic through the lens of widely used standards. The first part of this section considers teacher education in the university setting, and takes as its starting point the National Council for the Accreditation of Teacher Education (NCATE) standards for teacher preparation. We present a set of suggestions, aligned with NCATE standards (NCATE, 2007),⁴ for incorporating issues regarding ELLs into postsecondary programs. The second part addresses ongoing state- and district-wide staff development for practitioners and presents suggestions aligned with the National Staff Development Council's (NSDC) standards (NSDC, 2001).

⁴ The current set of NCATE standards were ratified May 11, 2007, and come into effect in fall 2008.

University-based Teacher Education

Teacher education in postsecondary programs may be either pre-service or in-service.

Universities offering pre-service teacher education programs generally adhere to a state's requirements for licensure or certification. Although licensing requirements vary from state to state,⁵ certification programs generally cover the foundations of education, methods, and field or clinical experiences.

The content and learning experiences included in a typical pre-service program can be presented in a variety of formats, stretching from field-based learning completed largely in professional development schools to more traditional programs that offer a majority of coursework at the university. The programs can be offered at either the undergraduate or graduate levels, and can include a Bachelor's or Master's degree along with licensure.

In-service teacher education programs are offered at the graduate level and often lead to a Master's degree or doctorate. They have a variety of foci and include coursework that emphasizes subject matter, advanced teaching strategies, or both. A high school history teacher, for example, can enroll in a Master's program in history, secondary education, or any of a variety of sub-disciplines. In-service programs for elementary teachers can be subject-oriented graduate programs, or may focus on particular topics, such as advanced instructional strategies, or subpopulations of students, such as gifted and talented students, or ELLs.

This section addresses teacher education at the pre-service and in-service level jointly, and takes as a point of departure the NCATE standards for accreditation of teacher preparation programs (NCATE, 2007). The six NCATE standards are:

NCATE Standards Applied to ELLs

1. Teachers should acquire **pedagogical content knowledge** which addresses ELLs
2. Assessment and evaluation data should **measure** teachers' preparedness to work with ELLs
3. Field experiences should provide **practice** and opportunities to see successful teachers **model** effective techniques in working with ELLs
4. Candidates should understand the range in **diversity among ELLs**
5. & 6. Unit should provide **qualified faculty** and **sufficient resources** to support teachers' learning about ELLs

⁵ See Volume III of this report for a review of state licensure requirements.

Standard 1: Candidate Knowledge, Skills, and Dispositions
Standard 2: Assessment System and Unit Evaluation
Standard 3: Field Experiences and Clinical Practice
Standard 4: Diversity
Standard 5: Faculty Qualifications, Performance, and Development
Standard 6: Unit Governance and Resources

The six NCATE Standards (NCATE, 2007)

Standard 1: Candidate Knowledge, Skills, and Dispositions

The first of the NCATE standards concerns the knowledge, skills, and dispositions of teachers, including their content area knowledge, their pedagogical content knowledge, their knowledge of learning styles, strategies, and differences, and their professional dispositions. Critical to providing quality education for ELLs is an understanding that pedagogical content knowledge and knowledge of learning must encompass the skills and knowledge to engage English language learners with the content of the discipline. Although knowledge of learners may stay constant across disciplines, pedagogical content knowledge is highly discipline specific.

Teachers with effective pedagogical content knowledge know the relevant disciplinary standards, and know how to teach in ways that facilitate student learning of the standards. For teachers of classes which include ELLs, effective pedagogical content knowledge means knowing how to teach content and language simultaneously. Teachers must take into account not only disciplinary standards, but also TESOL's standards for English language proficiency (TESOL, 2006).

There are five TESOL PreK–12 English Language Proficiency standards. Standards 2–5 are explicitly framed by the four core subject areas. Cross-cutting the standards are the four domains of language competence (listening, speaking, reading, writing), five levels of English proficiency, and five grade level clusters (preK–K, 1–3, 4–5, 6–8, 9–12). Included in the standards documents are a set of sample performance indicators which provide examples for how to operationalize the standards using sample topics. More detailed information on integrating the standards, specific to 9–12 teachers, can be found in *Integrating the ESL Standards Into Classroom Practice: Grades 9–12* (TESOL, 2001). Teacher educators can also refer to TESOL's companion publication, *Implementing the ESL Standards for Pre-K-12 Students Through Teacher Education* (Snow, 2000).

TESOL's PreK–12 English Language Proficiency Standards

Standard 1: English language learners **communicate** for **social, intercultural, and instructional** purposes within the school setting.

Standard 2: English language learners **communicate** information, ideas, and concepts necessary for academic success in the area of **language arts**.

Standard 3: English language learners **communicate** information, ideas, and concepts necessary for academic success in the area of **mathematics**.

Standard 4: English language learners **communicate** information, ideas, and concepts necessary for academic success in the area of **science**.

Standard 5: English language learners **communicate** information, ideas, and concepts necessary for academic success in the area of **social studies**.

(TESOL, 2006, p.28)

Effective pedagogical content knowledge, then, requires teachers to know how to teach the content of their subject in ways which result in English language learners having the ability to communicate effectively within the discipline. Because pedagogical content knowledge is so discipline-specific, the skills of an effective math teacher will differ from the skills of an effective social studies teacher. Pedagogical content knowledge of relevance to each of the four core content areas is covered in more detail in Chapter 3.

Standard 2: Assessment System and Unit Evaluation

The second NCATE standard for teacher preparation programs calls for units to include an assessment system which collects, analyzes, and evaluates data on applicant qualifications, candidate and graduate performance, and unit operations, and to use these data for program improvement. Where possible, these data should be disaggregated in order that the assessment and evaluation component can be used to give a clear picture of the efficacy of the teacher preparation program in readying teachers to work with ELLs. Data for such purposes might include data on the linguistic diversity of faculty, of candidates, and of the students encountered by candidates in their field experiences. Any tracking which considers program graduates and student outcomes should also account for the outcomes of ELLs. These data should be used to improve the program structure and curricula. Finally, candidates should be assessed on their capacity to work with ELLs, including assessment of candidates during clinical practice.

Standard 3: Field Experiences and Clinical Practice

It is crucial that all teacher education candidates have opportunities to engage with English language learners during their preparation, since the chances are great that they will eventually teach in a linguistically diverse classroom. Candidates should have the chance both to practice pedagogical content knowledge techniques, and also for a great number of teachers, to interact with students whose cultural backgrounds and experiences differ from their own. Clinical practice which includes ELLs is recommended by NCATE (see “Diversity” below), and by Grant & Wong (2003). Abbate-Vaughn (2008) details an approach in which urban field



Process Writing In the Practicum

During a year-long field placement in a culturally and linguistically diverse urban school, pre-service teachers use process writing to reflect on changes in attitudes and dispositions.

What did the educators do? Pre-service teachers used process writing techniques to produce thesis projects for a Master’s degree. Successive drafts, as well as field notes and journals, were read and critiqued by peers and by university faculty. As the pre-service teachers progressed through the year, they reflected on the cultural biases in their early efforts.

“Sonia” began her year by focusing on what children and families were lacking.

Families like Analia’s struggle just to provide food for their children, which does not leave room for many material possessions. Many families live with relatives just to make ends meet. Some families are even unable to provide basic needs for their children, such as beds or clothing. On top of everything, these children are lacking what they need most, parental involvement.

As Sonia progressed through her practicum, she was challenged in many ways. Although Sonia’s classroom teacher-mentor tended to re-inforce the idea of a deficit in the family background of the children in the school, she also received feedback from other quarters. Sonia’s university professor encouraged her to reflect and write more critically on what it meant to be rich and poor. Sonia’s pre-service teacher colleague, “Holly,” herself from an immigrant family, acted as a critical reader who challenged some of Sonia’s biases.

At the end of the practicum year, Sonia had shifted her focus away from a deficit perception to more clearly seeing assets that children brought to the classroom and embracing her own responsibility in reaching out across cultures.

*Parents are involved in the education of their kids in ways teachers often do not see. Parents may not be able to help their kids with homework when too many jobs prevent them from even seeing their children. Some have parents available at home but who might not be yet fluent in English. As a result, students are faced with the hardships of poverty and language barriers, and therefore, **teachers must find new ways to reach them.***

Standards: Field Experience and Clinical Practice

(Abbate-Vaughn, 2008)

experiences with culturally and linguistically diverse students are integrated with pre-service coursework. Practica should be designed in conjunction with school partners so that pre-service teachers have the opportunity to interact with mentor teachers who are knowledgeable about ELLs. It is imperative that classroom practice experiences be carefully structured so they work to break down, rather than to reinforce, any negative stereotypes that candidates may bring to the table. Candidates should have opportunities to see veteran teachers model successful techniques in classrooms where ELLs are succeeding in learning, and are full participants in their learning communities. Finally, a well designed field experience should be the first step toward a teacher learning to be an effective member of a professional community.

Standard 4: Diversity

NCATE's diversity standard calls for attention to diversity to be built into the design, implementation, and evaluation of the preparation program, and for programs to demonstrate diversity among faculty and candidates. The standard explicitly requires that candidates work with English language learners during clinical practice. It is important furthermore that candidates understand that there is diversity *among* ELLs. English language learners are diverse along the dimensions of race, class, and cultural background. Teachers must also be prepared to teach students from diverse educational backgrounds. This is particularly true of immigrant ELLs. The standards, teaching practices and expectations of schooling that students have previously been exposed to may be quite different in kind from those found in American schools. Learning in school may be particularly challenging for those students whose formal education has been interrupted due to natural disaster, war, or other violent upheaval in their home country. Such students must not only adjust to new cultural conventions regarding teaching and learning, but may have significant traumatic experiences in their past to deal with.

Through the requirement of diversity among faculty and teacher candidates, this NCATE standard implies linguistic diversity. Linguistic diversity should ideally also be found among the school personnel the candidate works with during practicum experiences.

Standard 5: Faculty Qualifications, Performance, and Development & Standard 6: Unit Governance and Resources

Universities may approach the problem of educating candidates about English language learners in one of three ways. They may offer stand-alone classes focusing on the needs of ELLs, they may offer an "infused" curriculum in which each faculty member incorporates materials of relevance to ELLs into courses across the curriculum—or they may combine these approaches. In conjunction with either of these methods, faculty may co-teach classes with bilingual education or ESL specialists. The choice of approach is related both to faculty preparedness to teach infused courses (Standard 5) and also to the program's commitment of resources, personnel, and facilities (Standard 6). Both options have advantages. Stand-alone courses are easier to implement in that they do not require all faculty to have training in issues of relevance to English language learners; furthermore, several states mandate stand-alone courses (see Volume III of this report for details).

An advantage of infused courses is that candidates constantly attend to the needs of ELLs throughout their coursework. Such courses, however, require that all faculty are adequately prepared in ELL education. Research on faculty preparation is scant and somewhat preliminary. For the most part, this research focuses on the design and implementation of programs at individual universities. Despite the fact that no large-scale assessments are available, the research presented by Costa, McPhail, Smith and Brisk (2005), Meskill (2005), Brisk (2008), and Nevárez-La Torre, Sanford-DeShields, Soundy, Leonard and Woysner (2008) provides a promising start in this field. These resources describe professional development activities intended to prepare faculty to include attention to ELLs in their courses.

Professional Development for Practicing Teachers

Staff development at the state and local levels includes the education of teaching and other educational staff as a part of the ongoing professional development of practitioners. Perhaps the most widely-known standards in staff development have been produced by the National Staff Development Council (NSDC, 2001).

NSDC standards support long-term and continuous staff development and represent a departure from decontextualized workshops presented by external experts. They include a commitment to intellectually rigorous learning that enhances “the knowledge, skills, attitudes, and beliefs necessary to create high levels of learning for all students” (NSDC, 2001, p. 2). The standards include a strong focus on the critical analysis and interpretation of research and data by educators themselves, rather than a reliance on outside authorities. Central to the delivery of standards-based staff development is practitioners’ participation in collaborative action research. The NSDC standards are intended for teachers, principals, district and state level administrators, and paraprofessionals.

The standards are organized according to three categories – Context, Process and Content.

Context Standards	Process Standards	Content Standards
<i>Learning Communities</i> <i>Leadership</i> <i>Resources</i>	<i>Data-driven</i> <i>Evaluation</i> <i>Research-based</i> <i>Design</i> <i>Learning</i> <i>Collaboration</i>	<i>Equity</i> <i>Quality Teaching</i> <i>Family Involvement</i>

The NSDC standards for staff development (NSDC, 2001).

This section will address each of the NSDC standards and its relevance to ELL education.

Context Standards

Learning Communities

Staff development that improves the learning of all students organizes adults into learning communities whose goals are aligned with those of the school and district.

The NSDC standards define learning communities as “teams that meet on a regular basis ... for the purposes of learning, joint lesson planning, and problem solving” (NSDC, 2001 p. 8). Learning communities are recognized in the professional development literature as a powerful tool for improving the quality of teaching (Hord, 1997; Kruse, Louis, & Bryk, 1994; Newmann & Wehlage, 1995).

