Teaching English Language Learners in Career and Technical Education Programs

Victor M. Hernández-Gantes
William Blank
Today's classrooms increasingly include students for whom English is a second language. *Teaching English Language Learners in Career and Technical Education Programs* explores the unique challenges of career-oriented education, and provides simple and straightforward advice on how to teach English language learners (ELLs) alongside all students in today's Career and Technical Education programs. The authors' teaching framework and case studies draw from common settings in which career and technical educators find themselves working with ELLs—in the classroom, in the laboratory or workshop, and in work-based learning settings. By integrating CTE and academic instruction, and embedding career development activities across the curriculum, readers will gain a better understanding of the challenges of teaching occupationally-oriented content to a diverse group of learners in multiple settings.

**Special Features:**

- Engaging vignettes vividly illustrate real-life interactions of veteran teachers and ELLs in the classroom
- Graphs, tables, and charts provide additional access points to the text in clear, meaningful ways

**Victor M. Hernández-Gantes** is Associate Professor in the Department of Adult, Career, and Higher Education, University of South Florida.

**William Blank** is Professor in the Department of Adult, Career, and Higher Education, University of South Florida.
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Teaching English Language Learners in Career and Technical Education Programs

VICTOR M. HERNÁNDEZ-GANTES AND WILLIAM BLANK
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No educational issue has proven more controversial than how to teach linguistically diverse students. Intertwined issues of ethnic and cultural differences are often compounded. What is more, at the time of writing, December 2007, how immigrants and their heritages ought to fit with the dominant culture is the subject of rancorous debate in the United States and a number of other nations.

However thorny these issues may be to some, both legally and ethically, schools need to accommodate the millions of English language learners (ELLs) who need to be educated. Although the number of ELLs in the United States has burgeoned in recent decades, school programs generally remain organized via traditional subjects, which are delivered in English. Many ELLs are insufficiently fluent in academic English, however, to succeed in these programs. Since policymakers have increasingly insisted that ELLs, regardless of their fluency in English, be mainstreamed into standard courses with all other students, both classroom enactment of the curriculum and teacher education need considerable rethinking.

Language scholars have generally taken the lead in this rethinking. As is evident in Part 1 of the volumes in this series, language scholars have developed a substantial body of research to inform the mainstreaming of ELLs. The primary interest of these language scholars, however, is almost by definition the processes and principles of second language acquisition. Until recently, subject matter has typically been a secondary consideration, used to illustrate language concerns. Perhaps not surprisingly, content-area teachers sometimes have seen this as reducing their subjects to little more than isolated bits of information, such as a list of explorers and dates in history or sundry geological formations in science.

In contrast, secondary school teachers see their charge as effectively conveying a principled understanding of, and interest in, a subject. They look for relationships, seek to develop concepts, search for powerful examples and analogies, and try to explicate principles. By the same token,
they strive to make meaningful connections among the subject matter, students’ experience, and life outside of school. In our observations, teacher education programs bifurcate courses on content-area methods and (if there are any) courses designed to instill principles of teaching ELLs. One result of this bifurcation seems to be that prospective and in-service teachers are daunted by the challenge of using language principles to inform their teaching of subject matter.

For example, Gloria Ladson-Billings (2001) has experimented with how to prepare new teachers for diverse classrooms through a teacher education program focused on “diversity, equity, and social justice” (p. xiii). Teachers in her program are expected, for instance, to confront rather than become resigned to low academic expectations for children in urban schools. From Ladson-Billings’s perspective, “no matter what else the schools find themselves doing, promoting students’ academic achievement is among their primary functions” (p. 56).

The authors in this series extend this perspective to teaching ELLs in the content areas. For example, how might ELLs be included in a literature lesson on Hardy’s use of landscape imagery in *The Mayor of Casterbridge*, or an economics lesson on the principle of comparative advantage, or a biology lesson on the ecosystem of a pond? Such topics, experienced educators quickly recognize, are often difficult for native speakers of English. How can teachers break down these subjects into topics in a way that is educationally significant for ELLs?

The purpose of this series is to assist current and prospective educators to plan and implement lessons that do justice to the goals of the curriculum and make sense to and interest ELLs. If the needs of diverse learners are to be met, Ladson-Billings (2001) underscores that innovation is demanded, not that teachers merely pine for how things once were. The most obvious innovation in this series is to bring language scholars and specialists in the methods of teaching particular school subjects together. Although this approach is scarcely unique, it remains relatively uncommon. Combining the two groups brings more to addressing the problems of instruction than could be obtained by the two groups working separately. Even so, these volumes hardly tell the reader “everything there is to know” about the problems addressed. But we do know that our teacher education students report that even modest training to teach ELLs can make a significant difference in the classroom. We hope this series extends those successes to all the content areas of the curriculum.
We wish to express our sincere appreciation to our colleagues, Dr Barbara Cruz and Dr Stephen Thornton, professors in the Department of Secondary Education at the University of South Florida, and Dr Tony Erben, Associate Professor at the University of Tampa, for their foresight in conceiving the Teaching English Language Learners (ELLs) across the Curriculum series, for serving as series editors, and for inviting us to write this book. We also wish to thank them for their generosity in sharing their time, ideas, resource materials, and—most importantly—their enthusiasm for this project. Thanks also to Dr Erben for producing Part 1 of the series.

Our thanks go to the ESOL support personnel in Tampa area schools and their students whom we interviewed for background information about the journey that English language learners undertake as they master their new language and prepare for a career. We were greatly impressed by their caring and commitment. We also thank the Career & Technical Education instructors throughout the state of Florida who shared information with us through a statewide survey about the challenges they face as they support their English language learning students. Our appreciation goes to:

Ms Stephanie Osborn, ESOL Teacher, Wharton High School
Ms Aurora Valenziano, Bilingual Aide, Wharton High School
Ms Lesleigh Lopez, ESOL Specialist, Leto High School
Mr Eric Issac, Computer Systems Technology Instructor, Leto High School
Ms Kim Friedmeyer, LPn (licensed practical nurse) instructor, Erwin Technical Center
LPn student, Erwin Technical Center
We would also like to acknowledge the following organizations for granting us permission to include their materials in this book:

The Association for Career and Technical Education
The Career Academy Network
The States’ Career Cluster Initiative
National Governors Association

Victor M. Hernández-Gantes and William Blank
Career & Workforce Education Program
Department of Adult, Career & Higher Education
University of South Florida
March 2008
Kim Friedmeyer—a nursing instructor at a technical center in Tampa, Florida—realized that the number of students considered as English language learners (ELLs) had been rising steadily each year. Their backgrounds and needs varied and she lacked the appropriate preparation and resources to help them. Related supports at her school were limited to testing initial language proficiency and she could not find much in the way of instructional resources for use in the classroom or for teaching nursing procedures.

Unfortunately, Kim's situation is not unique. All teachers, career and technical education (CTE) teachers included, are experiencing similar challenges. The growth in the number of English language learners (ELLs) in the United States is overwhelming, and it is not surprising to see the trend translating into increases in student enrollments across the public education pipeline.* The question is “Are schools and teachers prepared to help students with limited English language proficiency?” Are CTE (formerly known as vocational education) programs and teachers, in particular, ready to meet the instructional challenges posed by English language learners? Teachers, in general, are not well prepared to serve the special needs of ELLs. If anything, CTE teachers may be at a greater disadvantage since technical programs have been traditionally viewed as the place for students with at-risk factors. Further, CTE teachers are often hired based on their occupational expertise and may be less likely to have the appropriate pedagogical knowledge and preparation for helping English language learners compared with teachers in academic disciplines. Thus, CTE teachers may need help identifying, designing, and implementing instructional strategies appropriate for English language learners. Let's take a closer look of the issues and challenges resulting from the increase in ELLs in the schools.

*Although other terms are used (e.g. limited English proficient, English as a second language), we will use the term English language learner (ELL) throughout the book, mostly because of its widespread use and acceptance.
Teaching English Language Learners in Career and Technical Education Programs

The Rising Enrollment of English Language Learners

Let’s face it, the growth of ELLs is steady and we are more likely to see increased enrollments in our schools. In 2003, the Census Bureau reported that 18 percent of the population in the United States did not speak English at home. This represented an increase of 50 percent over the previous two decades (U.S. Census Bureau, 2003)! The trend is happening everywhere in the country, as demonstrated by growth in the ELL population in 45 states. In six of these states, the number of non-English speakers actually doubled between 1990 and 2000 (U.S. Census Bureau, 2003). Although the entire country is affected to some degree, some regions and states are impacted more than others. For example, more than 20 percent of the 342,000 students in the Miami-Dade County school district are foreign born, and 15 percent of those in the Broward County district (just north of Miami, FL) were born outside the United States. Similarly, in 2006, over 700,000 students in Texas were classified as limited English speaking. To cope with these numbers, Texas has been recruiting ESOL (English for speakers of other languages) teachers from Mexico.

Immigration to the United States has reached levels not seen in almost a century. It is projected that net international migration to this country will account for more than half of the nation’s population growth from now until 2015 (Kirsch, Braun, Yamamoto, & Sum, 2007). Immigrants and refugees make up an ever-increasing percentage of the U.S. labor force, and it is vital to the economic well-being of the country for them and their sons and daughters not only to learn English but to master career-related skills and knowledge that will lead them to high-wage employment. The situation in Florida, as in other states that have high concentrations of immigrants, is revealing. Almost one-fourth of the total workforce in the state was born outside the United States. Immigrants make up almost half of the $65.8 billion construction industry, half of the $86 billion agriculture industry, and 30 percent of the huge service workforce. One recent study put the estimated annual taxes paid by immigrants in Florida at $15 billion or $4,756 per capita.

New arrivals come from almost every country on the globe; however, a large proportion come from a relatively small number of countries. Thirteen countries that each sent 100,000 or more immigrants to America between 2000 and 2004 accounted for two-thirds of all immigration. Of these 13 countries, only one is primarily English speaking (Canada); the largest source of new arrivals is Mexico, which accounts for about one-third of the total (Kirsch et al., 2007). To this end, there is much misinformation and myth surrounding immigrants that often get in the way of making rational decisions about dealing with immigration issues in general, and about the large number of non-English-speaking students in our schools in particular. For example, a study at Florida International University (Eisenhauer, Zhang, Hernandez, & Angee, 2007) reported that, compared with their native-born counterparts, immigrants in Florida:

- are just as likely to possess an advanced degree;
- are almost as likely to hold a bachelor’s degree;
- are more likely to be an entrepreneur;
- contribute equally or more to the economy.

A good example of the heated emotions that are sometimes tied to the immigration issue are the comments made by the well-known political figure and former House Speaker Newt Gingrich when he said “We should replace bilingual education with immersion in English so people learn the common language of the country and they learn the language of prosperity, not the language of living in a ghetto” (Houston Chronicle, 2007). As expected, his comments brought about a torrent of heated reactions and continue to fuel an ongoing immigration debate.

In the United States, Spanish speakers make up the largest of the four major language groups among ELLs. The number of Spanish speakers in the United States increased dramatically, by
about 60 percent, from 1990 to 2002, and Spanish continues to be second only to English as the primary language most frequently spoken at home in the United States (U.S. Census Bureau, 2003). Across all language groups, including Spanish, other Indo-European, Asian and Pacific Island, and “all other languages,” the common thread is that only a small percentage claim to speak English very well (U.S. Census Bureau, 2003). That means there is an ever-present need for learning English at various levels in a variety of settings and contexts. Thus, it is not surprising that school-age ELL students are enrolling in public schools in increasing numbers (Recruiting New Teachers, Inc., 2002; National Center for Education Statistics, 2006).

Furthermore, the National Center for Education Statistics (NCES) has reported that the number of children aged 5–17 speaking a language other than English at home more than doubled between 1979 and 2005. Specifically, the number of children considered to be ELLs (i.e. those who spoke English with difficulty) increased by 124 percent! By comparison, the overall number of children aged 5–17 in the general population grew by only 19 percent during the same period (NCES, 2005). In elementary and secondary schools, the number of ELLs actually grew by about 152 percent between 1990 and 2005, about seven times the rate of total student enrollment (National Clearinghouse for English Language Acquisition, 2006).

What are the Challenges for Teachers?

By all accounts, ELLs represent the fastest growing group of students in the public schools (Recruiting New Teachers, Inc., 2002; Flynn & Hill, 2005). Yet it appears that teachers are not prepared to meet the needs of ELLs. Available evidence clearly shows a gap between the rising number of ELLs and the percentage of teachers who are prepared to teach them (Watson, Miller, Driver, Rutledge, & McAllister, 2005). Research reports have consistently noted that only a small percentage of teachers who teach ELLs have received related training (Menken & Antunez, 2001; NCES, 2002a). For example, the majority of teachers in urban, suburban, or rural locations have never participated in professional development in how to teach ELL students (Lewis, Parsad, Carey, Bartfai, Smerdon, & Green, 1999).

In turn, new teachers entering the profession do so ill-prepared for the changing demographics of today’s classrooms as many teacher preparation programs do not adequately cover issues involving teaching and learning of ELLs (Meskill & Chen, 2002). Further, popular textbooks used in teacher education often do not address the growth of the ELL population. Nor do the books present much practical information on teaching and learning strategies for ELLs (Watson et al., 2005).

The challenge for new and current teachers is overwhelming considering the limitations in preparation and contemporary demands stemming from increased calls for accountability. Although the No Child Left Behind (NCLB) Act demands the availability of “highly qualified” teachers in every school, the emphasis is on mastery of specific content knowledge, and little is said about being able to meet the needs of special groups. Paradoxically, however, the NCLB Act mandates accountability for the educational needs of ELLs as part of annual progress reports (Flynn & Hill, 2005). In response to this challenge, districts and schools have resorted to quick fixes, such as the increased recruitment of ESOL or bilingual education teachers. The problem is that the supply has not met the demand, as over 38 percent of public schools reported related vacancies in the early 2000s (NCES, 2002b). Like it or not, with limited ESOL support, the responsibility of teaching language skills and academic content to ELLs is now becoming an integral part of the role of all teaching staff (Antunez, 2002; Flynn & Hill, 2005).

What’s a teacher to do in the midst of limited preparation and available supports? The first step is to identify needed skills and knowledge to better serve English language learners. To this
end, there is agreement that teachers should have a basic understanding of language proficiency and second language development, and about how students with diverse backgrounds perform in mainstream education (Flynn & Hill, 2005). Further, teachers should also be able to recognize the individual needs of culturally diverse students and integrate language with content instruction (Antunez, 2000). Given the diversity of the ELL population and varying individual needs, this represents an overwhelming challenge for all teachers.

Why Should Career and Technical Education Teachers Care?

Typical state regulations for enrollment in CTE programs mandate that a student’s level of English language proficiency should not be used as a criterion for placement in related classes or programs. However, over time, CTE has been notoriously used as a “dumping ground” for students with special needs under the premise they can “at least learn some” occupational skills despite their academic learning limitations. At any rate, once students are enrolled in a class or a program, CTE teachers are required to make the necessary accommodations and provide English language instruction appropriate to the students’ level of proficiency. The case of a business education program in a high school in the Tampa area may be a typical representation of these issues (Box 1).

**Box 1 English language learners in career and technical education programs**

In a typical suburban comprehensive high school (grades 9–12) in the Tampa area, student enrollment is about 2000 students and the curriculum includes some form of CTE program offerings. In a typical school we visited, a business education program staffed by 10 teachers offered courses in business technology (e.g. web design, business software applications). In addition, a “success center” provided services for transition from school to careers, including “technical and career education programs with an emphasis on occupational awareness, basic work skills and preparation for continuing education.”

White students constitute the largest group (40 percent) at this Tampa high school, followed by black (29 percent) and Hispanic (22 percent) students. The rest (9 percent) of the study body is represented by students of multiracial, American-Indian, and Asian ethnicity. In addition to English, 18 languages are represented in the school.

Five ESOL teachers/assistants work with about 200 students at different stages of English proficiency. Almost all students identified as ELLs enroll in career and technical education courses, which places considerable demands on CTE instructors to meet their special needs. The business education program at this high school accepts all students with limited English proficiency.

The overrepresentation of ELLs in CTE and the challenges they bring to the classroom are not new. The need for English language intervention programs has been highlighted since the mid-1980s—when the field was known as vocational education—as a means to help students succeed in CTE programs (Friedenberg & Bradley, 1984). Much has changed in vocational education over the past two decades, though. Not only is the field now known as CTE, but programs are currently delivered under a variety of new designs (e.g. career academies, career pathways, youth
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These CTE designs feature more rigorous integration of academic and technical education, which make them more challenging even for those students for whom English is the native language.

Further, ELLs are usually recent immigrants from low-income families with very limited knowledge of the English language who view participation in CTE programs as a means for economic survival. In today’s economy, the ability to interact in English even in relatively low-wage jobs in hotels, hospitals, construction, or manufacturing has become as important as specific occupational skills. As a result, a growing number of ELL students seek CTE courses or programs hoping to acquire English language proficiency as well as job-specific skills (Buchanan, 1990).

Meeting the needs of such students can be particularly challenging for career and technical educators given that their ELL students are learning the basics of a new language, adapting to a new culture, and at the same time attempting to master an entirely new technical, occupationally specific vocabulary. In some new and emerging occupational fields there may be technical aspects of an occupation such as processes, equipment, and instruments for which the ELL doesn’t know the equivalent vocabulary in his or her native language. The case of Lena, a nursing student originally from Croatia, illustrates these issues (Box 2).

**Box 2 From Croatia to Florida**

Lena came to the United States from Croatia in 2000. She recalled with fondness the time she took ESOL classes, although her experience with the teacher was not very productive. The teacher was bilingual in Spanish and was not able to assist her much compared with the majority of Spanish-speaking students in the ESOL classes. To overcome the limited assistance she received in the classes, she resorted to carrying and using a dictionary to look up words on the spot.

Lena is completing a practical nursing program at a technical center. For the most part, she is doing well except in pharmacology. This has been a difficult subject because of the terminology. In her nursing program, she likes the clinics because of the opportunity to refine her English-speaking ability through the required personal interactions.

She recommends teachers take the time to explain the same concept, idea, or procedure in a variety of ways and to recognize the language limitations by speaking clearly and slowly. “Sometimes they forget there are students like me in the class and they speak fast. And it is hard to understand the whole thing when you missed a big chunk of what they said.”

How prepared are CTE teachers for meeting the needs of ELLs? What are the supports available in schools to help teachers provide effective instruction to ELLs? Teachers are not very well prepared and lack appropriate supports, according to a national report on the vocational teacher pipeline (Cramer, 2004). In the context of contemporary emphasis on rigorous infusion of academic and technical skills, teachers’ backgrounds, and teaching preparation, new CTE teachers are academically or pedagogically unprepared compared with teachers in secondary academic fields. Incoming CTE teachers scored consistently lower than their secondary counterparts on an assessment of principles of learning and teaching (Cramer, 2004). The variation in pedagogical knowledge may be associated with the fact that CTE teachers tend to be older and out of school longer than are academic teachers. In addition, CTE teachers may join the teaching profession through alternative certification paths and be recruited into teaching as a result of their technical skills and knowledge.
In general, considering that traditional teacher preparation programs and textbooks do not adequately provide prospective teachers with the skills and knowledge to teach ELLs, CTE teachers appear to be at an even greater disadvantage (Meskill & Chen, 2002; Cramer, 2005; Watson et al., 2005). To make matters worse, it has been reported that the level of relevant school supports and services and collaboration with ESOL staff is usually low for CTE teachers.

The combination of all these factors and conditions leads to teacher frustration and resistance to investing time in helping ELLs (Wichowski & Nunez, 2005). An informal poll of CTE teachers participating in a master’s degree program at the University of South Florida confirmed this assessment. Almost all respondents admitted having ELL students in their classrooms with varying levels of English proficiency. Attitudes toward ELLs were mixed, and the majority of respondents reported lacking appropriate preparation to teach ELLs. Also, respondents confirmed the limited support from ESOL staff and the lack of appropriate curricular materials appropriate for ELL students (V.M. Hernández-Gantes, W. Blank, & T. Leslie, informal poll of career and technical education teachers of the readiness and supports for working with ELL students, unpublished raw data, 2007).

To make matters even more challenging, the expectations raised by high-stakes testing and recent calls for increased accountability, such as the NCLB Act, have put an additional strain on CTE teachers in two conflicting ways. First, since the mid-1990s, Perkins requirements—the current federal legislation providing funds to CTE programs—have called for increased rigor of academics in CTE programs. As a result, the academic demands on students participating in emerging CTE programs have been raised (U.S. Department of Education, 2004). Yet CTE programs continue to be perceived as a “dumping ground” by many, and ELLs continue to be “tracked” into such programs to prevent the lowering of test scores in mainstream classrooms. Second, as a result of the pressure to perform under the NCLB Act and states’ high-stakes testing, CTE teachers may be asked to spend more time on remedial academic activities as part of strategies to raise scores and help schools meet annual progress goals. In the process, with the focus on raising overall reading and mathematics school scores, teachers may have less time to think about and find ways to meet the specific needs of individual ELL students (Malone, 2002; Flynn & Hill, 2005). Under these circumstances, CTE teachers need practical supports and resources to help them better understand and more effectively teach ELL students in the classroom and in the technical laboratory.

In the context of these challenges, Crandall (1994) reports that content-centered language learning not only is desirable, but is essential for the overall educational development of the student. She notes that instructional strategies such as cooperative learning, task-based or experiential learning, whole-language approach, and graphic organizers are central for content learning. To this end, CTE makes extensive use of contextual teaching and learning strategies such as work-based learning, service learning, school-based enterprises, and project-based learning that—if used purposefully—can benefit ELLs greatly (Harwell & Blank, 2001).

Given the implications of these trends and challenges for career and technical education, a book for career and technical educators on teaching ELLs is timely. Although general ESOL books exist, without exception they are more appropriate for ESOL teachers rather than for CTE teachers who have ELLs in their classrooms. There are simply no books addressing teaching and learning in career-oriented programs with specific focus on issues relevant to ELLs and their teachers.

What are the Goals of this Book?

The primary aim of Teaching English Language Learners (ELLs) in Career and Technical Education Programs is to help CTE teachers meet the instructional challenges posed by the rising number of
ELLs. A secondary aim is to inform academic educators and decision-makers such as principals and counselors that participating in CTE programs is a sound strategy for helping ELLs succeed in school and beyond. This book is part of the Teaching English Language Learners (ELLs) across the Curriculum series and bridges what we know about language development and what works for ELLs in the context of practical applications in CTE programs.

This book has five goals. The first goal is to provide CTE instructors and other supporting staff with background knowledge on recent findings about language development and what works for ELLs. Given the lack of related resources specifically developed for CTE teachers, this book provides a valuable contribution to the field by summarizing promising research-based practices and ideas for teaching ELLs.

The second goal is to provide a description of the dramatic transformation that “vocational education” has undergone to re-emerge as today’s modern “career and technical education,” making it an ideal choice for those learning English. As emerging CTE programs are more prominently integrated with academics, the contextual, hands-on nature of related curriculum and instruction offers a wealth of opportunities for authentic learning aligned with practices that work with ELLs.

The third goal is to summarize promising contextual instructional strategies typically found in CTE programs that are positively associated with student learning. Teaching and learning in CTE programs present many opportunities to bridge language learning in the context of preparation about, for, or through work. This book highlights potential in-school and work-based instructional strategies that are particularly relevant for teaching ELLs.

The fourth goal is to show how knowledge of English language learning and contextual instructional practices can be integrated to help ELLs succeed in career and technical education programs. The applied focus of CTE curriculum and instruction involving authentic learning tasks requiring the use of tools, materials, and technical equipment makes possible the use of a variety of interactive activities supporting student engagement, and cognitive and language development. Emerging from research on English language learning, this book outlines the use of non-linguistic representations, questioning, peer learning, and other instructional strategies that should work for ELLs in CTE programs.

The fifth and final goal is to highlight a number of resources that can be useful for teachers and ELL support personnel to facilitate the teaching of ELLs in career and technical education programs. Although resources specifically developed for CTE teachers are scarce, a variety of related resources with potential for adaptation in CTE program contexts can be found both in print and electronically. In this book, we made an effort to identify resources that may be particularly useful for CTE teachers.

Who Can Benefit from this Book?

The primary target audience is teaching staff who work with English language learners in career and technical education programs. Supervisors and administrators who provide related supports should also benefit from this book. Further, academic educators, principals, and policymakers are another important audience who may find this book useful as well. The latter audience needs to be aware of the vital role new designs in CTE can play in helping English language learners become proficient in English, meet academic goals, and learn valuable occupational skills needed for transitioning into self-sufficiency. This book should also be a valuable resource in pre-service teacher education programs that prepare future CTE teachers.

Depending on specific interests and context, the book can be used by CTE teachers in a variety of ways including the classroom, academic/technical laboratory, and in the workplace as part
of on-the-job training or internship/apprenticeship activities. Teachers can jump directly to the sections where instructional strategies are featured, though it is best to first get familiar with background material on language development and English language learners. The book is organized in three parts:

- **Part 1: Your English Language Learner.** This part provides readers with an overview of the linguistic mechanics of second language development and promising instructional strategies. Specifically, readers learn what to expect in the language abilities of ELLs as their proficiency in English develops over time.

- **Part 2: The Changing Landscape of Career and Technical Education: Implications for ELL Students.** This part describes the recent transition of “vocational education” into career and technical education, the emerging program designs, and the many benefits of program participation. In addition, contextual teaching and learning strategies commonly used in CTE programs are featured in this part. This part will be helpful to those who are unfamiliar with today’s CTE and how dramatically it has changed and how these changes make it so well suited to meeting the needs of ELLs. It can also serve as a point of reference for CTE teachers who are considering or are in the process of making the transition from vocational education to CTE.

- **Part 3: Teaching English Language Learners in CTE Programs.** This part provides instructional strategies for teaching CTE to ELLs applicable across program designs and occupational themes. Instructional strategies are grounded in typical CTE instructional contexts (e.g. classroom, technical laboratories), integration with academic education, and the interface with research on English language development.

Finally, we provide a compilation of annotated resources for teachers for further reading, for additional insights, or as sources of practical information on related topics. Many of the identified resources are free and readily available online.

Whereas Part 1 of this book is written by a language scholar, we come to this task as CTE educators. Aside from the fact that one of the authors learned English as a second language, and the other’s spouse was an immigrant at age 14 who spoke no English, we are not language specialists. Our professional background has been in contextual teaching and learning aimed at preparing youth and adults for the workforce. Between us, for example, we have researched and contributed to the design and development of a number of projects rooted in contextual teaching and learning practices over the years. We have also taught in graduate programs for a combined total of over 30 years, and over time we have encountered many examples of the plight of CTE teachers, such as Kim Friedmeyer’s, trying to help ELL students.

It is our belief, though, that our limited knowledge of language development gave us the appropriate perspective for finding the right balance in terms of background content and instructional strategies. Essentially, we put ourselves in the CTE teachers’ shoes and we tried to sort out what would be important to know and do in the classroom and technical laboratories. It is with this perspective in mind that we approached the organization and content of this book.

We hope that the concepts, information, and suggestions contained in this book are helpful as a frame of reference for identifying instructional practices appropriate to local conditions, available time, energy, imagination, and knowledge of the topic as well as the individual students to be taught.
Part 1
Your English Language Learner
Tony Erben
University of Tampa
English language learners (ELLs) represent the fastest growing group throughout all levels of schooling in the United States. For example, between the 1990–1991 school year and the 2000–2001 school year, the ELL population grew approximately 105 percent nationally, while the general school population grew only 12 percent (Kindler, 2002). In several states (including Texas, California, New Mexico, Florida, Arizona, North Carolina, and New York), the percentage of ELLs within school districts ranges anywhere between 10 and 50 percent of the school population. In sum, there are over 10 million ELLs in U.S. schools today. According to the U.S. Department of Education, one out of seven students in our nation's classrooms speaks a language other than English at home. Although many of these students are heritage language learners and are proficient in English, many others are recent immigrants with barely a working knowledge of the language let alone a command of academic English. Meeting the needs of such students can be particularly challenging for all teachers given the often text-dependent nature of content areas. The language of the curriculum is often abstract and includes complex concepts calling for higher-order thinking skills. Additionally, many ELLs do not have a working knowledge of American culture that can serve as a schema for new learning.

But let's now look at these English language learners. Who are they and how do they come to be in our classrooms?

ELL is the term used for any student in an American school setting whose native language is not English. Their English ability lies anywhere on a continuum from knowing only a few words to being able to get by using everyday English, but still in need of acquiring more English so that they can succeed educationally at school. All students enrolled in an American school, including ELLs, have the right to an equitable and quality education. Traditionally, many ELLs are placed in stand-alone English to speakers of other languages (ESOL) classes and learn English until they are deemed capable of following the regular curriculum in English. However, with the
introduction of federal and state legislation such as No Child Left Behind (2002), Proposition 227 in California, and other English-only legislation in other states, many school systems now require ELLs to receive their English instruction not through stand-alone ESOL classes, but directly through their curriculum content classes. Today “mainstreaming” is the most frequently used method of language instruction for ELL students in U.S. schools. Mainstreaming involves placing ELLs in content-area classrooms where the curriculum is delivered through English; curricula and instruction are typically not modified in these classrooms for non-native English speakers (Carrasquillo & Rodriguez, 2002). According to Meltzer and Hamann (2005), placement of ELLs in mainstream classes occurs for a number of reasons including assumptions by non-educators about what ELLs need, the scarcity of ESOL-trained teachers relative to demand, the growth of ELL populations, the dispersal of ELLs into more districts across the country, and restrictions in a growing number of states regarding the time ELLs can stay in ESOL programs. They predict that, unless these conditions change, ELLs will spend their time in school (1) with teachers not adequately trained to work with ELLs, (2) with teachers who do not see it as a priority to meet the needs of their ELLs, and (3) with curricula and classroom practices that are not designed to target ELL needs (Coady et al., 2003). As we shall later see, of all possible instructional options to help ELLs learn English, placing an ELL in a mainstreamed English-medium classroom where no accommodations are made by the teacher is the least effective approach. It may even be detrimental to the educational progress of ELLs.

This then raises the question of whether or not the thousands of curriculum content teachers across the United States, who now have the collective lion’s share of responsibility in providing English language instruction to ELLs, have had preservice or in-service education to modify, adapt, and make the appropriate pedagogical accommodations within their lessons for this special group of students. This is important: ELLs should remain included in the cycle of everyday learning and make academic progress commensurate with grade-level expectations. It is also important that teachers feel competent and effective in their professional duties.

The aim of Part 1 of this book is to provide you the reader with an overview of the linguistic mechanics of second language development. Specifically, as teachers you will learn what to expect in the language abilities of ELLs as their proficiency in English develops over time. Although the rate of language development among ELLs depends on the particular instructional and social circumstances of each ELL, general patterns and expectations will be discussed. We will also outline for teachers the learning outcomes that ELLs typically accomplish in differing ESOL programs and the importance of the maintenance of first language development. School systems differ across the United States in the ways in which they try to deal with ELL populations. Therefore, we describe the pedagogical pros and cons of an array of ESOL programs as well as clarify terminology used in the field. Part 1 will also profile various ELL populations that enter U.S. schools (e.g. refugees vs. migrants, special needs) and share how teachers can make their pedagogy more culturally responsive. Finally, we will also survey what teachers can expect from the cultural practices that ELLs may engage in in the classroom as well as present a myriad of ways in which both school systems and teachers can better foster home–school communication links.
1.2
The Process of English Language Learning and What to Expect

It is generally accepted that anybody who endeavors to learn a second language will go through specific stages of language development. According to some second language acquisition theorists (e.g. Pienemann, 2007), the way in which language is produced under natural time constraints is very regular and systematic. For example, just as a baby needs to learn how to crawl before it can walk, so too a second language learner will produce language structures only in a predetermined psychological order of complexity. What this means is that an ELL will utter “homework do” before being able to utter “tonight I homework do” before ultimately being able to produce a target-like structure such as “I will do my homework tonight.” Of course, with regard to being communicatively effective, the first example is as successful as the last example. The main difference is that one is less English-like than the other. Pienemann’s work has centered on one subsystem of language, namely morphosyntactic structures. It gives us an interesting glimpse into how an ELL’s language may progress (see Table 1.1).

Researchers such as Pienemann (1989; 2007) and Krashen (1981) assert that there is an immutable language acquisition order and, regardless of what the teacher tries to teach to the ELL in terms of English skills, the learner will acquire new language structures only when (s)he is cognitively and psychologically ready to do so.

What can a teacher do if an ELL will only learn English in a set path? Much research has been conducted over the past 20 years on this very question and the upshot is that, although teachers cannot change the route of development for ELLs, they can very much affect the rate of development. The way in which teachers can stimulate the language development of ELLs is by providing what is known as an acquisition-rich classroom. Ellis (2005), among others, provides useful research generalizations that constitute a broad basis for “evidence-based practice.” Rather
than repeat them verbatim here, we have synthesized them into five principles for creating effective second language learning environments. They are presented and summarized below.

**Principle 1: Give ELLs Many Opportunities to Read, to Write, to Listen to, and to Discuss Oral and Written English Texts Expressed in a Variety of Ways**

Camilla had only recently arrived at the school. She was a good student and was making steady progress. She had learned some English in Argentina and used every opportunity to learn new words at school. Just before Thanksgiving her science teacher commenced a new unit of work on the periodic table and elements. During the introductory lesson, the teacher projected a periodic table on the whiteboard. She began asking the students some probing questions about the table. One of her first questions was directed to Camilla. The teacher asked, “Camilla, tell me what you see on the right hand side of the table.” Camilla answered, “I see books, Bunsen burner, also pencils.”

Of course the teacher was referring not to the table standing in front of the whiteboard, but to the table projected onto the whiteboard. Though a simple mistake, the example above is illustrative of the fact that Camilla has yet to develop academic literacy.

In 2001, Meltzer defined academic literacy as the ability of a person to “use reading, writing, speaking, listening and thinking to learn what they want/need to learn AND [to] communicate/demonstrate that learning to others who need/want to know” (p. 16). The definition is useful in that it rejects literacy as something static and implies agency on the part of a learner who develops an ability to successfully put her/his knowledge and skills to use in new situations. Being proficient in academic literacy requires knowledge of a type of language used predominantly in classrooms
and tied very much to learning. However, even though it is extremely important for ELLs to master, not many content teachers take the time to provide explicit instruction in it. Moreover, many content teachers do not necessarily know the discipline-specific discourse features or text structures of their own subject areas.

Currently, there is much research to suggest that both the discussion of texts and the production of texts are important practices in the development of content-area literacy and learning. For ELLs this means that opportunities to create, discuss, share, revise, and edit a variety of texts will help them develop content-area understanding and also recognition and familiarity with the types of texts found in particular content areas (Boscolo & Mason, 2001). Classroom practices that are found to improve academic literacy development include teachers improving reading comprehension through modeling, explicit strategy instruction in context, spending more time giving reading and writing instruction as well as having students spend more time with reading and writing assignments, providing more time for ELLs to talk explicitly about texts as they are trying to process and/or create them, and helping to develop critical thinking skills as well as being responsive to individual learner needs (Meltzer & Hamann, 2005).