Learning communities of mainstream teachers can incorporate the needs of ELLs by inviting into their communities individuals with expertise in ELL education. Such individuals might include

ESOL or bilingual certified teachers, other bilingual educators with cultural background knowledge, district or state level personnel, university faculty, or outside researchers. Learning communities comprised of senior personnel such as principals and district-level administrators, and of university faculty learning to infuse their courses with an awareness of issues related to ELLs, offer benefits to both sets of stakeholders. For examples of learning communities made up of content area teachers collaborating with ELL experts, see Buck, Mast, Ehlers & Franklin (2005), Clair (1998) and Warren & Rosebery (1995).

NSDC Context Standards Applied to ELLs

- Professional learning communities for content area teachers should include **ELL experts**
- Educational leaders must **model responsibility** for ELL learning
- Schools and districts must assign **adequate resources** so teachers can learn how to **interpret data** and **access research** of relevance to ELLs

Leadership

Staff development that improves the learning of all students requires skillful school and district leaders who guide continuous instructional improvement.

It is not only teachers who must move away from the attitude that “it’s not my job” when working with ELLs. Successful professional development requires the vested participation of educational leaders at the state, district, and school levels. Department chairs exert valuable influence in the culture and practices of teachers. Principals, district administrators, SEA administrators, and policymakers and decision makers at all levels must also become aware of their responsibilities in providing quality teaching and learning for language minority students. (See Reyes (2006) and Suttmilller & González (2006) for background on the professional development of principals and other educational leaders.)

Resources

Staff development that improves the learning of all students requires resources to support adult learning and collaboration.

District-level resources include (i) human capital (including the relevant skills and knowledge within the district), (ii) fiscal resources, including time, and (iii) physical capital, including meeting space, access to technology, and access to classroom materials (McLaughlin et al., 2002). A commitment of resources to human capital might include supporting specialists to help teachers understand and interpret data related to ELLs, or arranging for conversations between experts in assessment and standards and classroom teachers. Districts must also allocate paid staff-hours to professional development to ensure success. Finally, district resources must account for providing space and computer access, and for allowing teachers access to research and other training materials of relevance to ELLs.

Process Standards

Data-driven

Staff development that improves the learning of all students uses disaggregated student data to determine adult learning priorities, monitor progress, and help sustain continuous improvement.

Both the planners of staff development and teachers in professional learning communities can benefit from data-driven staff development. Data of relevance include the numbers of ELLs in the classroom, school, or district. Also important are assessment data that address the performance of ELLs relative to the general population of students, to expected standards, and across time. Performance data can come from standardized tests, district-wide tests, student portfolios, AP enrollment, and high school graduation rates. In order that teachers can engage fully with these data, they need training on the sorts of data available to them and how to interpret it. They should know how students are classified as ELL or LEP within their system, and should understand the nuances of any assessments, including assessment accommodations. Professional learning communities should be empowered to collect, analyze, and interpret data as professional development unfolds, and to adjust their trajectory on the basis the results.



Strong Leadership Makes Space for Teacher Learning

At “Cedar Park Elementary,” located one mile from the U.S.–Mexico border, 51% of the students are ELLs. Cedar Park’s principal instituted an innovated scheduling plan so that teachers had time for extended meetings of their professional learning communities.

What did the educators do? Cedar Park’s principal, “Ms. Thomas,” has fostered a number of initiatives in her school to better meet the needs of the students. In order to make sure that classroom teachers had time to engage in professional learning activities, Ms. Thomas arranged the school schedule so that all of the children in the same grade level took their non-core classes, including, art, music, and physical education, at the same time. This left teachers free to meet for three-hour sessions every two weeks.

Ms. Thomas attends all of the teachers’ professional learning meetings. In the meetings, teachers discuss instructional strategies and ways to better align their curricula. They also pay attention to assessment beyond mandated standardized testing. Cedar Park’s assessment strategies are informed by Ms. Thomas’ assessment philosophy:

in order for assessment to be informative in evaluating student learning and improving curricular content, it must assess what students are taught, be relevant to students’ cultural and linguistic needs, and provide accurate and reliable data to assure that all students are learning.

Standards: Leadership, Collaboration, Data-driven

(Suttmiller & González, 2006)

Evaluation

Staff development that improves the learning of all students uses multiple sources of information to guide improvement and demonstrate its impact.

Evaluation of professional development programs serves two compelling purposes. Effective evaluation demonstrates to the policy or decision makers who are responsible for providing funding that professional development is working and should be continued. It also highlights successful program components which should be continued or replicated. There is a wealth of literature on the evaluation of professional development, much of which can be applied directly to ELL education. A particularly useful resource is Guskey (2000), which pinpoints five levels of evaluation of professional development: participants' reactions; participants' learning; organizational support and change; participants' use of new knowledge and skills; and student learning outcomes. For ELLs, the potential methods for collecting data on student learning outcomes are rich and varied, and connect directly with assessment methods.⁶

Research-based

Staff development that improves the learning of all students prepares educators to apply research to decision making.

As well as being data-driven, effective staff development must also be research-based. A strong foundation in the research on second language acquisition is essential for those who plan and implement staff development for content area teachers. Research is also an effective tool for teachers, and it can provide direction and impetus for professional learning communities to set effective agendas. Mainstream teachers, however, are far better served by engaging with research which is narrowly targeted toward their specialty than they are in attempting to replicate the knowledge of second language acquisition experts. An overemphasis on second language acquisition or on linguistics may in fact be counterproductive for mainstream teachers (Télez & Waxman, 2005). Rather, teachers should become acquainted with research that addresses learning the specific language of their discipline. There are, naturally, broad concepts which are of relevance to all teachers, such as an understanding that second language

NSDC Process Standards Applied to ELLs

- Staff development should be driven by accurate and relevant **data about ELLs**
- Evaluation of staff development should include data on **ELL outcomes**
- The research base of staff development should address **language skills for the content areas**
- Programs must be designed **specifically for each content area**
- Teachers' knowledge base should include the **learning styles of ELLs**
- Teachers should learn how to collaborate **across cultural boundaries**

⁶ For more on assessment, see p.39 below.

acquisition differs from first language acquisition; an understanding of the crucial differences between informal and academic English; and an understanding that all children bring “funds of knowledge” (Moll, Amanti, Neff & González, 2005) to the classroom. These concepts, however, will be more concrete and relevant to content area teachers if they are contextualized within each teacher’s area of expertise. (See particularly Faltis & Coulter (2008) and Richard-Amato & Snow (1992) for research on practice across the four core subjects, as well as the resources provided in the next chapter.)

Design

Staff development that improves the learning of all students uses learning strategies appropriate to the intended goal.

Perhaps the most important lesson for designers of professional development programs to internalize is that general education teachers are not ESOL teachers. Professional development designers who have expertise and background in ESOL or bilingual education need to ensure that they tailor staff development programs for learners who are experts in science, or language arts, or other spheres of general education. In a study of 1,027 science and mathematics teachers who participated in professional development activities, Garet, Porter, Desimone, Birman, & Yoon (2001) found that teachers who participated in professional development activities with a greater focus on pedagogical content skills were significantly more likely to feel that program had a beneficial effect on their knowledge and skills than did those who focused on general pedagogical knowledge. Teachers who felt that they had gained an increase in knowledge and skills, moreover, were also more likely to transfer this knowledge into changes in teaching practice. Similar results were found by Cohen & Hill (1998) and Kennedy (1998).

A second important design characteristic is coherence. Professional development which is aligned with the goals, standards, and assessments that teachers are already working with is more likely to increase teachers’ skills and knowledge, and more likely to result in change in teaching practice, than is professional development which is at odds with these aims (Garet, Porter, Desimone, Birman & Yoon, 2001). As well as targeting teachers’ knowledge of their content areas, then, effective professional development for English language learners must be aligned with disciplinary standards. A list of standards of professional associations can be found in Chapter 3, below.

Learning

Staff development that improves the learning of all students applies knowledge about human learning and change.

Research on the preparedness of mainstream teachers indicates that they hold a variety of misconceptions about how ELLs learn (see Chapter 1 for discussion). Effective professional development must address these misconceptions and provide all teachers with accurate and research-based knowledge about ways in which the learning of ELLs is both similar to and different from monolingual learners.

A popular myth holds that “good teaching” in general will enable ELLs to learn content and language. Studies by de Jong and Harper (de Jong & Harper, 2005; de Jong & Harper, 2008; Harper & de Jong, 2004) argue that this perspective renders ELLs and their specific learning needs invisible, and that such an approach does nothing to challenge misconceptions that teachers hold about second language acquisition. They propose three key aspects of ELL’s learning preferences that should be included in teachers’ knowledge bases. First, an understanding that second language acquisition is not identical to first language acquisition, and that second language acquisition does not emerge from immersion alone. Second, a knowledge that cultural differences may lead to different attitudes toward appropriate classroom behaviors, including cultural difference in norms of speaking to authority figures, eye contact norms, or self-promotion. Finally, they argue that teachers should have a sense of ELL diversity, along domains such as age, L1 literacy, and the complexity of students’ attitudes toward embracing a new language and culture.

Professional development standards (e.g. NSDC, 2001; Eisenhower Mathematics and Science Clearinghouse and Consortia Network, 2005) tend to maintain that teachers’ learning in professional development settings ought to mirror students’ learning, using the premise that teachers will teach material in ways similar to those in which they themselves were taught it. This approach is problematic when it comes to learning to teach ELLs, and is particularly problematic when the demographics of the teacher population is not reflective of the diversity of students. Effective professional development for ELLs must deliver content relevant to the learning strategies of ELLs, but the mode of delivery must be tailored to the learning strategies of content area teachers. Teachers can, however, role-play or simulate teaching methods that match ELLs’ learning styles.

Collaboration

Staff development that improves the learning of all students provides educators with the knowledge and skills to collaborate.

Recognizing that effective professional learning communities are not built overnight, the NSDC standards suggest that professional development should include instruction in “appropriate knowledge and skills regarding group processes to ensure various teams, committees, and departments within schools achieve their goals and provide satisfying and rewarding experiences for all participants” (NSDC, 2001). For teachers of ELLs, this instruction should also be attentive to the multicultural aspects of the groups these teachers will be working in. In addition, the very act of participating in a professional learning community can be a powerful tool for learning collaboration techniques. Clair (1998) comments that teachers in a study group became more adept at collaborative learning as they spent more time with colleagues. Initial forays into collaboration should ideally begin at the pre-service level during the clinical practice component of the training.

Content Standards

Equity

Staff development that improves the learning of all students prepares educators to understand and appreciate all students, create safe, orderly and supportive learning environments, and hold high expectations for their academic achievement.

The question of equity has been addressed somewhat above under NCATE’s “Standard 4: Diversity.” It is expected that as teachers progress through their professional careers, and have greater experience with and exposure to the diversity of cultural backgrounds in their classrooms, they will sharpen their skills in working with students from varied backgrounds. Research by de Jong and Harper (2008) suggests that effective teachers of ELLs should understand issues of bilingualism and biculturalism, the process of acculturation and bicultural identity development, the sociopolitical context of teaching ELLs, and, as stressed above, the diversity among English language learners.

Skilled teachers have strategies which enable them to address prejudices among their students. It is important that native English speaking and ELL students learn to work collaboratively across cultural differences. ELL students may encounter prejudicial attitudes which hinder their learning if the teacher does not facilitate successful group work in the classroom—or worse, they may feel that school is not a safe environment. A broad review of studies which address prejudice reduction and antiracist teaching strategies can be found in Banks (2004).

NSDC Content Standards Applied to ELLs

- Teachers should understand the **cultural backgrounds** of their students
- Teachers should acquire **pedagogical content knowledge**, including knowledge of accommodations and assessments, which addresses ELLs
- Teachers should know how to involve their students’ **families and communities** in education

Quality Teaching

Staff development that improves the learning of all students deepens educators' content knowledge, provides them with research-based instructional strategies to assist students in meeting rigorous academic standards, and prepares them to use various types of classroom assessments appropriately.

Instructional strategies are addressed in depth in Chapter 3, below. As teachers move along the continuum of professional development, their pedagogical content knowledge should become broader and deeper, and so the kinds of instructional strategies presented in staff development programs should take into account the prior expertise of the staff involved.

Assessment is crucial not only because it provides the background data which drives professional development, but also because high-stakes assessment is becoming more and more prevalent across the curriculum. English language learners have typically performed worse than their native-English-speaking peers (see Chapter 1 for more information). Assessment instruments can be problematic in that in some cases the linguistic complexity of test questions means that rather than providing feedback on how well a student has learned academic content, the question instead is a linguistic barrier to students of low English proficiency. For more on assessment, including methods to level the assessment playing field, see Chapter 3.



Funds of Knowledge and Family Visits

“though teachers are trained to build on prior knowledge, they are given no guidelines for how to go about eliciting this knowledge”

Cathy Amanti, teacher-researcher

In Tucson, AZ, educators began to understand more about the knowledge that their students bring from home by participating in a very different kind of home visit.

What did the educators do? Teacher-researchers collaborated in ethnographic investigations of their students’ households. A collaborative group of four teachers and three researchers wanted to learn more about the background funds of knowledge that students from working class immigrant families bring to the classroom. In a typical home visit, teachers aim to educate parents. In this project, the aim was for the teachers to learn from the families.

Teachers visited families with an open-ended questionnaire and a tape-recorder, and asked questions about topics including family history, the parents’ work experiences, and their beliefs about raising children. They wrote field note journals and met with other teachers in the project to discuss what they were learning about their students’ families.

“As I read [my early journal entries] I realized that I had discussed my students in terms of low academics, home-life problems, alienation, and socioeconomic status, and that I was oriented toward a deficit model. I no longer see the families I visited that way. Since I am looking for resources, I am finding resources, and I recognize the members of the families for who they are and for their talents and unique personalities.”

Martha Floyd Tenery, teacher-researcher

Standards: Learning Communities, Research, Family Involvement

(Moll, Amanti, Neff & González, 2005; González et al., 2005)

Family Involvement

Staff development that improves the learning of all students provides educators with knowledge and skills to involve families and other stakeholders appropriately.

Involving families and the wider community in the educational process has a dual benefit for English language learners. First, it brings into the school community the parents of children who otherwise might be left out due to linguistic and cultural barriers. Second, it allows for teachers and students to integrate cultural and family knowledge directly into the curriculum.

High quality family involvement requires that educational leaders build structures which respond to the needs of immigrant and non-English speaking families, and that teachers know how to access these resources. Districts must make available resources such as translation and interpretation services, and teachers must be aware of and know how to use them.

Professional development for teachers that encompasses cultural knowledge enables the teacher to successfully build partnerships with parents. By understanding cultural norms regarding the respective roles of teachers and parents, teachers can work to involve parents who may feel, for example, that to approach a teacher about their child's performance is an inappropriate challenge to the authority of the teacher (see Atunéz (2000) for an outline of barriers to involvement for Hispanic parents with limited English proficiency and strategies teachers can use to overcome them).

Just as teachers may hold misconceptions regarding language acquisition, so may parents, and effective family involvement can help to reassure parents and dispel mistaken beliefs. Parents may believe, for instance, that speaking the native language at home will hamper their children's attempts to learn English. In fact, exploring the material learned in school in the home environment, in any language, allows children to consolidate the learning they receive in the school. An appreciation of literacy is especially valuable when it emerges from the home environment, and literacy skills learned in the home language have the potential to transfer into the second language and in fact may enhance learning literacy in English.

Teachers can also use participatory strategies to weave cultural and family knowledge into the curriculum in ways that are directly relevant to students' home and school life. Berriz (2002) explores a number of examples, including exercises that center around interviewing family and community members, as well as activities in which families are invited into the classroom to view student work. NSDC (2001) describes a school in which parents were frustrated with score-based report cards because they felt that they were not receiving adequate reports of higher-level thinking skills. In response, the school initiated staff development centered on portfolio assessments. When these alternative assessments were implemented, parents had the opportunity to come into the school and view students' portfolio work.

Summary

This section of the report has considered the structure and design of teacher education and professional development programs for mainstream teachers of ELLs. It incorporates guidelines for enhancing both teacher education in postsecondary settings as well as professional development for practicing teachers. These guidelines are aligned with existing standards.

Guidelines for providing teacher education which addresses the needs of ELLs have been presented using the framework of the NCATE standards. They call for attention to pedagogical content knowledge which recognizes ELLs' learning styles; program evaluation which measures teachers' knowledge and skills in working with ELLs; clinical practice experiences which include ELLs; fostering teacher candidates' understanding of the diversity among ELLs; and a sufficient commitment of financial and faculty resources to ensure that these components are feasible.

For practicing teachers, we present a set of guidelines aligned with the NSDC standards for professional development. The context for continuing staff development should be based in professional learning communities which include ELL experts, nurtured by educational leaders who model responsibility for ELLs, and supported by resources at the school, district, and state levels. The professional development process should be driven by accurate data concerning the numbers and performance of ELLs and by evaluation which takes this data into account. Programs should incorporate research which focuses on the language and communication skills required in the content areas, and should be designed with mainstream teachers in mind. An understanding of the learning styles of ELLs is key, as is professional development which fosters collaboration across cultural boundaries. Finally, the content of staff development programs should include strategies for involving the families of ELLs, for ensuring equity, and should have a strong focus on instructional strategies which result in ELLs meeting rigorous academic standards.

The next section of this report explores the question of instructional strategies and appropriate assessment and accommodations in greater depth. Included are four short stand-alone pieces that address specific instructional strategies for English language arts, social studies, science, and mathematics.

3: Guide for Mainstream Teachers of English Language Learners

This section of the report provides an overview of the key concepts related to educating ELLs, with the explicit intention of providing awareness and practical suggestions for teachers who have little or no experience with this population. Given the number of myths about language learning that exist, it is necessary that teachers develop a basic understanding of how language is learned and accordingly, the research-based practices that support that learning. The following topics are discussed in the following order:

1. language acquisition and communicative competence (the interplay of first and second acquisition, the second language acquisition process),
2. curriculum and instruction (coordinating standards, access to the subject matter content, differentiation, academic vocabulary and oral language, reading, writing, and technology),
3. content assessment (accommodations),
4. culture and education, and,
5. school and home communities.

Each category includes teacher performance criteria, which were compiled from recommendations from professional associations and refer to the tasks the teacher should be able to complete as a result of acquiring the accompanying knowledge. Guidelines for teachers in the subject areas of language arts, social studies, science, and math will follow the general guide.

Teacher knowledge can be described in terms of the acquisition of information and its application. For the purposes of this section these will be treated together. This expertise in teaching ELLs ranges on a continuum from novice to advanced, and includes university pre-service and in-service teachers seeking degrees and certificates as well as school-based in-service teachers (i.e., staff development). Drawing on Aida Walqui's (2001) definition of expertise that encompasses vision, motivation, knowledge, practice, context, and reflection, this section will focus on knowledge and practice.

Language Acquisition and Communicative Competence

The Interplay of First and Second Language Acquisition

Teacher Performance Criterion: *Teachers will be able to demonstrate the effective use of first language in the classroom.*

Acquiring a second language (L2) is fundamentally different than acquiring a first, since greater L2 immersion does not necessarily lead to increased acquisition. As a result, students should be able to use their first language in class to help aid comprehension (Verplaetse & Migliacci, 2008; Crawford & Krashen, 2007). For example, ELLs from the same language background might be grouped together to improve conceptual understanding. Because classes are conducted in

English, ELLs need to move from the native language to English as soon as their developmental abilities allow. In classes where there are single students from a specific language background, teachers can use wordless books (Cassady, 1998) or texts in those languages if available.

ELLs, unlike their native-speaking peers, must acquire a second language in addition to learning content knowledge. However, according to Cummins (1994) and Collier (1994), concepts and skills learned in one's first language will transfer to one's second language. The words to describe them need only be learned. Similarly, literacy skills in one's native language help with literacy in a second language (Verplaetse & Migliacci, 2008; Crawford & Krashen, 2007).

Second Language Acquisition Process

Teacher Performance Criterion: *Teachers will be able to recognize the signs of progressing second language acquisition.*

Many factors affect the second language acquisition process, including socio-economic background, motivation, personality, and willingness to make mistakes (Lightbown & Spada, 2006).

Socio-economic status (SES) affects a student's basic needs, such as shelter, nutrition, and learning materials at home. Students of low SES tend to be especially prevalent among ELLs; accordingly, teachers should be sensitive to all the factors that might be affecting their students' performance.

During the process, teachers can expect students to speak and write in ungrammatical ways, often referred to as *interlanguage*, that still communicate a message (Telléz & Waxman, 2005). Interlanguage has some traits of the student's native language, some traits of English, and some general errors common to many second language learners (Lightbown & Spada, 2006). For example, a student might say, "How much the beaker hold?" instead of "How much does the beaker hold?" Above all, teachers should encourage communicative competence, which focuses on the goal of communication and production rather than the correction of every mistake. From the outset, ELLs experience corrections or ridicule which, to different degrees, discourages participation in English and inhibits their progress. Also, the skill of listening often develops before the productive skill of speaking, so students may be silent for an extended period (Díaz-Rico, 2008; Crawford & Krashen, 2007).

In addition, invented spelling, which refers to spelling phonetically (i.e., spelling *teacher* "techr"), is common in developing a language. In fact, it demonstrates that students are learning certain rules and are closer to approaching actual spelling.

Language Acquisition and Communicative Competence

- Teachers will be able to demonstrate the effective use of first language in the classroom
- Teachers will be able to recognize the signs of progressing second language acquisition.

In some cases, although students may seem to speak English well, they may be lacking the academic language to perform well in school. As noted often in the literature, there is a difference between conversational language and academic language. For example, asking about a friend's family requires different language skills than discussing global warming.

Curriculum and Instruction

Coordinating Standards through Teacher Collaboration

Teacher Performance Criterion: *Through professional collaboration, teachers will be able to coordinate their content standards with English language standards to develop appropriate learning objectives.*

By working with ESOL and other staff members, teachers should be able to coordinate content standards with English language standards to develop relevant learning objectives. For example, a content objective for science might be: "Students will be able to identify a variety of adaptations among animals." The language objective might be: "Students will be able to write simple sentences describing animals."

The ESOL or bilingual education specialists should provide key information regarding language to the content teachers and other participants of professional learning communities. For example,

Standards in ESOL and the disciplines can be found at:

Teachers of English to Speakers of Other Languages (2006). *PreK-12 English Language Proficiency Standards*.

http://www.tesol.org/s_tesol/sec_document.asp?CID=1186&DID=5349

National Council of Teachers of English. (1996). *Guidelines for the preparation of teachers of English language arts*. Urbana, IL: Author.

<http://www.ncte.org/groups/cee/links/126867.htm>

National Council for the Social Studies. (2000). *National standards for social studies teachers*. Silver Spring, MD: Author.

<http://www.socialstudies.org/teacherstandards/>

National Research Council. (1996). *National science education standards*. Washington, DC: National Academy Press.

<http://www.nap.edu/readingroom/books/nse/>

National Council of Teachers of Mathematics. (2000). *Principles and standards for school mathematics*. Reston, VA: Author.

<http://standards.nctm.org/>

cognates, which are words that have a common origin, can often be helpful to students who are learning English. Often, these words will have a common meaning, spelling, and pronunciation, which can be helpful for ELLs. In fact, some multisyllabic words in English are cognates of Greek and Latin, so speakers of Romance languages may recognize their forms and meanings (Walqui & DeFazio, 2003). For example, Spanish-speaking students who know *comunidad* is the

same concept as *community*, are quickly able to augment their vocabularies. Approximately “30-40% of all words in English have a related word in Spanish.” (Colorín Colorado, 2007). However, students who are learning to read in English first and not Spanish may not notice the similarities in cognates because of the orthographic differences between the words (Hiebert & Lubliner, forthcoming.) Also, sometimes there are words that sound similar between languages but are actually false cognates like Spanish *embarazada*, which means *pregnant*, not *embarrassed*.

Access to the Subject Matter Content

Teacher Performance Criterion: *Teachers will be able to routinely use effective, research-based methods to teach ELLs while contextualizing the content in meaningful ways.*

Since understanding directions is often difficult for ELLs, teachers can institute routines that enable students to experience greater success and academic independence. In addition, by modeling students’ tasks, teachers contribute to improved comprehension and performance. Research supports teachers using graphic organizers (i.e., T-charts, brainstorming webs) when appropriate or visual representation in addition to verbal explanations to enhance the material (Verplaetse & Migliacci, 2008). Graphic organizers have three functions: generative as students fill in the organizer, representative, as they scaffold content understanding, and evaluative, as teachers are able to assess students’ understanding (Díaz-Rico, 2008). Real objects or events should be incorporated into the lesson to provide a concrete context for words and ideas. In addition, teachers should vary the style and medium of communication whenever possible. Spoken directions should also be written, for example, and gestures should accompany oral language.

One of the most widely-accepted and used models that incorporates scaffolds for ELLs is called the Sheltered Instruction Observation Protocol (SIOP) (Echevarria & Short, 1999). SIOP relies on careful lesson preparation that starts with building background knowledge and providing comprehensible input, while also incorporating strategies, interaction, practice and application, and assessment (Echevarria & Short, 1999). If the students do not have experience or background knowledge, the teacher can create an activity that provides that experience. In other words, the teacher should scaffold the material for ELLs by drawing on background knowledge or creating a shared experience for the students that expresses an enduring understanding of the lesson (Echevarria & Short, 1999). The purpose of this scaffolded approach is to take the students from preparation to engagement with rich activities, and finally to extension, or further applications. Rather than over-simplifying the material, teachers should focus on amplifying the lesson to provide for richer learning experiences so students are working with adapted text but still learning grade level content (Walqui & DeFazio, 2003; see page 37 for examples).

Curriculum and Instruction

- Through professional collaboration, teachers will be able to coordinate their content standards with English language standards to develop appropriate learning objectives.
- Teachers will be able to routinely use effective, research-based methods to teach ELLs while contextualizing the content in meaningful ways.
- Teachers will be able to increase student engagement by identifying language challenges in a text, differentiating material, and grouping students in purposeful and meaningful ways.
- Teachers will be able to explicitly teach academic vocabulary in context and provide ample opportunity for students to use these words, leading to mastery.