The importance of classroom talk in conjunction with learning from and creating texts cannot be underestimated in the development of academic literacy in ELLs. In the case above, rather than smiling at the error and moving on with the lesson, the teacher could have further developed Camilla’s vocabulary knowledge by easily taking a two-minute digression from the lesson to brainstorm with the class all the ways the word table can be used at school—in math, social studies, language arts, etc.

**Principle 2: Draw Attention to Patterns of English Language Structure**

In order to ride a bike well, a child needs to actually practice riding the bike. Sometimes, training wheels are fitted to the back of the bike to help the younger child maintain his/her balance. In time, the training wheels are taken away as the child gains more confidence. As this process unfolds, parents also teach kids the rules of the road: how to read road signs, to be attentive to cars, to ride defensively, etc. Although knowing the rules of the road won’t help a child learn to ride the bike better in a physical sense, it will help the child avoid being involved in a road accident. Knowing the rules of the road—when and where to ride a bike, etc.—will make the child a more accomplished bike rider. Why use this example? Well, it is a good metaphor to explain that language learning needs to unfold in the same way. An ELL, without much formal schooling, will develop the means to communicate in English. However, it will most likely be only very basic English. Unfortunately, tens of thousands of adult ELLs across this country never progress past this stage. School-age ELLs have an opportunity to move beyond a basic command of English—to become accomplished communicators in English. However, this won’t happen on its own. To do so requires the ELL to get actively involved in classroom activities, ones in which an ELL is required to practice speaking.

As mentioned above, early research into naturalistic second language acquisition has evidenced that learners follow a “natural” order and sequence of acquisition. What this means is that grammatical structures emerge in the communicative utterances of second language learners in a relatively fixed, regular, systematic, and universal order. The ways in which teachers can take advantage of this “built-in syllabus” are to implement an activity-centered approach that sets out to provide ELLs with language-rich instructional opportunities and offer ELLs explicit exposure and instruction related to language structures that they are trying to utter but with which they still have trouble.
Principle 3: Give ELLs Classroom Time to Use their English Productively

A theoretical approach within the field of second language acquisition (SLA) called the interaction hypothesis and developed primarily by Long (1996; 2006) posits that acquisition is facilitated through interaction when second language learners are engaged in negotiating for meaning. What this means is that, when ELLs are engaged in talk, they make communication modifications that help language become more comprehensible, they more readily solicit corrective feedback, and they adjust their own use of English.

The discrepancy in the rate of acquisition shown by ELLs can be attributed to the amount and the quality of input they receive as well as the opportunities they have for output. Output means having opportunities to use language. Second language acquisition researchers agree that the opportunity for output plays an important part in facilitating second language development. Skehan (1998) drawing on Swain (1995) summarizes the contributions that output can make: (1) by using language with others, ELLs will obtain a richer language contribution from those around them, (2) ELLs will be forced to pay attention to the structure of language they listen to, (3) ELLs will be able to test out their language assumptions and confirm them through the types of language input they receive, (4) ELLs can better internalize their current language knowledge, (5) by engaging in interaction, ELLs can work towards better discourse fluency, and (6) ELLs will be able to find space to develop their own linguistic style and voice.

It behooves teachers to plan for and incorporate ELLs in all language activities in the classroom. Of course an ELL will engage with an activity based on the level of proficiency (s)he has at any given time and the teacher should take this into account when planning for instruction. Under no circumstances should ELLs be left at the “back of the classroom” to linguistically or pedagogically fend for themselves.

Principle 4: Give ELLs Opportunities to Notice their Errors and to Correct their English

Throughout the day, teachers prepare activities for students that have the sole intent of getting them to learn subject matter. Less often do teachers think about the language learning potential that the same activity may generate. This can be applied to ELLs: Teachers encourage them to notice their errors, to reflect on how they use English, and to think about how English works, which plays a very important role in their language development. In a series of seminal studies, Lyster and his colleagues (Lyster, 1998; 2001; 2004; 2007; Lyster & Ranta, 1997; Lyster & Mori, 2006) outline six feedback moves that teachers can use to direct ELLs’ attention to their language output and in doing so help them correct their English.

Example 1

Student: “The heart hits blood to se body. . .”
Teacher: “The heart pumps blood to the body.”

In the above example, an ELL’s utterance is incorrect, and the teacher provides the correct form. Often teachers gloss over explicitly correcting an ELL’s language for fear of singling out the student in class. However, explicit correction is a very easy way to help ELLs notice the way they use language.
Example 2

*Student:* “I can experimenting with Bunsen burner.”
*Teacher:* “What? Can you say that again?”

By using phrases such as “Excuse me?”, “I don’t understand,” or “Can you repeat that?”, the teacher shows that the communication has not been understood or that the ELL’s utterance contained some kind of error. *Requesting clarification* indicates to the ELL that a repetition or reformulation of the utterance is required.

Example 3

*Student:* “After today I go to sport.”
*Teacher:* “So, tomorrow you are going to play sports?”
*Student:* “Yes, tomorrow I am going to play sport.”

Without directly showing that the student’s utterance was incorrect, the teacher implicitly *recasts* the ELL’s error, or provides the correction.

Example 4

*Teacher:* “Is that how it is said?” or “Is that English?” or “Does that sound right to you?”

*Without* providing the correct form, the teacher provides a *metalinguistic clue*. This may take the form of asking a question or making a comment related to the formation of the ELL’s utterance.

Example 5

*Teacher:* “So, then it will be a . . .” (with long stress on “a”)

The teacher directly gets the correct form from the ELL by pausing to allow the student to complete the teacher’s utterance. *Elicitation* questions differ from questions that are defined as metalinguistic clues in that they require more than a yes/no response.

Example 6

*Student:* “The two boy go to town tomorrow.”
*Teacher:* “The two boys go to town tomorrow.” (with teacher making a prolonged stress on “boy”)

*Repetitions* are probably one of the most frequent forms of error correction carried out by teachers. Here a teacher repeats the ELL’s error and adjusts intonation to draw an ELL’s attention to it.

Using these corrective feedback strategies helps to raise an ELL’s awareness and understanding of language conventions used in and across content areas.
One day, when we had visitors from up north, our daughter came home very excited and said that the teacher had announced that the class would be learning Spanish from the beginning of the month. Our friend, ever the pessimist, said, “I learned Spanish for four years at high school, and look at me now, I can’t even string a sentence together in Spanish.” What comes to mind is the old saying, “use it or lose it.” Of course, my friend and I remember our foreign language learning days being spent listening to the teacher, usually in English. We were lucky if we even got the chance to say anything in Spanish. Since we never used Spanish in class, our hopes of retaining any Spanish diminished with each passing year since graduation. My daughter’s 20-year-old brother, on the other hand, had the same Spanish teacher that my daughter will have. He remembers a lot of his Spanish, but also that his Spanish classes were very engaging. A lesson would never pass in which he didn’t speak, listen to, read, and write in Spanish. He was always involved in some learning activity and he always expressed how great it was to converse during the class with his friends in Spanish by way of the activities that the teacher had planned.

I use this analogy as it applies to ELLs as well. In order for ELLs to progress with their English language development, a teacher needs to vary the types of instructional tasks that the ELL will engage in. Student involvement during instruction is the key to academic success whereas constant passive learning, mostly through lecture-driven lessons, will greatly impede any language learning efforts by an ELL.

Our five principles provide a framework with which to construct a curriculum that is sensitive to the language developmental needs of ELLs. However, to further solidify our understanding of an ELL’s language progress, it is necessary to have a clear picture of what ELLs can do with their language at different levels of proficiency and what implications this has for instruction. Although many taxonomies exist that seek to categorize the developmental stages of second language learners, many education systems throughout the United States have adopted a four-tier description. The four stages are called Preproduction, Early Production, Speech Emergence, and Intermediate Fluency (Krashen & Terrell, 1983).

The preproduction stage applies to ELLs who are unfamiliar with English. They may have had anything from one day to three months of exposure to English. ELLs at this level are trying to absorb the language, and they can find this process overwhelming. In a school context, they are often linguistically overloaded, and get tired quickly because of the need for constant and intense concentration. An ELL’s language skills are at the receptive level, and they enter a “silent period” of listening. ELLs at this stage are able to comprehend more English than they can produce. Their attention is focused on developing everyday social English. At the preproduction stage, an ELL can engage in nonverbal responses; follow simple commands; point and respond with movement; and utter simple formulaic structures in English such as “yes,” “no,” “thank you,” or use names. ELLs may develop a receptive vocabulary of up to 500 words.

By the time an ELL enters the early production stage, (s)he will have had many opportunities to encounter meaningful and comprehensible English. They will begin to respond with one- or two-word answers or short utterances. ELLs may now have internalized up to 1,000 words in their receptive vocabulary and anything from 100 to 500 words in their active vocabulary. In order for ELLs to begin to speak, teachers should create a low-anxiety environment in their classrooms.
At this stage, ELLs are experimenting and taking risks with English. Errors in grammar and pronunciation are to be expected. Pragmatic errors are also common. Teachers need to model/demonstrate with correct language responses in context. Redundancies, repetitions, circumlocutions, and language enhancement strategies are important for teachers to use when interacting with ELLs at this level.

At the **speech emergence stage**, an ELL will begin to use the language to interact more freely. At this stage, ELLs have a 7,000-word receptive vocabulary. They may have an active vocabulary of up to 2,000 words. By this time, ELLs may have had between one and three years’ exposure to English. It is possible that they have a receptive understanding of academic English; however, in order to make content-area subject matter comprehensible, teachers are advised to make great use of advance organizers. Teachers should make explicit attempts to modify the delivery of subject matter, to model language use, and to teach metacognitive strategies in order to help ELLs predict, describe, demonstrate, and problem solve. Because awareness of English is growing, it is also important for teachers to provide ELLs at this stage with opportunities to work in structured small groups so that they can reflect and experiment with their language output.

At the stage of **intermediate fluency**, ELLs may demonstrate near-native or native-like fluency in everyday social English, but not in academic English. Often teachers become acutely aware that, even though an ELL can speak English fluently in social settings (the playground, at sport functions, etc.), they will experience difficulties in understanding and verbalizing cognitively demanding, abstract concepts taught and discussed in the classroom. At this stage ELLs may have developed up to a 12,000-word receptive vocabulary and a 4,000-word active vocabulary. Teachers of ELLs at the intermediate fluency level need to proactively provide relevant content-based literacy experiences such as brainstorming, clustering, synthesizing, categorizing, charting, evaluating, journaling, or log writing, including essay writing and peer critiquing, in order to foster academic proficiency in English.

At the University of South Florida, we have developed online ELL databases that have been created to provide pre- and in-service teachers with annotated audio and video samples of language use by ELLs who are at each of the four different levels of language proficiency. The video and audio files act as instructional tools that allow teachers to familiarize themselves with the language ability (speaking, reading, writing) of ELLs who are at different stages of development. For example, teachers may have ELLs in classes and not be sure of their level of English language development, nor be sure what to expect the ELL to be able to do with English in terms of production and comprehension. This naturally impacts how a teacher may plan for instruction. By looking through the databases, a teacher can listen to and watch representations of ELL language production abilities at all four levels (preproduction, early production, speech emergence, and intermediate fluency). In addition, the databases feature interviews with expert ESOL teachers, examples of tests used to evaluate the proficiency levels of ELLs, and selected readings and lesson plans written for ELLs at different levels of proficiency. Lastly, they provide case studies that troubleshoot pedagogical problem areas when teaching ELLs.

There are three databases: one that features ELLs at the elementary school level, one featuring ELLs at the middle school level, and one featuring ELLs at high school.
The three ELL databases can be found at:

- http://esol.coedu.usf.edu/elementary/index.htm (elementary school language samples);
- http://esol.coedu.usf.edu/middleschool/index.htm (middle school language samples);

It is important to remember that a lack of language ability does not mean a lack of concept development or a lack of ability to learn. Teachers should continue to ask inferential and higher-order questions (questions requiring reasoning ability, hypothesizing, inferring, analyzing, justifying, and predicting) that challenge an ELL to think.

Teaching Help

For two good websites that outline ways to enhance questioning using Bloom’s taxonomy, see www.teachers.ash.org.au/researchskills/dalton.htm (Dalton & Smith, 1986) and www.nwlink.com/~donclark/hrd/bloom.html (Clark, 1999). The latter gives a further detailed breakdown of Bloom’s learning domains in terms of cognitive, affective, and psychomotor key words and how these can be used to foster an ELL’s language learning.

Zehler (1994) provides a list of further strategies that teachers can use to engage ELLs at every stage. These include:

- asking questions that require new or extended responses;
- creating opportunities for sustained dialogue and substantive language use;
- providing opportunities for language use in multiple settings;
- restating complex sentences as a sequence of simple sentences;
- avoiding or explaining use of idiomatic expressions;
- restating at a slower rate when needed, but making sure that the pace is not so slow that normal intonation and stress patterns become distorted;
- pausing often to allow students to process what they hear;
- providing specific explanations of key words and special or technical vocabulary, using examples and non-linguistic props when possible;
- using everyday language;
- providing explanations for the indirect use of language (for example, an ELL student may understand the statement, “I like the way Mary is sitting” merely as a simple statement rather than as a reference to an example of good behavior).
Deciding on the Best ESOL Program

This section outlines the learning outcomes that ELLs typically accomplish in differing ESOL programs and the importance of the maintenance of first language development. Although school systems differ across America in the ways in which they try to deal with ELL populations, this section describes the pedagogical pros and cons of an array of ESOL programs and clarifies terminology used in the field.

There are several factors that influence the design of an effective ELL program. These include considerations regarding the nature of the ELL student demographics to be served, district resources, and individual student characteristics. The MLA Language Map at www.mla.org/map_main provides an interactive look into the distribution of languages spoken in the United States. The online maps are able to show numbers as well as percentages by state, district, and zip code. Over 30 languages may be geographically represented and compared. The MLA Language Map shows graphically that not all districts are the same. ELL populations differ across the country. Some areas may have an overwhelming majority of Spanish speaking ELLs whereas other districts may have an equally large numbers of ELL students but speaking 50–100 different languages. On the other hand, some districts may have very few ELLs while other districts experience an influx of ELLs of whose language and culture the area’s schools have little knowledge (for example, Hmong in Marathon County in Wisconsin, Haitian Creole in Palm Beach, Broward, and Dade counties in Florida, and Somali/Ethiopian in Hennepin and Ramsey counties in Minnesota). Cultural and linguistic differences, as well as factors such as size, age, and mobility of community members, very much influence the types of ESOL instructional programs that school districts choose to develop. Refer to English Language Learner Programs at the Secondary Level in Relation to Student Performance (www.nwrel.org/re-eng/products/ELLSynthesis.pdf) for a wonderful research-based yet easy-to-read outline of how the implementation of different ELL programs in schools affects the language learning gains of ELLs.
As mentioned above, not all ELLs are the same. ELLs may enter a school with vastly different educational backgrounds. Some enter U.S. schools with a strong foundational knowledge in their first language. This means that they may have had schooling in their first language, have literacy skills in their first language, and/or have developed social everyday language competency as well as academic proficiency in their first language. Other ELLs may have had less or even no academic schooling in their first language. Many ELLs, especially refugees, may have attended school in their homeland only for it to have been interrupted by famine or war, or for other socioeconomic or political reasons. Some ELLs arrive in the United States with their families at a very young age and, although they speak their first language at home, they may have never developed reading or writing proficiency in it. As will be discussed in the next chapter, it is of great importance to uncover the nature of an ELL’s first language development since this has a profound bearing on how an ELL manages to acquire English.

A third factor, according to the Center for Applied Linguistics (CAL, 1987, at www.cal.org), is the resources that a district has at its disposal. Some districts may have a cadre of qualified ESOL specialists working in schools, whereas other districts may only be able to use paraprofessionals and yet others draw on the surrounding community for help. Based on these constraints, one can classify different ESOL programs into what Baker (2001) terms strong and weak forms of bilingual education. Table 1.2 provides an overview of the merits of the many types of ESOL programs operating across the United States.

According to a report submitted to the San Diego County Office of Education (Gold, 2006), “there is no widely accepted definition of a bilingual school in published research in this country” (p. 37). As a rule of thumb, they are widely understood to be schools that promote bilingualism and literacy in two or more languages as goals for students (Baker, 2001; Crawford, 2004).
<table>
<thead>
<tr>
<th>Type of program</th>
<th>Target ELLs and expectations</th>
<th>Program description</th>
<th>What research says</th>
</tr>
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<tbody>
<tr>
<td>Submersion</td>
<td>All ELLs regardless of proficiency level or length of time since arrival. No accommodations are made. The goal is to reach full English proficiency and assimilation.</td>
<td>ELLs remain in their home classroom and learn with native speakers of English. The teacher makes no modifications or accommodations for the ELL in terms of the curriculum content or in teaching English.</td>
<td>States such as Florida have in the past faced potential litigation because of not training teachers to work with ELLs or modifying curriculum and/or establishing ELL programs. In order to avoid submersion models, Florida has established specific ELL instructional guidelines (Consent Decree, 1990).</td>
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<tr>
<td>ESL class period</td>
<td>As above, though usually in school districts with higher concentrations of ELLs</td>
<td>Groups ELLs together, to teach English skills and instruct them in a manner similar to that used in foreign language classes. The focus is primarily linguistic and ELLs visit these classes typically 2 or 3 times per week.</td>
<td>This model does not necessarily help ELLs with academic content. The effect is that these programs can tend to create “ESL ghettos.” Being placed in such programs can preclude ELLs from gaining college-entrance applicable credits (Diaz-Rico &amp; Weed, 2006).</td>
</tr>
<tr>
<td>ESL-plus (sometimes called submersion with primary language)</td>
<td>ELLs who are usually at speech emergence and/or intermediate fluency stage. The aim is to hasten ELL’s ability to integrate and follow content classroom instruction.</td>
<td>Includes instruction in English (similar to ESL class period and pull-out) but generally goes beyond the language to focus on content-area instruction. This may be given in the ELL’s native language or in English. Often these programs may incorporate the ELL for the majority or all of the school day.</td>
<td>According to Ovando &amp; Collier (1998) the most effective ESL-plus and content-based ESL instruction is where the ESL teacher collaborates closely with the content teacher.</td>
</tr>
<tr>
<td>Content-based ESL</td>
<td>As above</td>
<td>ELLs are still separated from mainstream content classes, but content is organized around an academic curriculum with grade-level objectives. There is no explicit English instruction.</td>
<td>See above</td>
</tr>
<tr>
<td>Type of program</td>
<td>Target ELLs and expectations</td>
<td>Program description</td>
<td>What research says</td>
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<tr>
<td>Pull-out ESL</td>
<td>Early arrival ELLs. Usually in school districts with limited resources. Achieving proficiency in English fast is a priority so that the ELL can follow the regular curriculum</td>
<td>ELLs leave their home room for specific instruction in English: grammar, vocabulary, spelling, oral communication, etc. ELLs are not taught the curriculum when they are removed from their classrooms, which may be anything from 30 minutes to 1 hour every day</td>
<td>This model has been the most implemented though the least effective program for the instruction of ELLs (Collier &amp; Thomas, 1997)</td>
</tr>
<tr>
<td>Sheltered instruction</td>
<td>Targets all ELLs regardless of proficiency level or age. ELLs remain in their classrooms</td>
<td>This is an approach used in multilingual classrooms to provide principled language support to ELLs while they are learning content. Has same curriculum objectives as mainstream classroom in addition to specific language and learning strategy objectives</td>
<td>ELLs are able to improve their English language skills while learning content. Exposure to higher-level language through content materials and explicit focus on language fosters successful language acquisition (Brinton, 2003)</td>
</tr>
<tr>
<td>or SAIDE</td>
<td>(specifically designed academic instruction in English). Sometimes called structured immersion</td>
<td></td>
<td></td>
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<tr>
<td>Transitional bilingual</td>
<td>Usually present in communities with a single large ELL population. Geared towards grades K–3. Initial instruction in home language and then switching to English by grade 2 or 3</td>
<td>ELLs enter school in kindergarten and the medium of instruction is in the home language. The reasoning behind this is to allow the ELL to develop full proficiency in the home language so that the benefits of this solid linguistic foundation may transfer over to and aid in the acquisition of English. Intended to move ELL students along relatively quickly (2–3 years)</td>
<td>Of all forms of traditional bilingual programs, the transitional model entails the least benefit to the ELL in terms of maintaining and building CALP in their home language</td>
</tr>
<tr>
<td>Type of program</td>
<td>Target ELLs and expectations</td>
<td>Program description</td>
<td>What research says</td>
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<tr>
<td>Maintenance bilingual</td>
<td>As above, but the ELL continues to receive language and content instruction in the home language along with English</td>
<td>As above, but are geared to the more gradual mastering of English and native language skills (5–7 years)</td>
<td>ELLs compare favorably on state standardized tests when measured against achievement grades of ELLs in transitional bilingual programs or ESL pull-out, ESL class period and ESL-plus programs (Hakuta et al., 2000)</td>
</tr>
<tr>
<td>Dual language/ Two-way immersion</td>
<td>This model targets native speakers of English as well as native speakers of other languages, depending which group predominates in the community</td>
<td>The aim of this program is for both English native speakers and ELLs to maintain their home language as well as acquire another language. Curriculum is delivered in English as well as in the ELL's language. Instructional time is usually split between the two languages, depending on the subject area and the expertise of the teachers</td>
<td>Dual language programs have shown the most promise in terms of first and second language proficiency attainment. Research results from standardized assessments across the United States indicated that ELLs can outperform monolingual English children in English literacy, mathematics, and other content curriculum areas. Has also many positive social and individual affective benefits for the ELL (Genesee, 1999)</td>
</tr>
<tr>
<td>Heritage language</td>
<td>Targets communities with high native population numbers, e.g. Hawai‘i, Native Americans in New Mexico. Community heritage language maintenance is the goal</td>
<td>In heritage language programs, the aim can be to help revitalize the language of a community. Sometimes English is offered as the medium of instruction in only a few courses. Usually the majority of the curriculum is delivered in the home language</td>
<td>Language diversity can be seen as a problem, as a right, or as a resource. Heritage language programs are operationalized through local, state, and federal language policies as emancipatory (Cummins, 2001)</td>
</tr>
</tbody>
</table>

TABLE 1.2 (continued). Types of ESOL programs in the United States
1.4

Teaching for English Language Development

This section explains the very practical implications of research in the phenomenon of bilingualism for classroom teachers as it relates to a context where many ELLs are learning English as their second, third, or even fourth language. One very important objective of this section is to help teachers understand how they can positively and purposefully mediate an ELL’s language development in English.

A very prevalent concept of academic English that has been advanced and refined over the years is based on the work of Jim Cummins (1979; 1980; 1986; 1992; 2001). Cummins analyzed the characteristics of children growing up in two language environments. He found that the level of language proficiency attained in both languages, regardless of what they may be, has an enormous influence on and implications for an ELL’s educational success. One situation that teachers often discover about their ELLs is that they arrived in the United States at an early age or were born in the United States but did not learn English until commencing school. Once they begin attending school, their chances for developing their home language are limited, and this home language is eventually superseded by English. This phenomenon is often referred to as limited bilingualism or subtractive bilingualism. Very often ELLs in this situation do not develop high levels of proficiency in either language. Cummins has found that ELLs with limited bilingual ability are overwhelmingly disadvantaged cognitively and academically from this linguistic condition. However, ELLs who develop language proficiency in at least one of the two languages derive neither benefit nor detriment. Only in ELLs who are able to develop high levels of proficiency in both languages did Cummins find positive cognitive outcomes.

The upshot of this line of research in bilingualism seems counterintuitive for the lay person, but it does conclusively show that, rather than providing ELLs with more English instruction, it is important to provide ELLs with instruction in their home language. By reaching higher levels of proficiency in their first language, an ELL will be able to transfer the cognitive benefits to learn English more effectively.
Teaching for English Language Development

Of course, we don't live in a perfect world, and it is not always feasible to provide instruction in an ELL's home language, so it behooves all teachers to be cognizant of the types of language development processes that ELLs undergo. Cummins (1981) also posited two different types of English language skills. These he called BICS and CALP. The former, basic interpersonal communication skills (BICS), correspond to the social, everyday language and skills that an ELL develops. BICS is very much context-embedded in that it is always used in real-life situations that have real-world connections for the ELL, for example in the playground, at home, shopping, playing sports, and interacting with friends. Cognitive academic language proficiency (CALP), by contrast, is very different from BICS in that it is abstract, decontextualized, and scholarly in nature. This is the type of language required to succeed at school or in a professional setting. CALP, however, is the type of language that most ELLs have the hardest time mastering exactly because it is not everyday language.

Even after being in the United States for years, an ELL may appear fluent in English but still have significant gaps in their CALP. Teachers can be easily fooled by this phenomenon. What is needed is for teachers in all content areas to pay particular attention to an ELL's development in the subject-specific language of a school discipline. Many researchers (Hakuta et al., 2000) agree that an ELL may easily achieve native-like conversational proficiency within two years, but it may take anywhere between five and ten years for an ELL to reach native-like proficiency in CALP.

Since Cummins's groundbreaking research, there has been a lot of work carried out in the area of academic literacy. An alternative view of what constitutes literacy is provided by Valdez (2000), who supports the notion of multiple literacies. Scholars holding this perspective suggest that efforts to teach academic language to ELLs are counterproductive since it comprises multiple dynamic and ever-evolving literacies. In their view, school systems should accept multiple ways of communicating and not marginalize students when they use a variety of English that is not accepted in academic contexts (Zamel & Spack, 1998).

However, one very important fact remains. As it stands now, in order to be successful in a school, all students need to become proficient in academic literacy.

A third view is one that sees academic literacy as a dynamic interrelated process (Scarcella, 2003), one in which cultural, social, and psychological factors play an equally important role. She provides a description of academic English that includes a phonological, lexical (vocabulary), grammatical (syntax, morphology), sociolinguistic, and discourse (rhetorical) component.

Regardless of how one defines academic literacy, many have criticized teacher education programs for failing to train content-area teachers to recognize the language specificity of their own discipline and thus being unable to help their students recognize it and adequately acquire proficiency in it (Bailey et al., 2002; Kern, 2000).

Ragan (2005) provides a simple framework to help teachers better understand the academic language of their content area. He proposes that teachers ask themselves three questions:

- What do you expect ELLs to know after reading a text?
- What language in the text may be difficult for ELLs to understand?
- What specific academic language should be taught?

Another very useful instructional heuristic to consider when creating materials to help ELLs acquire academic literacy was developed by Cummins and is called Cummins' Quadrants. In the Quadrants, Cummins (2001) successfully aligns the pedagogical imperative with an ELL's linguistic requirements. The four quadrants represent a sequence of instructional choices that teachers can make based on the degree of contextual support given to an ELL and the degree of cognitive demand placed on an ELL during any given instructional activity. The resulting quadrants are illustrated in Table 1.3.
Teaching English Language Learners in Career and Technical Education Programs

Quadrant I corresponds to pedagogic activities that require an ELL to use language that is easy to acquire. This may involve everyday social English and strategies that have a high degree of contextual support (i.e. lots of scaffolding, visual clues and manipulatives to aid understanding, language redundancies, repetitions, and reinforcements) or this may include experiential learning techniques, task-based learning, and already familiarized computer programs. Activities in this quadrant also have a low degree of cognitive demand (i.e. are context embedded). In other words, they are centered on topics that are familiar to the ELL or that the ELL has already mastered and do not require abstract thought in and of themselves.

Quadrant IV corresponds to pedagogic activities that require the ELL to use language that is highly decontextualized, abstract, subject-specific, and/or technical/specialized. Examples of these include lectures, subject-specific texts, and how-to manuals. The topics within this quadrant may be unfamiliar to the ELL and impose a greater cognitive demand on the ELL. Academic language associated with Quadrant IV is difficult for ELLs to internalize because it is usually supported by a very low ratio of context-embedded clues to meaning (low contextual support). At the same time, it is often centered on difficult topics that require abstract thought (high cognitive demand). It is important for the teacher to (1) elaborate language, as well as (2) provide opportunities for the ELL to reflect on, talk through, discuss, and engage with decontextualized oral or written texts. By doing this the teacher provides linguistic scaffolds for the ELL to grasp academically.

Quadrants II and III are pedagogic “go-between” categories. In Quadrant II, the amount of context embeddedness is lessened, and so related development increases the complexity of the language while maintaining a focus on topics that are easy and familiar for the ELL. In Quadrant III, language is again made easier through the escalation of the level of context embeddedness to support and facilitate comprehension. However, Quadrant III instruction allows the teacher to introduce more difficult content-area topics.

When a teacher develops lesson plans and activities that are situated within the framework of Quadrant I and II, the ELL engages in work that is not usually overwhelming. In low-anxiety classrooms, ELLs feel more comfortable to experiment with their language to learn more content. As an ELL moves from level 1 of English language development (preproduction) to level 3 (speech emergence), a teacher may feel that the time is right to progress to creating lesson plans and activities that fit pedagogically into Quadrants III and IV. A gradual progression to Quadrant III reinforces language learning and promotes comprehension of academic content. According to Collier (1995):

A major problem arising from the failure of educators to understand the implications of these continuaums is that ELLs are frequently moved from ESOL classrooms and activities represented by Quadrant I to classrooms represented by Quadrant IV, with little opportunity for transitional language experiences characterized by Quadrants II and III. Such a move may well set the stage for school failure. By attending to both language

TABLE 1.3. Cummins’ Quadrants

| Quadrant I: High context embeddedness, and Low cognitive demand (easiest) | Quadrant III: High context embeddedness, and High cognitive demand |
| Quadrant II: Low context embeddedness, and Low cognitive demand | Quadrant IV: Low context embeddedness, and High cognitive demand (most difficult) |
dimensions (level of contextual support and degree of cognitive demand) and planning accordingly, schools and teachers can provide more effective instruction and sounder assistance to second-language learners. (p. 35).

The degree of cognitive demand for any given activity will differ for each ELL, depending on the ELL's prior knowledge of the topic.
1.5

Not All ELLs are the Same

The United States continues to be enriched by immigrants from countries the world over. Many cities have ethnic enclaves of language minority and immigrant groups and these populations are reflected in school classrooms. This section outlines the background characteristics of ELLs that teachers need to be aware of when planning or delivering instruction. Certainly, ELLs bring their own strengths to the task of learning but they also face many challenges. Equally, these diverse backgrounds impact classroom practices culturally in terms of how ELLs behave in classrooms, how they come to understand curriculum content, and how their interactions with others are affected (Zehler, 1994). The following affords a glimpse of their diversity:

María is seven years old and is a well-adjusted girl in second grade. She was born in Colombia, but came to the United States when she was four. Spanish is the medium of communication at home. When she entered kindergarten, she knew only a smattering of English. By grade 2 she had developed good basic interpersonal communication skills (BICS). These are the language skills needed to get by in social situations. María sounded proficient in English; she had the day-to-day communication skills to interact socially with other people on the playground, in the lunchroom, and on the school bus. Of course, all these situations are very much context-embedded and not cognitively demanding. In the classroom, however, María had problems with her cognitive academic language proficiency (CALP). This included speaking, reading, and writing about subject-area content material. It was obvious to her teacher that María needed extra time and support to become proficient in academic areas but, because she had come to the United States as a four-year-old and had already been three years in the school, she was not eligible for direct ESOL support. Collier and Thomas (1997) have shown that, if young ELLs have no prior schooling or have no support in native language development, it may take seven to ten years for them to catch up to their peers.
Ismael Abudullahi Adan is from Somalia. He is 13 and was resettled in Florida as a refugee through the Office of the United Nations High Commissioner for Refugees (UNHCR; see www.unhcr.org/home.html). As is the case with all refugees in the USA, Ismael’s family was matched with an American resettlement organization (see www.refugees.org/). No one in his family knew any English. They were subsistence farmers in Somalia and, because of the civil war in Somalia, Ismael had never attended school. The resettlement organization helped the family find a place to live, but financial aid was forthcoming for only six months. While all members of the family were suffering degrees of war-related trauma, culture shock, and emotional upheaval, as well as the stress and anxiety of forced migration, Ismael had to attend the local school. Everything was foreign to him. He had no idea how to act as a student and all the rules of the school made no sense to him. All Ismael wanted to do was work and help his family financially; he knew that at the end of six months financial aid from the government would stop and he worried about how his family was going to feed itself. He is currently placed in a sheltered English instruction class at school.

José came to the United States from Honduras with his parents two years ago. He is now 14. His parents work as farm laborers and throughout the year move interstate depending where crops are being harvested. This usually involves spending the beginning of the calendar year in Florida for strawberry picking, late spring in Georgia for the peach harvest, early fall in North Carolina for the cotton harvest, and then late fall in Illinois for the pumpkin harvest. When the family first came to the United States from Honduras as undocumented immigrants, José followed his parents around the country. His itinerancy did not afford him any consistency with schooling. Last year, his parents decided to leave José with his uncle and aunt in North Carolina so that he would have more chances at school. Now he doesn’t see his parents for eight months out of the year. He misses them very much. At school José has low grades and has been retained in grade 8 because he did not pass the North Carolina High School Comprehensive Test. He goes to an ESOL pull-out class once a day at his school.

Andrzej is 17 years old. He arrived with his father, mother, and 12-year-old sister from Poland. They live in Baltimore where his father is a civil engineer. The family immigrated the year before so that Andrzej’s mother could be closer to her sister (who had married an American and had been living in the United States for the past 10 years). Andrzej always wanted to be an engineer like his father, but now he isn’t sure what he wants to do. His grades at school have slipped since leaving Poland. He suspects that this is because of his English. Even though he studied English at school in Poland, he never became proficient at writing. Because he has been in the United States for more than a year, he no longer receives ESOL support at school. His parents, however, pay for an English tutor to come to his house once a week.

The above cases reflect the very wide differences in the ELL population in schools today. One cannot assume that every ELL speaks Spanish or that all ELLs entered the country illegally. The ELL population in a school may include permanent residents, naturalized citizens, legal immigrants, undocumented immigrants, refugees, and asylees. Of this foreign-born population, 4.8 million originate from Europe, 9.5 million from Asia, 19 million from Latin America, 1.2 million from Africa, and 1 million from other areas including Oceania and the Caribbean (U.S. Census Bureau, 2005).
Stages of Cultural Adjustment

What the above cases of María, Ismael, José, and Andrzej also identify is that since the nation's founding immigrants have come to the United States for a wide variety of reasons. These may include one or any combination of economic, political, religious, and family reunification reasons. Depending on the reason for coming to the United States, an ELL might be very eager to learn English since they might see having English proficiency as the single best means to "get ahead" economically in their new life, or they might resist learning English because they see this as an erosion of their cultural and linguistic identity. A teacher may find an ELL swaying between these two extremes simply because they are displaying the characteristics and stages of cultural adjustment.

The notion of cultural adjustment or, as it is sometimes called, “culture shock” was first introduced by anthropologist Kalvero Oberg in 1954. The emotional and behavioral symptoms of each stage of this process can manifest themselves constantly or only appear at disparate times.

Honeymoon Stage

The first stage is called the “honeymoon” stage and is marked by enthusiasm and excitement by the ELL. At this stage, ELLs may be very positive about the culture and express being overwhelmed with their impressions particularly because they find American culture exotic and are fascinated by it. Conversely, an ELL may be largely passive and not confront the culture even though (s)he finds everything in the new culture wonderful, exciting, and novel. After a few days, weeks, or months, ELLs typically enter the second stage.