Differentiation

Teacher Performance Criterion: *Teachers will be able to increase student engagement by identifying language challenges in a text, differentiating material, and grouping students in purposeful and meaningful ways.*

Regardless of whether the class is majority mainstream students or ELLs, there will inevitably be a variety of language abilities represented. Therefore, the teacher should be able to differentiate content instruction based on language proficiency. To use the previous example from a science class, a teacher could vary the same content on animal adaptation through texts written at different reading levels. Some publishers such as National Geographic provide units with coordinated books at different levels. Alternatively, a teacher could adapt sentences and vocabulary to the extent necessary while still being authentic to the content. Teachers should also illustrate the differences representative of writing in their subject area. For instance, writing a lab report in science requires a different format and style than a narrative essay in language arts.

Pair work is a very effective organization strategy that enables peers to assist each other (Gersten et al., 2007). For example, instead of a teacher directing students to take turns reading aloud as a class, each student has many more opportunities to practice reading when paired with a partner. In addition to dramatically increasing the practice time, paired reading improves motivation and accountability (Calderón, 2007). According to some research, students of varied language proficiencies can be grouped together (Gersten et

al., 2007). According to other researchers, students should be paired carefully so that high and low level English students are not paired together. Rather, teachers should pair high level students with medium level students or medium level students with low level students (Kinsella, 2008). In addition to collaborating with classmates, students should have the opportunity for independent practice, processing, and reflection on their own learning.

Academic Vocabulary and Oral Language

Teacher Performance Criterion: *Teachers will be able to explicitly teach academic vocabulary in context and provide ample opportunity for students to use these words, leading to mastery.*

Gersten et al. (2007) recommend that teachers develop students' academic language to promote their success in literacy and English language acquisition. "Academic language refers to the decontextualized, cognitively challenging language used not only in school, but also in business, politics, science, and journalism, and so forth. In the classroom, it means the ability to understand story problems, write book reports, and read complex ... texts" (Crawford & Krashen, 2007, p. 17). In writing, academic language is necessary to be able to construct topic sentences, use transitions effectively, and edit (Gersten et al, 2007). Furthermore, academic language acquisition involves more than just the understanding of content area vocabulary. It includes cognitively challenging skills such as explaining, comparing, contrasting, classifying, reporting, synthesizing, evaluating, and inferring. Academic language tasks occur in a context different from students' familial context, especially as grade level increases. According to Verplaetse and Migliacci, "Academic language as compared to social, interpersonal language treats the speaker and receiver as if they are distanced from one another; it has been called the *language of strangers* ... It assumes a lack of shared history, it limits opportunities for negotiation of meaning, and it uses words rather than visuals to convey most of its meaning" (2008, p. 128). To further complicate matters, new ideas and concepts are presented to the students through the decontextualized language.

One way to help students access academic vocabulary is to teach strategies such as guessing a word's meaning from the context or using word prefixes, roots, and suffixes to help arrive at a word's meaning (Nation & Waring, 1997).

To assist students in expressing themselves in an academic context, the teachers can provide sentence starters that incorporate academic vocabulary (For an example of sentence starters in a science laboratory, report, see the section on science, pp. 48-50). The sentence starters should be used for writing and also for oral language, to provide multiple opportunities for reinforcing the new vocabulary (Kinsella, 2008). In addition, teachers should model grammatical structures that allow students to complete the sentence starters appropriately. If the teachers have knowledge of grammar, they can explain the form required. For example, in a sentence that starts, "To combat global warming, the President should ...," a teacher can point out that the verb the students should use needs to be in the base or infinitive form without "to". The students will benefit from instruction in the following academic language tasks: expressing an opinion, asking for clarification, soliciting a response, reporting a group's or partner's idea, disagreeing, affirming, predicting, paraphrasing, acknowledging ideas, offering a suggestion, or holding the floor (Kinsella, 2008). Students' ability to acquire and use academic vocabulary will directly affect their success in expressing themselves and accessing and analyzing text. Other options include creating a "shared history" by incorporating visuals, real objects, gestures, and occasions for students to clarify meaning (Verplaetse & Migliacci, 2008).

In terms of accessing teachers' spoken academic language, the research is divided. Some researchers support teachers making content comprehensible by speaking at a slower pace or

with exaggerated enunciation (Reyes & Vallone, 2008). In addition, they suggest that teachers adjust their spoken language by using simpler vocabulary words or grammatically uncomplicated sentences that match or are slightly higher than students' ability to comprehend oral language (Reyes & Vallone, 2008). Other teacher educators recommend that teachers should maintain an authentic pace and tone, but increase the number of pauses in their spoken language to allow time for comprehension (Verplaetse & Migliacci, 2008). At the same time, other researchers believe that simplifying or otherwise adapting language provides inadequate input for ELLs (Walqui & DeFazio, 2003). Gersten et al. agree, stating, "the problem with regularly giving English learners a diet of familiar reading material is that the academic texts of assessments and most content areas remain unfamiliar" (2007, p. 19).

Teachers should explain to their students that native language(s) can be used in the classroom. For example, students might use their native languages to demonstrate what they know. If the teacher doesn't speak the student's language, often there is another student from the same language background who may be able to translate.

In order for vocabulary instruction to be effective, words should be taught in context with sufficient time for rehearsal. A student is much less likely to remember a list of arbitrary vocabulary words than words that are taken from a chapter that they are reading, writing about and discussing in class. In learning a new word, a student must hear it, say it, be able to use it in a sentence, and notice something about it (i.e., prefix, cognate, part of speech, etc.). Repetition is essential, but always should be contextualized in meaningful ways. Because these words are pulled from the current unit, they will tend to be recycled and repeated naturally.

Most content teachers will be teaching advanced words, which are often concepts that are bolded in a textbook and link directly to the content standard (i.e., *mitosis*). However, ELLs often cannot access the content words because they need explicit instruction in other vocabulary. What further complicates the issue is that the supporting words often have homophones or different meanings across disciplines (Calderón, 2007). For example, consider the meaning of *radical* in math versus history or knowing the word *sign* and being confused when hearing *sine* in math class. Therefore, on a regular basis, teachers across disciplines should explicitly teach content-specific vocabulary as well as academic vocabulary that may be used across disciplines (Calderón, 2007).

Reading

Teacher Performance Criterion: Teachers will be able to demonstrate and monitor effective reading strategies.

Teacher Performance Criterion: Teachers will be able to identify texts that amplify rather than simplify language to facilitate ELLs' reading comprehension.

Teachers should be aware that some ELLs will not be literate in their first language, and thus need to learn the basics of the process of reading in addition to learning the language. The school's reading specialist should work with all students with low literacy, whether they are mainstream students or long-term ELLs, in addition to collaborating with those students' teachers.

For those students who are literate in their first language, the process of learning to read in English will be easier. Much of the skills learned in reading in one's first language can be applied to reading in a second language, depending on the similarity of one's first and second language (Francis, 2006, Book III). However, students who are literate in another language might have learned conventions that vary from English. For example, while English is read left to right and uses an alphabetic system, many world languages do not follow these patterns. Also, while some languages may have words with shared origins (cognates), other languages may not. For example, English and Spanish share many of the same Latin roots, but English and Chinese do not even share the same alphabet. Teachers also need to be aware of the different genres of writing in their disciplines to call their students' attention to those unique features before students read.

Teachers should remember that ELLs can start to read before they are proficient in oral language (Peregoy & Boyle, 2005). In cultivating reading skills, teachers should develop students' decoding skills through phonological awareness and phonics. ESL and reading specialists can assist content teachers in this area. In addition, the Institute of Education Science's What Works Clearinghouse features a review of research on the reading development of ELLs (2007). The highest-rated method is "Instructional Conversations," which are discussions completed in small groups under the guidance of the teacher, who focuses the topics on essential understandings in the reading and personal experiences. The next highest rated method is "Reading Mastery," which includes two programs that are available for either grades K-3 or grades K-6 ("Reading Mastery Plus"). The interactive program focuses on phonemic awareness, teaching students to

Curriculum and Instruction: Literacy and Technology

- Teachers will be able to demonstrate and monitor effective reading strategies.
- Teachers will be able to identify texts that amplify rather than simplify language to facilitate ELLs' reading comprehension.
- Teachers will be able to demonstrate and monitor effective writing strategies.
- Teachers will be able to identify appropriate technology to support learning.

associate sounds and letters, and continues into reading comprehension skills that include vocabulary development.

To avoid frustration, readings in which students are familiar with 90-95% of the vocabulary should be chosen (Calderón, 2007). In addition, independent reading should be “structured and purposeful” if it is to be beneficial (Francis, 2006, Book 1).

Students must learn and implement the strategies of good readers, such as predicting, monitoring for understanding, asking questions during reading, and summarizing after reading (Francis, 2006, Book 1). Students may be expected to demonstrate further literacy skills as defined by the state’s standards. While some states have adopted the World-Class Instructional Design and Assessment (WIDA) Consortium’s English Language Proficiency Standards, many have their own standards of learning (Gottlieb, Cranley, & Oliver, 2007).

In selecting reading materials, teachers should use the following mantra: “amplify not simplify” (Walqui, 2003). Simplifying the text generally refers to shortening sentences and deleting irregular forms, which makes the text less authentic and actually makes clarifying the meaning more difficult. However, a text that amplifies uses more explicit language with redundancies that draws on real, rich discourse. Accordingly, the amplified version will give the ELLs more opportunities to understand the reading passage. It is important for comprehension purposes that tangential information is eliminated. Texts for ELLs should be chosen or altered by teachers so that they limit technical terms and avoid clauses with distracting information, but insure that the material is authentic. Language that has been simplified for the sake of simplification actually hinders ELLs’ progress because there are fewer clues as to the meaning and worse, the text is not representative of how language is actually used.



Amplify, Don’t Simplify

Original Text:

A second-generation American, César Chávez was born on March 31, 1927, on a small farm near Yuma, Arizona. At age 10, he and his family became migrant farm workers after losing their farm in the Great Depression.

Simplified Text:

César Chávez was a second-generation American. He was born on March 31, 1927, on a small farm near Yuma, Arizona. His family lost their farm in the Great Depression. He was 10 years old. They became migrant farm workers.

Amplified Text:

A second-generation American, **whose parents emigrated from Mexico**, César Chávez was born on March 31, 1927, on a small farm near Yuma, Arizona. At age 10, he and his family became migrant farm workers, **moving around to find work**, after losing their farm in the Great Depression (**a time of economic difficulty, 1929-1939**).

Text adapted from National Chavez Center (n.d.).

In addition, Gersten, et al. (2007) recommend that all students, including ELLs, be screened for reading problems and monitored through formative assessments. When the screening results are compiled, an instructor can hold “intensive, small-group reading interventions,” which consist of three to six students and can focus on those with weak reading skills (Gersten, et al., 2007, p. 10).

Writing

Teacher Performance Criterion: *Teachers will be able to demonstrate and monitor effective writing strategies.*

Effective writing requires mastery on both the micro and macro level; while students must think about spelling and choosing precise words, they must also be mindful of overall organization of ideas. If the students have learned how to write in another country, they may organize their ideas differently and/or use a less direct argumentation style than is typical of the American academic context (Fox, 1994). Teachers should also be aware of the differences between the writing styles of different genres. Since learners’ expectations affect their ability to perform in English (Walqui & DeFazio, 2003), teachers should highlight their disciplines’ unique features. “For example, in American history, this might include period rhetoric and referents such as the Constitution; in science it might include the ways that conclusions are stated; and in literature, it might include the routine phrases that indicate a fairy tale is in process” (Walqui & DeFazio, 2003, p.5). For low-literacy students, teachers should begin by focusing on the meaning of the writing, then move on to mechanics as their writing progresses (Barron & DiCerbo, 2006).

The following teaching methods of writing have demonstrated positive effect sizes. They are presented in order from most to least effective.

1. summarization,
 2. collaborative writing,
 3. specific product goals,
 4. word processing,
 5. sentence combining (rather than de-contextualized grammar exercises),
 6. pre-writing, inquiry activities, process writing,
 7. studying models, and,
 8. writing for content area learning
- (Graham & Perin, 2007)

In addition, ELLs must learn explicit strategies on how to write, depending on the type of text (Calderón, 2007). Students should be exposed to the various genres of writing used in schooling such as procedural and historical recounts, reports, persuasive writing and others (Schlepppegrell, 2004). Writing is essential in a reading curriculum because it doubles as an assessment of reading comprehension.

Brisk, Horan, & Macdonald (2008) recommend the rhetorical approach as an effective instructional strategy for developing ELLs’ writing skills, which consists of the following steps:

1. explore a general topic;
 2. define the purpose and audience;
 3. select subtopics;
 4. select the genre and appropriate organizational structure;
 5. select information;
 6. order examples and details,
 7. write a draft;
 8. revise and edit; and,
 9. prepare a final copy
- (Brisk, Horan & Macdonald 2008, p. 18).

Teachers should also provide feedback and explicit grammar instruction to support ELLs' writing, especially at the secondary level (Scarcella, OELA Summit, 2005).

Technology

Teacher Performance Criterion: *Teachers will be able to identify appropriate technology to support learning.*

As with most students, technology can be used effectively with ELLs because it tends to increase engagement. In addition, technology often provides a visual or audio component that expands context while also addressing different learning styles. Finally, incorporating technology also develops computer literacy for ELLs. The classroom should be managed so that ELLs can gain access to technology, especially in group projects with mixed levels or native speakers. For example, by assigning roles to students in groups, ELLs will be much more involved in using the technology in the process of completing the project.

Díaz-Rico (2008) recommends incorporating Internet technologies into the curriculum, either through e-mail listservs, blogs, or online discussion boards where the teacher can ask questions, recommend resources, and evaluate students' online responses as part of their grades. The Internet is an endless source of videos and digital tutorials that can be incorporated into a lesson plan, and videoconferencing with classrooms in other countries can be compelling for ELLs. In addition, students can complete assignments using particular applications, such as Microsoft Word, Excel, Publisher, and Powerpoint or use software that includes a listening and/or speaking component to develop oral language.

Content Assessment

Teacher Performance Criterion: *Teachers will be able to select assessments that test content or design statistically valid and reliable assessments that assess content mastery while students are learning English.*

There are many ways to assess ELLs, but generally a single multiple choice test fails to

Content Assessment

- Teachers will be able to select assessments that test content or design statistically valid and reliable assessments that assess content mastery while students are learning English.

accurately describe a student's mastery of content. In part, this is due to the language involved. In these cases, the assessments do not measure students' knowledge of content. Alternative assessment, such as a portfolio with sample work, allows students to demonstrate content knowledge using materials at the individual student's independent reading level, thus accommodating for the students' English proficiency. Instead of relying on one test format that is only indicative of a small representation of that student's ability, teachers should consider a wider sample of work (Díaz-Rico, 2008; Crawford & Krashen, 2007). In addition, teachers should be aware of cultural and linguistic biases on high-stakes tests. They can review the results to look for evidence of misunderstanding patterns, which can be used to inform instruction.

Accommodations

Accommodations describe alterations in the testing environment that adjust for a certain factor, such as a student being a second language learner. There are many types of accommodations and varied results on their effectiveness. Francis (Book III, 2006) found that the most substantial positive effect was gained when ELLs were provided with English language dictionaries. Notably, bilingual dictionaries were not as helpful, possibly because the instruction was only in English. Simplified English did not demonstrate a significant effect size. The study, however, was limited by its small sample size. Spanish versions of assessments, extra time and dual language tests were not statistically significant. A different perspective is offered by Shohamy (2001), who argues that bilingual tests should be considered applications of democratic principles rather than accommodations, since they represent regular processing for bilingual students.

A study by Abedi, Courtner, Mirocha, Leon & Goldberg (2005) suggested that some accommodation strategies increased ELL performance, although the results varied across grade levels. For instance, in grade 4, the dictionary was more effective while linguistic modification was more helpful for grade 8 ELLs. In keeping with a true accommodation, the strategies did not affect the performance of the general student population.

Since the research is not definitive, teachers should carefully analyze the accommodations that are successful in their classes and use (or recommend) them for high-stakes settings as well. Consistency and comfort level are important—for example, if students are not familiar with using dictionaries, providing them during a test may actually be counterproductive.

Culture and Education

- Teachers will be able to interpret student behavior in light of different cultural beliefs.

Culture and Education

Teacher Performance Criterion: Teachers will be able to interpret student behavior in light of different cultural beliefs.

Cultural differences can appear in a variety of nonverbal modes, such as body language, gestures, facial expressions, eye contact, and distance between speakers, as well as through cultural norms for verbal communication regarding silence,

questions, and discourse styles (Díaz-Rico, 2008). Further, ELLs have a range of prior schooling experiences that range from none to intermittent to world-class.

Often, the academic context ELLs are familiar with is vastly different than that found in the U.S., which is primarily a reflection of American culture. For example, some international students feel that making direct eye contact with a teacher is a demonstration of disrespect, while American teachers might interpret a lack of eye contact as a display of disobedience or guilt. Also, in some countries, students believe the teacher is the ultimate authority and may not feel comfortable asking questions. Teachers should be aware of this possibility and other cultural differences in interaction and be willing to discuss them and adapt accordingly. Díaz-Rico (2008) suggests that before teachers can implement research-based practices in cultural inclusion, they need to reflect on their own cultural values. She extensively describes ways a teacher can accommodate a variety of cultures, whether it be through a recognition of different concepts of time, dress code, school rituals, or other values. In addition, Reyes and Vallone (2008) suggest that teachers complete informal research on unfamiliar cultural practices by interviewing colleagues or bilingual parents and adapt instruction accordingly. Then teachers can use language, examples, artifacts, and community resources that are relevant to the students' cultures to validate their heritage and make the lesson more applicable to their lives.

Finally, a number of ELLs have had their formal schooling interrupted, which presents another challenge for teachers. Students who have missed significant time in school, whether in the U.S. or abroad, may not be aware of the conventions for school behavior. Teachers should remember, however, that these students' lack of knowledge does not equate to a lack of cognitive capacity or intelligence.

School and Home Communities

Teacher Performance Criterion: *Teachers will be able to compile community resources and be aware of translation efforts for school-home communication.*

Teachers should be sensitive to cultural differences in working with ELLs' families. If the parents and/or relatives of an ELL are unable to speak English as well as the child it is difficult for them to help with homework or be involved in the school community. However, parents can participate more actively if notices are sent home in their language, or if the district endorses an organization where they can meet to discuss school issues. (i.e., Hispanic Parent Teacher Association). Teachers can become aware of the resources available at the school and district level for ELLs and their families, such as translation services or hotlines for parents who speak a specific language. In addition, teachers can encourage parents to read to their children in the home language and conduct exploratory activities in the home language to increase cognitive development (Díaz-Rico, 2008). (For more information on this topic, see the section on Family Involvement in the previous chapter, pp. 26-27.)

School and Home Communities

- Teachers will be able to compile community resources and be aware of translation efforts for school-home communication.

Summary

The ideas described above are offered as a practical guide, with no expectation that mainstream teachers will adopt all of them. As noted in several categories, mainstream teachers are advised to collaborate with their ESOL and bilingual education colleagues to provide the best instruction possible for ELLs. The remainder of this section offers practical suggestions organized around the four core subject areas: English language arts, social studies, science, and mathematics.

English Language Arts

The National Council of Teachers of English (NCTE) propose that English language arts teachers be able to:

Illustrate the close relationship between how home language, native language, dialect, and a second language are acquired, developed, and utilized in the classroom and can articulate the importance, therefore, of helping students strengthen their language abilities through the provision of developmentally suitable experiences throughout their schooling (NCTE, 2006, p.24).

Vocabulary

Many classrooms with ELLs increase visual input by creating a Word Wall, or a section of the wall that includes key content vocabulary and/or concepts. Word Walls can be used in different ways; they might be used to demonstrate relationships between word forms (*hero, heroine, heroism, heroic*) or between characters and character traits in a novel.

As is common in other content areas, English Language Arts employs vocabulary that has multiple meanings in various contexts, and even across disciplines, like *article, body, character, novel, play, and problem* (Calderón, 2007). Some cognates to indicate for ELLs in teaching language arts include:

English-Spanish Cognates

irony	ironía	hyperbole	hipérbola	conflict	conflicto
hero	heroe	fable	fibula	anecdote	anécdota
fiction	ficción	comedy	comedia	protagonist	protagonista

Oral Language in Language Arts

In creating a learner-centered classroom, students have more opportunities to practice speaking and listening. As a result, they are more engaged while also being accountable. A popular strategy is literature circles, in which students become “experts” on the target work by assuming different roles. For example, in a group of four, one student might focus on summarizing, another on vocabulary from the chapter, another on theme, and another on notable quotes. Then students interact with each other to fill in the other three focused areas, a type of reciprocal teaching which provides opportunities for ELLs to clarify meaning if necessary.

Reader’s Theater is an effective method to work on students’ oral language development. For example, as part of a unit on folktales, a teacher might select a script that reflects the cultural background of students. Scripts are rife with opportunities to work on reading aloud—for example, stage directions (which consist of emotional adverbs to inform vocal inflection)—and to notice genre-specific features (character roles on the left and absence of quotation marks).

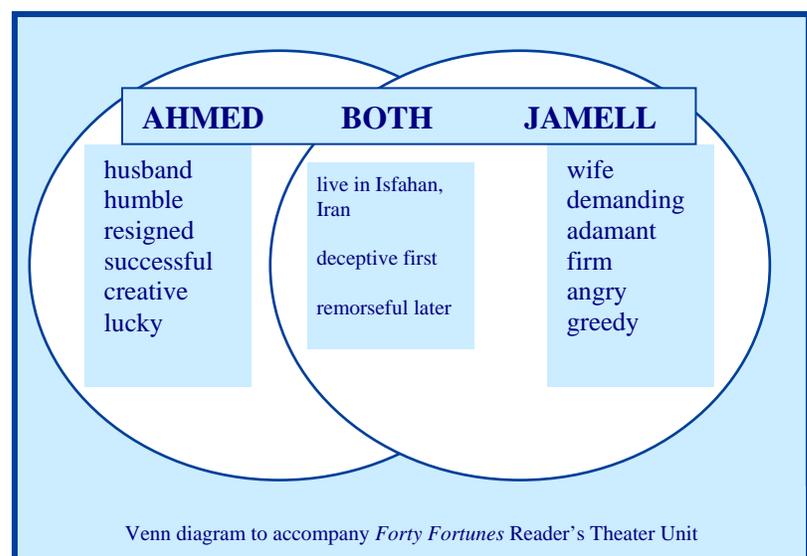
Accessing the Literature

A frequent problem with mainstream resources for ELLs is that they often marginalize the students by not depicting their lives or culture. When teachers use materials that mirror the populations they serve, students can connect with the texts in a meaningful way, and reflect on

their own lives in relation to the reading. Also, teachers can encourage students to choose what they read, since that increases student motivation. However, to insure that the reading level of the text is appropriate, the teacher should coach the students to read one page and if there are more than five words they don't know, they should choose another reading to avoid frustration.

For ELLs to access the novels, poems, or plays being used in class, they need graphic organizers or other types of anticipation guides with key vocabulary or reading strategies before they read the authentic text. A timeline of events in a chapter of a novel, for example, can provide the key points to the students before they wrestle with the actual text. They also should be taught the skills of good readers, such as predicting, re-reading, questioning, and summarizing. Teachers can teach students to use post-it notes in their textbooks, allowing them to react to the text by using a key of symbols for students to use in reacting to the text.

A Venn Diagram can be used to represent characters' similarities and differences or used as a way to brainstorm ideas before writing a compare-contrast essay. Another possibility is a listening guide or concept map with key concepts from the class lecture to be listed in a chart, which can be filled out to the appropriate level of instructional support for the student, and leaves gaps for the students to fill in as they listen.



Writing in Language Arts

Wordless books, which cover a range of topics appropriate for all ages, allow ELL students to integrate writing and reading skills. A student can access the text visually and learn about plot structure, focus on details, or work on predicting, which is a documented trait of good readers. If the students have literacy skills in their home languages, they can write the text to the wordless book, and as they progress add the English translation. Also, many students have difficulty with visualizing a story, so an activity that asks students to draw the main character can help cultivate imagination.

For students who have little or no literacy in either their first or second language, teachers can use the Language Experience Approach, in which students narrate a shared experience (i.e., field trip) they have had while the teacher writes down the story, modeling conventions of writing. For more advanced students, many teachers use journals or online blogs to have students respond to literature, thus integrating reading and writing skills, a constant practice in school.

To Learn More about Teaching Language Arts to ELLs

Web Resources

Aaron Shephard's Web site includes Reader's Theater scripts from a wide range of cultures, including *Forty Fortunes*. <http://www.aaronshep.com/rt/RTE.html#24>

Carroll, P.S. & Hasson, D.J. (2004). Helping ELLs look at stories through literary lenses. *Voices from the Middle*, 11(4). Retrieved May 5, 2008 from http://elearning.ncte.org/section/content/Default.asp?WCI=pgDisplay&WCU=CRSCNT&ENTRY_ID=3F245A2714164520B2F9F65428CEDEC7.

Mary Ellen Dakin's "Hamlet" for English Language Learners: The photo-performance project. <http://www.pbs.org/shakespeare/educators/performance/casestudy1.html>

National Council of Teachers of English (n.d.). *Pathways for teaching and learning with English language learners*. Online professional development course (fee required) available at <http://www.ncte.org/edpolicy/ell/resources/126760.htm>

Nilsen, A.P & Nilsen, D.L.F. (2004). Working under lucky stars: Language lessons for multilingual classrooms. *Voices from the Middle*, 11(4). Retrieved May 5, 2008 from http://elearning.ncte.org/section/content/Default.asp?WCI=pgDisplay&WCU=CRSCNT&ENTRY_ID=29ACA1F9703143A7BDAFB4A841E9E4E8.