Hostility Stage

At this stage, differences between the ELL's old and new cultures become aggravatingly stark. An ELL will begin to find anything and everything in the new culture annoying and/or tiresome. An ELL will most likely find the behavior of those around him/her unusual and unpredictable and thus begin to dislike American culture as well as Americans. They may begin to stereotype Americans and idealize their own culture. They may experience cultural confusion and communication difficulties. At this stage, feelings of boredom, lethargy, restlessness, irritation, antagonism, depression, and feelings of ineptitude are very common. This occurs when an ELL is trying to acclimatize to the new culture, which may be very dissimilar to the culture of origin. Shifting between former cultural discourse practices and those of the new country is a problematic process and can take a very long time to overcome. If it is prolonged, an ELL may withdraw because of feelings of loneliness and anxiety.

Home Stage

The third stage is typified by the ELL achieving a sense of understanding of the new culture. The ELL may feel more comfortable living in the new country and experiencing the new culture. They may regain their sense of humor. In psychological terms, an ELL may start to feel a certain emotional balance. Although feelings of isolation may persist, the ELL may stop feeling lost and even begin to have a feeling of direction. The ELL re-emerges more culturally stable, being more familiar with the environment and wanting to belong. For the ELL, this period of new adjustment could initiate an evaluation of old cultural practices versus new ones.
Assimilation Stage

In the fourth stage, the ELL realizes that the new culture has positives as well as negatives to offer. Integration patterns and practices displayed by the ELL become apparent. It is accompanied by a more solid feeling of belonging. The ELL enjoys being in the new culture, functions easily in the new environment (even though they might already have been in the new culture for a few years) and may even adopt cultural practices of the new culture. This stage may be seen as one of amalgamation and assimilation.

Re-Entry Shock Stage

This happens when an ELL returns to the old culture for a visit and notices how many things have changed in the country as well as how they themselves have changed. Upon returning from the home country, an ELL will have developed a new sense of appreciation and of belonging to the new culture.

Worthy of note is the fact that the length of time an ELL spends in each of these stages varies considerably. The stages are neither discrete nor sequential and some ELLs may completely skip stages. They may even exhibit affective behaviors characteristic of more than one stage.

Cultural Practices at School

Whenever an ELL steps into a new school environment, the ELL will be sure to go through a process of cultural adjustment. For an ELL, the countless arrays of unspoken rules acquired in his/her culture of origin may not be suitable in the new school and a new set of practices needs to be discovered and internalized. These include, but are of course not limited to, school rules, what it means to be a “good” student, how to interact with fellow students and teachers, eating practices, bathroom practices, and even ways of learning. It would be fairly easy to learn new rules for living if such were made explicit and one were provided with lists of things to learn. However, most cultural rules operate at a level below conscious awareness and are not easily relayed to students.

Often ELLs find themselves in the position of having to discover these rules on their own. Shared cultural discourse practices can be seen as the oil that lubricates social interaction; however, what a community’s cultural practices are, as well as the meanings that group members attach to their shared repertoire of cultural practices, are not always made explicit. Unfamiliarity with these cultural rules on the part of an ELL can cause a great deal of stress.

Many definitions regarding what culture is or is not abound. Diaz-Rico and Weed (2006) provide a very nice overview of the characteristics of culture. For them, culture is an adaptive mechanism, culture is learned, cultures change, culture is universal, culture provides a set of rules for living and a range of permissible behavior patterns, culture is a process of deep conditioning, culture is demonstrated in values, people usually are not aware of their culture, people do not know all of their own culture, culture is expressed verbally and non-verbally, culture no longer exists in isolation, and, last but very poignantly, culture affects people’s attitudes toward schooling and it governs the way they learn. It can affect how they come to understand curriculum content and how they interact with fellow students.

Diaz-Rico and Weed (2006) offer a number of strategies to promote cultural pluralism and assuage potential exclusionary practices such as stereotyping, prejudice, and racism in the classroom. Ways to acknowledge different values, beliefs, and practices include accommodating different concepts of time and work rhythms, as well as different concepts of work space. Being open to culturally sensitive dress codes and inclusive of culture in school rituals are effective ways
of promoting cultural pluralism. Considering different notions about work and play and maintaining an inclusive understanding of different health and hygiene practices as well as being tolerant of different religious practices and food and eating practices are critical in teaching acceptance. Most important to remember in relation to your ELL students are culturally based educational expectations (roles, status, gender), different discourse patterns, and your need to foster cultural pride and home–school communication.

One way to ease your ELL’s cultural adjustment while demonstrating inclusiveness is to get to know where your ELLs come from and then incorporate aspects of their culture into your lessons. You could overtly ask your ELL about their home country, but this tactic may not provide you with the type of information you want since your ELL may not have the language proficiency in English to express abstract cultural concepts. Therefore, you should observe your ELL and how they behave, interview people from the same country, conduct a home visit, or visit the community in which the ELL lives. Of course, teachers are often constrained by time, so an alternative is to conduct internet research or buy appropriate books.
1.6

Culturally Responsive Pedagogy

As more and more students from diverse backgrounds populate 21st century classrooms, and efforts mount to identify effective methods to teach these students, the need for pedagogical approaches that are culturally responsive intensifies. Today’s classrooms require teachers to educate students varying in culture, language, abilities, and many other characteristics.

(Gollnick & Chinn, 2002 p. 21)

The question is: How does a teacher adequately respond to the multicultural classroom?

In 2000 Gay wrote that culturally responsive pedagogy is validating, comprehensive, multidimensional, empowering, transformative, and emancipatory. In other words, culturally responsive pedagogy necessitates that teachers tread outside their comfort circles. It is only natural for humans to see, understand, judge, make sense of, and canonize the world around them through their own discursive norms of practice. What this means in the context of education is that teachers make choices every day about what they will and will not teach. More importantly, teachers make choices as to how they will present and frame their curriculum choices. Of course this sends a subtle message to students: What curriculum matter is taught and how it is framed tends to legitimatize, validate, and endorse it over other potential curricular perspectives, which by default are marginalized.

Thus, teachers instruct in ways and about things that are familiar to them. They usually adopt and transmit the dominant voice in society, namely that of white middle-class America. The problem is, if a student is an ELL, (s)he is usually not white, middle-class, or American. This is where the practice of culturally responsive pedagogy can help. Look at the reflection vignette below. It shows how the media can tend to reinforce dominant societal perspectives, perspectives that are reinforced and repeated in school curricula and textbooks across the country.
Teaching English Language Learners in Career and Technical Education Programs

Reflection Vignette

I was driving my 12-year-old son to school in the fall of 2003 when over the radio we heard a commercial for the movie Alamo. Coincidently, the previous day we had been to the movies and one of the trailers was for the same movie. Kevin Costner was one of the Texan heroes in the movie, and every time the movie trailer showed the Texans the screen was bright and full of smiling people. The music was light and they were obviously the “good guys.” However, when the screen shot showed the Mexican antagonists, the screen was dark, with hues of blue and red, the background images were full of cannon sounds, and the faces were “mean-looking.”

Back in the car, I asked my son, who at the time was focused on playing his Gameboy, “You’re doing American history now in your social studies class, right?”

My son, recognizing that another of dad’s teachable moments was upon him, just rolled his eyes and disgruntledly put down his Gameboy.

“Yes, why?” he said.

“What aspect of U.S. history are you learning about now?” I asked.

“We’re learning about the westward colonization of North America.”

“Did you hear that ad?” I asked.

“Sure.”

“Let me ask you something. What do you think would happen if a bunch of Cubans came into the middle of Florida, bought up a cluster of farms, and then told the government they were not going to pay taxes?”

“I suppose the government would fine them,” he said.

“Well, what would happen if those same Cubans then told the government that they were going to create their own country?”

“The government would send in the army and kick ’em all out and probably send them back to Cuba.”

At that point, I could see a flash of realization cross my son’s face. “Oh, I get it,” he said, “the Cubans are the Texans.”

In the United States the Alamo is usually constructed as part of a righteous war of independence against an autocratic foreign government, namely Mexico. Yet in Mexican schools the war surrounding the Alamo is constructed as an aggressive grab for land by non-Spanish speaking settlers. Who is right? Perhaps the question should be: Am I teaching curriculum matter in a way that alienates and inadvertently marginalizes my students? How would a Mexican ELL feel in your classroom if you taught a unit on the Alamo, or on the westward European settlement of North America, and Mexico and the Mexicans were portrayed as the baddies? At the very least it marginalizes an ELL’s voice in the classroom and indirectly discredits his/her potential contribution of another perspective for the class to think about.

Using Gay’s (2000) principles of culturally responsive pedagogy, how does a teacher make the curriculum more validating, comprehensive, multidimensional, empowering, transformative, and emancipatory?

The first step is to be conscious of our choice of language. Language is never neutral. What and how we say things in the classroom affects the way our students perceive curriculum matter. The second step is to be conscious of the images we present to the students. The third step is to engage in critical and reflexive thinking and writing tasks. By getting teachers to reflect critically
on the language, images, and content of their teaching, we begin to open the door on other ways to think about teaching that are less ethnocentric. The fourth step is to learn the history and culture of the ELL groups in your classroom. The fifth step is to try and visit teachers who are successful at implementing culturally responsive pedagogy and, last, become an advocate in your own educational institution to reform ethnocentric discursive practices so that it becomes more inclusive. Richards, Brown, and Forde (2004) suggest the following activities to become more culturally responsive:

1. acknowledge students’ differences as well as their commonalities;
2. validate students’ cultural identity in classroom practices and instructional materials;
3. educate students about the diversity of the world around them;
4. promote equity and mutual respect among students;
5. assess students’ ability and achievement validly;
6. foster a positive interrelationship among students, their families, the community, and school;
7. motivate students to become active participants in their learning;
8. encourage students to think critically;
9. challenge students to strive for excellence as defined by their potential;
10. assist students in becoming socially and politically conscious.
1.7
Not All Parents are the Same
Home–School Communication

Any school administrator and teacher will readily admit that the key to a school's success and indeed the key to a child's learning success is the active involvement of parents in the learning process. In the case of ELLs, parents are often at a loss because of barriers that prevent them from fully participating in the school community. Parents' hesitancy to involve themselves in their child's school arises from barriers such as the frustration they feel because of their own limited knowledge of English, their own possible lack of schooling, perceptions about power and status roles, or the anxiety they have because of different cultural norms such that they do not readily understand American school cultures or the cultural expectations, rights, roles, and responsibilities of teachers, parents, and students.

Schools can greatly enhance the effectiveness of ELL home–school communication and involvement by taking active steps to reduce these barriers. Careful planning is required to meet these challenges, though it can be done.

1. *Knowledge is King!* Get as much background information as is possible. Information useful to schools and teachers includes home language, home cultural/ethnic values, parental attitudes towards education, work schedules of parents, English proficiency, and the circumstances under which they have come to be in the United States (e.g. are they refugees, itinerant migrants, political asylees, second or third generation heritage speakers?). Depending on the information a school receives, a classroom teacher may make informed decisions about bilingual aide support, translation support, and changing school cultural practices that raise rather than bring down barriers to ELL home–school communication and parental involvement.

2. *Communicate as if it is going out of style!* The importance of fostering ELL parental involvement centers foremost on fostering and maintaining good lines of communication between the school/teacher and the home/parents. An important facet that frames parents’ participation
in schools is their perceptions of school personnel. Is the school inviting and welcoming? Are teachers and the administration approachable? Are teachers empathetic to ELL parental concerns, wishes, contributions, values, and cultural practices? How often are they invited to attend school functions? Do teachers follow through on their communications? Do teachers make an effort to talk directly and in person with parents? Are parents allowed to visit often and learn what goes on in the classroom? Do teachers take the time to explain the whats, whys, and hows of their teaching and the ELL child’s learning?

3. *It's not just about educating the ELL!* If schools want to enlist the support and help of ELL parents, then both the administration of a school and its teachers need to be prepared to extend their instruction beyond the ELL student to the ELL parent—beyond the classroom and into the ELL home. In other words, in order to break down the types of barriers that inhibit ELL parents from school involvement, steps need to be taken to educate the parents in matters concerning English language, as well as U.S. school customs. What would such steps look like? In an article published in *Essential Teacher* (2004), Bassoff says it centers solely on *access, approachability, and follow-through.*

**Ideas: On Fostering Access**
- Create, endorse, and implement an ELL parent–school participation program/policy.
- Have an ELL parent representative on school committees.
- Make the school a place to foster ELL community events.
- Provide access to the school library to aid ELL parents’ learning of English.
- Translate all school communications into the home language.
- Make sure all written communication reaches the ELL parent.
- Foster in-school support groups for ELL parents.
- Advocate that your school district establish an “Intake Center” for new arrivals that will help ELL newcomers with school registrations, placement, testing, and information services.
- Allow ELL parents to come to school professional development opportunities.
- Provide ELL parent education workshops and orientation opportunities.
- Advertise the contact information of bilingual school staff.

**Ideas: On Fostering Approachability**
- Use ELL parents as sources of information.
- Invite ELL parents to school.
- Use parents to raise multicultural awareness in the school and classroom; multiculturalism is a two-way street—foster inclusion through the provision of multicultural workshops, presentations, and events to mainstream monolingual school personnel and students.
- Multicultural appreciation events could include ethnic music and dance performances, art displays, drama shows, science fairs, and festival evenings, all accompanied by talks from ELL parents or ELL community leaders.
- Be amenable and open to different ways about thinking about education—show this through inclusive classroom practices, activities, realia, and visuals.
- Embed multicultural routines in everything and all the time.
- Foster ELL literacy family evenings.
- Establish native language parent groups.
I Ideas: On Achieving Good Follow-Through

- Give mainstream students service-learning opportunities to help ELL parents/families adjust to U.S. life.
- Foster ELL parent network circles.
- Provide classes that help ELL parents to meet their children’s education needs.
- Have the school library purchase a wide range of fiction and non-fiction bilingual books.
- Take the time to learn about the culture, language, and education system of the ELLs’ home countries and apply what you learn in your classroom.
- Create virtual spaces to post ongoing information for ELL parents as well as WWW links to useful websites.¹
1.8

**English Language Learners with Special Needs**

We want to highlight an important subset of the ELL population that is often disadvantaged because its members fall simultaneously into two underrepresented groups: special needs and ELL. They are underprivileged because many teachers within these separate discipline areas have not been trained to work with this population of students—ESOL teachers with special needs students, or special needs teachers with ELLs.

In 1984 the National Office for Educational Statistics reported that 500,000 students in the United States were English language learners with exceptionalities. Today, more than 20 years later, it is projected that there are more than 1 million ELLs with special needs in the United States (Baca & Cervantes, 2004).


A colleague of ours once told the story of when he first came to the United States. His son was seven years old and at the end of the summer in 2005 was ready to be placed in grade 2. In Florida, the parents of every newly enrolled student are obliged to fill out a home language survey form. Our colleague was raising his children bilingually and both his children were equally fluent in English and German. When asked on the form what languages were spoken at home, he wrote German and English. A week later, his son innocuously said at the dinner table that he enjoyed
being pulled out of the classroom, whereupon both parents asked the son what he meant. “Why I love being in the ESOL class with all the kids who speak other languages.” Little did my colleague know that, because he had written German on the home language survey, the school was legally bound to place his son in ESOL classes. The upshot of the story was that our colleague went to the school and explained to the administration that his son was a balanced bilingual speaker and having him in ESOL classes was unnecessary. The administration told him that there was nothing they could do because the home survey was filled out as it was. Ultimately, my colleague had to disenroll his son, re-enroll him in the same school, and fill out the home survey again (this time just putting English as the home language) to finally have him pulled from the ESOL classes. The reason this story is related is because parents and teachers are all too familiar with the fact that, within education environments, rule-driven practices, acronyms, and terminologies abound that more often than not pigeon-hole students into predetermined roles and assign these students to inevitable and predictable expectations. Unfortunately, ELLs with special needs have fallen prey to this stereotyping. There is, however, an ever-increasing but incomplete body of research that spotlights instructional strategies for ELLs with special needs that teachers may draw upon to help them in their efforts to identify, instruct, and assess. The following section summarizes some of the more important aspects of this research. The following two points may act as instructional guides:

- Students with mild to severe disability levels benefit from native language instruction (de Valenzuela & Niccolai, 2004).
- Instruction needs to be enriching and not remedial, empower language learners, recognize the learners’ culture and background, provide learners with authentic and meaningful activities, connect students to real-life experiences, begin with context-embedded material that leads to the use of context-reduced material, and provide a literacy/language-rich environment (Echeverria and McDonough, 1993).

But how can we translate the above into effective classroom practice? There are various pedagogic models that have been developed based on theoretical frameworks, research findings, and recommended practices appropriate for ELLs with special needs (Ruiz, 1995a,b). Ortiz (1984) describes four basic types of pedagogic models that offer structured institutional support for ELLs with special needs to achieve more accomplished social and academic skill levels. These models are:

1. **Coordinated services model**—assists the ELL with special needs with a monolingual English speaking special education teacher and a bilingual educator.
2. **Bilingual support model**—bilingual paraprofessionals are teamed with monolingual English speaking special educators and assist with the individualized education plans of ELLs with special needs. Wherever noted on the individualized education program (IEP), the bilingual paraprofessional provides home language instruction concurrently with the teacher providing content expertise.
3. **Integrated bilingual special education model**—consists of one teacher who is certified in both bilingual education and special education, where the teacher is able to assist with level-appropriate English language instruction as the learner develops in proficiency.
4. **Bilingual special education model**—in this model all professionals interacting with the ELL special needs student have received bilingual special education training and are qualified to provide services that meet the goals outlined in any IEP.
Another model, the Optimal Learning Environment (OLE) Project (Ruiz, 1989), is based on a constructivist philosophy and works within a holistic–constructivist paradigm, focusing on the extensive use of interactive journals, writers’ workshops, shared reading practices, literature conversations, response journals, patterned writing, as well as the provision of extended assessment time. The aim of the strategies is to build on a student's schema and interest.

The benefits of such models highlight the individualized and diverse needs of language learning students with special needs. As yet, guaranteeing unambiguous benefits across the board is not possible precisely because of the dearth of empirical research on instructional planning and curriculum design in this area. A very real consequence of this situation is the paucity of curricular materials available specifically geared to bilingual special education. Both fields of education have propagated methods on preparing either English language learners or special needs students. The main point to be internalized here is that materials must be integrated and specifically designed for English language learners with special needs. It is not enough that they receive “half of each curriculum” (Collier, 1995). Lack of curricular materials and trained personnel is still cited as the greatest barrier to providing services to English language learners with special needs.

So, what can teachers do to facilitate language learning for ELL students with a special need?

Of course, implementing well-informed instructional practices is one thing, but awareness raising, understanding of difficulties, and knowledge of differences and disorders are also an integral part of assisting the English language learner with disabilities.

In conclusion, we offer Hoover and Collier’s (1989) recommendations as a point of departure to think about teaching ELLs with special needs:

1. Know the specific language abilities of each student.
2. Include appropriate cultural experiences in material adapted or developed.
3. Ensure that material progresses at a rate commensurate with student needs and abilities.
5. Adapt only specific materials requiring modifications, and do not attempt to change too much at one time.
6. Try out different materials and adaptations until an appropriate education for each student is achieved.
7. Strategically implement materials adaptations to ensure smooth transitions into the new materials.
8. Follow some consistent format or guide when evaluating materials.
9. Be knowledgeable about particular cultures and heritages and their compatibility with selected materials.
10. Follow a well-developed process for evaluating the success of adapted or developed materials as the individual language and cultural needs of students are addressed. (Hoover & Collier, 1989: 253)

Conclusion

Understanding your English language learners can be daunting. They are different; they probably come from very different home environments from you, their teachers. Some of your students may be third-generation American and yet others may be newly arrived undocumented immigrants.

After reading Part 1, we don’t expect you to now know everything there is to know about ELLs. We did not set out to provide you in these few short pages with an all-inclusive research-informed, all-encompassing treatise on ELLs in education. We have been circumspect, to be sure, in trying to
introduce you to ELLs. There are plenty of ELL-specific books for that. It was our intent, however, to raise your awareness about the educational implications of having ELLs in your classroom. Our goal with this is to start drawing a picture of who an English language learner is and from this position help you think about the educational possibilities for your class.

Parts 2, 3, and 4 of this book are devoted exclusively to completing this picture. Not in a global sense, but finely etched within the parameters of your own content area.

What will be introduced to you in the pages to come will undoubtedly refer back to some of the points raised in Part 1. We have no intention of offering you static teaching recipes; instead we offer something akin to ideas, understandings, and skills that you can transfer to your own classrooms. Last, we refer you to Part 4 of this book, which offers you avenues for future professional development.
Part 1 provided an in-depth look at ELLs and their characteristics and outlined what recent research and best practice says about teaching them effectively. Part 2 provides an overview of career and technical education (CTE) and why participation in CTE programs can be such a valuable experience for those learning English. Part 2 will also provide a description of the types of career-related programs in which ELLs might be involved at the secondary and postsecondary levels.

As mentioned in the Introduction, this book has two primary purposes. The first is to help CTE teachers better serve the needs of ELLs enrolled in their programs. A second purpose is to provide current information on CTE programs for academic educators and decision-makers, such as principals and ELL support personnel, so that they will be aware of the important role that CTE can play in helping those learning English be successful in school, graduate and transition into the world of productive adulthood, and continue their education.

One of the most important messages we hope to share with readers is that a proven strategy for helping ELLs succeed in school and beyond is talking with them and their parents about the benefits of enrolling in CTE. ELLs’ participation in CTE might be limited to taking selected courses of interest (e.g. web design, principles of engineering, or horticulture fundamentals) as a part of their high school or postsecondary educational experience or completing an entire CTE program (e.g. construction technology, child care services, veterinary assisting). A wide array of high-quality, rigorous CTE courses and programs are now available to students in high schools, postsecondary technical institutes, and technical and community colleges. Just what is CTE? The California Department of Education website offers a succinct definition that reflects the broad mission of contemporary CTE: “A program of study that involves a multiyear sequence of courses that integrates core academic knowledge with technical and occupational knowledge to provide...
students with a pathway to postsecondary education and careers” (www.cde.ca.gov/ci/ct/). The Association for Career & Technical Education (ACTE) offers a more comprehensive definition of CTE (Box 2.1).

Box 2.1. What is career and technical education?

- Career and technical education prepares both youth and adults for a wide range of careers. These careers may require varying levels of education—from high school and postsecondary certificates to two- and four-year college degrees. Career and technical education is offered in middle schools, high schools, community and technical colleges, and other postsecondary institutions.
- Career and technical education covers a variety of challenging fields in diverse subject areas which are constantly evolving due to the changing global economy. Some of the career areas that students may enter through career and technical education include agriculture (farmers, animal scientists, turf grass specialists); trade and industrial (automotive technicians, carpenters, electricians); business and marketing (entrepreneurs, financial officers, arts/graphics designers); family and consumer sciences (management and life skills, executive chefs, hotel managers); health occupations (nurses, physical therapists, biomedical engineers); public safety and security (emergency medical technicians, emergency management and response coordinators); and technology (3D animator, computer engineer, biotechnical engineer).
- According to the U.S. Department of Education’s Office of Vocational and Adult Education (OVAE), most high school students take at least one CTE course, and one in four students take three or more courses in a single program area. One-third of college students are involved in career and technical programs, and as many as 40 million adults engage in short-term postsecondary occupational training.
- Nearly one-third of the fastest growing occupations will require an associate degree or a postsecondary vocational certificate, according to a 2006 U.S. Department of Labor Bureau of Labor Statistics report.
- More than 80 percent of respondents in the 2005 National Association of Manufacturer’s Skills Gap Report indicated that they are experiencing a shortage of qualified workers overall — with 13 percent reporting severe shortages and 68 percent indicating moderate shortages. Career and technical education plays a vital role in helping American business close this gap by building a competitive workforce for the twenty-first century.

Source: ACTE, http://acteonline.org; used with permission.
The national Association of State Directors of Career Technical Education Consortium developed a definition of CTE that should be helpful to those not familiar with this area (Box 2.2).

Box 2.2. Definition of career and technical education

Career technical education is an essential component of the total educational system in the United States and is critical to the country’s ability to compete in a global economy. This education for the workplace has been called vocational education, technical education, career education, applied education, professional–technical education, occupational education, and workforce training. For the purposes of this statement, it will be referred to as career technical education. Career technical education is provided in a variety of settings and levels including middle school career exploration, secondary programs, postsecondary certificates and degrees, and customized training for employees in the workplace. Career technical education also provides students and adults (1) the technical skills and knowledge necessary to succeed in occupations and careers, (2) the cross-functional or workplace basics necessary for success in any occupation or career (such as problem solving, teamwork, and the ability to find and use information) as well as skills for balancing family and work responsibilities, and (3) the context in which traditional academic skills and a variety of more general educational goals can be enhanced.

Source: National Association of State Directors of Career Technical Education Consortium (www.careertech.org/uploaded_files/Directors.pdf); used with permission.

Another term that you might still see today is “school-to-work.” Use of this term sprang from the passage of the School To Work Opportunities Act of 2004. Although the legislation has expired, many of the concepts upon which it was based continue to inform contemporary CTE practices and programs. Since the expiration of the act, school-to-work or “school-to-careers” has emerged as a generic term that focuses on career and technical education’s important role in helping students successfully transition from school to a career.

The benefits for ELLs of participating in career and technical education programs can be found at both the secondary and postsecondary levels. Educators are discovering that, when students (including ELLs) participate in career and technical education experiences, several very important things happen. First, students develop more focused and realistic career goals because an important aspect of today’s comprehensive CTE is career exploration and career counseling. Students are encouraged to investigate various careers and explore their own aptitudes and interests. Second, students see a direct link between what happens in school and their current and future lives beyond high school or college and are more likely to graduate. Third, students have an opportunity to apply the academic concepts and skills they are learning in meaningful contexts. When they can apply academics in relevant work-related settings, students see an authentic reason for the math, science—and, yes, English—they are learning. All of these factors can be critically important to the educational and future life success of ELLs—particularly recent immigrants and refugees. Nelson (2007) points out that research has shown that, when academic rigor is combined with school-based career or technical learning, work-based learning in a business or in the community and career guidance or mentoring, students’ graduation rates increase and their scores in reading, mathematics, and science improve. He adds that such outcomes will help
all high school graduates—whether they enter the workforce directly or go on to postsecondary education.

Allen, DiBona, and Reilly (1998: 9–10) identified several key advantages of participating in career and technical education for those learning English:

- ELLs advance their language skills by interacting with English-speaking adults in the workplace.
- They become better integrated into the wider community.
- They experience being treated as adults.
- Learning becomes an active, rather than a passive, process.
- Interaction with peers spans various levels of English proficiency.
- They can gain access to high-skill jobs.

These authors (ibid.: 12–14) also identified several barriers that might prevent ELLs from having full access to career focused programs:

- Inadequate preparation of school-to-career staff limits their effectiveness.
- Isolation of bilingual departments means missed opportunities.
- A shortage of non-English curriculum materials limits the potential for expanded dialogue.
- Concerns about ELLs’ readiness for the workplace can make placements a challenge.
- Extreme linguistic diversity within a community makes it more difficult to offer general instruction.
- Rural communities are at a disadvantage because it is difficult to arrange programs in areas where there will be fewer participants.
- Non-English-speaking parents may miss out on important information.
- Lack of documentation places legal restraints on some students’ ability to work.
- Strict graduation requirements leave little time for courses outside of the standard requirements.
To better understand the benefits of CTE, let us ask, “How does today’s CTE differ from vocational education?” Before you dismiss the role that participating in occupationally focused programs can play in helping ELLs learn English and in helping them complete high school and pursue and complete postsecondary education, we want to make sure readers understand that the “vocational education” of the past that you may be familiar with no longer exists! The vocational education of yesterday has been radically transformed into today’s CTE. Today, CTE is a viable option for all students—college and career bound, ELL and non-ELL alike. CTE models such as the career academy, tech prep (or career pathways as it is now being referred to), and instructional approaches routinely used in CTE, such as applied, contextual learning and work-based learning, have proved to be very effective models for transforming the American high school and making major curricular changes in two-year institutions. Even though this book is aimed primarily at career and technical educators, this chapter describing CTE, its transformation over the past decade or so, and how it can help ELLs succeed has been included for several reasons:

1. Not all CTE instructors have as yet fully embraced, nor have they fully made, the transition from vocational education to career and technical education. The information in this chapter might assist them in making that transition.
2. Career and technical education personnel—including those who have embraced the broader contemporary CTE model—might not fully appreciate the important role that participating in career-related experiences can play in helping those learning English be successful in school and beyond. This chapter will hopefully provide reinforcement and validation to CTE instructors that what they have to offer is of great potential value to ELLs.
3. Career and technical educators who read this book will probably want to share information and ideas from this section with their principals, deans, directors, members of the school
board, and others so that they might broaden and update their view of career-related programs and consider in a new light the role that focusing on career preparation can play in helping ELLs learn English, reinforce academics, find more relevance in their studies, and complete their education.

Career and Technical Education—Making a Strong Comeback

Today over 75 percent of high schools in the U.S. offer some form of CTE programming, with around 95 percent of all high school graduates having taken at least one CTE course during high school. Nationwide, career and technical education enrollment exceeds 15 million students and is growing. Even in today’s climate of high stakes testing and emphasis on reading and mathematics driven by the No Child Left Behind (NCLB) Act, many students continue to find room in their high school schedules for CTE courses (National Center for Education Statistics, 2007). In the year 2000, although CTE course-taking was down somewhat because of the factors just mentioned, high schoolers—on average—completed 3.5 credits in CTE coursework—about the same level of course-taking as in mathematics (3.6) and more than the average number of credits in science (3.2). Interestingly, as recently as 2000, the number of CTE courses taken by high school students was about the same as the number of English courses taken. This is significant considering the fact that English is typically required during every year of high school whereas, in contrast, CTE courses are elective. Today’s students apparently value taking CTE courses during their high school years.

Clearly, today’s students (and, thankfully, increasingly their parents and counselors) recognize that one primary purpose of high school is to lay the foundation for a career with a future that leads to economic self-sufficiency. We want to point out not only that is this true for all high school students but that it is even more important for ELLs because of their lower high school graduation rates, lower rates of participation in postsecondary education, and higher concentration in families and settings with lower economic resources.

Many high school CTE programs are in high-tech fields, and many lead directly to postsecondary education and training opportunities at community colleges, technical institutes, or four-year colleges and universities. Some high school CTE programs articulate smoothly with postsecondary programs in the same career field. This helps reduce course duplication and gives students either college credit or advanced standing at the postsecondary level as they continue their technical education beyond high school (these articulated 2 + 2 programs are referred to as tech prep). Many students—including the college bound—are finding room in their schedules for CTE courses that they find interesting and relevant and that they feel will help them in the future. CTE programs are also widely available at the postsecondary level in thousands of public and for-profit adult technical centers and community and technical colleges across the country. These may take the form of one-year or less certificate programs, two-year associate degree programs, or selected courses in the university transfer track that students take so that they will be more employable when they enter the workforce.

No Longer a Dumping Ground for English Language Learners and Others

The “vocational education” that you probably knew from your own school experience has changed radically, and not just in name only. One of the most significant changes is in the students targeted by CTE programs. The vocational education programs of the past were often characterized as
appropriate only for underperforming students, for minorities, or for “special” students, including those who had not yet learned English. Vocational programs were sometimes criticized for focusing on narrow jobs that would soon be obsolete. Also, vocational education had a history of involving less than rigorous academics and for targeting students who were not “college material.” Dana Hull (2007) observed that vocational education for many years had a reputation as a “dumping ground for misfits” that were on their way to blue-collar jobs.

On the recent emergence of career and technical education, Peter Schrag (2007) observed that:

The rusty American education policy pendulum, which makes a half cycle every generation or so, is about to swing back again. The hot new words are “flexibility” and “CTE,” career technical education, once known as vocational training. (para. 1)

Bob Couch, the director of South Carolina’s office of CTE observed “We were training people for jobs that weren’t going to exist. We were teaching masonry, plumbing, and electrical. Now, we’ve moved to a more integrated approach” (McNeil, 2007). South Carolina now focuses more on programs that prepare students for careers in fields such as biomedicine, engineering, information technology, and other math- and science-related fields.

Career-focused programs are also growing at the postsecondary level. CTE has long been a major part of the mission of technical institutes and two-year colleges in America as well as being a growing force in our university system. A report released by the Association for Career & Technical Education (ACTE, 2007a) described how extensive CTE is at the postsecondary level:

- Nearly a third of all students in for-credit postsecondary education are enrolled in career and technical education programs.
- About 85 percent of all postsecondary institutions report offering CTE, including nearly 75 percent of all four-year institutions and almost 93 percent of two-year institutions.
- Among sub-baccalaureate students, twice as many (50.8 percent) choose a CTE major as an academic major (25.4 percent).
- The Bureau of Labor Statistics estimates that, of projected openings in 2014, 24 of the 30 fastest growing occupations are among those for which the most significant source of post-secondary education and training is a CTE award or an academic degree.

Clearly, career-focused education and training programs and courses have become a fixture in our nation’s secondary schools and in our two-year colleges. ELLs and their parents and advisors should give serious consideration to those learning English participating in CTE experiences and, as appropriate, completing a CTE program. This will enhance their employability and, very importantly, provide a rich context in which to learn English.

A Transformation

The vocational education that most of us knew from our high school days has truly experienced a transformation. The National Governors Association (2007) reports that today’s CTE programs prepare youth for high-tech careers involving sophisticated scientific and technological skills and knowledge such as computer networking and pre-engineering and that more than half the students who choose to concentrate in CTE also take a college preparatory curriculum. Today’s career and technical education can be characterized as being both rigorous and relevant. This concept of rigor and relevance has been recently popularized by Willard Daggett of the Center for
International Leadership in Education (see www.perry-lake.k12.oh.us/district/communications/rigorrelevance.pdf for a brief slide presentation explaining Daggett's Rigor/Relevance Framework). While Daggett and others suggest that all of education should have more rigor and much more relevance to the current and future lives of students, they suggest that career and technical education—with its strong workplace connections—is in the forefront of making that happen.

Massachusetts is typical of the metamorphosis from vocational education to career and technical education and the enhancement of both rigor and relevance of schooling in the United States. Secondary “vocational” schools in that state are now preparing their students not only for careers with a future but also for college. Almost half of Massachusetts' vocational students go on to two- and four-year institutions. Massachusetts educators are also finding creative ways to integrate CTE studies with the traditional academic disciplines. At Assabet Valley Regional Technical High School, students in the plumbing program work with trigonometry teachers to install pipes. Carpentry students at Lexington's Minuteman Regional High read Thoreau as they built a replica of his well-known cabin at Walden Pond (Sacchetti, 2007).