Ms. Vogel's Guide to Blogging. <http://www.arlingtoncareercenter.com/msvogel>

A number of Web sites maintain bibliographies of culturally appropriate texts for children and adolescents:

The Barahona Center for the study of books in Spanish for Children and http://csbs.csusm.edu/csbs/www.book_eng.book_home?lang=SP

¡Colorín Colorado!. <http://www.colorincolorado.org/read>

Get Caught Reading's *New List of Recommended Titles Promote Literacy among Nation's Hispanic and Latino Community*. http://www.getcaughtreading.org/pressreleases/dia_pr.htm#reading%20list

The Lexile Framework for Reading rates books according to grade level, and teachers can search a database for books at a certain level. <http://www.lexile.com/EntrancePageHtml.aspx?1>

Print Resource

Cassady, J.K. (1998). Wordless books: No-risk tools for inclusive middle-grade classrooms. *Journal of Adolescent & Adult Literacy*, 41(6) 428-432.

Social Studies

Standards for teachers of social studies are maintained by the National Council for the Social Studies (NCSS, 2000). These standards do not explicitly reference English language learners, but they do charge social studies teachers with a responsibility to diverse learners:

The National Council for the Social Studies (NCSS)

Social studies teachers should possess the knowledge, capabilities, and dispositions to create at the appropriate school levels learning experiences that fit the different approaches to learning of diverse learners (NCSS, 2000, p. 51).

Vocabulary

Since Social Studies involves a lot of reading and writing, teachers should pay particular attention to pre-teaching vocabulary words with ELLs in mind. The selected words should be a combination of content words (the words typically bolded in a textbook) and other “access” words essential to grasping the meaning. For example, Calderón (2007) describes a lesson on trading and bartering skits in which the following vocabulary is pre-taught:

Access Words

coin	tool
societies	dye
ancient	worth
bronze	merchant
statue	doubtfulness

Content Words

barter	diffusion
economy	Lydians
trade	Phoenicians
colony	goods
cultural	

Accessing Content

Teachers can provide a pre-reading handout with key words, events, and dates that are extracted from the textbook. At right is an example timeline on the life of the Mexican American activist and leader of the United Farm Workers, César Chávez.

Often, the Internet is a resource for integrated graphic organizers, multi-media and content. For an example with animated maps, see the multimedia tutorial “European Voyages of Exploration” from the Applied History Group in the resources section that follows.

Another strategy that is particularly helpful for students with diverse cultural and education backgrounds is the Know-Want to Know-Learn (K-W-L) chart. This allows

César Chávez (1927-1993) Timeline

1927	Born in Arizona
1937	Family became migrant farm workers
1946	Joined the US Navy
1952	Joined the Community Service Organization, a Latino civil rights group
1968	Fasted for 25 days
1972	Fasted for 25 days
1975	The California Agricultural Labor Relations Act was passed to protect farm workers
1988	Fasted for 36 days ("Fast for Life")
1993	Died in Arizona
1994	Awarded the Presidential Medal of Freedom

Adapted from César E. Chávez Foundation (2008).

teachers to informally assess what background knowledge students have on a particular topic, and then adapt their instruction to fill in the gaps. The following is an example that could be used in conjunction with studying César Chávez:

K	W	L
What do you know about farm workers' rights?	What do you want to know about farm workers' rights?	What did you learn about farm workers' rights?

Once the students have completed the pre-reading activities, they need instruction in the metacognitive skills of reading. To teach these, the teacher can do a think-aloud to model asking questions, making judgments, and noting new words while reading.

Inquiry-based Projects

Another option besides scaffolding the text is to lead an inquiry-based project in which students act as historians or social scientists. If ELLs are literate in their native languages, they can complete Internet research in those languages. To encourage active participation, students should be able to choose their own topics within a common category. Choice enables students to draw on their own background knowledge and sociocultural identity, and familiarity with common themes or information will assist in understanding the material in English. In this way, ELLs are viewed as cultural resources that enrich the classroom experience for other students.

To learn more about teaching Social Studies to ELLs:

Web Resources

- Anstrom, K. (August 1998). *Preparing secondary education teachers to work with English language learners: Social Studies*. NCBE Resource Collection Series, 10. Retrieved December 17, 2007 from <http://www.ncela.gwu.edu/pubs/resource/ells/language.htm>
- Irvin, J. (2002). *Reading strategies for the social studies classroom*. Austin, TX: Holt, Rinehart and Winston. Retrieved December 30, 2007 from http://go.hrw.com/hrw.nd/gohrw_rls1/pKeywordResults?ST2Strategies
- National Clearinghouse for English Language Acquisition. (2002). *In the classroom: A toolkit for effective instruction of English language learners*. Retrieved May 5, 2008 from <http://www.ncela.gwu.edu/practice/itc/lessons/sinquiryss.html>
- The Applied History Research Group. (1997). *The European Voyages of Exploration*. Retrieved May 7, 2008 from http://www.ucalgary.ca/applied_history/tutor/eurvoya/vasco.html
- The César E. Chávez Foundation. (2008). *American Hero*. Retrieved May 13, 2008 from http://www.chavezfoundation.org/page.php?code=0010010000000000&page_ttl=American+Hero&kind=1

Print Resources

- Calderón, M. (2007). *Teaching reading to English language learners grades 6-12: A framework for improving achievement in the content areas*. Thousand Oaks, CA: Corwin Press.
- Faltis, C.J. & Coulter, C.A. (2008). *Teaching English learners and immigrant students in secondary schools*. Upper Saddle River, NJ: Pearson Education.
- Irwin-DeVitis, L, Bromley, K., and Modlo, M. (1999). *50 graphic organizers for reading, writing, and more*. (1999). Scholastic Professional Books.
- King, M., Fagan, B., Bratt, T. & Baer, R. (1992). Social Studies instruction. In P.A. Richard-Amato & M.A. Snow (Eds.) *The multicultural classroom: Readings for content-area teachers* (pp 287-299). Reading, MA: Addison-Wesley.
- McKeown & Beck (1994). Making sense of accounts in history: Why young students don't and how they might. In G. Leinhardt, I. Beck & C. Stainton (Eds.) *Teaching and learning in history*.
- Verplaetse, L.S. & Migliacci, N. (2008). Making mainstream content comprehensible through sheltered instruction in L.S. Verplaetse & N. Migliacci (Eds.) *Inclusive pedagogy for English language learners*. New York: Lawrence Erlbaum Associates.

Science

The National Research Council's (NRC) *National science education* standards state that: the commitment to science for all implies inclusion of those who traditionally have not received encouragement and opportunity to pursue science -- women and girls, students of color, students with disabilities, and students with limited English proficiency. (NRC, 1996)

Vocabulary

Both fluent English speakers and English language learners will encounter new and unfamiliar vocabulary as they move through their science education. Unlike their English speaking peers, however, English learners are also constantly learning vocabulary in all of their school subjects as well as in their daily lives.

There are a number of ways in which teachers can make the massive vocabulary-learning process required of English learners easier.

- Use classroom routines to present vocabulary. You might spend two or three minutes at the beginning of a class highlighting scientific vocabulary that students will need in the class. Use the same type of language each time—for instance “Here are some key words.” By making the presentation of vocabulary a routine event, students are not faced with the extra task of working out what kind of instruction is going on.
- Exploit cognates. Cognates are words which sound similar across languages because they have common origins. Much of the scientific vocabulary of English comes from words with Latin origins (like *experiment*, *observe*, *precipitation*); these words are likely to have cognates in languages descended from Latin (including Spanish, French, and Portuguese).

Talking Science

Communication is a vital part of the scientific discovery process. Students working in small hands-on groups in the science classroom use back-and-forth communication to make meaning out of their observations and discoveries. Teachers should ensure that English language learners are not excluded from this crucial learning experience.

- Make sure that instructions are clear to everyone in the group, perhaps by providing them in written as well as oral form, so that ELLs have time to digest the content.
- Allow speakers of the same language to work together and to discuss scientific concepts in their native language before they communicate them in English.
- If groups are multilingual, teachers can assign roles to each member of the group, and construct roles with more or greater linguistic demands to suit their diverse students. For instance, a student with limited English might be assigned to connect key concepts to new vocabulary; a more proficient student might be responsible for taking observation notes.
- When calling on students, give them a moment or two to jot down ideas before they speak in front of the class. This allows students to marshall their thoughts and gives them time to think about the language that they will need to express their ideas.

Writing Science

English language learners may understand the concepts of science very well, but unless they have the tools to communicate their understanding, teachers have no way of assessing their comprehension (and may underestimate it). Teachers can help ELLs by providing varying degrees of scaffolding. Of particular use to ELLs are partial “sentence chunks” that scaffold the types of sentences students should use to communicate their scientific knowledge. Sentence chunks allow students to express their scientific learning without being hindered by lack of language skills—they also model the types of scientific language students can use in the future. As students become more proficient, less scaffolding is required.

LABORATORY REPORT	
Title Relationship between _____ and _____	
Background This experiment investigates _____. This experiment tests the hypothesis that _____. Based on _____ I predict that _____.	
Equipment <i>(Ensure students have the vocabulary to list the equipment.)</i>	Procedure <i>(Provide examples of verbs that students will need to list the procedure. For instance, you might include a list of verbs such as add, pour, fill, heat, distill, decant.)</i>
Observations At the beginning of the experiment, the _____ was _____. After _____, the _____ became _____.	
Conclusion Adding _____ to _____ causes _____.	

Example of a laboratory report with partial sentence chunks.

Instructional Congruence

Instructional congruence refers to “the process of merging academic disciplines with students’ linguistic and cultural experiences to make the academic content accessible, meaningful, and relevant for all students” (Lee, 2004, p. 72). Instructional congruence can refer to both ways of talking and thinking about scientific inquiry as well as ways of presenting scientific topics.

Students from diverse cultural backgrounds may have ways of approaching inquiry that differ from Western norms. They may come from cultures where it is considered inappropriate to question authorities such as teachers and textbooks. Students from different cultural backgrounds may also differ in terms of their comfort levels with working collaboratively or individually. The presentation of topics in traditional science lessons may also miss chances to connect to students’ background knowledge.

Teachers can modify instruction so that it values students' cultural norms while simultaneously facilitating scientific inquiry. In designing a unit on weather for a multi-year professional development program, a research team built elements into the unit designed to be convergent with students' learning. In this case, the students were mostly Hispanic students from the Caribbean and Central and South America.

The unit:

- used both metric and traditional units of measure;
- incorporated weather conditions familiar to students, such as hurricanes and other tropical weather patterns;
- used inexpensive household supplies for hands-on activities so that students could replicate the activities at home with their families;
- allowed students to work collaboratively or individually depending on their comfort level with these patterns;
- integrated science standards with both TESOL and English language arts standards to encourage English language development in social settings, in the academic content, and in socially and culturally appropriate ways.

To Learn More About Teaching Science to English Language Learners

Web Resources

- Anstrom, K. (1998). *Preparing secondary education teachers to work with English language learners: Science*. NCBE Resource Collection Series, No. 11. Available from <http://www.ncela.gwu.edu/pubs/resource/ells/science.htm>
- Dobb, F. (2004). *Essential elements of effective science instruction for English learners*. Los Angeles, CA: California Science Project. Available from http://csmf.ucop.edu/downloads/csp/essential_elements_2.pdf
- Gomez, K. & Madda, C. (1995). Vocabulary Instruction for ELL Latino Students in the Middle School Science Classroom. *Voices from the Middle*, 13(1), 42-47. Available from http://elearning.ncte.org/section/content/Default.asp?WCI=pgDisplay&WCU=CRSCNT&ENTRY_ID=B1585EDDA5D74E0381945A054587AC58
- Jarrett, D. (1999). *The inclusive classroom: Teaching mathematics and science to English language learners*. Portland, OR: Northwest Regional Educational Laboratory. Available from <http://www.nwrel.org/msec/images/resources/justgood/11.99.pdf>

Print Resources

- Carr, J., Sexton, U., & Lagunoff, R. (2006). *Making Science Accessible to English Learners: A Guidebook for Teachers*. San Francisco, CA: WestEd.
- Fathman, A.K. & Crowther, D.T. (2006). *Science for English language learners: K-12 classroom strategies*. Arlington, VA: National Science Teachers' Association Press.
- The weather unit described above is taken from Lee, O. (2004). Teacher change in beliefs and practices in science and literacy instruction with English language learners. *Journal of Research in Science Teaching*, 41(1), 65-93.

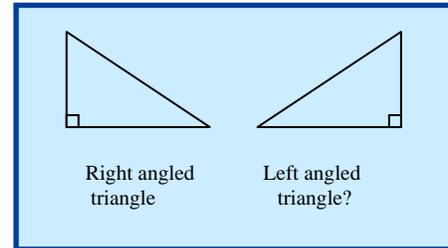
Mathematics

The National Council of Teachers of Mathematics (NCTM) pedagogy standard 8.1. requires that the teacher:

Selects, uses, and determines suitability of the wide variety of available mathematics curricula and teaching materials for all students including those with special needs such as the gifted, challenged and speakers of other languages.
(NCTM, 2003)

Math Vocabulary

Words which have different meanings in different contexts can be stumbling blocks for ELLs. Math vocabulary often uses words with everyday meanings which have very specific meanings in mathematics—words like *product*, *root*, *function* or *right*, as in *right angle*. Teachers can help students by pointing out that some words have specific meanings in mathematics, and when possible, trying to show how their mathematical meaning connects with their everyday meaning.