Some Massachusetts schools have added programs such as biotechnology and pre-engineering that lead to high-wage employment. Some programs have counterparts at the college level for those who want to go on. Minuteman and many schools like it now call their vocational education programs “majors” and have dropped “vocational” from their name. Vocational schools in Massachusetts have also turned around their reputation on the state high school completion examination, the MCAS. Now over 90 percent of vocational students pass. Massachusetts' vocational schools have increased the academic rigor of programs dramatically. Assabet Valley recently began advanced placement pre-engineering, English and U.S. government. Worcester Technical High School will launch advanced placement biology soon, and Minuteman offers a Latin, biotechnology, and pre-engineering programs. Typifying the new dual mission of career and technical education, the top two seniors recently at Worcester Technical High School were cosmetology students, both of whom planned to attend a state university the fall after graduation (Sacchetti, 2007). The new emphasis on academics at Massachusetts' Leominster Center for Technical Education has yielded impressive results. Only 3 percent of students scored at the “advanced” level in math on the MCAS in 2004; 25 percent scored at that level in 2007. Thirty percent of Leominster's students failed the MCAS in 2004, and that figure has dropped to 7 percent in 2007. The percentage of students scoring at the “advanced” and “proficient” levels combined rose from 26 percent to 66 percent during that same time frame (Leominster Champion, 2007).

State legislatures across the country are now providing leadership and funding to update and expand vocational education programs that were de-emphasized during the 1990s as states focused on high-stakes testing, NCLB compliance, and increased academic requirements. Florida, North Carolina, and California, for example, are strengthening their high school and postsecondary technical education programs. Interestingly, all three states have large numbers of ELL students. California, which has 1.6 million ELLs, has made a major commitment to revive CTE. The 2006 state budget included $100 million for expansion of CTE programs. Governor Arnold Schwarzenegger, who was trained in sales and marketing as a high school student in Austria, has made the expansion of CTE a personal cause.

“We must also continue to reinvigorate career tech education,” Schwarzenegger told legislators during his State of the State address in January. “I love career tech, love it.” Schwarzenegger’s political sales job and renewed media interest have suddenly made job-oriented education politically acceptable, even trendy. (Walters, 2007: para. 1)
California lawmakers, who once espoused the opinion of most legislators and education policymakers that everyone should go to college, are now championing CTE bills. Even the college-obsessed education establishment is starting to recognize that not everyone can or should go to college.

In 2000, 258 CTE high school courses met University of California standards. By 2006 that number was up to 4,705. The resurgence of CTE in California is likely a precursor of a national trend. That is significant because it indicates that the academic establishment is beginning to realize the importance of career-focused courses—particularly in these times of increasing numbers of non-English-speaking students entering our school systems. “Vocational” programs in California were out of favor by the 1990s for having high numbers of minority and lower socioeconomic status students and, seemingly, discouraging them from pursuing higher education. Today, under new labels such as CTE and multiple pathways it is one of the nation’s hottest educational trends. California now has high school CTE programs that focus on careers in film production, finance, technology, agriculture, construction, culinary arts, law and public safety, performing arts, and auto repair, among others. One thing that distinguishes these new CTE programs from their old-fashioned vocational versions is rigorous academic preparation that will help prepare students for higher education (Landsberg, 2007).

Texas has also seen a resurgence of career-related programs. CTE enrollment in that state increased 170 percent between 1996 and 2006, about three times the rate of enrollment growth in bilingual courses and almost 10 times the growth in overall student enrollment. Michael Garza, a senior at Lewisville, has plans to go to a one-year technical college in Houston after graduating to pursue a career as an auto technician; he could be earning $58,000 in a few years, which is significantly more than the salary for a teacher with a bachelor’s degree.

McNeil (2007) reported that similar changes are occurring all over the country, as CTE programs are being updated to respond to the labor market, as well as becoming more rigorous and providing a broader range of coursework. Many schools are developing high-tech CTE programs in occupations ranging from multimedia communications to engineering and forensic sciences. She observes that CTE programs and courses are getting broader, for example focusing on construction technology, rather than narrowly focusing on carpentry.

Leaders at the national level, however, have sent mixed signals about their level of buy-in of the importance of revitalizing career-related education in the United States. In 2006, the U.S. Congress voted to reauthorize $1.3 billion for career-focused programming in high schools and community colleges—despite the president’s attempt to eliminate CTE funding so that it could be redirected into reading and math courses.

Now that we have looked at the modern CTE of today, let us explore one of the most compelling reasons for ELLs to become involved in CTE programs at the secondary or postsecondary level: helping to reduce their chances of dropping out before realizing their educational goals—particularly from high school.

Helping At-Risk Students Stay in School

Why is participating in CTE important for recent immigrants and refugees? What are the biggest causes of dropping out of high school? The answers to these questions provide insight for teachers in how to keep students interested in school. Some researchers feel strongly that there are sufficient data to indicate that the high school dropout rate in the United States is 25–35 percent, although others suggest that it is lower than that. By almost any measure, however, the high school dropout rate in America is alarming, and the data show that it is even worse for English language learners. Many studies have linked factors such as low socioeconomic status and repeat-
ing a grade to dropping out. Speaking English as a second language, however, is one consistent factor that is linked to non-completion of high school. When young people with limited English competence—especially recent immigrants—leave high school before graduating, their futures can be bleak. The enormous costs of not completing high school, both to the dropout and to society, have been well documented.

The consequences of dropping out of high school today are devastating not only to individual dropouts, but also to their family, their community and to the nation. The bare minimum credential needed to secure employment beyond minimum wage is a high school diploma. “Yet, with little notice, the United States is allowing a dangerously high percentage of students to disappear from the educational pipeline before graduating from high school” (Orfield, Losen, Wald, & Swanson, 2004: 2). The financial and social costs of dropping out are well known; however, they are worth reviewing in this chapter (Table 2.1).

### English Language Learners at Higher Risk of Dropping Out

Grossly underreporting high school dropout figures is one of the cruel hoaxes played on the American public by some elected and appointed officials today. Hoff (2006) reported “In recent years, researchers have documented states’ systematic underestimation of the percentage of students who fail to complete high school.” He added that “The gaps between graduation rates for members of minority groups and whites were significant. Seventy-eight percent of white students earned a diploma in four years, while 72 percent of Asian-Americans, 55 percent of African-Americans, and 53 percent of Hispanics did”. The most recent dropout statistic for Latinos in the Los Angeles Unified School District was 61 percent. Some observers suggest that many minorities attend schools that are “dropout factories.” Some states have been brazen enough to report only the percentage of high school seniors who drop out—sweeping under the rug entirely the huge number of students who drop out before they ever get to their senior year. Some studies suggest that the decision to drop out is made around the ninth or tenth grade.

Jay P. Greene, a senior fellow of the Manhattan Institute, a New York City-based think tank, and Christopher B. Swanson, formerly of the Urban Institute and now the director of the Editorial Projects in Education Research Center, developed what they suggest is a more accurate method of estimating graduation rates using data from a federal database. Using this method, they estimate that the national graduation rate is about 70 percent, although critics say it is really much higher than that (Hoff, 2006). If Greene and Swanson’s figures are correct, this suggests that almost one out of every three students drops out of high school in the United States—an astounding figure indeed.

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<th>TABLE 2.1. The costs of dropping out</th>
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<td><strong>Employment</strong></td>
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<td><strong>Earnings/tax liability</strong></td>
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<td><strong>Health</strong></td>
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Source: ACTE (2007b: 3).
Compounding the problem is the fact that rarely are data for ELLs, the handicapped, and other special groups disaggregated from overall dropout statistics and, therefore, there is little national debate over causes and cures for the crisis, and the general public remains in the dark as to the severity of the problem. Recently, however, there has been a push for accurate numbers and more consistency among states and school districts in the way the dropout rate (and the high school completion rate) is computed. Research suggests that the dropout problem is particularly troubling for minorities including ELLs. *Losing Our Future*, a 2004 report by the Harvard Civil Rights Project, found that graduation rates are substantially lower for most minority groups than for whites, particularly among males. According to this report, only about 53 percent of Hispanic students who begin the ninth grade graduate with a regular diploma and almost half of Hispanic males fail to earn a regular high school diploma (cited in Orfield et al., 2004).

In the much talked about report “The Silent Epidemic—Perspectives of High School Dropouts”, Bridgeland, Dilulio, and Morrison (2006: i) reported:

> There is a high school dropout epidemic in America. Each year, almost one third of all public high school students—and nearly one half of all blacks, Hispanics and Native Americans—fail to graduate from public high school with their class. Many of these students abandon school with less than two years to complete their high school education. This tragic cycle has not substantially improved during the past few decades when education reform has been high on the public agenda. During this time, the public has been almost entirely unaware of the severity of the dropout problem due to inaccurate data. The consequences remain tragic.

The report added that this dropout “epidemic” in the United States has disproportionately affected youth who live in cities, are members of minority groups, live in low-income or single-parent homes, and are attending large, public, inner-city high schools. The foregoing characteristics are associated with many but, of course, not all ELLs, which makes them particularly vulnerable to dropping out. They are particularly at risk of not completing high school when the frustration resulting from sometimes not being able to communicate with teachers and fellow students or not being able to follow textbooks and other curriculum materials is factored in. “It should come as no surprise, then, that ELLs complete high school at very low rates. Among eighth graders who reported to the 2000 U.S. Census that they spoke English with difficulty, only 18 percent went on to earn a diploma four years later” (Alliance for Excellent Education, 2007a). In 2000, just over 44 percent of Hispanic young adults who were born outside the borders of the United States were high school dropouts. Many variables have been found to be associated with individual-level risk of educational failure and dropping out. Natriello *et al.* (1990) noted that limited English proficiency was a significant risk factor.

A look at the characteristics of school districts with low graduation rates reveals several disturbing trends. School districts located in major cities, with high poverty rates, with high percentages of students with disabilities, or with high percentages of ELLs are more likely to have low graduation rates (Orfield *et al.*, 2004).

New York City (NYC) is not unlike many major urban areas in terms of the high school ELL dropout rate. The New York Immigration Coalition (2007) reported that the dropout rate of ELLs in that city has reached an alarming rate. The report suggests that the problem has been worsened by the Regents raising promotion and graduate standards without adequately preparing immigrant and ELL students to meet the new standards. The Coalition goes on to charge that many ELLs are being illegally “pushed out” (p. 1) of high school as the school system tries to suppress the dropout rate. They add that ELLs have the highest dropout rate of any subgroup of students
in the NYC school system, at 50.5 percent. ELLs, the report laments, have to become proficient in English, adjust to a new culture, pass the English Language Arts Regents exam that was designed for native English speakers, and pass all other required Regents exams—a formidable gauntlet.

About 5 percent of the nation's students were ELLs in 1990, with that percentage growing to over 10 percent in 2007 (Alliance for Excellent Education, 2007b). ELL enrollments are growing in almost every part of the United States, including states that have not historically been home to large ELL populations. States such as North Carolina, Nebraska, Georgia, and Tennessee are examples. While growing in numbers, ELLs are among the nation's lowest performing students as a group.

Finally, one factor that very few want to talk about is how the high-stakes testing movement has contributed to the dropout rate among students least likely to raise schools' test scores. With teacher incentive bonuses, public recognition, and even principals' and teachers' jobs hanging in the balance, schools today go to great lengths to boost their scores or to keep them from falling (including bribing students, holding test prep pep rallies, feeding students high-carbohydrate foods just prior to testing, and cheating). NCLB, with its requirement that subgroups of students (including ELLs) make “adequate yearly progress,” puts intense pressure on each subgroup to perform well on a state's high-stakes test. Students that don't are often encouraged to “disengage” from school so that their lower test scores will not be included when a district, school, or teacher's performance is examined. Thus, the very students who need the most help to succeed are often sacrificed to boost a school's test scores.

What are the Biggest Causes of Dropping Out?

What causes such high rates of non-completion of high school in America? There has been much research to attempt to isolate the causes of the high rate of dropping out. Many factors have been identified, such as problems in the home, pregnancy, and others; however, in almost every major study analyzing the self-reported reasons why dropouts decide to leave school before completion one factor has surfaced—boredom with their classes! Roberts (2007: para. 2) reported “According to Sen. Tom Torlakson, nearly 50 percent of students in California high schools are giving up on their education because they fail to see the relevance of school in their lives.” The ACTE (2007b: 4) reports:

Many students lose interest and motivation in education because the curriculum does not seem to have a real-world application. Academics are often presented in isolation, instead of in a way that shines a spotlight on how the subject is applicable in the context of the real world.

Bridgeland et al. (2006) reported on a major research project to better understand factors that contribute to students dropping out of high school today. The researchers conducted focus groups in cities, suburbs, and small towns with high dropout rates in several areas of the country. Importantly, these focus group sessions where held with actual dropouts between the ages of 16 and 25. One of the most significant findings was that almost half (47 percent) said a major reason for dropping out of school was that classes were “not interesting.” They reported being bored and disengaged from high school. And a high percentage of these dropouts (42 percent) hung out with people who were also not interested in school. And the shocking thing is that most of these students were not failing their classes; they were just bored! Only 35 percent of the dropouts reported that “failing in school” was a major reason for leaving school. Here is a very telling excerpt from the study's final report:
When the participants in our focus groups were asked in what areas their high school did not do enough, their highest level of response related to “not making school interesting.” Again and again, participants recounted how high school was “boring, nothing I was interested in,” or “it was boring, . . . the teacher just stood in front of the room and just talked and didn’t really like involve you.” A female from Baltimore said, “There wasn’t any learning going on,” and another complained, “they make you take classes in school that you’re never going to use in life.” (ibid.: 4)

Bridgeland et al. (2006: 12) went on to report that “Eighty-one percent of survey respondents said that if schools provided opportunities for real-world learning (internships, service learning projects, and other opportunities), it would have improved the students’ chances of graduating” and added that “Outside studies have noted that clarifying the links between school and getting a job may convince more students to stay in school.”

In other words, the two things that educational policymakers and teachers have the most control over—what is taught and how it is taught—are the very things that are pushing students out of high school—particularly those with limited ability in English and other at-risk factors! Although shocking, these results are not at all new. Asked why they decided to leave high school, dropouts from the past 30 years consistently cited three major reasons for leaving:

1. a dislike of school and a view that school is boring and not relevant to their needs;
2. low academic achievement, poor grades, or academic failure;
3. a need for money and a desire to work full-time.

Bridgeland et al. included several recommendations to improve the problem. “The following recommendations are based on what dropouts themselves told us in focus groups and the survey: improve teaching and curricula to make school more relevant and engaging and enhance the connection between school and work” (ibid.: iv).

Can Career and Technical Education Help Keep English Language Learners in School?

What can be done to keep more students—particularly those learning English—in school? There has been a mad scramble to identify ways to keep more young people in school until they graduate with a regular high school diploma. A multitude of strategies have been employed, such as providing mentors, better engaging parents of at-risk youth, and many others. Let us consider what dropouts themselves suggest might help the problem. Bridgeland et al. (ibid.) examined dropouts’ thoughts and ideas on how to help keep future students from dropping out. Not surprisingly, the most common recommendation (cited by 81 percent of study participants) was “provide opportunities for real-world learning (internships or service learning) to make classroom more relevant” (Figure 2.1). Not exactly rocket science is it? The most often cited reason for leaving school early is how boring and irrelevant students perceive the curriculum to be, so it’s not surprising that providing more real-world connections should help.

It has been established that the predominant reason for dropping out of high school is the perceived lack of relevance of high school courses and the boredom that results from the standard academic curriculum. It has also been established that the number one recommendation of dropouts themselves for addressing the problem is to infuse more “real-world learning” into high school. Given that, is there a way to change the high school experience in such a way that
relevance can be greatly enhanced while, at the same time, students master the academics they will need for postsecondary education and to function as adults?

The answer is “yes”! Not only is there a way to do this, but many school districts throughout the country are already doing it. They are encouraging (and buckle your seat belt—some districts are even requiring) students to participate in CTE programming in a career field of interest to them along with completing rigorous academic courses. Some districts and schools are requiring every high school student to declare a career major. In South Carolina, schools are now required by law to engage sixth and seventh graders in career planning and to develop “career-inclusive individual education plans” (Richard, 2005: 2). Some districts are going an important step further by linking or “integrating” the academic subjects that students learn with relevant, meaningful workplace applications. Learning in context—what a marvelous approach! High schools in South Carolina must offer courses from the 16 nationally developed career clusters such as health sciences or information technology (more on these clusters in a bit). Quoting California state senator Tom Torlakson, Roberts (2007: para. 4) wrote:

Career technical education (CTE) courses are the wave of the future. They give students a sense of a future career path. They put school in a context that helps students understand why they are studying and shows them that they are working toward good paying, exciting jobs.

It doesn’t sound far-fetched at all when you think about it. When students participate in educational experiences that focus on preparing them for entry into a career field of personal interest to them, their level of motivation and their engagement are greatly enhanced. This is true for native English speakers and ELLs alike. Moje, Ciechanowski, Kramer, Ellis, Carrillo, and Collazo (2004) assert that both native and non-native adolescents have out-of-school literacy interests and skills and that their teachers may not even know about these. The authors go on to say that these outside interests and skills might serve as a springboard for language learning in the classroom. We suggest that students’ interest in the world of work is among these. The National Governors Association (2007: 1) concluded:

Despite CTE’s past reputation as a less-demanding track, research proves that career technical education engages and motivates students by offering them real-world
learning opportunities, leading to lower dropout rates and greater earnings for high school graduates. When CTE courses also incorporate more academic rigor, research shows that student achievement significantly increases. These findings suggest that CTE should be an important aspect of a state’s broader high school redesign strategy.

Central Educational Center (CEC) chief executive officer (CEO) Mark Whithlock (he is no longer called principal) reports that there has been a dramatic decline in the high school dropout rate since the implementation of CEC’s career and technical education programs. According to Whithlock, “We are beginning to hear the drumbeat for more career and technical education programs . . . ” (Schewe, 2007). “We have fewer students who drop out if they see a purpose to why they’re in school,” said Marty Thompson, dean of Denton’s $22 million Advanced Technology Complex, which opened last fall in Texas. “TAKS [Texas Assessment of Knowledge and Skills] performance is better because it makes sense. They know how to apply it” (Parsons, 2007: para. 7).

Bridgeland et al. (2006: v) offered a major recommendation for curbing the high dropout rate:

Instead of the usual “one-size fits all” school, districts should develop options for students, including a curriculum that connects what they are learning in the classroom with real life experiences and with work, smaller learning communities with more individualized instruction.

The Fordham Foundation offers this suggestion about reducing the dropout problem by expanding CTE:

One can easily understand why, when confronted with a daily routine both insufferable and irrelevant, so many students decide to stop attending school. We can solve this problem partly by making courses more academically challenging, starting in the elementary grades. But increased rigor by itself is not enough; it must be coupled with increased relevance, and that means allowing a new kind of vocational education to play a prominent role in today’s American high schools. These programs—now known as career and technical education (CTE)—already exist, although they are not nearly as wide spread as they should be. They have a variety of critics, too, ranging from those who believe CTE will dissuade minority students from college, to those who think tough academics will be sacrificed for quick jobs. But when run well, CTE has demonstrated an ability to keep young men and women from dropping out by providing in their educations relevance, ownership, and purpose that would not otherwise exist, while still building key academic skills. (Julian, 2007)

Hull (2007) describes how 30 students at Palmdale High School in Los Angeles (which serves a largely poor, predominantly Latino, population) arrive at 6:30 a.m. for “0” period and are not only awake but can hardly contain their enthusiasm to begin the school day. Algebra class? Hardly. These students have elected to leave home in the dark for a sports medicine class that is part of Palmdale’s Health Careers Academy. Palmdale’s students (including the ELLs) love their CTE courses. Examples that have generated great interest—and in some cases, waiting lists—including forensic investigation, law enforcement, and video production. Zachary Picard, 17, a junior at Santa Teresa High School in San Jose, is enrolled in the law enforcement class. He gladly talked
about what he has learned in the course so far, such as physical training, constitutional law, and how to take down a criminal. Like other students at Santa Teresa, Zachary can articulate the differences between his CTE classes and his regular academic classes. “My problem with high school is that the classes are boring,” Picard said. “This is three hours every day, and the time flies by” (Hull, 2007).

The James Irvine Foundation, based in San Francisco, views CTE as the most promising solution to the state’s dropout crisis. It recently spent $6 million on a new statewide center focusing on the issue. The $10.4 billion school bond recently passed by California voters included $500 million for CTE facilities and the governor’s proposed 2007–2008 budget would add over $50 million to career programs.

But does participation in career-related experiences actually reduce students’ chances of dropping out? A University of Michigan study reported that high-risk high school students are 8–10 times less likely to drop out in the last two years of high school if they enroll in a CTE program instead of a general education program and that CTE students are less likely than their general-track counterparts to be absent or to fail a course (Kulik, 1998). Plank, DeLuca, and Estacion (2005) summarized the case for CTE helping to reduce the dropout rate: (a) students generally find CTE classes more interesting than their academic classes; (b) some students find their CTE classes better than their academic classes in preparing them for a career of interest; (c) CTE classes can help students see the value of academic context and skills by showing how academics are used in careers of interest; and (d) CTE classes seem to encourage students to define their career goals and help keep them more engaged in studies.

The National Dropout Prevention Center/Network (Schargel & Smink, 2001) identified 15 research-based strategies that have the most positive impact on the high school dropout rate. One strategy specifically listed is participation in CTE programs. Another is the use of “active learning,” which is a hallmark of the teaching/learning process in CTE classrooms and laboratories. The ACTE (2007b: 3) reported:

Not only does The Dropout Prevention Center/Network note CTE specifically as one of its 15 strategies, but many of the other strategies are important components of CTE programs, such as individualized instruction, service-learning, community collaboration, mentoring, active learning, and educational technology. According to the Center, “A quality CTE program and a related guidance program are essential for all students.” CTE was identified to have five potential benefits to at-risk students by Schargel and Smink in Strategies to Help Solve our School Dropout Problem. These benefits include enhancement of students’ motivation and academic achievement; increased personal and social competence related to work in general; a broad understanding of an occupation or industry; career exploration and planning; and acquisition of knowledge or skills related to employment in particular occupations or more generic work competencies.

Jeffrey Solochek (2007) reported that Okaloosa County (FL) superintendent Don Gaetz offered this rationale for launching career academies in that district’s high schools in career fields ranging from aerospace to construction technology: “most of the students who dropped out of high school dropped out because they’re bored out of their gourd” (para. 22). And how are these career academy students doing on the state’s high-stakes test? Only one district had better 10th-grade reading scores than Okaloosa and only three had higher math scores. Why would involvement in a career academy boost students’ academic performance? Solochek observed: “Students begin to see the importance of their curriculum, because it applies to something they’re interested in and something they can do with their lives” (ibid.: para. 17).
Career and Technical Education Fosters Positive Peer and Adult Relationships

Another key reason why participation in CTE programs helps reduce the incidence of dropping out is that it very effectively facilitates the development of positive personal relationships. This can be very important for recent immigrants and refugees. Research has shown that one factor in students’ decision to leave high school before completing is the feeling of isolation and that “No adults in the school cared about me.” A study conducted years ago found that the only adults that many high school students had any truly personally meaningful conversations with in the course of their entire high school careers were their band teacher, their athletic coach, and their “vocational education” teacher. No doubt it is even worse today, with larger and more impersonal schools, emphasis on test scores, and multicultural student bodies. CTE is better able to facilitate students having personal relationships with adults for several reasons.

Relationship with Their Career and Technical Education Teacher

Students are often closer to their CTE teacher than to their academic teachers. This can be attributed to several reasons. One is that CTE instructors often have fewer students to deal with during a given semester or school year because their classes are often offered in larger blocks of time to provide the time necessary to set up, complete, and clean up after complex hands-on activities. This simply gives the CTE teacher more time to deal with fewer students, leading to deeper personal interaction. Another reason is that CTE teachers take a very personal interest in their students’ career plans since career development of students is one of the purposes of CTE programs. Student and instructor explore the student’s career interests and aptitudes together so they get to know one another far better than the history teacher can who deals with 120 kids a day and who interacts with them only about history. In some programs, particularly at the postsecondary level, the CTE program must maintain a certain placement rate of graduates in the career field or it is in jeopardy of being eliminated. Such pressure for “success” encourages instructors to really get to know their students and their career aspirations.

Career and Technical Education Students are Often Part of Small Learning Communities

One of the leading efforts in building positive adult–student relationships is the push toward smaller learning communities. Although it is not unheard of for learning communities to be used to deliver instruction in academic disciplines in high schools, it is not common. However, the utilization of small learning communities is growing rapidly in CTE—most often as part of a “career academy.” We will look at career academies in some detail later, but their effectiveness is well documented.

Career academies have been found to increase both the attendance rate and the likelihood of staying in school among students who began the programs at high risk of dropping out. MDRC (originally Manpower Demonstration Research Corporation), a non-profit, non-partisan social policy research organization, in a study conducted in 2004, found that “career academies significantly cut dropout rates and increase attendance rates, credits earned toward graduation, and preparation for postsecondary education” (Kemple, 2001: x). It found that the career academy group’s dropout rate was reduced by about one-third compared with the rate for the non-academy group.
Career and Technical Education Links Students With Workplace Mentors

Fostering positive relationships with adults in the workplace and in the broader community is a hallmark of modern CTE programs. This is done through informal and formal mentorship programs linking students with businesspeople or by students participating in job shadowing or completing paid or non-paid internships and similar experiences. Through “work-based learning” experiences like these, CTE facilitates students having meaningful interaction with positive adult role models in ways that other high school programs simply cannot. MENTOR, a national organization that promotes the expansion of mentoring, concludes that working closely with workplace mentors provides several student benefits, including higher grade point averages, improved self-esteem, better attendance rates, and the feeling that school is relevant to work (www.mentoring.org/program_staff/research_corner/work_based_mentoring.php?pid=al).

It is critical for newly enrolled ELLs to develop friendships with other students as quickly as possible. Participation in CTE can help those learning English to forge such student-to-student relationships. In addition to fostering a deeper level of personal interaction between students and adults than academic courses can, CTE also facilitates positive relationships between students. This is done several ways.

Routine Use of Cooperative Learning

Informal and structured cooperative learning (e.g. jigsaw, STAD (Student Teams-Achievement Divisions)) are used in academic classrooms as well as in CTE classrooms and laboratories but are usually more common in CTE. The reason cooperative learning would be far more routinely used in, say, automotive technology than in English I, for example, is that effectively working on teams is a major outcome of CTE programs in addition to the technical competencies of the occupation. Work teams are becoming more and more common in the modern workplace. Also, working in pairs and in small teams is inherent in performing many of the tasks learned in CTE programs (e.g. practicing recording vital signs, participating in mock interviews). CTE instructors (most of whom have recent work experience themselves) make a concerted effort to utilize student teams very frequently to solve problems, complete projects, or visit worksites, and for routine instructional purposes.

Career and Technical Education Student Organizations Promote Positive Peer Relationships

Another and very significant way that CTE fosters positive relationships between and among students (as well as with their instructor) is their involvement in career and technical student organizations (CTSOs). These student organizations are an integral part of each of the broad CTE program areas; examples include SkillsUSA in industrial education, Health Occupations Students of America (HOSA) in health sciences, and Future Farmers of America (FFA) in agriculture. Secondary and postsecondary students can participate in CTSOs. Over 2 million CTE students participate in a CTSO each year. "Young people involved in these CTSOs . . . work regularly with an adult adviser to prepare for local, regional and national competitions; take on student leadership roles in the organizations; and develop a range of project management, public speaking, and leadership skills" (ACTE, 2007b: 5). The ACTE reports that research has linked participation in these CTE-related student organizations with enhanced student engagement and higher grades.

Students compete locally, statewide, and nationally in all manner of competitive events related
to their career and technical program area. They may be troubleshooting complex electronic circuits, preparing food dishes, creating websites or repairing marine engines in a high-pressure, timed, competitive environment. In addition to “technical” competition, students also engage in competitive events focusing on leadership development such as extemporaneous and prepared speaking, community service, interviewing for a job, and conducting formal meetings. Competition provides a powerful incentive to succeed and gives students an authentic context in which to develop English competence. ELLs preparing for and participating in CTSO competition know they need to master the general vocabulary associated with the occupation as well as the specialized terms that are a part of the specific competitive tasks they must perform. Here is an example of what students are charged with doing during a welding competition held in Texas: “Competitors had about 20 minutes to execute welds on either side of a steel T-bar, one using a low hydrogen rod and one using mild steel. A number on each T-bar, made of two 6-inch pieces of steel put together in a T-shape . . . ” (Gallaspy, 2007: para. 10). Look at the technical terminology involved in that single task. Such a competitive setting is a far richer environment in which to master new language skills than a sterile academic classroom using a workbook.

One of the major benefits the CTSO has over academic clubs found in high schools is that CTSOs are “co-curricular,” that is, CTSO activities are an integral part of the regular ongoing CTE curriculum. Also, ELLs involved in CTSOs have the opportunity to work closely with other students on team activities, including engaging in competitive student events.

An example of how CTE can provide a supportive environment for those learning English is the Academy for Travel and Tourism at Miami Beach High School. Seventy-five percent of the students speak a language other than English at home, and almost 70 percent were born outside the borders of the United States. Students and teachers are organized into small learning communities which provide a great deal of support to ELLs. Students complete a summer internship; activities during the regular school day include workplace visits, guest speakers, and job shadowing. According to Academy administrators:

English language learners succeed because the block schedule, project-based approach, and clustering system provide academic and personal supports that English language learners do not receive in traditional classrooms. Students develop relationships with one another and their teachers over the program’s three years, and more experienced bilingual students mentor younger English language learners in completing academic projects. In addition, Academy staff believe that students from diverse backgrounds benefit from the flexibility gained through a smaller, more personal education setting: teachers can maintain high standards for student work while offering opportunities to spend additional time to complete academically challenging tasks. Finally, many teachers in the school are bilingual and provide personal and career guidance to students through a teacher advisor program. (Allen et al., 1998: 46)

Helping All Students Transition to Work and Further Education

Some may wonder, “Is CTE for the college bound as well as the career bound?” One of the hallmarks of modern CTE is that its goal is to prepare students for careers and for postsecondary education. In times past, it was assumed that students in the “vocational track” were not going on to further their education and they therefore took vocational courses that emphasized hands-on skills. Students in the college prep track took purely academic courses taught largely in an abstract manner. It was assumed they would all go on to college. Most did go on but few graduated with a
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The reach of CTE is well documented—in most states, half of all high school students enroll in at least one CTE course, and 25 percent to 40 percent complete the three or four courses that comprise a typical program of study . . . However, there are examples that show applied learning does not always come at the expense of academic rigor. In Maryland—a pioneer in developing a new vision for CTE—51 percent of CTE concentrators now meet the state university system’s entrance requirements, up from 14 percent a decade earlier. Maryland’s example shows that CTE, when at its best, can help high schools draw on the advantages of applied learning while equipping students to meet college and career expectations. (National Governors Association, 2007: 2)

Today, progressive states, districts, and schools are encouraging all students to take a mix of career and technical and academic courses that are far better integrated than they ever have been. For example, a look at the Tennessee Department of Education website reveals a contemporary vision of CTE: “Vision: To provide Tennessee students the opportunity to participate in a rigorous and relevant career and technical education program that leads to academic achievement and successful employment in a global economy” (www.state.tn.us/education/cte/, accessed June 26, 2007).

To highlight the dual mission of today’s CTE (and the language-rich nature of student competitive events), let us look at the experience of Matt Bushnell and Todd Clark from Albany, New York. They recently competed in the National Automotive Technology Competition sponsored by auto-makers and tool companies and beat nearly 40 teams from as far away as Los Angeles and Toronto in the two-day competition in New York City. The test was to find as many bugs as they could in a modern car with 36 or more onboard computers—more than the Apollo lunar module. Was this experience preparation for college or for a career? They walked away with full scholarships to college, new cars upon graduation, and thousands of dollars’ worth of tools. The prize also included $35,000 in tools and equipment and a Toyota Camry to work on in class for their school, the Capital region Career & Technical School of the Capital region BOCES.

Bob Sipchen (2007: para. 24) describes Salvador Vergara, who recently competed in the SkillsUSA competition in the electrical wiring area: “Vergara not only will master fairly high-level math, but he will emerge from his training a journeyman electrician, ready to earn as much as $100,000 a year. He plans to spend part of that income on a college education in psychology.” This student was prepared not only to enter the world of work in a career that will provide him and his family with economic self-sufficiency, but also to go on to college. Today’s CTE is not about tracking but about expanding students’ options!

An example of how effective modern up-to-date CTE programs can help high school and post-secondary students launch a career with a future and get a head start on economic self-sufficiency is given by Toby Hughes, who graduated from Central Educational Center (CEC) in Georgia. CNN.com reporter Audrey Schewe (2007) related “Hughes was hired by a computer networking company his senior year. ‘After I graduated from high school,’ says Hughes, ‘they put me on salary for $52,000 and promoted me to Operations Manager—I was only 18 years old!’” CEC is typical of high schools that embrace a key element of modern CTE: high academic standards. CEC students must pass the same high-stakes tests other students in Georgia do, and it has been reported that CEC students perform better than students not enrolled in CTE programs. They
also must meet high levels of technical and career proficiency. CEC programs stress work ethic, and many programs lead to industry certification where applicable. Significant, challenging work-based learning is also a part of the CEC experience. CEC partners with over 200 local businesses to provide students with rigorous, challenging work-based learning experiences in the form of job shadowing, apprenticeships, and internships. There is also a focus on transitioning students into postsecondary education. Students at CEC can dual enroll in courses at West Central Technical College.

In Montgomery County, MD, public schools, “Many students earn college credit for the work they do in high school or take college courses as part of their career and technical training . . . parlaying their hands-on skills into careers as engineers, architects and business owners” (Aratani, 2006: para. 14). Tom Clendenin, who is a graduate of Edison's electrical program, is a prime example. He is now co-owner of Crown Stairs and Rails in Gaithersburg, MD. He launched his career by completing Edison's electrical and carpentry class and worked his way up the ladder into management.

Completing a CTE program in a high-demand field can be a valuable asset to ELLs as they enter the workforce. Completing a four-year college degree is not always a guaranteed ticket to success—especially for those who haven't fully mastered English. According to a survey by the career site MonsterTrak, only 10 percent of college graduates have jobs lined up after college. Sixteen percent of college students plan to attend graduate school, which will delay their need to find a permanent job. Of the 1,092 students surveyed, 57 percent intended to move back home with their parents when they graduated (Kennedy, 2004: paras 2 and 3).

Many ELLs might be better served completing a CTE program in high school rather than by completing a solely academic, university prep program that they may not be able to take advantage of after high school graduation, whether because of low grade point average, lack of support at home, insufficient finances, or their legal status. This is especially true when the CTE program leads to immediate employment well above minimum wage—and keeps the door open for attending college. It can be argued that many students would be well served by completing a CTE program in high school. They can launch a career with a future, begin to earn a living for themselves and their families and then—as is the case with many companies—are helped by their employer to go to college later and complete a two-year or four-year degree. Such students will have several things working for them that those who enter college or university right after high school do not (especially that large percentage who drop out of college with only a student loan to show for it): they will be gaining work experience earlier, they will complete years of service towards retirement and social security earlier, and they will rarely have large educational loans to pay off. A bonus is that during their schooling their CTE classes and work-based learning experiences will have provided them with rich, contextual applications of the English (and other academic subjects) they were learning and an authentic context in which to use it.

A key point also is that the technical, occupationally related competencies students acquire in a CTE program will prove invaluable in securing employment and in advancing up the career ladder. Bishop (1995) cites data bearing this out. He found that when employers look for skills in their new hires they look first at occupational and technical skills and at work habits well before they look at academic skills such as reading and math. Bishop writes about the importance of technical skills in securing employment in today's economy and advancing within an occupational field:

The applicants’ knowledge of history, geography and literature is seldom evaluated . . . When members of the National Federation of Independent Business were asked which abilities influence hiring selections the most, they cited occupational skills more
frequently than any other ability. Once a new person is hired, which abilities predict success on the job? The NFIB survey also provides insight here. The business owners supplied information on the background and on-the-job success of two employees (A and B) who had recently occupied the same job for a year or more. Since the firms were small, the owners had contact with each worker. Assessments of relative occupational skills, learning ability, work habits and people skills all had significant positive relationships with relative global productivity ratings at about one year of tenure. Employer assessments of a worker’s academic skills and leadership ability, on the other hand, had no relationship with current overall job performance ratings. Holding demographics and employer evaluations of other traits constant, workers thought to have “much better” occupational skills were judged to be 10.7 percent more productive after about a year on the job. The impact of occupational skills on relative wage rates is even more striking. Workers whose occupational skills were thought to be “much better” started with a 12 percent better wage and were making 14 percent extra after a year on the job. Academic skills had no significant effects on wage rates. People skills also had no effects on wage rates. Leadership had modest positive effects on wage rates and initial productivity but not on productivity a year later. (ibid.: 38)

It is inescapable that a company hiring a cable installer is looking for someone who knows how to install cable, an automotive service center is seeking a brake technician who knows how to install brakes, and a firm hiring a word processing specialist wants someone who knows word processing software intimately. Being a good student and doing well in academics (or scoring well on a high-stakes test) will not win out over technical competencies in today’s technologically based economy. This is a message that ELLs and their parents and advisors need to consider seriously.

If there is still any doubt in your mind about the positive impact that participation in CTE programs can have for those learning English at the high school and postsecondary levels, consider the conclusion reached by the national Governors Association (2007: 4) after it considered the impact that CTE can have on school reform in America and on its citizens:

Several recent studies find that CTE has a positive impact upon high school graduation rates, labor market outcomes, and postsecondary enrollment. Students who take CTE courses are less likely to drop out, especially students who are most at risk for doing so. A review of the more recent research suggests that taking three CTE courses for every four academic courses will have the greatest impact, cutting the dropout rate for students taking these courses by up to four times more than for those students taking only academic courses. Students who take at least three CTE courses also earn 18 percent, or $212, more a month than comparable high school graduates after high school. The National Assessment of Vocational Education found that higher proportions of CTE students are moving on to some form of postsecondary education or training.

ELLs, their families, and their advisors should give CTE a close look as a means of helping ELLs learn English in a language-rich, authentic, interesting context but also for helping them successfully begin a career with a future.
This chapter discusses four fundamental ways in which participation in CTE can help ELLs acquire English language competence and at the same time successfully transition into a career with a future and on to adulthood. These four ways in which CTE benefits ELLs go well beyond the scope of traditional vocational education as you may have known it in the past. Why are knowledge of the world of work in the United States and knowledge of themselves so important for recent immigrants and refugees? Today’s CTE helps non-English speakers learn their new language and supports their career development in the following ways.

- The first is vitally important to all students and is critical for recent immigrants: learning about work. What is the American workplace like and how does it differ from working in other countries? What jobs, occupations, and careers are out there and what do they pay? Knowing the answers to these questions can help youth and adults make more informed career choices. This also involves learning about one’s own aptitudes, strengths, and career interests, and how these match up with career requirements.
- Second, learning through work contexts is a powerful way to reinforce and apply academics, including English. Research shows that, when students can place new learning into authentic contexts of application, motivation, engagement, and learning outcomes are enhanced. We suggest that one of the best ways to learn English is to use personally meaningful work-related contexts as a primary vehicle.
- Third, actually preparing for work and then entering into a career with a future is the primary goal of CTE and, when successful, can dramatically improve the standard of living of ELLs and their families. We are reminded that standard of living is strongly linked to quality of life, physical and mental health, longevity, citizenship participation, general well-being, and pursuit of further education.
Finally, there is no substitute for ELLs actually being at work in the modern, high-tech workplace to see what the world of work is really like, how academic and technical competencies are really used by workers, and to see and hear written and spoken English modeled by competent adults. The best way to learn the English related to a particular occupational field is to be there!

Learning about Work and Self

Newly arriving immigrants, refugees, and their siblings, children, and other family members face a daunting task in learning about all the aspects of their new lives in the United States. Not only must they master English, but they must also learn about living and working in their new country. In a sense, learning about American life and culture is easier than learning about the American workplace because of the pervasive presence of movies, television, other forms of entertainment, and the Internet. In fact, immigrants from almost anywhere in the world know a surprising amount about the American way of life because of the long reach of American popular culture (some might debate the use of the term “culture” considering the content). Learning about working in America beyond minimum wage employment, on the other hand, is far more difficult but is vitally important to recent immigrants if they are to achieve even a small slice of the American dream. They need to learn about supply and demand of the huge number of occupations in the U.S. economy, educational requirements for being hired, current and projected levels of pay, and how to go about actually preparing for and applying for employment that pays a living wage or beyond.

Knowledge of the Workplace

Without a basic command of English and accurate, current information about and adequate preparation for the workplace, most immigrants and refugees are destined for low-wage jobs that offer little in terms of benefits and opportunities for career advancement. Helping ELLs learn about the world of work in the United States and the intricacies of how it all operates is one of the potential benefits of their participation in CTE programs. For example, in all likelihood, only in a CTE program will ELLs learn that those in the skilled “trades” in the United States earn more, on average, than do college graduates (except for those with advanced degrees). Castellano, Stringfield, and Stone (2001: 14) observed:

Career and technical education can teach about work. Education about work, like education through work, is meant to be broadly educational. The curriculum assumes that career and technical knowledge—knowledge about the world of work—is valid school knowledge, good in its own right, and rightfully belongs in the common core of knowledge that all students should possess . . . Workplaces are a primary site of the construction of culture, since people spend so much of their lives at work. Thus, what transpires in the workplace constitutes content worthy of a place in the school curriculum.

As mentioned earlier, one of the key components of today’s CTE is emphasis on career exploration and initial preparation at the high school level and advanced preparation at the postsecondary level for a broad occupational field rather than for a narrow job. During their time in a typical CTE program, limited English-proficient (LEP) students will be exposed to guest speakers from various occupations related to the CTE program area, view video clips showing what the workplace
is like, visit workplaces, and even spend an extended period of time in an actual worksite in an
arrangement now called “work-based learning” (WBL)—more on that a bit later. In some cases it
is possible to pair a particular student who has limited English-speaking ability with a workplace
mentor who speaks the student's native language to work with during the WBL experience but, of
course, this is not possible in all cases.

*Career Clusters*

One way that CTE has broadened the focus of programs beyond narrow jobs as in traditional
vocational education is through the use of the “career cluster concept.” These 16 career clusters are:

1. Agriculture, Food & Natural Resources
2. Architecture & Construction
3. Arts, Audio/Video Technology & Communications
4. Business, Management & Administration
5. Education & Training
6. Finance
7. Government & Public Administration
8. Health Science
9. Hospitality & Tourism
10. Human Services
11. Information Technology
12. Law, Public Safety, Corrections & Security
13. Manufacturing
14. Marketing, Sales & Service
15. Science, Technology, Engineering & Mathematics

For more information on the 16 major career clusters that have been developed at the national
level, see the States’ Career Cluster Initiative (SCCI) website (www.careerclusters.org/). You will
see how Nebraska, like many states, has taken these 16 career clusters and incorporated them
into a comprehensive Career Education Model (Siebert et al., 2007). Nebraska has grouped the
16 clusters into six very broad career fields. For example, the Industrial, Manufacturing, and
Engineering Systems career field includes the national career clusters of manufacturing and archi-
tecture and construction as well as two others. Notice that in each cluster there are several career
paths or “pathways” listed that students can pursue by enrolling in a closely related CTE program
in high school, continuing with advanced study at the postsecondary level and then entry into
that occupation. Within each pathway are specific occupations that students can begin exploring
(Figure 2.2).

The idea of career pathways was taken a step further by Brighton High School in Boston, which
has developed two parallel career pathways for the health professions, one for Vietnamese and one
for Spanish ELLs. Early in their program, Brighton students take two career pathway courses each
year for two years, which focus on medical technology, information on health careers, and similar
concepts, taught in their native language by a bilingual teacher with experience in the health field.
Then, in their junior year, these ELLs are mainstreamed into the health professions pathway and
participate in clinical experiences and internships in hospital, clinics, and similar facilities.
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Can completing CTE programs help ELLs begin a career with a future? As you can see, through the use of the career cluster concept, ELLs who participate in CTE programs will be exposed to a wide array of possible career choices within a broader career field in which they express an interest. ELLs will not (nor will other students) get this kind of up-to-date career-related information in history class or from their English teacher. Keep in mind that, even if students change their mind later about the career field they wish to pursue, they have still completed their academic courses (using workplace contexts to enhance learning) and they have learned a great deal about the workplace in general.

All Aspects of Industry

Another component of today’s CTE that has the potential to help ELLs (as well as all youth and adults) to be more successful in the workplace is known as “All Aspects of Industry” (AAI). By learning about various aspects of a particular industry or career field beyond just the technical skills needed for the job, those learning English will be more rounded and will better understand the overall social, political, and other contexts of their career field of interest. Exposing students to all aspects of an industry was strongly encouraged in Federal legislation, the School-To-Work Opportunities Act of 1994 (U.S. Congress, 1994). Aspects of industry described in the legislation are:

- **Planning** (e.g. examined both at the industry level and at the firm level; various forms of ownership, including cooperatives and worker ownership; relationship of the industry to economic, political, and social context).
- **Management** (e.g. methods typically used to manage enterprises over time within the industry; methods for expanding and diversifying workers’ tasks and broadening worker involvement in decisions).
- **Finance** (e.g. ongoing accounting and financial decisions; different methods for raising capital to start or expand enterprises).
- **Technical and production skills** (e.g. specific production techniques; alternative methods for organizing the production work, including methods that diversify and rotate workers’ jobs).
- **Underlying principles of technology** (e.g. integrated study across the curriculum of the mathematical, scientific, social, and economic principles that underlie the technology).
- **Labor issues** (e.g. worker rights and responsibilities; labor unions and labor history; methods for expanding workers’ roles).
- **Community issues** (e.g. the impact of the enterprise and the industry on the community, and the community’s impact on and involvement with the enterprise).
- **Health, safety, and environmental issues** (e.g. in relation to both the workers and the larger community).

As with information about career opportunities open to them, ELLs very likely will not hear about these aspects of a particular industry from their academic teachers or from their guidance counselors. They will get this exposure only while involved in CTE programs. As you can see, with CTE’s inclusion of all aspects of industry, even if ELLs enroll in one or more CTE courses or complete an entire CTE program but do not actually enter the workforce in the occupational field for which they were preparing, they will still learn a great deal about working and about the workplace in the United States. Career and technical educators have access to many resources that will help ELLs explore various careers clusters and specific occupations they are potentially interested in pursuing. Here are a few:

- The Spanish Translation of the O*NET 4.0 Database is available for download at: www.onetcenter.org/database.html under the heading, “Database 4.0 Spanish.” For a copy of the completed translation and a report of the process used, visit the O*NET Center Web site at: www.onetcenter.org.
- CareerInfoNet is loaded with information about various careers with video clips showing workers in a wide variety of careers at work (the site and videos are available in both English and Spanish).
- An excellent site is Career Voyages (www.careervoyages.gov/index.cfm).
- Career videos in Spanish can be found at www.careervoyages.gov/careervideos-main.cfm?language=spanish and sources of work-related information in Spanish from the U.S. Department of Labor are shown on the following page.

**Knowledge of Self**

The flip-side of learning about work, the workplace, and careers is learning about oneself. By participating in career exploration and awareness experiences and engaging in self-assessment activities to determine one’s own interests, strengths, and aptitudes, ELLs can learn a lot about
themselves and can envision more career possibilities than they would otherwise. This self-exploration is part of the “career development” process. Career development can be defined as “the total constellation of psychological, sociological, education, physical, economic, and chance factors that combine to influence the nature and significance of work in the lifespan of any given individual” (Maddy-Bernstein, 2000). Even though the career development process is virtually lifelong, the high school and postsecondary educational experiences of youth and adults can play an important role in an individual’s career development. Schneider and Stevenson (1999) assert that career development is vitally important for today’s youth, who are more than ever “motivated but directionless.” ELLs, in particular, can benefit from career development because they probably had little exposure to the concept in their native land and they now find themselves in a new country with which they are unfamiliar. One of the purposes of modern CTE is to assist students in helping them chart their career trajectory armed with information about the workplace and about themselves.

Traditionally, the guidance counselor has been charged with career development efforts at the high school level. But many studies reveal that counselors have huge student loads and spend much of their time on high-stakes testing, helping students apply to college, and other duties, leaving little time for career counseling. The likelihood of a newly enrolled ELL student receiving intensive career counseling from an overburdened guidance counselor is quite low. The public continues to be concerned about the lack of support schools offer students in their career development. A Gallup poll (Hoyt & Lester, 1995) found that many Americans believe that high schools should help students plan careers, develop skills to get jobs, and learn to use occupational information. Furthermore, 64 percent of the respondents believed that the high school should place graduates and dropouts in jobs, compared with only 33 percent who believed that high schools should do more to prepare students for college. CTE can help fill this gap. CTE teachers and career guidance personnel have a great deal of personal occupational experience and have access to vast stores of information about the world of work as well as personal contacts in the business community. And many of them are bilingual, which is a vast untapped resource for students trying to learn English. Career guidance materials and resources to which CTE instructors and support personnel have access are available not only to students formally enrolled in CTE courses and programs, but to any students who avail themselves of it. When ELLs first enroll in school, the CTE department should be one of the places to which they are directed.

Not only ELLs but all young people need more intensive career development. We truly have a crisis in this country in terms of the poor job we do of guiding our youth toward appropriate, informed career and postsecondary education choices. A look at the results of the overemphasis placed on university admission is revealing. Although almost three-fourths of high school graduates go on to a college or university some time after graduation, only about half of them are academically prepared to do college-level work.

... while college enrollments grow, so do college remedial education and dropout rates. By the late 1990s, college dropout rates were at record levels. Two thirds of all college students now withdraw at least once before finishing, and 91 per cent of these never earn a degree. (Gray, 2000: 2)

Reporting on a study of the often misguided career aspirations of high school graduates, Gray and Herr (1995) reported that recent graduates’ top-ranked aspiration was being a “professional” and that no other career choice even came close. Only 8.4 percent of males and 3.7 percent of females aspired to work as technicians, and even fewer saw themselves working in the skilled trades or crafts. “If technicians... will be the new worker elite and will... be very well paid for
their skills, then an important inconsistency seems to exist because very few of today's youth aspire to these occupations” (ibid.: 8).

Since ELLs complete high school and postsecondary education at lower rates than regular students and often have fewer family resources and role models to rely upon, they need accurate, timely, and appropriate career development support. Most importantly, they need to know about options! They especially need to be aware of high-paying careers that are open to them with one or two years of postsecondary education. For example, do high school students who are recent immigrants or refugees or those providing advice to them know that a dental hygienist can earn $50,000 a year after only two years at a community or technical college? Most likely they receive the same message that other high school students do: The only path to a high-paying job is a four-year college degree. Although college graduates, on average, outearn their high school graduate counterparts, this is only part of the picture. The average earnings of those with only a high school diploma includes those without marketable skills (which in many locations is the majority of them), which pulls the average earnings figure down dramatically. Conversely, although the average earnings of college graduates is higher than those who only complete high school, many individual college graduates are underemployed, and some remain unemployed for significant lengths of time. Compensation of those with bachelor’s degrees and those with sought-after occupational skills without degrees is more similar than many people imagine.

The number one reason for attending college reported by college freshmen is to get a good job. But often this does not happen. Gray (2000) reported that by the mid-1990s about one-third of university graduates were underemployed. During this same period when increasing numbers of high school graduates entered college and an increasing number of college graduates were ending up in low-wage jobs, the economy was generating record number of high-wage/high-tech technical jobs—many of which require only one or two years of technical education beyond high school. While this was occurring, another troubling trend was developing. A growing number of students enrolling in one- and two-year technical programs in community and technical colleges were college graduates (some with master’s degrees!). They were seeking what their university degrees could not provide: an advantage in the increasing technical labor market.

A newspaper in southwest Florida recently ran an article with the somewhat shocking headline: “Growing Number Of College Graduates In South Florida Classified As Poor”. It reported that the number of people classified as poor who have attended college has doubled to almost 6 million. According to recent census estimates, more than 1 out of every 10 adults living in poverty in Florida’s Broward and Palm Beach counties has a bachelor’s degree or higher (Malernee, 2007). Ouch! ELLs and their parents need to get the message that, although attending a two-year or four-year college or university is a viable option, acquiring marketable skills that are in high demand and that lead to high wages might also be something they want to pursue. And these two aims are not mutually exclusive!

Another point that often goes unnoticed except to those affected is that illegal immigrants and their offspring are not eligible for federal college loans, work study programs, or many scholarships because they have no social security number. Most states bar them from qualifying for in-state tuition at state universities. Encouraging illegals to complete a strictly academic, university prep high school curriculum with little or no career preparation when their prospects of attending college are small is at best questionable. Immigrant youth pay a high price in the United States for the decision of their parents (sometimes many years ago) to enter this country (or remain in it) illegally. For these young people, getting enough high school or post-high school technical education to earn a living wage when they leave school is absolutely essential. Having a social security number is important for legitimate employment but is less critical than it is for receiving college aid since many employers do not require documentation related to immigration status—especially
in the “underground” economy. It has been estimated that over 65,000 undocumented students graduate from America’s high schools each year. Most would benefit greatly from today’s rigorous and relevant CTE, which leaves the door open to attend college in the future. The 12 percent of this country’s Hispanic 15- to 19-year-olds who are not in school at all and the 50 percent who are likely to drop out of high school would especially benefit from CTE. Not only are the prospects of Dade County brothers, Alex and Juan Gomez, of attending college slim, they face even bigger hurdles in establishing a new life in the United States. Their entire family was recently detained by authorities for overstaying their tourist visas from Colombia 16 years ago.

Concern about the career development of those learning English as well as all high school and post-high school youth is not a recent phenomenon. A landmark study begun in the 1950s is telling (Jepsen & Choudhuri, 2001). The 21-year-long Career Pattern Study conducted by Super and colleagues began by looking at ninth-grade boys (about 15 years old) and focused on their career maturity. These boys were studied again as seniors and followed until they were about 36 years old. Only 10 percent of ninth graders and 20 percent of seniors had decided on an occupation. Their vocational preferences continued to be unstable, uncertain, and unrealistic. Two-thirds of the 12th graders and an even higher percentage of ninth graders had little or no confidence in their goals. Most knew little about the occupation they thought they might like to enter. Fewer than 5 percent of seniors studied had well-thought-out plans for actually getting training needed for their occupational aspiration, for pursuing education, or for entering the occupation once they had completed their training. One of the conclusions of the study was that the vocational preferences of high school seniors are no more appropriate than those of children in the ninth grade.

Herr and Cramer (1996) took a more contemporary look at high school student career maturity and concluded that high schoolers experience uncertainty and instability and may have unrealistic expectations concerning their career choices. They went on to conclude that “Many young people flounder for several years before entering an adult lifestyle” (ibid.: 427). Data indicate that “high schools vary widely in the status of their career planning services, including planning for postsecondary and collegiate education,” and studies “echo an unevenness of guidance services in high schools across the country” (ibid.: 414). And keep in mind that these studies involved native-born American youth. The career counseling needs of immigrants are even greater since they are much less familiar with work and jobs in the U.S. economy.

Kenneth Gray suggested that our high schools must do a much better job of promoting career maturity among our youth. He defines “career maturity” using the following four criteria (Gray, 2000: 8–9):

- understand the importance of narrowing career interests as a basis for postsecondary planning;
- have, by the 10th grade, identified one or more career interests after an objective evaluation of likes and dislikes, aptitudes, and labor market projections;
- have, by the end of the 12th grade, engaged in activities to verify these choices.;
- use these choices to make post-high-school decisions.

CTE programs today routinely build in all of these types of experiences. The need for comprehensive career development services at the high school level was summed up by Maddy-Bernstein (2000: 6): “Evidence is mounting that an effective means of addressing all these issues may be a comprehensive guidance program that includes a strong career development component.”

What are the most promising CTE models for the secondary and the postsecondary level? Well, more and more schools, districts, and community colleges are ramping up their career
development programs—and many of these involve the active participation of career and technical programs and instructors. For example, 10 associated school districts in Newark, Ohio, have infused career development experiences into the ongoing curriculum for their K–12 students. Here is how that works:

What’s relevant is that C-TEC is working closely with all schools in Licking County to ensure that the academic standards of schools align with career development standards. This means teachers deliver a single lesson plan that addresses career topics, as well as the required academic standards. The real relevance lies in the fact that students now are exposed to career awareness and exploration as early as kindergarten... These schools have a system of learning activities emphasizing career awareness K–4, career exploration in grades 5–8 and career preparation in nine–12. Also, these schools have formal activities such as the eighth-grade career experience, freshman career fair and sophomore hands-on days to support students’ career development. Real excitement is being generated by the program. (Cassidy, 2007: 44, 45)

Such comprehensive career development programs in K–12 school systems and community colleges are becoming more common. One challenge, though, is to insure that recent immigrant youth and young adults are made aware of such programs and that they are able to fully participate even though their English skills may be lacking.

Learning through Work

The second important way that participation in career-related programs can help ELLs learn English (and other academic skills and concepts) is that it provides a rich and authentic context in which to initially learn and also to apply academics. Why is WBL such an important part of modern CTE? It is inescapable that virtually all teenagers and young adults are very interested in work and the workplace. Why not capitalize on that inherent interest and fascination to counteract some of the boredom and lack of student engagement we so often see? After all “Adolescents thrive in situations in which they recognize the relevance of what they are learning” (Short & Fitzsimmons, 2007: 36).

Contextual Learning

Although it is discussed more fully in another chapter, at this point we need to mention the powerful impact that learning in context (particularly work contexts) can have on student engagement and on student learning outcomes. “All students should have the opportunity to learn school subjects with work as the context of their learning” (Castellano et al., 2001). We simply can’t ignore the fact that a huge number of high school (and even community college) students fail to see the point of much of what they are being asked to learn in school. “Career [and] technical education has the power to engage and motivate all students by giving them chances to learn in applied settings” (National Governors Association, 2007: 2).

Remember from a previous chapter that many studies have shown that the number one reason for dropouts leaving school early is that they are bored with the school curriculum and what they are being asked to learn. ELLs may often feel even more disconnected from the real world while sitting through lessons in which they have little interest and which do not appear to be useful. Today’s overstimulated and always entertained students constantly (at least silently, anyway) ask that well-known question: “How am I ever going to use this?” Too often, unfortunately,
the only reply is “You’re going to need this for the test.” Adria Steinberg (1998) reported on a research effort by Lawrence Steinberg that underscores the perceived irrelevance of the modern-day academically dominated high school experience in this country. Lawrence Steinberg, of the University of California, conducted a survey of more than twenty thousand high school students and concluded:

Across the country, whether surrounded by suburban affluence or urban poverty, students’ commitment to school is at an all-time low. Four in ten of the teenagers surveyed by Steinberg indicated that they are just “going through the motions.” These are the young people who “drop in” to their classes, tolerating forty or so minutes of instructional time as the price they must pay to join their peers in the hallways, lunchrooms, and practice fields, and eventually to reach the ritual of graduation. Although they say most school work is irrelevant to their lives, they are afraid to give up on school altogether, still believing that school may have something that do with reaching future goals. (Steinberg, 1998: 2)

One reason school districts all over the country are rebuilding and expanding their CTE offerings is that they are finding that using the context of the workplace can add much needed relevance to the academic classroom, including reading and writing and learning English. They are finding that important academic concepts and skills can be very effectively learned and reinforced through the use of occupational contexts. Is this a new approach? Hardly. Steinberg (1998: xv) observed:

“Education through occupations consequently combines within itself more of the factors conducive to learning than any other method,” Dewey wrote in his 1916 book, Democracy and Education. Like current-day cognitive scientists, Dewey saw learning as an act of construction and meaning-making. The learner doesn’t simply “take in” information handed to him, would rather create knowledge and understanding by active engagement with problems and efforts at resolution that involve transforming the environment in some way.

Steinberg goes on to say that, to Dewey, “The vocation acts as both magnet to attract and glue to hold” (ibid.). Grubb (1995: 12, 13) also described John Dewey’s view:

Much of Dewey’s writing criticized the dualisms that dominated education, in his time as now—the separation of individual and society, of body (or activity or experience) and mind, of “learning” and “doing”, of play and work, of academic education versus vocational education. He argued that academic and vocational education should not be separated, and in fact that vocations and broadly occupational themes are the most appropriate ways of focusing instruction: “Education through occupations [not for occupations] consequently combines within itself more of the factors conducive to learning than any other method”.

The opportunities for contextual teaching and learning that CTE provides is unmatched in the academic disciplines. One reason CTE teachers report having so few discipline problems is that their students are most often actively engaged in what they are learning because they see its usefulness and are able to immediately apply what they are learning in a “hands-on/minds-on”
fashion. In a CTE classroom or laboratory one rarely hears the teacher say: “Pay attention because you’ll need this some day.”

The Integration of Academics and Career and Technical Education

When separate funding was made available for vocational programs by the Smith–Hughes Act in 1917, academic education and vocational education began to move further and further apart. Fortunately, educational leaders and policymakers saw the folly of this artificial separation. The movement to reconnect or “integrate” academic and technical instruction began in the early 1990s and continues today. Integration is seen as a means of addressing major shortcomings of both areas: the lack of relevance of academics and the lack of academic rigor of many vocational programs. One of the most often cited problems with the traditional academic high school curriculum is that most of what we ask students to learn is disconnected from their immediate and future lives—they don’t see why they need to learn it. Also, there is little opportunity for immediate application of what they are learning. School-based and workplace-based CTE-related experiences can help fill that gap through “integration” with academic instruction. Integration can be a very useful tool to help ELLs see the “why” of the academics they are learning and for seeing relevant contexts for applying written and spoken English. Kevin Hart, the director of the Tech Center at Yorktown, New York, which was recently cited by the ACTE (Reese, 2007) as an exemplary site for integration, talks about the impact of integration on learning: “Teaching academics in an applied way just makes sense. Students never question if this will be on the test, because they see the relationship between the academic principle and its application and understand its importance” (ibid.: 18). Wilson County Schools in Tennessee have also seen the benefits of integration:

The requirements for passing classes such as automotive technology and food science have gone up in recent years. Schools have been overhauling lesson plans to integrate more reading and math and better reflect the cutting-edge skills that employers are demanding . . . “We’re not the classroom out back anymore. There’s a misconception that we’re the old shop class, the less-than instruction,” said Bill Moss, the career–technical education supervisor for Wilson County Schools. “Our teachers are teaching more academics and integrating that into the classroom.” . . . For example, teachers can work together to show students taking biology how the concepts they’re learning can be applied in the health or agricultural fields . . . The changes in career–technical courses, which used to be known as vocational, are in line with a national push to improve students’ academic achievement and make sure they have the skills needed to be successful in college and the workplace . . . “We’re preparing our kids,” said Moss, adding that 95% of career-tech students in Wilson County enter college, the military or good-paying jobs after graduation. “We are what makes the academic classes relevant. We hook them.” (Riley, 2005)

Recent research in cognitive psychology has shown that the human brain strives for meaning, for connections, for utility of the new information the brain is processing. In short, students learn better when new material is put into useful context and when they are given immediate opportunity to apply what they are learning. This philosophy has driven the movement to “integrate” academic education and career and technical education including ramping up the academic rigor of CTE programs and teaching academics in workplace contexts. Ascher and Flaxman (1993: 7) offered a comprehensive definition of integration:
the renewed interest in integration has been spurred by new cognitive science research, as well as by a recognition that neither vocational nor academic education as currently practiced provides students with the problem-solving and interactive learning skills required by further education, the economy, and social life. Thus, curricular integration reforms job-specific vocational education by bringing out the intellectual and moral content of a range of occupations, providing students with employability skills and the knowledge to direct their own futures in any one of related careers. At the same time, it transforms academic education, making the teaching of traditional academic subject more active, more directly meaningful, and more connected with out of school experience.

Harwell and Blank (2001: 85) described how the integration of academic and technical instruction addresses the shortcomings of each area: “Vocational education programs have long been criticized for offering training in very narrow jobs and focusing too heavily on psychomotor skills. Academic instruction has been criticized for its abstractness and lack of relevance to the real world.”

Ways in which CTE and academic teachers are working together to integrate their instruction and provide much needed relevance and context for learning academics (including English) include:

- CTE instructors paying more attention to reinforcing important academic concepts and skills in their technical instruction (e.g. the web design instructor emphasizing correct grammar by being able to show students why it is important);
- academic teachers (usually with examples provided by their CTE counterparts) showing students how academic content is used in the workplace (e.g. an English teacher explaining that spelling and punctuation are critical and can alter the meaning of legal contracts in the workplace);
- academic and CTE teachers working together to jointly plan and implement student projects that require students to fully integrate technical and academic concepts and information (e.g. designing and building a school gazebo);
- restructuring academic courses to incorporate opportunities for “hands-on/minds-on” immediate application of concepts and principles—often using workplace contexts (e.g. CORD Geometry produced by the Center for Occupational Research and Development (CORD); CORD’s Mathematics in Context is an innovative program that uses real-world, workplace applications and laboratory activities for learning geometry);
- providing students with the opportunity to conceptualize and launch for-profit business enterprises, either school based or community based (e.g. students in Ohio set up Comet Savings & Loan at Mason High School with $2,000 in seed money provided by a local bank);
- building into the regular curriculum opportunities for students to provide and then reflect on service they provide to individuals, families, communities, or organizations that need assistance (e.g. students at Gig Harbor High School in Washington translating and illustrating children’s stories for homeless Hispanic families);
- combining specific technical and academic courses into a new courses that might result in academic credit, CTE credit, or credit in both areas (e.g. Kentucky now has several high school CTE courses that also meet academic course requirements, such as construction and computer-aided drafting—both of which include all Kentucky high school geometry standards).
How important is it for today's students to be able to apply what they learn in school in the real world they will inhabit after they leave school?

No one disputes that because today's students face a different world, they will need a different kind of literacy and different skills . . . Kuzmich spoke about literacy to “do,” not just to “learn,” and explained that it encompasses document, technological, and quantitative skills. Together, these enable learners to comprehend texts, understand tasks, and complete processes. When these skills are taught within real-world, meaningful contexts, not in isolation from one another, students become motivated and invested in their learning—and achievement soars. (Ochse, 2007: para. 2)

Myth: Integration Hurts Students’ Academic Performance

The misconception that enrollment in CTE courses and programs and the integration of academics and CTE will hurt the academic performance of ELLs or other students has been dispelled. In fact, there is ample evidence to suggest the opposite. When students can see the real-world applications for the academics they are asked to learn, it removes an important obstacle to becoming engaged and being motivated to learn. Research shows that well-designed integrated studies enhance academic outcomes.

Research by the University of Minnesota also shows the powerful promise of integrating academic rigor into CTE courses. The typical auto shop teacher can teach students how piston displacement works in a car engine; however, he will likely be unable to teach the abstract mathematical formula to calculate the volume of a cylinder. In response, the “Math in CTE” experiment was created. This randomized trial involved 131 teachers and 3,000 students across 12 states and asked CTE and mathematics teachers to collaboratively develop lesson plans that integrated math content within the real-world context of CTE courses. The results were impressive. On average, CTE students scored 21 points higher on the TerraNova math exam, compared with those students in the randomized control group. These findings show the advantage of integrated curricula. Students respond when they learn math as a tool to solve a workplace problem rather than merely as an abstract concept. (National Governors Association, 2007: 4–5)

Myth: Integration Hurts Students’ Performance on High-Stakes Tests

Some critics of CTE have also expressed concern that, when students take CTE courses rather than more academic courses, it will hurt their performance on high-stakes tests. This also has not been the case. For example, in 2004 high school graduates in Arizona who completed two or more CTE courses outperformed general-track high school students on all three of that state’s high-stakes academic tests (Lewis, 2007: 4).

When students take a curriculum that integrates rigor and relevance, they perform better on standardized academic tests. Twelfth graders in the CTE-focused High Schools That Work program who took four years of math and applied technology courses outperformed the average student on the 12th-grade NAEP exam. (National Governors Association, 2007: 4)
One of the outrages being played out in our schools as you read this is the shunning of ELLs because of the perception that they will score low on high-stakes tests and pull down the performance of their class, school, or district. They are sometimes passed off to different teachers or even “nudged” out of school entirely. Hopefully, the educational community will get the message that participating in relevant, meaningful career-related programs that integrate academic and technical studies and that are of personal interest to them will not harm ELLs’ test scores and may improve them.

**Learning for Work**

The most important goal of CTE is, of course, to help youth and adults prepare to enter into and/or advance within a chosen career field. Closely related to that goal is the mastery of important academic content and skills, acquisition of broadly applicable work related habits and behaviors valued by employers, and pursuit of postsecondary education. Acquiring occupational competence, however, is the central mission of CTE. We cannot emphasize enough how important it is for recent immigrants and all youth and young adults to acquire occupational competencies that are in demand in the marketplace as a means of entering the workplace beyond low-level minimum wage employment and, thus, having opportunities for advancement. Possessing skills that will lead to high-wage employment is vitally important for those learning English so that they are able to fully achieve the American dream and enjoy a comfortable standard of living for themselves and their families. Not only is our education system failing in this regard for over half of “regular” students, we are doing an even poorer job for ELLs.

Unfortunately, our educational system can be judged as ineffective in terms of meeting the career-related needs of youth—particularly ELLs. Resnick and Wirt (1996: 1–2) support the need to reinvent our workforce preparation system for youth:

> the United States is locked into a peculiarly dysfunctional relationship between education and work . . . We have, albeit unintentionally, created a world in which the only reliable way to enter the workforce in a career capacity is to graduate from college . . . This means that only 25 percent of our young people—those who earn college degrees—are eased into economic and civic adulthood by our established institutions, public and private. The others—three quarters of our youth—are left to fend for themselves in an increasingly unfriendly and undependable world . . . because everyone prefers the more seasoned workers and there is in this country no general system of apprenticeship or educational preparation for work, there is no way for most young people to gain the experience that would make them attractive to employers. So they drift from one short-term minimum wage job to another, with frequent periods of unemployment in between.

Fortunately, the pendulum has begun to swing the other way. Most schools, schools districts, and community colleges have already begun to more fully embrace the career-related mission of K–14 education. Educational policymakers have begun to realize that giving schooling a career development focus can enhance student motivation and provide context for learning as well as opportunities for applying academics. They have also come around to the point of view that preparing all students—not just the 25 percent or so who will graduate from a four-year college or university—for a career with a future is in the best interest of the student and society. As chronicled in an earlier chapter, this awareness has led to the recent renaissance of CTE in America.