One way to give students a boost in their math vocabulary is to be aware of cognates—words which sound the same across languages because they have a common origin.

English-Spanish Cognates

equal	igual	angle	el ángulo	capacity	la capacidad
diameter	el diámetro	triangle	el triángulo	probability	la probabilidad
estimate	estimar	rectangle	el rectángulo		

Beware! Not all similar-sounding words have similar meanings. Sometimes the meaning of a word in another language may not be a perfect match for its English cognate. The Spanish *la figura*, for example, means “figure” in the sense of a table or graph, but does not refer to a numeral (as in a *figure 8*).

Sentence Structure in Math

Even simple word problems in mathematics can be difficult for English language learners because they require students to use language to understand the relationships between mathematical operators and numbers. There may be several ways to express a mathematical operation in a word problem. For instance, a problem involving subtraction might use “minus” or “less than”; one involving division may use the terms “divided by”, “into,” or “over.”

Furthermore, choosing a particular word changes the relationships between the other words in the sentence. A problem that uses the word “minus” tells readers or listeners that they should take the first number and subtract the second number. In a “minus” problem, the order of the words in the sentence is the same as the order of the terms in the operation:

	The number a	is	five	minus	b
Right!	a	=	5	-	b

A problem that uses the expression “less than” is more complicated:

	The number a	is	five	less than	b
X Wrong!	a	=	5	-	b
Right!	a	=	b	-	5

Because a “less than” sentence is more complex, students may require explicit instruction and practice with this kind of sentence. Although this subtraction example is relatively simple, good math teachers are alert for similar patterns in more complex word problems. Particularly in assessments, unfamiliar word pattern problems may end up testing students’ language ability, not what they know and can do in mathematics.

Context

Although the specifics of vocabulary and sentence structure are important, they are not the end goal of mathematics education. Rather, they are a communicative toolkit which give students the ability to think in mathematical ways and to communicate to others their mathematical thinking.

Skilled math teachers know that it is easier to encourage mathematical thinking when math in the classroom is connected to real-world situations. Math teachers who are working in multicultural classrooms need to consider whether their “real-world” problems reflect the real worlds of their students. In what real-world situations will students *need to use* their mathematics knowledge?

- In Alaska, the *Math in a Cultural Context* curriculum contains a unit entitled *Drying Salmon*. In *Drying Salmon*, students combine indigenous knowledge of fishing practices with skills measuring, estimating, proportional thinking and algebra as part of a thematic math unit.
- “Mrs. Diamante” teaches a ninth-grade geometry class in an ethnically diverse school. About one third of her students are English language learners. Her lessons about functions and slope connect mathematical ideas to the needs of her students’ communities. Students in Mrs. Diamante’s class have used their math skills to design wheelchair ramps, skate ramps, and sloped roofs for bus shelters.

Although actual examples of ways that other teachers have adapted lessons to fit the cultural contexts of their students can be illuminating and inspiring, teachers cannot and should not take an example from one context and expect it to work in another. Every math classroom is situated within its own specific community, and each community is unique. Good math teachers will look for examples which fit their own contexts, and will work with their pedagogical content knowledge tools to adapt lessons to fit their own unique classrooms.

To Learn More About Teaching Mathematics to English Language Learners

Web Resources

The Texas State University System Math for English Language Learners Project (<http://www.tsusmell.org/>) has a wealth of useful techniques and tips for math teachers.

The Connected Mathematics project at Michigan State University has a page on mathematics and English language learners at <http://connectedmath.msu.edu/teaching/ell.html>

Long Beach Unified Schools District (n.d.) *Math cognates*. Retrieved April 14, 2008 from http://www.lbschools.net/Main_Offices/Curriculum/Areas/Mathematics/XCD/ListOfMathCognates.pdf

Southwest Educational Development Laboratory (SEDL) (2007). *What can a mathematics teacher do for the English language learner?* Austin, TX: Author. Available at <http://txcc.sedl.org/resources/mell/index.html>

Stepanek, J. (2004). From Barriers To Bridges: Diverse Languages in Mathematics and Science. *Northwest Teacher*, 5(1), 2–5. This resource expands on many of the themes expressed above: <http://www.nwrel.org/msec/images/nwteacher/winter2004/winter2004.pdf>

Print Resources

More information on the unit *Drying Salmon* can be found in Nelson-Barber, S. & Lipka, J. (2008). Rethinking the case for culture-based curriculum: Conditions that support improved mathematics performance in diverse classrooms. In M.E. Brisk (Ed.), *Language, Culture and Community in Teacher Education* (pp. 99-126). New York: Lawrence Erlbaum Associates.

“Mrs. Diamante” is a composite character described in Chapter 5 of Faltis, Christian J. & Coulter, Cathy A. (2008). *Teaching English learners and immigrant students in secondary schools*. Upper Saddle River, NJ: Pearson Education, Inc.

Other ideas described above are adapted from:

Anstrom, K. (1999). Preparing secondary education teachers to work with English language learners: Mathematics. *NCBE resource collection series*, no. 14. Retrieved February 28, 2008 from <http://www.ncela.gwu.edu/pubs/resource/ells/math.htm>

Dale, T. C., & Cuevas, G. J. (1987). Integrating mathematics and language learning. In J. A. Crandall (Ed.), *ESL through content-area instruction: Mathematics, science, social studies* (pp. 9-54). Englewood Cliffs, NJ: Prentice Hall Regents.

Secada, W. G. (Ed.) (2000). *Changing the faces of mathematics: Perspectives on multiculturalism and gender equity*. Reston, VA: National Council of Teachers of Mathematics.

References

- Abbate-Vaughn, J. (2008). Highly qualified teachers for our schools: Developing knowledge, skills, and dispositions to teach culturally and linguistically diverse students. In M.E. Brisk (Ed.), *Language, Culture, and Community in Teacher Education* (pp. 175-202). New York: Lawrence Erlbaum Associates.
- Abedi, J., Courtner, M., Mirocha, J., Leon, S., Goldberg, J. (2005). *Language Accommodations for English Language Learners in Large Scale Assessments: Bilingual Dictionaries and Linguistic Modification*. Washington, DC: Institute of Education Sciences.
- Alexander, D. Heaviside, S. & Farris, E. (1999). *Status of education reform in public elementary and secondary schools: Teachers' perspectives*. Washington DC: U.S. Department of Education, National Center for Education Statistics. Retrieved December 4, 2007 from <http://nces.ed.gov/pubs99/1999045.pdf>.
- Atunéz, B. (2000). When everyone is involved: Parents and communities in school reform. In *Framing effective practice: Topics and issues in educating English language learners*. Washington, DC: National Clearinghouse for Bilingual Education. Retrieved February 20, 2008 from <http://www.ncela.gwu.edu/pubs/tasynthesis/framing/framing.pdf>
- Banks, J.A. (2004). Multicultural education: Historical development, dimensions, and practice. In J.A. Banks & C. A. McGee Banks (Eds.) *Handbook of Research on Multicultural Education* (2nd ed.) (pp. 3-29). San Francisco, CA: Jossey-Bass.
- Barron, V. & DiCerbo, P. (2006). *In the classroom: A toolkit for effective instruction of English learners, Grade level content 7-12 Secondary*. Retrieved March 5, 2008 from <http://www.ncela.gwu.edu/practice/itc/secondary.html>
- Bartolomé, L. (2002). Creating an equal playing field: Teachers as advocates, border crossers, and cultural brokers. In Z.F. Beykont (Ed.), *The power of culture: Teaching across language difference* (pp. 167-191). Cambridge, MA: Harvard Education Publishing Group.
- Batalova, J., Fix, M., & Murray, J. (2005). *English language learner adolescents: Demographics and literacy achievements*. Report to the Center for Applied Linguistics. Washington, DC: Migration Policy Institute.
- Berriz, B.R. (2002). Connecting classroom and community through the arts and oral narrative. In Z.F. Beykont (Ed.), *The power of culture: Teaching across language difference* (pp. 147-163). Cambridge, MA: Harvard Education Publishing Group.
- Brisk, M.E. (2008). Program and faculty transformation: Enhancing teacher preparation. In M.E. Brisk (Ed.), *Language, culture, and community in teacher education* (pp. 249-66). New York: Lawrence Erlbaum Associates.
- Brisk, M.E., Horan, D.A., & Macdonald, E. (2008). A scaffolded approach to learning to write in L.S. Verplaetse & N. Migliacci (Eds.) *Inclusive pedagogy for English language learners*. New York: Lawrence Erlbaum Associates.
- Buck, G., Mast, C., Ehlers, N., & Franklin, E. (2005). Preparing teachers to create a mainstream science classroom conducive to the needs of English-language learners: A feminist action research project, *Journal of Research in Science Teaching*, 42(9), 1013-1031.
-

-
- Calderón, M. (2007). *Teaching reading to English language learners grades 6-12: A framework for improving achievement in the content areas*. Thousand Oaks, CA: Corwin Press.
- Capps, R., Fix, M., Murray, J., Ost, J., Passel, J.S., & Herwanto, S. (2005). *The new demography of America's schools: Immigration and the No Child Left Behind Act*. Washington, DC: Urban Institute. Retrieved February 4, 2008 from http://www.urban.org/UploadedPDF/311230_new_demography.pdf.
- Cassady, J.K. (1998). Wordless books: No-risk tools for inclusive middle-grade classrooms. *Journal of Adolescent & Adult Literacy*, 41, 6. 428-432.
- Center on Education Policy. (2005). *States try harder, but gaps persist: High school exit exams 2005*. Washington, DC: Center on Education Policy. Retrieved February 4, 2008 from <http://www.cep-dc.org/index.cfm?fuseaction=document.showDocumentByID&DocumentID=143&C:\CFusionMX7\verity\Data\dummy.txt>.
- Clair, Nancy (Autumn 1998). Research and Practice in English Language Teacher Education *TESOL Quarterly*, 32(3), pp. 465-492.
- Cohen, D.K. & Hill, H. C. (1998). *Instructional policy and classroom performance: The mathematics reform in California (RR-39)*. Philadelphia: Consortium for Policy Research in Education.
- Collier, Virginia (1994). Acquiring a second language for school. *Directions in Language & Education*. 1 (4). DC: National Clearinghouse for Bilingual Education.
- Colorín Colorado (2007). Using cognates to develop comprehension in English. Retrieved April 11, 2008 from <http://colorincolorado.org/article/14307>
- Costa, J., McPhail, G., Smith, J., Brisk, M. (2005) Faculty First: The Challenge of Infusing the Teacher Education Curriculum with Scholarship on English Language Learners. *Journal of Teacher Education*, 56(2), 104-118.
- Crawford, J. & Krashen, S. (2007). *English learners in American classrooms: 101 questions, 101 answers*. New York: Scholastic.
- Cummins, J. (1994). Primary language instruction and the education of language minority students in *Schooling and Language Minority Students: A Theoretical Framework*. Los Angeles, CA: Evaluation, Dissemination, and Assessment Center.
- de Jong, E.J., & Harper, C.A. (2005). Preparing mainstream teachers for English language learners: Is being a good teacher good enough? *Teacher Education Quarterly*, 32(2), 101-124.
- de Jong, E.J., & Harper, C.A. (2008). ESL is good teaching “plus”: Preparing standard curriculum teachers for all learners. In M.E. Brisk (Ed.), *Language, Culture and Community in Teacher Education* (pp. 127-48). New York: Lawrence Erlbaum Associates.
- Díaz-Rico, L.T. (2008). *Strategies for teaching English language learners*, 2nd edition. New York: Pearson.
- Echevarria, J. & Short, D.J. (1999). *The Sheltered Instruction Observation Protocol: A tool for teacher-research collaboration and professional development*. Retrieved February 28, 2008 from <http://www.cal.org/resources/digest/sheltered.html>
- Eisenhower Mathematics and Science Consortia and Clearinghouse Network (2005). *What experience has taught us about professional development: Facilitating*
-