How important is it for ELLs to acquire marketable skills in CTE programs at the high school
and/or community college level? John Bishop of Cornell University synthesized a dozen years of research on the preparation of youth for employment. He concluded that skills workers possess that are new and in demand tend to receive high compensation. A good example are the people (often quite young and without college degrees) who commanded huge salaries in the early days of the Internet because they could create and manage websites. Such skills were brand new and in short supply. Bishop also observed that most of schooling is about learning skills such as writing, reading, and mathematics that everyone else possesses. Such skills are not new and are not in high demand, therefore employers are not willing to pay a wage premium for them. Bishop (1995, p. 38) concluded that “It is unwise to devote one’s entire education to learning things that everyone else knows or will know.” He also concluded that the better the job, the greater the weight employers give to occupation-specific skills.

So, we might conclude that if we want those learning English to be able to earn a good living they must master not only the language and other important academics but also marketable skills—especially if they will be among the huge percentage of young adults who will not complete a college degree. Participating in CTE is the way for that to happen. Even for ELLs going on to college right after high school or later, having skills that lead to a job that pays above minimum wage can help make the college journey more affordable and can help reduce the reliance on student loans.

What CTE programs are available to high school and community college ELL students? Since this book focuses primarily on strategies to help CTE instructors support ELLs, there is not sufficient space to fully explore all of the high school and two-year college CTE programs available to LEP students. We will, however, focus on two recent approaches to CTE that have the potential to reach the highest number of ELLs and do so in a very effective manner. One of these is at the secondary level and the other is at the community college level.

English Language Learners are Not Well Served by the “College for All” Mentality

Before we look at CTE program models that can benefit ELLs at the high school and postsecondary level we need to take a look at how out of synch the current “college for all” mentality driving the K–12 curriculum is (particularly at the high school level). It is inescapable that the primary mission of the American high school has become preparation for college. One assumption driving this is the notion that a college degree is required for someone to secure a well-paid job. Another factor perpetuating this thinking is that virtually everyone at every level in the educational decision-making hierarchy—the president, members of Congress, governors, state legislators, school board members, and principals—is a college graduate. They assume that “Since it worked for me, it should work for everyone else.” Unfortunately, those in the educational system and in government are in the minority and are not representative of the U.S. workforce or general population.

Here are some of the important reasons why the college for all philosophy is not serving the youth of the United States very well—particularly groups whose college attendance is lower than the norm such as ELLs:

1. College attendance is pushed so hard among youth as the expected norm that almost all high school students say they plan to go on to college (most polls report between 80 and 90 percent) and a large percentage of high school graduates enter college (about 72 percent of public high school graduates in 2003), but the sad reality is that a huge percentage of them are just not prepared for college-level studies. In some states the college freshman remediation rates in community colleges in mathematics and communications is over 75 percent. In Florida,
Teaching English Language Learners in Career and Technical Education Programs

for example, in 2003–2004, 78 percent of students enrolling in the state’s community colleges and 10 percent of students enrolling at the state’s public universities required remediation in mathematics, reading, and/or writing (Florida Legislature, 2006). Huge sums of money are being spent trying to bring incoming college students up to the level of performance needed ($1.4 billion nationally according to the Alliance for Excellent Education, 2006).

2. The dirty little secret of the “college for all” high school curriculum is that a large percentage of high school graduates go on and begin their college education but only about half actually complete. College completion rates vary depending on how the data are collected, definitions of graduation used, and other factors, but most analysts place the graduation rates from bachelor’s degree programs within six years of enrolling at between 50 and 60 percent. Another little secret is that almost all college dropouts have the following in common: a badly bruised self-esteem and the shame of being a dropout and substantial student loans to pay off.

3. The number one reason students report that they go to college is to get a good job. The little-known fact, however, is that there are almost twice as many college graduates being produced by this country’s colleges and universities each year as there are job openings requiring a college degree. Very few high school students, parents, and guidance counselors seem to be aware of this very critical piece of information.

4. One myth that continues to sustain the “everyone should go to college” way of thinking is that getting a college degree will almost always lead to high-paying, stable employment. This is simply not true. A large percentage of college graduates are underemployed or unemployed, and an increasing number are technically living at the poverty level. The “real” income of college graduates rose less than 1 percent per year between 1975 and 2004. Recently, the number of unemployed college graduates (over 1.2 million) actually surpassed the number of high school dropouts in the United States (Economic Policy Institute, 2007).

5. The vast majority of jobs in the U.S. economy do not require a four-year college degree. For many years, the percentage of jobs requiring a bachelor’s degree has been around 20 percent, and that figure is projected to hold steady into the future. In Florida, that figure is only about 10 percent, but the “college for all” mentality pervades this state’s educational system, as it does throughout the country.

6. A huge number of good, well-paying jobs are available for those with one or two years of post high school technical education. This is one of the best-kept secrets in America. This is where we should be putting our emphasis in terms of encouraging high school students to consider such careers. This is where most of the new jobs will be. With their one- or two-year education and training duration and low cost, many of these are ideally suited for recent immigrants and those with limited financial resources.

Sure, there will always be jobs requiring a college degree, but there are many, many more (and many that pay well) that only require a certificate or associates degree. Take a few minutes to digest the numbers in Table 2.2. The striking fact is that, of the 15 occupations that are projected to have the highest number of new jobs, only two require a bachelor’s degree or higher. All of the others require on-the-job training or some postsecondary technical education.

In fact, in terms of percentage growth, according to the U.S. Bureau of Labor Statistics, 8 of the top 10 occupations expected to grow the most between now and 2014 do not require a bachelor’s degree. Here are some well-paid jobs that do not require a college degree. Be sure and take a look at the earnings (Farr & Shatkin, 2006):

- air traffic controller: $102,030
- storage and distribution manager: $66,600
TABLE 2.2. Projected number of new jobs between 2006 and 2016 (top 15 occupations in terms of new jobs)

<table>
<thead>
<tr>
<th>Occupation</th>
<th>No. of jobs</th>
<th>Educational level</th>
<th>Median salary ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Registered nurses</td>
<td>587,000</td>
<td>Associate's degree</td>
<td>57,280</td>
</tr>
<tr>
<td>Retail salespersons</td>
<td>557,000</td>
<td>Short-term on-the-job training</td>
<td>19,760</td>
</tr>
<tr>
<td>Customer service representatives</td>
<td>545,000</td>
<td>Moderate-term on-the-job training</td>
<td>28,330</td>
</tr>
<tr>
<td>Food preparation and serving</td>
<td>452,000</td>
<td>Short-term on-the-job training</td>
<td>15,050</td>
</tr>
<tr>
<td>Office clerks, general</td>
<td>404,000</td>
<td>Short-term on-the-job training</td>
<td>23,710</td>
</tr>
<tr>
<td>Personal and home care aides</td>
<td>389,000</td>
<td>Short-term on-the-job training</td>
<td>17,770</td>
</tr>
<tr>
<td>Home health aides</td>
<td>384,000</td>
<td>Short-term on-the-job training</td>
<td>19,420</td>
</tr>
<tr>
<td>Postsecondary teachers</td>
<td>382,000</td>
<td>Doctor's degree</td>
<td>56,120</td>
</tr>
<tr>
<td>Janitors and cleaners</td>
<td>345,000</td>
<td>Short-term on-the-job training</td>
<td>19,930</td>
</tr>
<tr>
<td>Nursing aides, orderlies, and attendants</td>
<td>264,000</td>
<td>Postsecondary vocational award</td>
<td>22,180</td>
</tr>
<tr>
<td>Bookkeeping, accounting, and auditing clerks</td>
<td>264,000</td>
<td>Moderate-term on-the-job training</td>
<td>30,560</td>
</tr>
<tr>
<td>Waiters and waitresses</td>
<td>255,000</td>
<td>Short-term on-the-job training</td>
<td>14,850</td>
</tr>
<tr>
<td>Child care workers</td>
<td>248,000</td>
<td>Short-term on-the-job training</td>
<td>17,630</td>
</tr>
<tr>
<td>Executive secretaries and administrative assistants</td>
<td>239,000</td>
<td>Work experience in a related occupation</td>
<td>37,240</td>
</tr>
<tr>
<td>Accountants and auditors</td>
<td>226,000</td>
<td>Bachelor's degree</td>
<td>54,630</td>
</tr>
</tbody>
</table>

Number requiring a bachelor's degree or higher: 2.

- transportation manager: $66,600
- police and detectives supervisor: $64,430
- non-retail sales manager: $59,300
- forest fire fighting and prevention supervisor: $58,920
- municipal fire fighting and prevention supervisor $58,902
- real estate broker: $58,720
- elevator installer and repairer: $58,710
- sales representative: $58,580
- dental hygienist: $58,350
- radiation therapist: $57,700
- nuclear medicine technologist: $56,450
- child support, missing persons, and unemployment insurance fraud investigator: $53,900
High School Career and Technical Education Model: The Career Academy

Although ELLs at the high school level would benefit from participating in one or more individual CTE courses by learning about the world of work, exploring their career interests, and acquiring marketable skills, they would benefit even more from completing an entire CTE program, which involves completing multiple courses in a particular career field over two or three years. As a CTE “program completer,” in many states ELLs would be eligible to earn industry certification, such as Novell or A+, which would greatly enhance their employability and may also make them eligible to compete for college scholarships based on their CTE program completion. However, even more beneficial to recent immigrants learning English than completing a stand-alone CTE program would be participating in a CTE program that is part of a “career academy.” The career academy holds great promise for substantive reform of both the mission and the curriculum of the high school and it addresses many of the career development shortcomings raised earlier in this chapter. Let’s look at a few career academy examples from north Florida (Conner, 2007):

At Baker County High School, criminal justice students will work in a crime laboratory many deputies would envy. At Bartram Trail High School in St. Johns County, teens in the finance academy will operate the school’s own bank branch. At Terry Parker High School in Jacksonville, budding scientists will monitor the coastal salt marsh and aquatic ecosystems, and students in the aviation academy at Frank H. Peterson High head to Cecil Field every afternoon, where they work on the academy’s own Boeing 727, which was donated by United Parcel Service.

One thing that is significant about the recently emerged career academy model is that that they are aimed at the career bound and the college bound. “Vocational education isn’t new. But career academies that incorporate both high-achievers and at-risk students have become a centerpiece for many recent high school reform efforts . . . The idea, supporters say, is to prepare students both for the workforce and for college” (Conner, 2007).

Ironically, it appears as if the most effective model for redesigning our high schools that has recently emerged centers on career preparation—a far cry from the disparaging public perception of vocational education of yesterday. Perhaps, this strange turnaround was brought about by the depths to which the ineffectiveness of the American high school has plunged. How bad do our high schools need to become to be rethought?

America’s high schools are obsolete, Microsoft chairman Bill Gates said last year at the first National Education Summit, an extended gathering in Washington, DC, aimed at rallying state governors around high school reform. The Microsoft founder noted that “even when they’re working exactly as designed, they cannot teach our kids what they need to know today. Training the workforce of tomorrow with the high schools of today is like trying to teach kids about today’s computers on a fifty-year-old mainframe. It’s
the wrong tool for the times. Our high schools were designed fifty years ago to meet
the needs of another age. Until we design them to meet the needs of the twenty-first
century, we will keep limiting—even ruining—the lives of millions of Americans every
year.” (Daly, 2006: para. 14)

When the Hamilton County school district in Tennessee received an $8 million grant for school
reform from the Carnegie Foundation and also got a matching amount from the Public Education
Foundation, what model did it choose to radically redesign its high school for the contemporary
needs of today’s high school students? The career academy model! When the Sacramento Unified
School District realized that it had a crisis on its hands due to declining test scores, low student
motivation, and a curriculum that failed to inspire, what approach did it select for the planned
$14 million redesign? The career academy model. It made a bold decision: Every one of its 12,000
high school students (including large numbers of immigrants) would participate in career educa-
tion using the career academy approach for all four years of their high school experience. “We
had a district sending only 23 percent of its kids to college, and we determined that for the other
77 percent of the kids, we needed to do something to make their lives meaningful” (Lipper &
Sagehorn, 2005: para. 4).

Is a new high school model called for in America—particularly for meeting the unique needs
of the millions of immigrant students pouring into our schools and for other students at risk?
“Today’s high school is wrong in every way,” says Tom Vander Ark, executive director of the Bill
and Melinda Gates Foundation’s multimillion-dollar education initiative. “It’s the wrong mission,
the wrong architecture, the wrong curriculum, and the wrong instructional model. This is not a
problem you can address by tinkering with the old model” (Furger, 2004: 39). The career academy
model offers an alternative that addresses many of the shortcomings of the traditional high school
curriculum and organization. Very importantly, the career academy model addresses both the
workforce development and the postsecondary education needs of all high school students. Stern
et al. (1992: xi–xii) indicated that:

The academies offer solutions to some all-too-familiar problems in high schools, where
students are chronically apathetic and sometimes hostile, test scores remain low, and
employers and colleges alike complain about the poor preparation of graduates. Career
academies are schools-within-schools. Most of them span the last two or three
years of high school, but some cover all four years. The curriculum simultaneously
trains students in an occupational field and prepares them for college . . . Among the
more frequent curricular themes are business, computers, electronics, finance, health
occupations, public service, and travel and tourism . . . The curriculum keeps students’
options open by providing courses required for college admission while demonstrating
the immediate relevance of academic subject matter to an occupational field.

Kemple and Snipes (2000: ES-1) wrote that “The Career Academy approach is one of the oldest
and most widely established high school reforms in the United States. Career Academies have
existed for more than 30 years and have been implemented in more than 1,500 high schools
across the country . . . its core features offer direct responses to a number of problems that have
been identified in large comprehensive high schools.” They reminded us that there is now fairly
widespread agreement that career academies should prepare students for college and for work.
Further, they added that career academies should include a cross-section of high school students,
including those who are high performing.
One of the first career academies was the Electrical Academy at Thomas Edison High School in Pennsylvania, which was begun in 1969. We find it very interesting that several highly successful early career academies were started partly in response to the needs of ELLs. In the late 1970s, the Sequoia School District south of San Francisco experienced rapid growth in minority, LEP, and educationally disadvantaged students. Problems with drug abuse, dysfunctional family problems, and general apathy caused an indifference to school, lack of motivation, and a rise in the dropout rate. Even if they graduated, most students were unprepared for work. In response, two academies were created: the computer academy at Menlo-Atherton High School and the electronics academy at Sequoia High School. Using business partnerships, integrating academic skills, these academies experienced success. Students were enthusiastic and employers were positive about the students’ work in their businesses. Several awards were given to the school district, including one from the National Academy for Vocational Education (in 1985) for an exemplary program and a commendation by the president of the United States in 1986 (Stern et al., 1992).

Stern et al. (1992: 11) addressed the appeal of the career academy model for enhancing the learning of both the college- and the career-bound student—particularly special needs students such as ELLs: “Students in classes that are already relatively rigorous could understand and retain more if they had more opportunities to relate what they are taught to real-world applications.” The career academy typically has the following characteristics:

1. It is a school within a school for grades 11–12, 10–12, or 9–12 run by a small team of teachers from various disciplines.
2. It recruits students who volunteer for the program and who must apply.
3. It focuses on a career theme in a field in which demand is growing and good employment opportunities exist. Important for ELLs, the curriculum combines technical and academic content, usually through one technical and three academic classes each semester. Generic employability skills are also included. An academy keeps open students’ option to attend college.
4. Students are employed during the summer and (in some cases) part time during the school year in jobs related to their field of study. This is a wonderful way for ELLs to hear English spoken and see it written in an occupational context.
5. Employer representatives from the academy career field help plan and guide the program and are involved as speakers, field trip hosts, job supervisors, and mentors. With some effort, workplace mentors who speak the native language of ELLs can be found, which will add a powerful link between school and work.
6. Classes are smaller than is typical in the high school; regular contacts with parents contribute to a sense of membership in a caring community. This aspect of academies can be particularly important in preventing ELLs who are recent immigrants from feeling “lost in the shuffle” of large high schools.
7. A mixture of outside funding, district backing, and employer contributions supports the program.

The Career Academy Support Network suggests that there are three key components of any career academy (Figure 2.3).

Two terms you may see associated with the career academy model are the “pocket academy” and “wall-to-wall academies.” As the terms imply, a pocket academy might the only academy in a school or one of only a few. On the other hand, in a wall-to-wall situation, the entire high school is organized around multiple career academies. The latter situation is highly desirable since every student and every teacher will be identified with a career academy.
Many career academies focus on providing coursework for one or more specified “career pathways” that will lead to employment and/or further education in that particular occupational field. Examples from the career academies that serve New York’s Putnam and Northern Westchester counties are shown in Table 2.3.

Another thing that makes the career academy model so powerful is that it also helps educational reformers accomplish another goal of high school reform: making schools smaller. Although high schools that reorganize around the career academy model might have just as many students enrolled as before, they are now organized around smaller learning communities with a common career interest. This encourages stronger relationships between students and faculty and among students. Rosa Fernandez, an immigrant from the Dominican Republic, put it this way: “Small schools are perfect for teenagers, because we need people to be warm and care about us, to be after us—otherwise, we might take the wrong road” (Furger, 2004: 40).
To get an idea of the tremendous opportunity that career academies provide in terms of contextual teaching and teaching English to non-English speakers, consider what Wisconsin English teacher Arlo Ketchpaw had to say about the power of learning in context:

In the academy’s English classes, Ketchpaw has students read articles out of trade publications such as *Engineering News-Record* and *Constructor*. She works with them on oral presentations, encouraging them to imagine they’re trying to win a bid on a project, and teaches them how to decipher contracts and specification sheets. “I’m helping them see that language has specific uses within their world,” Ketchpaw said. She acknowledges that the English curriculum she’s tailored to the academy lacks the poetry of literature classes in the department. “You’re taking a lot of the emphasis on the creativity out, and you’re putting it more on the practical,” she said. “But I never get the ‘What do we have to do this for?’” (McClain, 2007: para. 9)

Nationally Affiliated Career Academies

We use this term to distinguish a “regular” career academy (as described above) that any school or school district might set up and operate from one of several specialized academies that are affiliated with a national organization that might certify and support career academies that specialize in a particular career field. One of the first such nationally affiliated academies is the Academy of Finance (AOF), which was founded in 1982 and is operated by the National Academy Foundation. Students in schools affiliated with the AOF engage in school-based and work-based learning experiences similar to those in any career academy, but the focus is on the financial services industry. The AOF assists local schools in establishing an affiliated academy and makes site visits before certifying the academy as AOF affiliated. Over 275 high schools are currently affiliated with the AOF program. The National Academy Foundation also sponsors a network of affiliated career academies in information technology and hospitality and tourism (www.naf.org/cps/rde/xchg).

Do Career Academies Work?

Marion Technical Institute (MTI), an innovative high school in Florida, reports that 100 percent of its career academy graduates found employment in the career field in which they were trained.
The pity is that MTI can only serve 400 students this year in its seven “academies”—automotive technology, business/finance, culinary arts, construction, industrial engineering technology, information technology and, new this year, power industry. Students in each of these programs have to meet above-average academic qualifications and adhere to a long list of requirements, including wearing uniforms and staying out of trouble at school and with the law. (Ocala Star Banner, 2007: para. 7)

And, interestingly, most of MTI’s students represent the middle range of previous academic performance. According to Edwards (2007):

For too long, though, “the middle 50 percent,” good kids who do well in school but who may not be college-bound, have been bypassed time and again by the public education system, while reformers focused on the brightest or the lowest performing students.

The superintendent’s goal in Marion County is to put career academies in all its high schools. You would never guess that the highest academically ranked high school in the Los Angeles Unified School District is a modification of the career academy model. Hi Tech Hi, near Los Angeles, is a public–private partnership charter school that boasts a “vigorous real-world curriculum.” Students are chosen by lottery to attend the school, whose mission is “to train students for the kinds of careers they’ll be likely to pursue in today’s working world . . . students can vary from astronomically gifted to learning disabled” (Edwards, 2007: 32, 33).

As part of a 10-year evaluation of career academies in the United States, the Manpower Demonstration Research Corporation (Kemple & Snipes, 2000) conducted a unique study of academy effectiveness. This major study involved over 1,700 students who had applied to one of nine academies across the United States. Students in the study were identified while in the eighth or ninth grade and they were followed through the end of the 12th grade. A unique feature of this research is that some of these students who applied to the academies were randomly picked to enroll in the academy to which they applied. The number of students who applied to these academies (1,764) was twice the number that could be served, thus providing a rare opportunity to randomly select students to participate. This randomization of assignment to the academy model versus the traditional high school model of two comparable groups of students makes the results of this study very powerful indeed. As you review the summary of the findings below keep the characteristics of ELLs in mind:

- The academies in this study increased both the level of interpersonal support students experienced during high school and their participation in career awareness and work-based learning activities.
- The academies substantially improved high school outcomes among students at high risk of dropping out. For this group, the academies reduced dropout rates, improved attendance, increased academic course-taking, and increased the likelihood of earning enough credits to graduate on time.
- Among students least likely to drop out of high school, the academies increased the likelihood of graduating on time.
- The academies increased vocational course-taking for these same students without reducing their likelihood of completing a basic core academic curriculum.
- In academies where interpersonal support students received from teachers and peers was enhanced, the academies reduced dropout rates and improved school engagement for both high-risk and medium-risk students (Kemple & Snipes, 2000).
The career academy model facilitates the integration of CTE and academics, which is critical to infusing workplace contexts into academic instruction. Illustrative of the career academy’s ability to promote integration is the experience in New York’s Putnam and Westchester counties’ eight academies that were recently evaluated by the Association for Career & Technical Education. Sandy Mittelsteadt, a member of the evaluation team, reported:

What a privilege to evaluate the eight career academies in the Putnam/Northern Westchester BOCES! Curriculum integration in these eight academies is the best that this evaluator has ever witnessed in an academy undergoing an evaluation. The curriculum integration is threefold: integration between career and technical with academics, intra-curriculum integration within the different pathways of the academy, and inter-curriculum integration between the academies. (Reese, 2007: 18)

Although not all high schools offer career academies, more and more are beginning to. The key point is that secondary-level ELLs should be given the option of participating in CTE courses or completing entire CTE programs regardless of the organizational structure that might be available. Just taking a single CTE course in aviation technology or health careers, for example, can give ELLs valuable insight into the U.S. workplace and valuable information about what working in America is all about. Further, it can provide rich, authentic contexts in which they can apply what they are learning in their academic courses and a wonderful avenue to use the English they are learning. But participating in a career academy program can have even more payoff for those learning English.

A good example of the career academy model used to meet the career preparation needs of ELL students is New York City’s Washington Irving High School. The school is organized around seven career-based academies or “houses,” which focus on career fields such as public service, art, and technology. An ESOL career-related curriculum that has been developed for each grade level includes computer and related skills, SCANS (Secretary’s Commission on Achieving Necessary Skills) competencies, and preparation for the SAT. Washington Irving students go on trips to various worksites, later completing half-day and full-day job-shadowing experiences in fields such as office administration, medical, telecommunications, and the arts. Internships of longer duration are now being phased in.

Another example of how a career academy is being used as the primary vehicle for serving ELLs—particularly those at risk of not graduating—is J.E.B. Stuart High School in Fairfax County, Virginia. Stuart is an urban Washington, DC, metro area high school, serving working-class neighborhoods with a heavy immigrant population. Two-thirds of Stuart students are ELLs from 70 different countries, and over half are eligible for free and reduced-price lunch. Many students at risk of not graduating participate in “The Academy,” which is a career-focused program with an ESOL component and a choice of 20 different CTE programs ranging from electrician to hair stylist. Yet another example is Union City School District across the Hudson river from New York City, which is a traditional immigrant site with a large working-class population of about 100,000. About 42 percent of Union District students are ELLs, and about 40 percent are enrolled in a transitional bilingual/ESOL program. Languages spoken by students include Spanish, Mandarin, Arabic, and Russian, among others. In addition to a “Career to Business” program, which is a WBL program, the district operates a career academy that also includes linkages to postsecondary technical education opportunities.

North Carolina has launched innovative “economic development themed” schools, with planning dollars from the Bill and Melinda Gates Foundation. These are similar to career academies and focus on emerging industries such as biotech, health care, information technology, and
international commerce and usually have no more than about 400 students. The career theme helps students make the connection between their school curriculum and their career field of interest. Local employers provide WBL experiences such as internships that help students make connections between what they learn in school and what they do while on the job. North Carolina has about 25 of these economic development-themed schools around the state so far and there are plans to open more in the future.

Postsecondary Career and Technical Education Model: Tech Prep (Career Pathways)

What about ELLs who are already out of high school when they come to the United States, or those who complete high school after they arrive and still have no career path to follow or need to further improve their English? Are there programs they can participate in that will lead them to both a two-year or four-year college degree and advanced preparation within a career field? The answer is yes. Just as participating in almost any high school CTE course or program would be beneficial to ELLs, participation in almost any postsecondary technical education experience at a community or technical college (or technical center or institute) would prove beneficial. Participating in a particular type of postsecondary CTE program would probably have even more payoff. We are referring to a model that emerged during the mid-1980s and is referred to as “tech prep”—short for “technical preparation.” Originally championed by Dale Parnell and popularized in his widely read book *The Neglected Majority* (1986), tech prep is designed to link career and technical education at the high school level with advanced technical preparation at the postsecondary level in a seamless and articulated manner. Recently, tech prep is being referred to more and more as “career pathways.” This rebranding is more in line with the broader scope of modern CTE and emergence of the use of career clusters as described in an earlier chapter. The National Tech Prep Network is now the National Career Pathways Network (www.cord.org/ncpn-index.cfm).

The tech prep movement has been one of the most significant school reform initiatives to impact the American community college. Tech prep originally grew out of the need to improve vocational education at the high school level. By the early 1980s, high school vocational education had the widely perceived image of being a dumping ground for those students who could not perform well academically. Many students completed vocational programs prepared for narrow and soon to be obsolete jobs, with poor academic skills and a limited ability to enter postsecondary education institutions. Tech prep was originally conceived for the “neglected majority” of students who would not go on to complete a college degree, although the movement has now broadened to include all learners. Several goals undergird the tech prep movement (Hull & Grevelle, 1998):

- Secondary and postsecondary educators should work closely together to develop a “seamless” and fully articulated system of education leading smoothly from high school to postsecondary education.
- Emphasis is placed on reducing gaps and duplication between the two levels, with high school students gaining advanced standing when they enroll in a community college or technical center and continue their advanced preparation in the career field. Almost a thousand school district–community college–business partnerships or consortia have been formed throughout the United States to facilitate this process.
- Strengthen academics for all students and use academics as the foundation for vocational–technical programs. The focus is on raising the academic achievement of all students—particularly the occupational student. Common approaches to reforming academics that are a part of tech prep programs are through the use of “applied academic” learning.
strategies and integrating the vocational and academic instruction so that students can apply academics in their technical studies.

- Prepare students for world-class careers. This goal focuses on students’ preparation for high-wage, high-skill employment in careers with a future rather than narrowly focusing on specific jobs that may not even exist in a few years. It recognizes that automation and globalization have made most low-skilled jobs disappear.
- Keep education and career options open.

Involvement in tech prep (or career pathways) is widespread throughout the United States. The U.S. Department of Education (USDOE) estimates that approximately 7,400 high schools, or about 47 percent, offer tech prep programs and that almost all community and technical colleges are part of a tech prep consortium. In addition, the USDOE reports that many four-year universities and business and labor organizations also participate (ACTE, n.d.).

Does Tech Prep Work?

We mentioned earlier that some observers express concern over the apparent “vocationalization” of the high school brought about by the spread of the career academy movement and by the integration of academics and CTE. Similar concerns have been expressed about the growth of “applied” degrees in community colleges, such as the AS (Associate of Science) degree and the AAS (Associate in Applied Science) degree, the growth of “applied courses,” and the widespread adoption of tech prep at the community college level. Traditional two-year postsecondary occupational programs and more recent tech prep programs have been shown to be effective in helping students earn a certificate or associate degree, prepare for high-wage employment, and continue their education if they so choose. “Community colleges have made significant contributions to preparing America’s workforce. Their broad arrays of low-cost programs and flexibility in providing instruction are their hallmarks. Occupational-related programs at community colleges produce income gains for students” (Jacobs & Vorhees, 2006: 133). Roks (2006: 519) reported on a study that looked at the impact of completing career-related community college programs on students’ success in ultimately completing a bachelor’s degree.

The results of this study indicate that students attending vocationally focused community colleges do not inevitably have lower educational attainment. Controlling for individual and state characteristics, the proportion of associate degrees granted in vocational fields does not have negative effects on any of the outcomes examined, including earning an associate degree, transferring to a four-year institution, and earning a bachelor’s degree. In other words, when community colleges offer vocational training in degree granting programs, it does not hinder students’ educational attainment.

Research shows that high-quality tech prep programs help students transition from secondary to postsecondary education (ACTE, n.d.). Students who attended a CTE tech prep program in the state of Ohio between 1997 and 2001 were compared with a similar group of students who did not. The tech prep students scored significantly higher on college entrance exams, they earned higher grade-point averages, and they were more likely to return to college for a second year. “A New York state survey found that tech prep appeared ‘to be especially beneficial to students who initially had no plans to continue their education beyond high school’” (ACTE, n.d.: 6). Just as the career academy is a sound approach to CTE at the secondary level that ELLs should be able to learn about and elect to participate in or not, tech prep programs provide a way for ELLs to
continue their education at the postsecondary level in a manner that provides relevance to what they are learning and also provides meaningful context in which to learn or reinforce their growing English language skills.

Learning at Work

The fourth way that career and technical education can help ELLs master English and also help ease their transition into the workplace is by allowing them to experience the American workplace at first hand. This approach to providing worksite experiences, when well planned and coordinated with students’ in-school learning, is called “work-based learning” (WBL). Although Chapter 3.3 will examine the WBL model in detail, along with providing suggestions for supporting ELLs while engaged in such experiences, in this chapter we will provide a brief overview of WBL. There is growing agreement that we should provide all students—college bound and career bound alike—with multiple, well-planned, and well-organized, rigorous, high-quality, WBL experiences throughout their K–12 years and as a part of their community college and/or university education. Most high school students work while in school. For many of these teenagers, their job has no connection whatsoever with schooling. The WBL movement is an attempt to link the two. Packer and Pines (1996: 41) talk about the lack of connections between learning and earning for most working teenagers.

Classroom learning has little to do with performing these jobs. The disconnect also works in reverse. The jobs offer little or nothing in the way of learning experiences that can improve academic performance . . . The situation prompts a creative search for latent learning possibilities in these jobs—and activating those possibilities to give young earners a more meaningful, fulfilling workplace experience.

It is ironic that WBL has been around for a long, long time, although it has only recently been “rediscovered.” WBL has been shown to be effective in providing badly needed outcomes: career direction, occupationally relevant skills, capacities valued in the workplace, and opportunities to apply academic skills and concepts in an authentic context.

A key point is that both the college-bound and the non-college-bound (and the college dropout bound) will benefit from WBL experiences. Such experiences can prove valuable in providing an authentic context in which to use written and spoken English and to help link what happens in the English classroom to students’ area of career interest. Remember they will all eventually enter the workplace, some before high school graduation, some immediately after, and some after a delay of several years (or more than several years in many cases) after a temporary detour in college or the military. In short, WBL can be a powerful vehicle we can use for reshaping the mission of high school while still preparing students for postsecondary education and for the workplace. At the community postsecondary level it can provide a valuable bridge between the college campus and full-time employment in a high-wage occupation.

A simple definition of WBL might be any experience that is designed to give students direct or vicarious experience in the world of work. We want to make sure we distinguish work-based “learning” from just work experience. In this book we want to focus on experiences that are intentionally planned and designed by educators (and often jointly designed along with those in the workplace) to provide authentic (and/or realistically simulated) settings in which students can experience at first hand how the modern demanding workplace operates and also provides some vehicle for reflecting on or processing what they are experiencing. “It involves students in the construction of knowledge by engaging them in authentic tasks of the workplace that create a
context for creative decision making in uncertain situations” (Harnish & Wilke-Schnaufer, 1998: 22). It engages students in reflective practices that help them develop both personally and professionally (Kinman & Kinman, 1997). “Work-based learning (WBL) includes a range of activities that extend beyond traditional cooperative education, such as job shadowing, service learning, internships, and apprenticeships” (Brown, 2003: para. 2).

WBL is not the same thing as working at the local drugstore or fast food outlet after class or in the summer. Although such employment can have its own benefits, there is not much connection between such work and the aims of schooling, nor does part-time work provide any vehicle to help students reflect on and grow from their experience. ELLs often work while in high school or while attending a community or technical college, as do most of their siblings and parents to support the family. But it should be noted that working while going to school (or working too much while in school) can have negative impacts—especially for high school students.

WBL may also be defined in contrast to existing forms of education for work. Stern and Rahn (1995), for example, differentiate the new models of WBL from traditional “cooperative education” by virtue of the fact that the new programs also emphasize reflection, relate students’ work experience to non-vocational subjects, and, in many instances, ensure that students satisfy the course requirements for admission to four-year colleges and universities. Brown (1995) distinguishes the new school-based enterprises from traditional simulations by providing several examples of school-based enterprises in Kentucky in which students develop managerial and entrepreneurship skills (developing marketing and business plans, conducting market surveys, investing for their firms, and determining profit margins). The importance of integration (of academic and vocational education and school- and work-based learning) and high levels of employer involvement is emphasized throughout the literature on WBL (Naylor, 1997).

It is ironic that, even though some forms of WBL, such as apprenticeship and internships, have been around for centuries and WBL was an integral part of federal education reform initiatives in the 1990s, such as the School To Work Opportunities Act, many academic educators (and many school leaders, policymakers, and parents) see WBL as getting in the way of the real business of K–12 education in the United States: academics.

A further irony is that higher education in the United States (which is unarguably the envy of the world) has used several forms of WBL for many years at both the undergraduate and graduate levels. Many undergraduate students in business, engineering, teacher education, and other disciplines complete one or more field-based or internship experiences when they are placed in a work organization to apply what they have learned in the classroom. The trend is to engage students in even more work-related experiences in disciplines such as law and medicine. Many graduate and advanced graduate programs have significant field-based experiences, internships, practica, and similar educational components designed for the very same purpose as high school and two-year college WBL. If WBL is such an integral part of higher education and its use is growing, why are some opposed to it for K–14 students—especially high school students? Why can’t we embrace WBL for that group that is the most vulnerable and is least likely to see the relevance of what they are learning: ELLs?
Over the years, teaching in CTE programs has become more complex and demanding. Long gone are the days when students in the field—formerly known as vocational education—used to spend their time working on projects involving the rote application of occupational skills. Today, students are more diverse and the curricular demands more rigorous. As a result, teaching and learning in CTE programs have become both complex and challenging. In this chapter, we focus on the nature of teaching and learning aligned with the contemporary aims of CTE programs.