- mathematics and science reform: Lessons learned*. National Network of Eisenhower Regional Consortia and Clearinghouse.
- Faltis, Christian J. & Coulter, Cathy A. (2008). *Teaching English learners and immigrant students in secondary schools*. Upper Saddle River, NJ: Pearson Education, Inc.
- Fox, H. (1994). *Listening to the world: Cultural issues in academic writing*. Urbana, IL: National Council of Teachers of English.
- Francis, D.J., Rivera, M., Lesaux, N., Kieffer, M., & Rivera, H. (2006). *Practical guidelines for the education of English language learners*. Center on Instruction.
- Garet, M. S., Porter, A. C., Desimone, L., Birman, B. F., & Yoon, K. S. (2001). What makes professional development effective? Results from a national sample of teachers. *American Educational Research Journal*, 38(4), 915-945.
- Gersten, R., Baker, S.K., Shanahan, T., Linan-Thompson, S., Collins, P., Scarcella, R. (2007). *Effective literacy and English language instruction for English learners in the elementary grades: A practice guide* (NCEE 2007-4011). Washington, DC: National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U.S. Department of Education. Retrieved March 31, 2008 from <http://ies.ed.gov/ncee>.
- González, N., Moll, L., Tenery, M.F., Rivera, A., Rendón, P., Gonzales, R., et al. (2005). Funds of knowledge for teaching in Latino households. In N. González (Ed.) *Funds of knowledge: Theorizing practices in households and classrooms* (pp. 89-111). Mahwah, NJ: Lawrence Erlbaum Associates.
- Gottlieb, M., Cranley, M.E., Oliver, A.R. (2007). *Understanding the WIDA English language proficiency standards: A resource guide*. Madison, WI: Board of Regents of the University of Wisconsin. Retrieved March 31, 2008 from http://www.wida.us/standards/Resource_Guide_web.pdf.
- Graham, S. & Perin, D. (2007). *Writing next: Effective strategies to improve writing of adolescents in middle and high schools – A report to the Carnegie Corporation of New York*. Washington, DC: Alliance for Excellent Education.
- Grant, E.A., & Wong, S.D. (2003). Barriers to literacy for language-minority learners: An argument for change in the literacy education profession. *Journal of Adolescent & Adult Literacy*, 46, 386-394.
- Guskey, T. (2000). *Evaluating professional development*. Thousand Oaks, CA: Corwin Press, Inc.
- Harper, C. & de Jong, E. (2004). Misconceptions about teaching English-language learners. *Journal of Adolescent and Adult Literacy*, 48 (2), 152-162.
- Hiebert, E.H. & Lubliner, S. (forthcoming). To appear in S.J. Samuels & A. Farstrup (Eds.), *What research has to say about vocabulary*. Newark, DE: International Reading Association.
- Hord, S. (1997). *Professional learning communities: Communities of continuous inquiry and improvement*. Austin, TX: Southwest Educational Development Laboratory.
- Institute of Education Sciences, What Works Clearinghouse (2007). *Interventions for Elementary School English Language Learners: Increasing English Language Acquisition and Academic Achievement*. Washington DC: Author. Available from <http://ies.ed.gov/ncee/wwc/reports/topic.aspx?tid=10>

-
- Karabenick, S.A. & Clemens Noda, P.A. (2004). Professional development implications of teachers' beliefs and attitudes toward English language learners. *Bilingual Research Journal*, 28(1), 55-75.
- Kennedy, M. M. (1998). *Form and substance in in-service teacher education*. (Research monograph No. 13). Arlington, VA: National Science Foundation.
- Kinsella, K. (2008, February). *Bolstering language proficiency for English learners through structured academic interaction*. Symposium conducted at the meeting of the Virginia English as a Second Language Supervisors' Association, Richmond, VA.
- Kruse, S., Louis, K., & Bryk, A. (1994, Spring). *Building professional community in schools*. Madison, WI: Center on Organization and Restructuring Schools.
- Lee, J.S. & Oxelson, E. (2006). "It's not my job": K-12 teacher attitudes toward students' heritage language maintenance. *Bilingual Research Journal*, 30(2), 453-477.
- Lightbown, P.M. & Spada, N. (2006). *How Languages are Learned*. Oxford: Oxford University Press.
- McLaughlin, B. (1993). *Myths and misconceptions about second language learning: What every teacher needs to unlearn*. Santa Cruz, CA: National Center for Research on Cultural Diversity and Second Language Learning. Retrieved on Dec. 13, 2007, from <http://www.ncela.gwu.edu/pubs/symposia/readingarticle6/mclaughlin93.html>.
- McLaughlin, M., Talbert, J.E., Gilbert, S., Hightower, A.M., Husbands, J.L., Marsh, J.A. et al. (2002). *Domains of district action: A framework for assessing district reform strategies*. Center for the Study of Teaching and Policy: Stanford University.
- Menken, K. & Atunéz, B. (2001). *An overview of the preparation and certification of teachers working with limited English proficient students*. Washington, D.C., National Clearinghouse of Bilingual Education. Retrieved December 11, 2007 from <http://www.ericsp.org/pages/digests/ncbe.pdf>.
- Meskill, C. (2005). Infusing English language learner issues throughout professional educator curricula: The Training All Teachers project. *Teachers College Record*, 107(4), pp. 739-56.
- Moll, L., Amanti, C., Neff, D., & González, N. (2005). Funds of knowledge for teaching: Using a qualitative approach to connect homes and classrooms. . In N. González (Ed.) *Funds of knowledge: Theorizing practices in households and classrooms* (pp. 71-88). Mahwah, NJ: Lawrence Erlbaum Associates.
- Nation, P. & R. Waring. (1997). Vocabulary size, text coverage and word lists. In: Schmitt, N. and M. McCarthy (eds). *Vocabulary: Description, Acquisition and Pedagogy*. Cambridge: Cambridge University Press. 6-19.
- National Chavez Center (n.d.). Cesar E Chávez – Biography. Available from <http://www.nationalchavezcenter.org/main.html>
- National Clearinghouse for English Language Acquisition. (2007). *The Growing Numbers of Limited English Proficient Students*. Washington, DC: Author. Retrieved January 16, 2008 from http://www.ncela.gwu.edu/policy/states/reports/statedata/2005LEP/GrowingLEP_0506.pdf.
- National Council for Accreditation of Teacher Education (NCATE). (2006). *Professional Standards for the Accreditation of Schools, Colleges, and Departments of Education*.
-

- Retrieved November 26, 2007 from http://www.ncate.org/documents/standards/unit_stnds_2006.pdf.
- National Council for Accreditation of Teacher Education (NCATE). (2007). *The NCATE Unit Standards*. Retrieved November 26, 2007 from <http://www.ncate.org/documents/standards/UnitStandardsMay07.pdf>
- National Council for the Social Studies. (2000). *National standards for social studies teachers*. Silver Spring, MD: Author. Available from <http://www.socialstudies.org/teacherstandards>
- National Council of Teachers of English. (1996). *Guidelines for the preparation of teachers of English language arts*. Urbana, IL: Author. Available from <http://www.ncte.org/groups/cee/links/126867.htm>
- National Council of Teachers of Mathematics. (2000). *Principles and standards for school mathematics*. Reston, VA: Author. Available from <http://standards.nctm.org>
- National Research Council. (1996). *National science education standards*. Washington, DC: National Academy Press. Available from <http://www.nap.edu/readingroom/books/nse>
- National Staff Development Council (NSDC) (2001). *Standards for staff development: Revised*. Oxford, OH: Author.
- Nevárez-La Torre, A.A., Sanford-DeShields, J.S., Soundy, C., Leonard, J. & Woyshner, C. (2008). Faculty perspectives on integrating linguistic diversity issues into an urban teacher education program. In M.E. Brisk (Ed.), *Language, culture, and community in teacher education* (pp. 267-312). New York: Lawrence Erlbaum Associates.
- Newmann, F. & Wehlage, G. (1995). *Successful school restructuring: A report to the public and educators*. Madison, WI: Center on Organization and Restructuring Schools.
- Peregoy, S.F. & Boyle, O.F. (2005). *Reading, writing, and learning in ESL: A resource book for K-12 teachers*. New York: Pearson Education.
- Phuntsog, N. (2001). Culturally responsive teaching: What do selected United States elementary school teachers think? *Intercultural Education*, 12(1), 51-64.
- Reeves, J.R. (2006). Secondary teacher attitudes toward including English-language learners in mainstream classrooms. *Journal of Educational Research*, 99(3), 131-142.
- Reyes, A. (2006). Reculturing principals as leaders for cultural and linguistic diversity. In K. Téllez & H.C. Waxman (Eds.) *Preparing quality educators for English language learners* (pp. 145-56). Mahweh, NJ: Lawrence Erlbaum.
- Reyes, S.A. & Vallone, T.L. (2008). *Constructivist strategies for teaching English language learners*. Thousand Oaks, CA: Corwin Press.
- Richard-Amato, P.A. & Snow, M.A. (1992) *The multicultural classroom: Readings for content-area teachers*. Reading, MA: Addison-Wesley.
- Samway, K.D. & McKeon, D. (1999). *Myths and realities: Best practices for language minority students*. Portsmouth, NH: Heinemann.
- Scarcella, R. (2005). *Teaching the language of school: How all teachers can support English language learners*. Symposium conducted at the meeting of the Office of English Language Acquisition's Celebrate Our Rising Stars Summit, Washington, DC. Retrieved April 30, 2008 from

- http://www.ncela.gwu.edu/oela/summit2005/presentations/RobinScarcella_generaIModifiedFinal.pdf
- Schleppegrell, M. J. (2004). *The language of schooling: A functional linguistics perspective*. Mahwah, N. J.: Lawrence Erlbaum Associates.
- Shohamy, E. (2001). Democratic assessment as an alternative. *Language Testing*, Vol. 18, no. 4, 373-391.
- Snow, M.A. (2000). *Implementing the ESL Standards for Pre-K-12 Students Through Teacher Education*. Alexandria, VA: Teachers of English to Speakers of Other Languages (TESOL).
- Suttmiller, E.F. & González, M.L. (2006). Successful school leadership for English language learners. In K. Téllez & H.C. Waxman (Eds.) *Preparing quality educators for English language learners* (pp. 167-88). Mahweh, NJ: Lawrence Erlbaum.
- Teachers of English to Speakers of Other Languages (2006). *PreK-12 English Language Proficiency Standards*. Available from http://www.tesol.org/s_tesol/sec_document.asp?CID=1186&DID=5349
- Teachers of English to Speakers of Other Languages (TESOL). (2001). *Integrating the ESL Standards Into Classroom Practice: Grades 9-12*. Alexandria, VA: Author
- Teachers of English to Speakers of Other Languages (TESOL). (2006). *PreK-12 English Language Proficiency Standards*. Alexandria, VA: Author
- Telléz, K. & Waxman, H.C. (2005). *Quality teachers for English language learners: A review of the research*. The Laboratory for Student Success, The Mid-Atlantic Regional Educational Laboratory at Temple University Center for Research in Human Development and Education. Retrieved February 28, 2008 from <http://www.temple.edu/Lss/pdf/ReviewOfTheResearchTellezWaxman.pdf>
- U.S. Department of Agriculture (June, 2007). *National School Lunch Program*. Retrieved April 10, 2008 from <http://www.fns.usda.gov/cnd/lunch/AboutLunch/NSLPPFactSheet.pdf>.
- U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics (2007a). *National Assessment of Educational Progress (NAEP) 2007 Mathematics Assessment*. Washington DC: Author. Retrieved April 19, 2008 from <http://nces.ed.gov/nationsreportcard/nde/>.
- U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics (2007b). *National Assessment of Educational Progress (NAEP), 2007 Reading Assessment*. Washington DC: Author. Retrieved April 19, 2008 from <http://nces.ed.gov/nationsreportcard/nde/>.
- U.S. Department of Education, National Center for Education Statistics. (2004). *Language minorities and their educational and labor market indicators— Recent trends, NCES 2004-09*. Washington, DC: U.S. Department of Education.
- U.S. Department of Education, National Center for Education Statistics. (1997). *1993–94 Schools and Staffing Survey: A Profile of Policies and Practices for Limited English Proficient Students: Screening Methods, Program Support, and Teacher Training*. (NCES 97–472). Washington, DC. Retrieved December 10, 2007 from <http://nces.ed.gov/pubs97/97472.pdf>.
- U.S. Department of Education, National Center for Education Statistics. (2001). *Teacher Preparation and Professional Development: 2000* (NCES 2001–088).

-
- Washington, DC: Parsad, B., Lewis, L. & Farris, E. Retrieved December 10, 2007 from <http://nces.ed.gov/pubs2001/2001088.pdf>.
- Verplaetse, L.S. & Migliacci, N. (2008). Making mainstream content comprehensible through sheltered instruction in L.S. Verplaetse & N. Migliacci (Eds.) *Inclusive pedagogy for English language learners*. New York: Lawrence Erlbaum Associates.
- Walqui, A. & DeFazio, A.J. (2003). The selection of written text for English learners in *Teaching Reading to Adolescent English Learners*. San Francisco, CA: WestEd.
- Walqui, A. (2001). Accomplished teaching with English learners: A conceptualization of teacher expertise. *The Multilingual Educator*, 2(2), 51–56.
- Warren, B., & Rosebery, A. S. (1995). Equity in the future tense: Redefining relationships among teachers, students, and science in linguistic minority classroom. In W. G. Secada, E. Fennema, & L. B. Adajian (Eds.), *New directions for equity in mathematics education* (pp. 298-328). New York: Cambridge University Press.
- Zehler, A.M., Fleischman, H.L., Hopstock, P.J., Stephenson, T.G., Pendick, M.L. & Sapru, S. (2003). *Policy Report: Summary of Findings Related to LEP and Sp-Ed LEP Students*. Washington DC: U.S. Department of Education, Office of English Language Acquisition, Language Enhancement, and Academic Achievement of Limited English Proficient Students (OELA). Retrieved December 3, 2007 from <http://www.ncela.gwu.edu/resabout/research/descriptivestudyfiles>.