This chapter begins with an overview of the purpose of CTE and the connections to teaching and learning. If the purpose of CTE programs involves preparation about, for, and through work, what should be the nature of instruction to meet program goals? Also, what should be the content focus in contemporary CTE programs? As teachers, how would you decide when to emphasize background knowledge and skills? In turn, should all instructional strategies lead to skill development? Now, as one of the goals of the CTE programs is to help students transition effectively to further education or work, what are the implications for assessing student performance? Further, what makes the role of occupational contexts so important for teaching and learning in CTE programs? Proponents of contextual teaching and learning argue that related teaching strategies can boost motivation, learning, and competence; but where does the support for this argument come from? Most importantly, what is the relevance of all this for teaching ELLs in CTE programs? In this chapter, we attempt to characterize the nature of teaching and learning in CTE programs, the promising premises of contextual teaching and learning, and the implications for teaching ELLs.
of technical education was exclusively on preparation for work, current designs now emphasize career education so students can participate effectively in further education or work. The shift in focus involves teaching and learning featuring education-and-work connections in three broadly defined ways requiring instructional strategies leading to preparation about, for, and through work. Across curriculum designs (i.e. from single courses to entire programs), occupational contexts represent the common thread and serve as thematic anchors for teaching and learning about, for, and through work (Figure 2.4).

For planning, implementation, and evaluation purposes, school staff must agree on the purpose of the CTE program and the alignment between curriculum and instruction: What kind of teaching facilitates preparation about, for, and through work? Teachers must teach according to the purpose of the curriculum, which in some instances integrate all three goals such as tech prep, Youth Apprenticeship, and high school career academies. Let us take a look at the alignment between curriculum and instruction based on whether the program purpose is to prepare students about, for, or through work.

Preparation “about Work”

In its weakest form, preparation “about work” may occur in single academic or elective courses whose purpose is to create career awareness or introduce related career concepts. For example, upon completion of a unit on geometry, a math teacher may require students to investigate how certain geometric concepts can be applied to bridge building and to describe the work of civil engineers as a complementary activity. In this case, civil engineering as a career is not a prominent contextual anchor in the unit or the course. The purpose here is to create career awareness and add relevance to target academic concepts; and, in another unit, the teacher may very well choose a different occupation. In another variation, teaching “about work” may occur when a teacher wants to establish contextual relevance upfront. In this case, a science teacher may introduce concepts of interest by presenting a problem scenario found in the context of an occupation. The importance of studying DNA-related concepts may be illustrated by a crime solved by forensic investigators through DNA analysis. Again, in this case the role of the occupational context is
restricted to relevance and awareness of career connections and it may not be necessarily connected elsewhere in a course or a given program.

CTE elective courses represent more coherent representations of career connections, but those connections may be for exploratory purposes only. Such courses may be designed for teaching and learning “about work” in the context of career exploration in general or in a particular occupational area. In the former case, middle school students—for instance—may be introduced to careers in general, and instructional strategies might include speakers representing various occupations, field trips, and other career exploratory activities. Similarly, exploratory courses in a given occupational area (e.g. health-related careers) may use the same instructional strategies but using only career targets within the area of interest (e.g. nurses, dental hygienists, surgeons). In both instances, although the occupational context is prominent and central to each course, its primary role is to facilitate teaching and learning about the generalities of careers leading to creation of career awareness. This type of coursework may be taught as a stand-alone in middle and high schools or may be part of the introductory curriculum leading to enrollment in a coherent CTE program. Such experience can be very valuable in aiding recent immigrant students learn about the world of work in the United States.

Preparation “about work” happens in a more systematic and coherent way when it is integral to a CTE program and within courses in the program. In a program, each course features a set of complementary concepts, skills, and competencies representing what people do in related work situations. In each course, new concepts are introduced in the context of work situations found in related occupations to establish relevance for students and the application of concept and skills application later on. Unlike isolated courses, in this case instruction is underlined by an occupational context serving as the common thread from the classroom to the technical laboratory and to actual work settings through practical activities (e.g. internships). Although much of the preparation about work may be directly taught in classroom settings as new concepts and skills are introduced, students may continue to learn informally about how the world of work operates as they interact with peers and others in laboratories and work-based settings.

Preparation “for Work”

For about 80 years, when the field was known as vocational education, the focus was on teaching skills and competencies to prepare students for specific occupations in agriculture, business, and the trades. Such a narrow focus became a tradition in schools, and technical programs were referred to as “shops” because teaching would occur in school settings outfitted with appropriate equipment for instructional purposes. The notion of preparing students for specific work is still alive today. Although the focus of the field as a whole is on careers rather than preparation for specific jobs, the nature of the economy is such that there is always a demand for specific occupational skills associated with ubiquitous jobs such as assistant nurses, auto mechanics, plumbing, electricians, paralegals, and many others. Such programs still operate in some high schools and in career and technical centers serving both youth and adults.

Under current CTE designs, focusing on careers and transferable skills within broadly defined occupational clusters (e.g. health sciences, business and finance), “preparation for work” takes on the notion of providing students with opportunities to experience and practice the application of skills and concepts in the context of actual problems found across all aspects of an occupational cluster. The purpose is to help students develop skills, attitudes, and competencies that can be transferable to the real world of work. Typically, as in traditional programs emphasizing preparation for specific jobs, related teaching occurs in laboratories or workshops. An important difference with traditional programs preparing students for work is that current CTE designs also
emphasize the integration of academic education and coherent connections beyond rote and specific skills development. Teachers involved in tech prep programs and career academies represent examples of this evolving notion on preparation for work. In this context, preparation for work is part of a whole, rather than the only focus and purpose.

Preparation “through and at Work”

Preparation through work represents the ultimate teaching scenario in which students can actually transfer and experience the application of concepts and skills learned in school settings to real-world situations (Bailey, 1995). Work-based learning (WBL) affords students the opportunity to experience problems, procedures, skills, and concepts as they happen in contemporary work contexts. As such, WBL is a motivation booster and an opportunity for schools to stay connected to current developments and demands in the workplace. The format of these work-based teaching and learning opportunities may vary depending upon the nature and purpose of the program. The WBL component of youth apprenticeship programs, for example, is integral to the concept of the “apprenticeship” whereby students get to experience all aspects of an industry through hands-on, on-site instruction as part of their overall experience. In this context, youth apprenticeship programs epitomize the coherent integration of teaching “about” (occupational information in school), “for” (occupational skills and concepts in school and at work settings), and “through” and “at” work (in schools and workplaces).

Work-based teaching and learning opportunities can be found as part of many other curriculum formats. For instance, tech prep programs incorporate internships and mentorship opportunities requiring students to spend time in work settings working alongside workers in different areas depending upon the purpose of the learning experience. High school career academies provide similar opportunities for students, all grounded in broader occupational contexts representing the thematic interest of the academies. In other program designs in which the thematic context is dispersed through multiple career targets (e.g. academic career clusters) or restricted in scope (e.g. exploratory courses), some form of work-based teaching opportunities can be found as well, such as cooperative education, job shadowing, school-based enterprises, and short-term internships.

At the center of it all, regardless of the program format, is the notion of cognitive apprenticeship whereby students learn by doing while working on activities people get paid for. When students have the opportunity to work with and learn from experienced workers (i.e. experts), students begin to model skills and concept applications through observation and gradual performance of tasks of interest until independent mastery is accomplished (Collins, Brown, & Holum, 1991).

The logistical complexity and need to ensure quality of education and training provided by work mentors prevents many teachers and schools from using WBL components widely. However, when conducted well, WBL opportunities following cognitive apprenticeship principles involve four important components. First, through a modeling component, work mentors demonstrate how to perform tasks of interest and the thinking behind ways of doing things. Second, through a demonstration component, work mentors support students as they perform assigned tasks on their own. Third, through a fading component the support of work mentors and main instructor is gradually removed as students build mastery and independence. Finally, coaching is provided as an ongoing form of support and discontinued when students demonstrate proficiency in performing target tasks. Under these circumstances, it is apparent that careful planning and the contribution of work mentors are critical to the success of WBL.
Nature of Instruction: Linking Content Focus and Teaching Strategies

Learning in CTE programs involves both knowledge and skills. It usually requires content knowledge built around academic–work connections coherently associated with an occupation or broadly defined career cluster. Learning also involves the ability to apply content knowledge and skills as tools for performing tasks and/or solving problems found in work settings of interest. To this end, the development of skills requires foundational content to set the cognitive stage for student motivation, meaning, and further understanding. The development of skills also requires that teaching and learning occur under conditions ranging from contextually relevant to authentic representations of conditions under which knowledge and skills of interest are actually used (Berryman, 1995). Contrary to the public perception that CTE is “just” about occupational skills, the need and role of content knowledge is undeniable. The question is “When should teachers focus on what?” Once this question is addressed, another important instructional decision points to the choice of teaching strategies. Obviously, not all content knowledge or skills should be taught in the same way. The nature of the target content, the conditions of the learning environments (i.e. classroom, technical laboratory, and workplace), resources available, and students’ characteristics should inform an appropriate framework for teaching and learning in CTE programs, including communication skills requiring English language proficiency.

Deciding on Content Focus: Knowledge and/or Skills?

Whether you are teaching information technology, nursing, agribusiness, or paralegal courses, there will be a need to break down content into foundational and practical knowledge. Foundational knowledge involves general facts, rules, and procedures commonly used to establish the importance and nature of a topic of interest. This type of knowledge is targeted when a new topic is introduced and, as a teacher, you want students to develop an awareness of relevant education-and-work connections and boost their motivation to learn. Another reason is to show how things work while making sure to note key terms, facts, and procedures along the way (Doyle & Carter, 1987).

In exploratory courses, much of the content focuses on foundational knowledge and such courses are most likely to be taught in the classroom since broad career awareness is often the primary goal of instruction. For example, an instructor may teach basic anatomy in an introductory course to health sciences. In other curriculum designs, background or foundational knowledge can be taught in the classroom across the curriculum depending upon the level of integration with academic education. In youth apprenticeship programs, for instance, students will be introduced to relevant but broad education-and-work connections in math, science, and social sciences in school. At the worksite, students are typically introduced to new topics in classroom-like settings prior to attempting practical work as part of WBL. Regardless of the curriculum format, foundational/background knowledge is usually the focus of instruction primarily in classroom settings. The outcomes associated with this type of knowledge are represented by lower levels of cognitive complexity and psychomotor demands.

When the focus of instruction is on conceptual understanding and/or on skill development usually associated with preparation for work or through work, the cognitive demands involve higher levels of critical thinking, reasoning, and problem-solving abilities. In some cases, the development of specific skills may become the sole focus of instruction for the sake of achieving certifiable occupational competencies. However, even in such cases, students may have to demonstrate the ability to troubleshoot independently or as part of a team, thus requiring analytical
and problem-solving skills. The outcomes associated with this type of knowledge include the
demonstration of understandings and the actual performance of relevant skills needed for suc-
cessful completion and troubleshooting of target tasks.

Conceptual understandings and skills development are usually the focus of instruction in
technical laboratories depending upon the nature of the CTE program or course. For example,
teaching and demonstration of skills troubleshooting computer repairs can happen in a computer
laboratory. In turn, students can actually field repair calls as part of a technology support unit in a
local company during a summer internship. Likewise, students in a health sciences program can
practice taking and interpreting vital signs in a school laboratory and further reinforce related
concepts and skills during clinical practice at a local hospital.

Teaching and Assessment Strategies: Choosing the Right Tools

Determining the content focus is only one part of the teaching process. How many times have
you seen colleagues lecturing over and over again when it is obvious that other strategies may
suit the content much better? By the same token, there is always a colleague who likes to use the
demonstration technique for just about everything. Heavy reliance on certain teaching strategies
is certainly not the best way to boost student motivation and facilitate learning, understanding,
and skills development—particularly when teaching ELLs, who may be struggling to learn the
new language. Just like a technician who chooses the right tool for the right task, teachers need
to choose the appropriate instructional strategy for different content objectives (Doyle & Carter,
1987).

Teaching Background Knowledge

The introduction of new topics or skills requiring the learning of background information, facts,
and procedures is best conducted with the involvement of the entire class to have everyone on
the same page. In this case, the teacher plays an active role in the teaching process to elicit stu-
dent interest and to establish content relevance for target concepts and skills that will later serve
as prior knowledge for subsequent learning components in the laboratory or workplace. This is
absolutely critical, especially for ELLs, who may require alternative ways to comprehend the new
material.

Direct teaching techniques are appropriate for introducing new content and involve explana-
tions including relevant examples followed by opportunities for practice and instructor’s feedback
(Borich, 2000). In addition to carefully articulated explanations, the teacher facilitates interactions
with and among students via questioning and reviewing techniques. Direct teaching techniques
are also used for demonstrating how things work, including rules and procedures to set the con-
text for skills application in the laboratory or workshop. Further, direct instructional strategies are
helpful in creating student interest on a topic and addressing the eternal student question: “what
do I have to learn this?” In this case background information should be mixed with relevant facts
and application to real-world situations. For example, in a business class the instructor may use
the following lesson plan on writing effective business letters:

1. **Setting the context and relevance.** Display a letter submitted as part of an actual application
   for a job on a screen using a projector (overhead or LCD projector), and ask students to spot
   problems with the letter. The instructor uses this context to emphasize the importance of
writing professional business letters and notes the consequences of failing to do so, such as not getting the job!
2. Informing students of the objectives. The instructor makes the connection to relevant objectives for the class period and makes sure to note how the objectives fit into what students have been learning and the overall unit of study in progress.
3. Eliciting prior knowledge. The instructor asks the students if they have written a business letter before. Building on responses, the instructor reviews with students why writing good letters is important, and basic composition rules taught concurrently with a cooperative teacher in language arts.
4. Introducing the new material. The instructor presents the components and rules for writing effective letters appropriate to intended purposes and target recipients. The instructor displays samples of business letters on the screen and points out the common features that need to be included.
5. Providing opportunities for practice. The instructor displays newspaper ads for positions relevant to the students and asks them to write a cover letter as part of a job application.
6. Providing feedback. The instructor walks around as students write their cover letter, responds to questions, and provides corrective or reinforcing feedback as needed. When students are finished, the instructor selects and displays two or three sample letters, one at a time, and asks students to comment on whether the letters meet the criteria.
7. Assessing performance. Based on a walk-about assessment and review of finished letters, the instructor determines the level of student understanding and application skills, and assigns further practice as needed until students demonstrate an acceptable level of performance.

Facilitating Reasoning and Practical Skills

When the objective is to have students demonstrate what they know and can do (i.e. competence and understanding), then problem-solving teaching strategies may be more effective. Problem-solving takes advantage of the contextual relevance of occupational themes and serves as the basis for problem scenarios requiring the application of analytical abilities and skills needed to perform disciplinary tasks, and demonstration of core understandings underlying overall student performance. In this context, appropriate teaching strategies take the form of problems and/or projects requiring students to work individually or in teams. Problems or projects can be simulated and solved in the school laboratory or workshop and may take from a few hours to weeks to complete. Depending upon the nature of the problems or projects, students may also need to demonstrate technical skills when using appropriate tools and following performance procedures. In CTE programs, both cognitive and technical skills are integral to the demonstration of competence.

In addition to problem/project-centered teaching strategies, teachers should make good use of questioning techniques as the means to reviewing and guiding student work. Complemented by formal and informal feedback, ongoing questioning should help students refocus their work and think about relevant education-and-work connections.

In those programs in which students have the opportunity to participate in WBL, teaching strategies are concerned with the facilitation of cognitive, technical, and attitudinal behaviors expected in the workplace. In this context, the ability to work with others is added to the mix of cognitive and technical competencies. Here, the primary role of the instructor is to promote self-directed and cooperative learning, and to facilitate instructional mediation by work mentors/supervisors so that students learn as much as they can about how things work in a particular workplace. To this end, careful instructional planning and collaborative agreements with work mentors are essential for the promotion of independent thinking, successful interactions between
mentors and students, and productive relationships with adult workers as students learn all aspects of an occupation.

Assessment Considerations

The mix of knowledge and skills emphasized in CTE programs requires alternative assessment considerations to monitor the quality and coherence of content focus, instruction, and expected outcomes. Performance tasks (e.g. projects, presentations) and portfolios are commonly used for assessment purposes.

Performance tasks, such as problems or projects, help assess analytical and problem-solving skills as well as attitudes and dispositions such as motivation, decision-making, and teamwork. Performance tasks provide students with the opportunity to demonstrate what they know and are able to do. When properly designed, performance tasks represent viable and sound strategies for assessing reasoning, attitudinal, and practical skills. In this context, assessment strategies should be considered upfront as an integral and ongoing component of curriculum and instruction. As teachers make decisions on essential core concepts, skills, and attitudes as the target of instruction, the content focus should also inform decisions on performance tasks. In general, teachers should decide on what to test aligned with essential core target concepts and/or skills, the criteria and scoring rubrics associated with the performance tasks, and the conditions for completing related activities. A good performance task should feature hands-on activities of varying duration depending upon the nature of problem/project, an observable process that can be monitored, a clear and expected outcome demonstrating an appropriate result or product, and opportunities for students to communicate their results. The nature of the task should be close representations of actual problems confronted by people who perform related tasks in actual workplaces.

To assess student growth over time, and as an effective complement to performance tasks, portfolio assessment offers a systematic process for collecting and documenting the quality of student work. As such, student portfolios can include evidence generated through both traditional test and performance tasks depending upon the underlying objectives. Following portfolio development criteria and assisted by the teacher, students can select and share their accomplishments at the end of course or a program, or upon completion of a project.

Performance tasks and portfolios offer reliable and valid assessment tools to monitor student progress and overall competence and, in the case of ELLs, opportunities to evaluate language learning development. Teachers can assess what ELLs can actually do considering language limitations, help them clarify misconceptions and target specific terminology, speech, or grammatical areas in need of improvement in the context of procedures, results, and communication activities.

Contextual Teaching and Learning: Premises and Promises

At the core of teaching and learning in CTE program is an advantage lacking in many academic subjects: coherent and meaningful contextual grounds provided by occupational themes. Whether students are engaged in learning about, for, or through work, and regardless of the content focus in the classroom, technical laboratories, or in work-based settings, the authenticity of occupational contexts provides built-in advantages for teachers. The premises of contextual teaching and learning are rooted in the body of knowledge emerging within cognitive science, and promising benefits for all students, ELLs included.
Contextual Teaching and Learning: Connecting “Knowing” and “Doing”

Under the traditional perspectives on learning there is usually a separation between knowing and doing. Behavioral and cognitive notions of teaching and learning assume that learning can be separated from situational contexts, and often seek to emphasize knowledge and reproduce it in rote fashion. The contexts in which learning can occur are viewed as useful, but merely incidental to what is actually learned (Brown, Collins, & Duguid, 1989). For example, in mathematics learning, the context of a problem is just an artifact to emphasize the knowledge of a formula. The goal is for students to “know” math assuming that conceptual knowledge is the basis for usable knowledge at some point. This, in broad strokes, illustrates the traditional approach to teaching and learning in secondary education.

In turn, CTE has been long accused of focusing too much on practical skills and not enough on conceptual academic knowledge. The perception of teaching and learning in CTE programs has been that of “doing” shops, i.e. learning the skills of specific trades and the “know-how” afforded by learning in occupational contexts. In this case, the occupational contexts and related practical activities are viewed as the vehicle for the reproduction of practical skills and assuming little connection to conceptual knowledge.

The reform movement of the 1990s and recent developments in cognitive science have slowly bridged these previous notions of teaching and learning and the value of “knowing” and “doing” in CTE programs. The reform movement called for academic education to be more contextually relevant to students, and for CTE to be more academically rigorous. In CTE, this movement led to a greater emphasis on curriculum and instruction featuring the integration of academic and technical education. In turn, research on situated cognition has produced convincing evidence suggesting that, when learning occurs in the context of real-world problem situations representing coherent connections between “knowing” and “doing,” the resulting knowledge is more meaningful and usable (Greeno, Collins, & Resnick, 1996). As a result, as new and more rigorous program designs have emerged in the field of CTE, the notion of contextual teaching and learning has evolved beyond the narrow focus on practical skills to meeting the multiple purposes of preparation about, for, or through work. To this end, contextual teaching and learning is defined as the coherent use of real-world situations and problems found in broadly defined careers.

The Role of Authentic Occupational Contexts

CTE provides the ideal grounds for emphasizing situated learning. Whereas in academic education the use of situated learning means finding and using examples with appropriate fit to target concepts and potential relevance for students, in CTE programs the underlying occupational contexts are built in and serve as the source for many meaningful and coherent learning situations. From stand-alone courses focusing on career exploration to courses integrated in career cluster coursework, the occupational contexts serve as the pool of relevant learning tasks. Best of all, such learning situations are authentic representations of what people do in work-related situations. The authenticity of the learning situations is paramount to contextual teaching and learning, which is often referred to as “authentic pedagogy” to stress this point (Newmann & Wehlage, 1997).

When student learning is grounded in an occupational context throughout an entire course or program, both conceptual knowledge and skills can be situated and gradually developed through understandings and tasks that build upon each other. The role of a coherent occupational context is to link concepts, skills, and attitudes in a course—and all courses in a program of study—in ways that resemble how people do things in actual work situations. Learning here is framed and
made visible by the culture and conditions of the occupational context. Under these conditions, students are able to develop an increasingly deep understanding of education and work connections. That is, students develop a knowledge base ("knowing") and the capacity to use that knowledge ("doing") in a variety of situations actually confronted by workers and professionals in real work environments.

From Situated Learning to Cognitive Apprenticeship

As students become progressively acculturated to the knowledge, skills, and attitudes expected in an occupational context, situated learning becomes even richer for all participating students. When students experience preparation for and through work, they engage in various forms of cognitive apprenticeship (e.g. internships, job shadowing, apprenticeships) depending on the nature of the program. In traditional apprenticeship programs, instruction is organized around observable skills and practices serving as the learning targets with less concern for concept connections. The primary goal is mastery of skills as a means for direct induction of novice individuals into a particular occupation. Although this apprenticeship model was useful in the past, contemporary workplaces have shifted away from the mastery of specific skills to problem solving and broader applications of knowledge and skills (Berryman, 1995).

In contemporary CTE programs, cognitive apprenticeship takes full advantage of occupational contexts and related expectations on knowledge and skills, and makes the cognitive components of learning tasks visible. In this case, both related conceptual knowledge and practical skills in the context of work situations are recognized and modeled within the culture of an occupation or career. Knowledge of academic concepts and technical applications are integrated and purposefully structured to happen in school and/or in workplace settings depending on the nature of the program (e.g. tech prep, Youth Apprenticeship). Regardless of the learning setting, the gradual introduction of core knowledge, skills, and attitudes used and exhibited in situations representing how people operate in certain work environments facilitates the effectiveness of cognitive apprenticeship (Collins et al., 1991; Berryman, 1995).

The common components of the cognitive apprenticeship model include the use of authentic tasks typically found in real-world professional situations. Authentic tasks are designed to help students develop expertise, building upon problem-solving skills related to those tasks. The instructor models underlying procedures and strategies, provides students with opportunities to practice independently, and coaches them as needed. In the process, students are required to demonstrate and justify their problem-solving strategies and, as students become more competent, teacher support is gradually removed (Brown et al., 1989; Collins et al., 1991; Bransford, Brown, & Cocking, 2001).

In CTE, youth apprenticeship programs combine classroom and on-the-job instruction under the supervision of an expert technician (e.g. journey-level craftperson or trade professional). For example, in the state of Wisconsin the bioscience and biotechnology industries contributed to the development of a youth apprenticeship program as part of related workforce development strategies. Participating students (youth apprentices) learn all aspects of the industry as they rotate through multiple areas at the worksite complemented by relevant classroom instruction at the local high school (or technical college) or at the worksite. At the worksites, trained workplace mentors teach youth apprentices the knowledge and skills needed for entry-level employment in the bioscience and biotechnology industries. Students in the Wisconsin's biotechnology program have two options: a one-year option involving two semesters of classroom instruction with at least 450 work hours and a two-year option requiring four semesters of classroom instruction with at least 900 work hours (Wisconsin Department of Workforce Development, 2007). Given
the nature of youth apprenticeship activities, basic interpersonal communication skills along with academic language proficiency are implicitly targeted for successful learning on the worksite and in school.

Promising Premises of Contextual Teaching and Learning

Situated learning, authentic instruction, contextual teaching and learning, cognitive apprenticeship, and other related terms are often used interchangeably, signaling shared premises and promises. Sometimes the variations in terminology can be too distracting. With the nuances previously outlined, we used contextual teaching and learning in this book to highlight the valuable role that occupational contexts can play in CTE. What is the research behind the roots of contextual teaching and learning though? What makes contextual teaching and learning promising? What are the premises holding emerging views on teaching and learning together? Let us take a tour of key premises.

Research on human learning has come a long way: from behavioral conditioning to cognitive science. The emergence of cognitive science, in particular, has enriched our understanding of how people learn from an interdisciplinary perspective, including the influence of linguistics on student learning (Bransford et al., 2001). Cognitive science is broadly rooted in three complementary lines of research suggesting the promising premises of teaching and learning for understanding, building upon existing knowledge, and the facilitation of active learning.

Teaching for Understanding

Traditional teaching strategies often emphasize the acquisition of content knowledge and rote memorization. This, apparently, is emphasized even more given the pressures of high-stakes testing and wide scope of curriculum coverage. Under these circumstances, students may have limited opportunities—and time—to make sense of new material as the focus is placed on facts and moving on quickly to the next topic. To their credit, teachers do their best to help students become knowledgeable on subjects of interest and skilled in reproducing the acquired knowledge (e.g. using a mathematical formula). The problem is that knowledge and skills do not necessarily equal understanding. That is, students may know how to read but may not be able to make inferences from what they have read. By the same token, students may “know” mathematics but may have trouble understanding the appropriate use in different contexts (Gardner, 1991; Resnick, 1992; Perkins, 1993). Recent developments in cognitive science recognize that content knowledge and routine skills play an important role in learning. When new knowledge and skills are connected and contextualized, related research shows that they support understanding and transfer to other situations as opposed to the mere recall of information (Perkins, 1993; Bottoms & Sharpe, 1996; Newmann & Wehlage, 1997). From the perspective of cognitive science, the use of knowledge is boosted when students develop an understanding of relationships between concepts and appropriate use when confronted with the need to solve new problem situations (Bransford et al., 2001).

In brief, when students know something, they may be able to reproduce that knowledge and perform routine skills even though their understanding may be limited. In contrast, when students understand something, they should be able to perform in different situations requiring appropriate generalizations and applications of what they know (Perkins, 1993). In this context, the best way to teach for understanding is to provide students with learning activities requiring them to generalize, find alternative solutions or examples, implement solutions (e.g. complete a project), and verify and analyze the results of their work (Bottoms & Sharpe, 1996; Newmann &
Wehlage, 1997). The teaching principles that have emerged out of this thinking represent great opportunities for improving instruction in CTE programs and helping ELLs (Perkins, 1993; American Psychological Association, 1995; Bottoms & Sharpe, 1996). Here is an outline of promising principles:

1. **Focus on sustained thinking-centered activities.** Teachers emphasize challenging activities demanding that students think deeply about concepts of interest for an appropriate period of time. Students should have time to think about what they are learning and generate their own understandings through tasks, such as the completion of an individual or team project, leading to the demonstration of those understandings.

2. **Emphasize the use of multiple representations of information.** The learning of new and/or complex ideas can be facilitated when students are provided with varying and intuitive ways of representing core ideas, such as images, models, and analogies. In addition, teachers should require students to create their own representations, which can become a performance of related understanding in its own right.

3. **Recognize and account for individual student factors.** Recognizing individual differences such as culture and language ability is the first step in creating the right conditions for learning and understanding. The second step is to use that knowledge for creating instructional activities that are appropriate for maximizing the learning of all students.

4. **Use occupational contexts for relevance and understanding.** Student understanding is boosted when knowledge and skills are learned in the context of problem situations encountered within the functions, structures, and logic of a discipline (e.g. mathematics, history) or occupation (e.g. business, manufacturing technology). Meaningful contexts allow students to establish coherent concept connections, identify appropriate applications, explain how things work, and solve problems they can relate to.

5. **Emphasize the transferability of concept connections.** Student understanding is facilitated when instructional activities demand that they think deeply about concept connections and applications beyond the narrow constraints of a discipline. The use of thematic contexts and problem-solving activities provides suitable avenues for teaching concept connections and transferability of skills.

6. **Plan and facilitate ongoing assessment.** Sustained student-centered activities involving the application of knowledge and skills in thematic contexts require ongoing assessment strategies. Student understanding can be facilitated and shaped through the provision of appropriate performance criteria, feedback, and opportunities for peer and self-evaluation.

The principles outlined above represent the broad and basic premises of teaching for understanding. CTE programs provide ideal opportunities for using related instructional strategies. Further, it should be evident that such strategies can be useful for teaching ELLs as well.

**Pre-existing Knowledge**

Victor Hernandez recalls the day he took a final test on a graduate adult education course at Virginia Tech. One of the questions required him to explain, “how in the world” some adult education practices occurred. Being a foreign student at the time, with interest and prior experience in international economic development, he took the question at face value and he launched into a lengthy explanation of how the particular practices would be implemented in various regions of the world. His test was returned with a note from the instructor indicating he was only asking about the “how” part! The instructor had, in fact, used the common parochial expression “how in
the world” with the narrow meaning of process (i.e. how something is implemented) signaling a question with a scope restricted to what had been covered in class in the context of the American system only. In this case, Victor had taken the question literally based on his prior knowledge because it had made sense to him. As such, the interpretation of the language and the question had been faulty.

The role of previous individual understandings on how people learn is another important principle of cognitive science. Imagine this. A business education teacher is introducing the concept of balancing a bank account to her class. In the group there are three immigrant students from rural communities in Cuba, Mexico, and China whose families have never had a bank account. Whereas the majority of students can relate to the idea of bank accounts, the immigrant students have no way of connecting to prior knowledge. Both the concept and related terminology are hard for them to grasp. The interpretation and readiness to make further connection depend on what the students bring to the learning situation.

When learning in context—as in CTE programs—students may find clues provided by the coherent nature of what is being learned as in the previous example. The problem arises when the context is not sufficient for filling the void of previous related knowledge. On top of that, the typical rate of speech in teaching situations is aimed at mainstream students. Thus, if the students lack prior knowledge on the subject and have language limitations, they are probably struggling both to grasp the new concept and to decode the instructor’s talk.

Taking into consideration pre-existing knowledge is a requirement for effective teaching for understanding. Unlike traditional views of learning, which perceive individuals as passive recipients of new information, new developments in the learning sciences see learners as active agents in the teaching/learning process. Essentially, it is argued that student motivation and engagement in learning activities will depend upon individual prior knowledge, skills, and beliefs. In short, people learn most effectively when they can relate to new material, that is, when the new learning situations allow them to build upon what they already know. This, of course, has enormous implications for making learning relevant, engaging students in meaningful problem solving and facilitating the creation of new knowledge.

First, teachers must pay close attention to their students’ cultural frame of reference to gauge existing understandings and interpretations brought to the classroom on a given subject. This is critical when students in a group have different cultural backgrounds or family experiences. If the teacher is using parochial aphorisms, for example, ELLs may appear confused and teachers may falsely attribute their behavior to their limited English proficiency. Whereas language limitations may contribute to student understanding, in this case it is the contextual disconnect that is preventing students from understanding. To this end, there is plenty of evidence indicating that students learn better when teachers take account of their existing knowledge and cultural differences in learning situations involving new concepts and when evaluating students’ progress.

A quick survey of your students’ background should provide an important payoff. For example, if you are teaching a class as an elective you are most likely to have students with a variety of backgrounds and levels of prior knowledge. In contrast, students taking a class within a CTE program are most likely to take their cues from the contextual connections and connect to experiences in previous courses. Obviously, the two situations require different approaches. In general, it should pay to learn about what courses students have taken, whether there are common courses taken by all, and about their aspirations and backgrounds. In collaboration with counseling and/or ESOL staff, producing student profiles including family background, prior coursework, and any experiences related to the class should prove helpful in gauging what everyone brings to the class.

Second, teachers must understand that lecturing has a role in clarifying and setting the context when new concepts are introduced so that everyone can understand what the new concepts are
about and how they are relevant to them. It is also essential that teachers understand that at some point during instruction it is helpful for students, especially those with different cultural backgrounds and English language proficiency, to have an overview of key ideas and provide opportunities for establishing connections to prior knowledge and a cultural frame of reference. In CTE programs, this can be accomplished in the form of an introduction to new instruction or during instruction after students have spent time working on a project or solving a problem on a need to know basis.

The use of examples, demonstrations, and analogies has been found effective for bridging prior knowledge and new information. Clearly, it is impracticable to suggest customizing instruction for all students based on their level of prior knowledge. The practical goal should be to make instruction relevant for all students by illustrating new ideas using a variety of examples, demonstrations, and explanations. In this way, students may be in a position to find clues from strategies that are most useful for them.

Active Learning

Another important principle underlying cognitive science—and a requirement for understanding—is engagement in active learning, whereby students take charge of their own learning. If students are to grasp ideas beyond mere recall of information, they should be provided with opportunities to identify when they need additional information to reach new understandings. When students engage in activities requiring them to reason and solve problems, they are more likely to analyze and assess what they know and need to know, and what worked and did not work in the process of testing solutions. Active learning is the common denominator of those teaching and learning activities found to improve the transferability of student understandings to new situations (Schonfeld, 1991). Engaging students in active learning will help improve their reasoning ability, retention and understanding of new concepts, as well as the transfer of new ideas to different contextual situations.

Teaching for understanding and building upon existing knowledge consistently reinforce the idea of students as active seekers of information, especially when the information is relevant to them. There is extensive evidence suggesting that teaching and learning are more effective when students actively engage in clarification, questioning, application, problem solving, and activities involving synthesis of information. In CTE classes and programs students have plenty of opportunities to engage in such activities via demonstrations, class projects, senior projects, problem solving, and other learning-by-doing types of activities. Group discussions, brainstorming, case studies, role play, journal writing, and cooperative learning strategies can also be used to promote active learning.

As noted earlier, there are instances when knowledge clarification can be best attained through a short lecture or overview. Too much of that, though, will cause students’ attention to wander and they will lose motivation to learn. To develop both understanding and related application of concept and practical skills in marketing education, communications technology, culinary arts, electronics, and other occupational contexts, teachers should seek a balance with active practice. In general, the goal should be to provide students with opportunities to see how something works, reflect on the experience and communicate what they are thinking in some form. An underlying requirement is that the active learning tasks should represent authentic activities featuring real work situations to ensure relevance for students.

Active learning strategies can be integrated into a class period or an entire course using a variety of teaching techniques. Questioning, practicing, teamwork, and reflective activities can be easily integrated into class periods to reinforce concepts of interest. In turn, case studies, problem
solving, projects, and presentations of results can be integrated into the course as a whole. The benefits of participation in CTE programs for ELLs should be obvious. Active learning should provide opportunities to clarify what the new material is about, establish a frame of reference through practical connections, learn new terminology in context, and allow them to show what they know and can do through demonstration of results. Some examples of related active learning strategies are featured in Part 3 of this book.

Implications for Teaching English Language Learners in Career and Technical Education Programs

Given their cultural background and language limitations, ELLs are often at a disadvantage in mainstream classrooms. The lack of meaningful contexts and the traditional focus on rote knowledge and skills make it harder to serve the learning needs of ELLs effectively. In CTE programs, the underlying goals (i.e. preparation about, for, and through work) and the use of meaningful contexts within courses and programs provide great opportunities for emphasizing teaching principles suitable for working with ELLs.

First, it is well documented that ELLs perform better when they are engaged in meaningful activities grounded in contexts they can relate to in some way (Garcia, 1996). In CTE programs, occupational contexts and work situations to which students can relate provide the opportunity for students to obtain cognitive, social, and linguistic clues as the prelude for understanding.

Second, the coherent sequence of courses in CTE programs should allow ELLs to build on prior knowledge and experiences as they advance in the programs. Whether in a program or in an elective course, establishing contextual relevance is part of the content focus and provides opportunities for connecting to and building upon students’ frame of reference. In a CTE program context, the cumulative knowledge and experience should help ELLs develop higher-order cognitive and practical skills.

Third, engaging ELLs in active and contextually relevant activities in the classroom, in laboratories or workshops, and in actual workplaces depending upon the program, should reinforce conceptual understandings and language development as students are constantly required to master technical terminology and demonstrate what they know and can do both verbally and in writing.

Ultimately, the benefits of contextual teaching and learning underlying CTE programs can be extended to ELLs only if teachers make the right instructional decisions across the various settings where teaching and learning occurs in a program. To take full advantage of built-in contextual grounds and multiple opportunities to teach content knowledge and skills in relevant ways, teachers need to engage in careful instructional planning factoring in the specific needs of ELLs.
In Part 1, you were introduced to the basics of English language development including processes and expectations, developmental stages, appropriate instructional strategies, and the different types of ESOL programs. Background characteristics of ELL students were also highlighted along with a research-based approach to teaching for language development. In Part 2, we described how the field of CTE has changed, the many variations in curriculum formats, and the premises and promises of contextual teaching and learning. In Part 3, we outline a framework for bridging research on language development and contextual teaching and learning in CTE programs. We also provide specific examples of instructional strategies for teaching ELL students in the classroom, in the academic/technical laboratory, and in work-based settings.

A Framework for Teaching and Learning in Career and Technical Education Programs

To be sure, it would be unwieldy to address teaching and learning in the context of individual CTE program areas and curriculum designs. There are simply too many program areas and curriculum configurations to make that attempt in a single book. Fortunately, at this point it should be evident that, regardless of the occupational theme featured by CTE programs in secondary or postsecondary institutions, CTE teachers are faced with common instructional challenges and choices. After taking into consideration student characteristics, teachers have to make decisions on instructional strategies appropriate to the nature of the program and local resources.

Essentially, CTE teachers have to plan for and teach appropriate content in the classroom or in the technical laboratory depending upon the nature of the CTE program context, and in the workplace depending upon the purpose and scope of the program design. The question is: What can teachers do to create learning environments where English language learners have the
opportunity to succeed? Figure 3.1 illustrates a framework for teaching and learning in CTE programs with particular focus on teaching English language learners.

This framework builds upon the notions of preparing students about, for, and through work addressed in Part 2, and the alignment of those notions with content focus appropriate for instruction in the classroom, in the technical laboratory, and in workplace settings. The recurring theme in the framework is the prominent role of occupational contexts serving as the catalyst for bridging practical connections to research on contextual teaching and learning and English language learning. The framework is also predicated on the idea of establishing connections to local supports and services available to students and teachers.

Making Instructional Decisions across Instructional Settings

Teachers in all disciplines are constantly making instructional decisions. The factors contributing to instructional decisions include time constraints, available resources, pressure for content coverage, and pedagogical knowledge and experience. When making instructional decisions, accounting for potential limitations and opportunities represents a balancing and challenging act. In CTE, in addition to content expertise, teachers have to consider pedagogical knowledge, what they know about their students—especially those with limited English language proficiency—and the nature of available resources and supports in the process of selecting instructional strategies that meet program purposes and student needs.

Depending upon the educational level and program, instructional decisions are made in classrooms, technical laboratories, and/or workplace settings. In some cases, the classroom and laboratory/workshop are one and the same as in many business and marketing programs, but are separate areas in many industrial, agriculture, family and consumer science, and health sciences programs. Ultimately, the teacher's knowledge, experience, and instructional choices are

![Diagram of framework for teaching English language learners in career and technical education programs.](image)

**FIGURE 3.1.** Framework for teaching English language learners in career and technical education programs.
translated into patterns of discrete practices deemed appropriate for both content focus and the type of learning environment. In CTE programs, instructional decisions revolve around two primary lines of content often associated with in-school and work-based environments. The connections and alignment between target content focus across instructional settings and choice of instructional strategies are discussed in Chapter 2.3. Examples of related instructional strategies are highlighted in Part 3 of this book.

In classroom settings, regardless of the type of CTE programs, teachers are most likely to teach new concepts, facts, and procedures associated with careers or specific occupations. In exploratory or introductory courses, teachers may also focus on objectives involving awareness about careers/occupations of interest. When the objective is to integrate academic and technical education, teaching may focus on establishing the relevance of academic topics by introducing connections to appropriate careers/occupations.

In technical laboratories, teaching typically focuses on skills and competence development involving hands-on assignments requiring the completion of performance tasks (e.g. installing PVC pipes within wall structures), solving authentic problems (e.g. locating a short in an electrical circuit), and demonstrating understanding of concepts (e.g. explaining how hydraulic principles apply to the braking system on a car) and skills applications (e.g. practicing injection of medication with hypodermic syringes). Teaching is often based on demonstration strategies complemented by short-term projects (e.g. designing a playground for a nearby elementary school), investigations (e.g. researching the impact of pesticides on water streams), creating a product (e.g. creating a webpage in a business technology class), or troubleshooting activities (e.g. diagnosing the problem with an air conditioning system). Across programs, teaching may be integrated in courses involving short- and long-term projects, or in thematic units, depending on the program purpose and extent of teacher collaboration.

In work-based settings, teaching is concerned with the development of competence, applying conceptual understanding and skills in actual workplaces. Modeling, coaching, and feedback associated with cognitive apprenticeship are primarily targeted as a means for student induction to all aspects of an occupation. In addition, teamwork and work attitudes expected in the workplace are the focus of instruction. Paid and unpaid internships, job shadowing, and mentorship activities are supported and facilitated by workers and professionals in the workplace.

In some configurations of CTE curriculum, the lines between learning settings may not be so clear, and instructional strategies may flow more fluidly across settings and complement each other along the way, such as in high school career academies, youth apprenticeship programs, and community college applied academic courses co-taught by CTE and academic faculty. A key point to remember here is that the nature of target content knowledge and skills will dictate whether teaching can be most effective in the classroom, in the technical laboratory, or in work-based settings.

Bridging Contextual Teaching and Learning and English Language Development

An advantage of CTE programs over academic education is the fact that content knowledge, skills, and attitudes are highly contextualized thanks to underlying occupational contexts. As shown in Figure 3.1, the occupational context in CTE programs ties and feeds meaning-making for instruction. As such, occupational contexts serve as the anchor for bridging contextual teaching and learning and English language development around the three tenets of cognitive science outlined in Chapter 2.3: building upon prior knowledge, teaching for understandings, and emphasizing active learning.
Building on prior knowledge, understandings, and beliefs aligns with the need to understand that “not all ELLs are the same.” Thus, and as obvious as it may seem, it is important to realize that instruction will work effectively as long as it is appropriate to the stages of language development, prior understandings, and social frame of reference. As pointed out elsewhere, it may be unrealistic to tailor instruction to each individual student, but it should pay off to develop a general understanding of where they are in their language proficiency and about their cultural background. To this end, you should put to good use the stages of second language acquisition outlined in Part 1 in combination with an evaluation of where the majority of your students fall. Knowing this will allow you to identify appropriate prompts and questioning techniques to facilitate productive interactions with ELLs (Krashen & Terrell, 1983). By the same token, it is also important to learn about students’ background as another reminder that “not all ELLs are the same,” and be mindful of using colloquial expressions, aphorism, or idioms that may appear to be “plain English” for fluent and native speakers, but are confusing from an outsider’s perspective.

Building on prior knowledge may be also facilitated by asking students to compare what they know of an occupation or specific procedures relevant to what is being taught in class. Knowledge of appropriate prompts aligned with stages of language development is also useful for building upon prior learning as students move within a program.

In turn, teaching for understanding is consistent with Cummins’ (1986) framework for instructional intervention to help ELLs develop basic interpersonal communication skills (BICS) and cognitive academic language proficiency (CALP). In this case, the emphasis on teaching for understanding takes full advantage of the role of meaningful contexts in language development. Concurrently, the different applications of thinking-centered and competence-centered activities in the classroom, technical laboratories, and workplaces allow the identification of appropriate instructional strategies corresponding to each of the Cummins’ Quadrants as reproduced in Table 1.3. Owing to the built-in advantage of having occupational contexts across the curriculum and learning settings, the use of the Cummins’ framework in CTE programs falls primarily on Quadrants I and III, and less prominently on Quadrants II and IV. Here’s why:

- **Quadrant I** features a combination of high contextual support and low cognitive demands. In a CTE program, meaning, relevance, and clues can be embedded in occupational context. Factual information, in this case, represents low degree of cognitive demand and may be easy for ELLs to relate to and master. For example, in the highly contextualized instruction in programs such as automotive technology, construction, and manufacturing among many others, students can easily understand the importance of safety procedures and learn to follow them to prevent accidents.

- **Quadrant II** features a combination of low contextual support and low degree of cognitive demands. This combination is most likely to represent a situation in academic education (e.g. math, science) void of any purposeful connections with CTE. For example, students in a math class may be required to solve a math problem following rote procedures and applying formulas they can look up in a textbook.

- **Quadrant III** features a combination of high contextual support and high cognitive demand. In this case, the high contextual grounds found in CTE programs promote rigorous academic–technical connections with an emphasis on conceptual and skills applications aligned with practices that work for ELLs. For example, in an engineering technology class, students working in teams may be required to research bridge designs and apply engineering concepts for the design of a bridge to be considered for replacing a local bridge scheduled for demolition. Student teams may be charged with the task of designing a bridge that is structurally
sound using an efficient load path and esthetically pleasing. In this case, student teams have
to use AutoCAD (computer-aided design) technology and apply knowledge of engineering
and design concepts, and design process. The resulting designs have to be defended before a
panel of community representatives recruited for this purpose.

- **Quadrant IV** features a combination of low contextual relevance and high cognitive demands.
  This situation can be found in courses with superficial or spurious levels of integration with
  CTE topics. Contextual connections may be used to bring relevance to a demanding task but
  may lack coherence within and across other concurrent experiences. For example, it is typical
  of high school students to work on the following type of math problems:

  A chemical company spends $x$ million dollars on research and finds that its profit can
  be expressed as a function of the amount of money spent on research. If $\text{Profit}(x) = 30 +
  6\log(x + 2)$, how much will the company have to spend on research to increase its profit
  from its present level, with a research investment of $5$ million dollars ($\text{P}(5)$), to $80$ million
  dollars? (Canada’s SchoolNet, 2007, retrieved at www.stfx.ca/special/mathproblems/).

  Although this problem requires students to apply reasoning skills, the contextual relevance
  is obviously artificial. An effort is being made to establish contextual connections and make
  the task relevant for students, but the problem is unlikely to build on anything else, as the
  next problem may be about estimating the speed of cars factoring in some variables.

  The example for Quadrant IV illustrates the benefits of participation in CTE programs. Whereas
  contextual meaning may be forced into a task for students in traditional academic subjects, stu-
  dents participating in CTE programs are in a better position to take full advantage of contextual
  representations of real-world tasks since a coherent and relevant context is embedded across the
  curriculum. The sample problem for Quadrant IV, for instance, should make perfect sense for
  students in a business and finance program. For those students the conceptual applications of
  finance and mathematics are something that can be actually used in the real world of work. For
  that reason, the contextual nature of CTE programs allows a teacher to plan for instruction pri-
  marily aligned with Quadrants I and III, where high contextual relevance is embedded. At any
  rate, recognizing the different combinations of context and cognitive demands provides the basis
  for gauging student disposition toward language comprehension and conceptual understanding,
  and readiness to tackle progressively difficult topics and skills applications.

  An emphasis on active learning strategies provides the grounds for the use of hands-on and
  interactive activities conducive to the facilitation of basic communication and academic language
  proficiency. Knowledge of the stages of language development and intervention Quadrants should
  be useful in identifying appropriate use of advance organizers, questioning techniques, and visu-
  als to engage students in active learning. Performance tasks appropriate to stages of language
  development and combination of context and degree of cognitive demands can then be selected to
  afford students the opportunities to react to and/or manipulate visuals, engage in labeling activi-
  ties, interact during questioning components, design and complete products, solve problems, and
  communicate what they have learned and can do (Hill & Flynn, 2006).

  In other instances, having students identify similarities and differences and engaging in
  cooperative work may best suit the specific conditions set by content focus and the type of learn-
  ing environment. The key element here is the notion that hands-on interactive activities can be— if used appropriately and timely—the catalyst for increased comprehension and competence
  of ELLs in CTE programs.
Connection to English Language Learners’ Supports and Services

One factor often overlooked when making instructional decisions for teaching ELLs is the fact that students’ behavior and performance in learning environments is also influenced by personal and family situations. When teaching ELLs, being aware of available local services and resources and—whenever possible—working in collaboration with ESOL staff may prove to be very fruitful (McKeon, 1987). In fact, the Perkins Act mandates the provision of services for students with special needs, ELLs included. While enrolled in CTE programs, all English language learning students are eligible to receive career guidance and related counseling services, assessment of vocational interests and dispositions, and special services if needed to ensure full program participation (Lopez-Valadez, 1989). Awareness of available services and resources for students can be helpful for referring students to appropriate sources of support for them and their families if warranted during their program participation.

Likewise, although ESOL staff wear many hats and are often too busy to participate in ongoing and close collaboration with instructors, teachers should be aware of how they can be of assistance if ever needed. If time constraints prevent frequent input, teachers should benefit from at least one ESOL staff debriefing on new ELLs at the beginning of the school year or when a new ELL student enrolls. Ideally, the debriefing should represent an opportunity to learn about the level of the student’s English language proficiency, match the student with a stage of language development, and learn about personal or family issues that may need to be taken into consideration when monitoring student progress and performance.

Teaching English Language Learners in Career and Technical Education Programs: Making the Framework Work

To make the framework for teaching ELLs in CTE programs work, teachers need to heed the importance of integrating what we know about contextual teaching and learning and research on English language development. The choice of instructional strategies should match the combination of occupational context and cognitive demands, the collective stages of language development, and the nature of the learning environment. As such, the framework for teaching ELLs in CTE programs will work best when instruction is organized, taking into consideration students’ background and language proficiency, around learning tasks eliciting conceptual understandings and the expected competence needed for successful participation in further education or work. It also requires making a shift from teacher-centered to student-centered activities, emphasizing the social organization of active learning and reaching out beyond the classroom to identify complementary supports and services as needed.

As hinted earlier, the specific choice of instructional strategies can take many forms and should be appropriate to the conditions, opportunities, and limitations of learning situations found in classroom instruction, laboratories or workshops, and workplace settings (Doyle & Carter, 1987). Building upon these premises, the chapters in Part 3 provide suggestions for teachers interested in helping ELL students succeed in CTE programs. The approach we use is to break down learning situations typically occurring in school settings (i.e. classroom, technical laboratories) where CTE is conducted, and in work-based components available in many programs. Knowing that the majority of CTE teachers have not been formally prepared to teach ELLs, our goal is to decode, in a teacher-friendly manner, the complexity of teaching ELLs in CTE programs while preserving the validity of instructional suggestions.
In this chapter we provide a starting point for implementing the framework introduced in Part 3 of this book. For a teacher, it is always tempting to jump straight to instructional strategies, eager to implement what works for particular student groups. In the case of ELLs, however, it is important to develop a basic understanding of the stages of English language development, and the connection to target content as a prerequisite for selecting appropriate instructional strategies. In this chapter, we begin with the need for establishing a frame of reference about ELLs enrolled in a particular course. This includes becoming familiar with the information and ideas covered in Part 1 of this book, including the stages of language development, and Cummin's Quadrants highlighting various combinations of context and cognitive demands as a frame of reference for teaching ELLs. Next, we provide some practical suggestions for learning about students and existing school resources. Further, we outline some considerations for selecting target content and core understandings as the basis for making informed decisions on instructional strategies later on. Finally, we conclude with a brief overview of criteria aligned with student performance in CTE program contexts and notions of teaching for understanding.

The success of instructors in engaging all students, ELLs included, in learning activities builds upon the realization that “not all ELLs are the same.” To select and plan instructional strategies appropriate to their needs, teachers must first establish a frame of reference about their ELLs, think about content and learning setting considerations, and decide on performance criteria as the starting point for the selection and use of the right instructional strategies (Friedenberg, 1995; Platt 1996; Hill & Flynn, 2006).

Setting a Frame of Reference about Your Students

First things first: Get to know your English language learning students. Now, this can be an intimidating task when time limitations, language barriers, and preconceived ideas are all mixed
Get Informed about the Stages of Second Language Acquisition

Quite often the lack of a basic frame of reference on second language acquisition is a factor preventing teachers from seeking background information on ELL students. What does it all mean? The good news is, it is all right here. If you skimmed Part 1, this is a good time to go back and take a closer look. Or check related resources available on the internet. Run a search for “second language acquisition” and you will sure find numerous sources with varying levels of detail. For example, the Northwest Regional Educational Laboratory offers online strategies and resources for teachers of ELL students and has an overview of second language acquisition theory at www.nwrel.org/request/2003may/overview.html. If you have had ELL students previously, you are most likely to have some “aha!” moments as you brush up on related material. Whether you have had prior experience or not, a basic understanding of the stages of second language acquisition is a must for setting a frame of reference to get to know your students.

View Video Samples Representing Language Proficiency

Basic knowledge of the stages of language acquisition also means practical recognition of language proficiency. How can you develop practical recognition of language proficiency? As indicated in Part 1 of this book, the University of South Florida maintains an online database of video samples of language use by ELLs available for pre- and in-service teachers. Sample videos feature students representing the four different stages of English language development and include annotated audio to help users make such connections. The online database also includes speaking, reading, and writing samples of ELLs from different backgrounds, different ages, and grade levels along with a number of case studies for further study. The links for online databases for elementary, middle, and high school levels can be found in Part 1.

Run an Informal Audit of Developmental Stages in Your Class

Now that you have a basic frame of reference to understand and recognize emerging language proficiency, run a quick audit of developmental stages in your class. Think about the ELL students in your class and match them with the appropriate category of language proficiency: preproduction, early production, speech emergence, and intermediate fluency. Where do the majority of students fall? As stated elsewhere, it is often unrealistic to plan for individual instruction, and this kind of information should allow you to make the most of selected strategies later on. A description of the stages of language development can be found in Part 1.

Get Additional Insights from ESOL Staff

At this point you should benefit from having a conference with ESOL staff. Armed with a basic frame of reference on the stages of language development and rough evaluation of your students’ proficiency, additional insights from ESOL staff should be valuable in four ways. First, it is an opportunity to develop a rapport with ESOL staff and to get to know them as well. Do you know who they are and what they do? You may be surprised to find out about the actual scope of their
work. Second, double-check with ESOL staff on the accuracy of your student classification and see if there is anything else you should know about your students. Third, request a debriefing on new students to get a complete picture of the ELL membership in your class. Fourth, ask ESOL staff for school and district resources that ELL students can access. Some reports suggest that related resources and supports are often underutilized because of a lack of awareness (Lopez-Valadez, 1989).

Yes, conducting these suggested activities may take a little time the first time around, but it should be a rewarding investment of your time. As you continue to do this year after year, you should become more efficient with the process and savvy using your knowledge of school and district resources.

Deciding on Target Content and Core Understandings

Choosing the appropriate instructional strategies begins with clear identification of the target content to make sure there is a good fit (Borich, 2000). When teaching for understanding, it is suggested that you begin with the identification of desired outcomes and results, followed by the determination of criteria for acceptable performance, and—finally—the selection of appropriate instructional strategies as the means to help students develop the desired outcomes (Wiggins & McTighe, 2005). In CTE programs, there are three primary types of learning outcomes.

Type 1: Knowledge of Essential Background Information

This type of knowledge encompasses factual information involving common characteristics of an object or event, rules, and procedures. Though this type of knowledge is characterized by low cognitive demand, it is considered a prerequisite for understanding. Learning outcomes associated with this type of knowledge require students to “know” basic information about something. Knowledge of safety rules and regulations when operating machinery is an example of this type. The key feature of this type of knowledge is the low level of complexity, corresponding to Cummins’ Quadrants I and II.

Type 2: Conceptual and Applied Knowledge

This type of knowledge is concerned with higher-order thinking skills often associated with demonstration of understanding. Building upon knowledge of facts and procedures, target content is about conceptual understandings and practical skills representing high cognitive demand associated with Cummins’ Quadrants III and IV. The expected learning outcomes bridge “knowing” and “doing,” requiring students to demonstrate what they can do with what they know. Troubleshooting computers or cars, designing a landscape, and determining the causes of water pollution are some examples of this type of knowledge.

Type 3: Functional Working Knowledge

This type of knowledge bridges type 1 and type 2 knowledge in the context of actual workplace settings. As such, it is about practical skills, functional competencies, and attitudes expected in work-based settings such as teamwork and work ethics. This type of knowledge requires the integration of high levels of cognitive, psychomotor, and affective domains. The outcomes of interest involve the ability to demonstrate performance in authentic work situations including knowledge
of rules and regulations along with conceptual applications and skills needed for successful completion of typical work tasks. Performing car maintenance schedules at an actual car dealer service station and taking vital signs and reporting results as part of clinical practice at a hospital are examples of functional working knowledge.

### Linking Target Content and Learning in the Classroom

In academic subjects, for which the type of learning setting is a given, the bulk of instruction will occur in classroom-type environments. Only in some instances, such as in science education, is classroom instruction routinely complemented by teaching and learning in laboratories by means of investigation activities. In CTE programs, as indicated earlier, the distinction between classroom and technical laboratories instruction is not clear cut because in some instances the laboratory is the only learning setting students know—and in many ways it is treated as a classroom as well. Under these circumstances, it is important for teachers to differentiate when to target what and to use the learning environment accordingly.

For practical purposes, type 1 knowledge is more appropriate for instruction in classroom-type settings, where all students can be brought together and the teacher can make sure that everybody is on the same page of basic comprehension of essential background information. In CTE programs where the integration of academic and technical education across the curriculum is enacted through “applied” learning, type 2 knowledge is also emphasized, such as in tech prep or in career clusters. However, the level of authenticity and duration may be reduced to problem/project-based activities that can be completed in the classroom (e.g. short-term investigations, simulations).

### Connection to Cummins’ Quadrants

Determining the type of target content and the learning setting is important for practical reasons. This information is critical for taking full advantage of the Cummins’ Quadrants illustrated in Part 1 and shown in Table 1.3. How do you make good use of the matrix though? The combination of context level and cognitive demand provides valuable clues for identifying appropriate target content and, in turn, prompts and instructional strategies appropriate to the language proficiency of students in the group.

The major suggestion here is that, upon identification of target content, you should check the Cummins’ Quadrants and see where it falls. Then, review Part 1 and take notes on the suggested instructional strategies and connections to the development of basic interpersonal communication skills (BICS) and cognitive academic language proficiency (CALP). For this, review related material in Part 1 of this book.

In CTE program context, an additional dimension of expected CALP communication skills involves the use of technical terminology and language specific to the occupational context of interest. In general, you may use Figure 3.2 as a guide to establish the connections between target content, cognitive demand, and learning setting as a springboard for identifying matching clues for questioning techniques and appropriate instructional strategies.

### Setting the Criteria for Acceptable Performance

When designing instruction for understanding, once target content has been identified, the next step is to decide on the criteria for acceptable performance as a guide for assessment strategies. This is an important step because the nature of acceptable performance should signal the
instructional strategies that best fit the expected outcomes (Wiggins & McTighe, 2005). When teaching ELLs, this is particularly relevant because it allows the teacher to plan instruction more effectively. Below are some suggested broad guidelines for emphasizing six dimensions of understanding in the context of CTE programs and English language learning students.

Explaining

Instead of knowledge reproduction (recitation of information), students should be able to explain what they know by providing comprehensive and reasonable descriptions of factual information, phenomena, procedures, and data. For example, upon completion of a project involving the evaluation of the school’s emergency evacuation plan, students in a Firefighting Academy are required to explain their findings and justify their recommendations to a panel including representatives of the police and fire departments.

Reasoning

Students should demonstrate the capacity to sort out different points of view, integrate critical points, and identify common threads supporting justifiable conclusions. Consider the following example in which students have to analyze how a system works and evaluate its operation:

The student troubleshoots problems in the operation of a system in need of repair or devises and tests ways of improving the effectiveness of a system in operation; that

![Interface of Cummins’ Quadrants with type of content and learning setting](image)
is, the student [may]: troubleshoot and repair faults in the operation of an automobile, tractor, or computer based communication system. (National Center on Education and the Economy, 1997: 108)

Interpreting
Students should be able to interpret and communicate their own representation of information emerging from learning activities in ways that are both accurate and easy to understand. For example, students participating in an Agricultural Sciences Magnet School are routinely engaged in the interpretation and analysis of data, and presenting resulting information to others. In one instance, students interpret data from soil samples, determine appropriate fertilization formulas, and present their report to the farmers who submitted the soil samples. In another example, students in a marketing and finance program interpret data on stock movement and market trends, and prepare a proposal customized to the needs of a client.

Applying
Students should demonstrate the ability to use what they know and can do when confronted to problem situations found in occupational contexts of interest and extrapolating knowledge and skills to other situations if feasible. Here is an example in which students apply technical and academic concepts:

Students in agriculture and mathematics classes at Hoke County High School in Raeford, North Carolina, calculate the number of six-foot-square propagation boxes needed to root 1,000 plants placed two inches apart with an anticipated survival rate of 80 percent. In building the boxes and rooting the plants, the students [apply and] help each other with academic and vocational concepts. (Bottoms & Sharpe, 1996: 3)

Adjusting
Students should demonstrate the ability to consider other points of view or ways of doing things and draw from own prior experience if necessary to constructively adapt knowledge and skills to new situations. For example, students in CTE programs are afforded opportunities to interact with other students and adults in work settings, evaluate their roles and ways of doing things to determine underlying demands for specific knowledge, skills, and attitudes. As students move between school and work settings they have to adjust to shifting demands and expected roles.

Shaping
Students should be able to demonstrate that they recognize the limitations and opportunities shaping their understandings, technical skills, and language proficiency. For example, in CTE programs student self-assessment strategies are integral to the underlying approach to performance evaluation of competence. Through project- and problem-based activities students constantly demonstrate what they know and can do. In the process, students may observe or get feedback from peers, the instructor, and/or worksite mentors. To further shape their competence and communication skills, students can participate in job shadowing experiences, internships, and a variety of activities organized by trade clubs (e.g. design competitions).
The common denominator of the general criteria for performance is the setting of high expectations for all students, ELLs included. Reports from the Southern Regional Education Board’s Middle Schools and High Schools That Work programs indicate positive results when the emphasis of teaching and learning is on understanding through challenging performance tasks in the context of contemporary workplace practices (see, for example, Bottoms & Sharpe, 1996). This type of emphasis and nature of expected performance criteria require the selection of appropriate instructional strategies and tools for teaching ELLs in classroom settings.
Once you have decided what students should be able to know and do, you are ready to select the appropriate teaching tools and strategies for the target content and performance criteria. As indicated in Part 2 of the book and elsewhere, there are instances when it is perfectly appropriate to teach directly in the form of a lecture when the nature of the content involves background information, facts, or procedures. However, this form of direct instruction may not work well with English language learners as they become passive recipients of information. At the other end of the spectrum of instructional choices are interactive instructional strategies that allow students to clarify, question, apply, and process new knowledge. These latter strategies are aligned with what we know works best with ELLs.

Whether we like it or not, direct teaching strategies are widely used in the classroom and in the technical laboratory in the form of teacher-centered activities. These instructional strategies are useful for providing background information on a topic of interest or for describing step-by-step procedures or skills. The choice for the teacher is either to follow traditional teacher-centered forms of such strategies or to shift to more interactive modes that may work better for teaching ELLs.

In this chapter we highlight ways in which teachers can transform classroom instruction into interactive activities across the various program designs in CTE, and how to use them following a modified approach to make them work for ELLs. The interactive instructional strategies featured here are grounded in contextual teaching and learning principles, research on English language development, and the framework outlined in this book. We follow with descriptions and examples of selected complementary strategies that have worked well for ELLs.
Using Interactive Instructional Strategies in the Classroom

Making Classroom Instruction Work for English Language Learners

In traditional classroom instruction, the teacher introduces a new topic by doing all the talking following a lecture-type presentation. New ideas are introduced in narrative form, scripted on the board, and further carried out with the aid of overheads, PowerPoint presentations, or other visuals depending upon the nature of the topic. What defines traditional classroom instruction is the linearity of its approach and its teacher-centered focus whereby students play the role of passive recipients of information. The underlying behavioral conditioning is for students to “sit down, listen, and learn.” Under these conditions, ELLs may not have the best opportunities for identifying clues to staying engaged and follow the thread of ideas. What can we do differently to make the presentation of new material work for ELLs in classroom-type learning environments? Let us take a look at the promising premises of interactive instructional strategies and ways to use them in CTE programs.

Integrating Interactive Strategies into Classroom Instruction

The purpose of an effective presentation of new material is to provide a logical introduction to students following an instructional plan that includes verbal, visual, and writing components. In classroom settings, CTE teachers introduce new ideas to set the context for a new unit, to establish the occupational relevance of new concepts, or to help students make interdisciplinary connections. The central idea is to simplify new material into manageable bits of information, definitions, procedures, or facts that students can connect in the context of an occupation. The goal of the teacher is to make the new ideas accessible and meaningful for all students through appropriate arrangement of teaching activities (Bottoms & Sharpe, 1996).

Turning traditional lectures into effective interactive instruction requires teachers to create opportunities for student participation and allow them to “work” with the new ideas or concept connections. To this end, interactive classroom instruction should provide opportunities for students to participate in individual, paired, or small-group instructional activities depending upon the nature of the target content and objectives. As students participate in such activities, the teacher is in a position to monitor whether students are on their way to achieving performance criteria and to clarify students’ understandings as needed (Hake, 1998). Interactive instructional activities also allow for student engagement in reflective thinking as opposed to mere recall of information, and create many opportunities for eliciting BICS and CALP.

In a typical lecture format—during or upon completing a logical presentation of new material—the teacher may ask students rhetorical questions and/or may query selected students to check if they are “getting the picture.” In an interactive instructional format, the teacher may actually require all students or small groups of students to discuss a question and then share what they think with the class (Johnson, Johnson, & Smith, 1991). These student interactions are intended to promote higher engagement and understanding in ELLs. In short, the key ideas of interactive classroom instructional strategies are for teachers to:

1. facilitate student understanding by placing new ideas, background information, procedures, and facts in a context they can relate to;
2. provide students with opportunities to think about occupational relevance, connections to prior knowledge, and/or connections to other contributing concepts; and
3. create structures for the development of communication skills for all students.
These three conditions are known to facilitate the success of ELLs in traditional classrooms and should work in CTE programs, where the richness and coherence of contextual teaching and learning are stronger.

**Following a Basic Approach to Interactive Classroom Instructional Strategies**

Considering the three conditions identified above, the basic approach to making the presentation of new material interesting and interactive requires the active involvement of students in some type of reflective activity. Rather than telling students, the teacher gets students to reflect on questions, evaluate visual materials, and/or work on problems individually or in small groups. Obviously, interactive activities are time-consuming and, given the pressure for content coverage, it is important to remember here to target the essential big ideas underlying the core content as the focus of interactive teaching strategies (Wiggins & McTighe, 2005). See Chapter 3.1 for a review of related ideas on selecting essential core content emerging from research on teaching for understanding.

The basic instructional events of interactive classroom instruction are designed to meet the conditions highlighted above and include establishing contextual relevance, having students “work” with the new material, and promoting communication of understanding. The way to organize interactive instructional activities and the extent to which you can make them work will depend on your level of comfort with specific instructional skills, the nature of the target content, the size of the overall class, the number of ELLs in the class, the duration of the class period, and available teaching resources (Zehler, 1994). Based on the corresponding Cummins Quadrant for the type of target content, teachers can identify the combination of context and cognitive demands. With this starting point, teachers are then in a position to select and articulate the right type of questions for ELLs, be able to facilitate and manage questions-and-answers interactions, and evaluate student responses on the spot to make them flow into the planned interactive activities.

Essentially, the choices are when and how to present new information and ideas using instructional activities led by the teacher or featuring some form of student participation. Again, depending upon the nature of the target content, the number of ELLs in the class, the perceived level of language proficiency, and other factors, the goal for the teacher should be to establish a classroom climate in which ELLs are expected to participate actively in one way or another, building on and further promoting BICS and CALP (Lopez-Valadez, 1989; Zehler, 1994). What follows is a suggested structure for the integration of direct instruction and interactive activities that can be used consistently in CTE program context.

**Establishing Contextual Relevance**

Getting the initial attention of students is critical to interactive presentations, especially when the target topics are considered to be challenging. Factoring in the relatively short span of student attention and the language limitations of ELLs, this instructional component needs to be well planned. One way to gain initial attention is to ask a relevant question to set the context for student contributions. Better yet, use images, graphs, or other visuals to help students react to something and begin to think about what they know about the ideas conveyed by the visual aids. If you use this activity on a consistent basis, students will develop gradual readiness and will come to expect participation that is appropriate to their level of language proficiency (Zehler, 1994; Bottoms & Sharpe, 1996).
Introducing and Connecting New Content

Once the relevance of the topic is established, the teacher may provide an overview of the new material and how it is connected to what students already know and what they need to learn next. This overview often works best when it is short yet concise and sticks to key points tied to lesson objectives. In essence, the teacher is creating here an opportunity for students to connect and build upon prior knowledge and providing an advanced organizer of new ideas so that students can see the “big picture.” This teacher overview can be further facilitated with the aid of handouts, notations on the board, slide presentations, or other means involving written or visual materials. When students are able to follow and visualize explanations, they are more likely to understand the flow and nature of ideas (Borich, 2000). The type of materials supporting teacher overviews will depend upon the nature of the occupational context.

Facilitating Opportunities for Active Learning

Depending upon nature of content, instructional skills, time, resources, and other factors, some teachers may choose to facilitate opportunities for active learning at the end of the content overview. Whenever possible, it is preferred to embed interactive learning activities throughout the overview of new material to address specific ideas after they are presented to enhance relevance and understanding of discrete ideas. For class periods, short bursts of interactive activities should be chosen carefully to fit the flow of instruction and desired scope of coverage under the time limits. The goal is to give students something meaningful to think about to facilitate their understanding of new ideas and help them establish connections to other concepts. To create consistent expectations in the class and play down student anxiety for participation, it is recommended that the teacher focuses on the use of one or two interactive strategies. As both teachers and students get more comfortable with such activities, other interactive strategies may be gradually introduced (Johnson et al., 1991; Zehler, 1994).

Reviewing Student Understanding

During the class, teachers can use student responses and contributions to interactive activities to determine their level of understanding. At this time, the teachers can provide feedback, clarify misunderstanding, and help students establish concept connections. This is when background knowledge of ELL students in the class and a basic understanding of the Cummins Quadrants should be useful. Such background knowledge allows teachers to identify and select appropriate questioning techniques to probe students during interactive activities and when wrapping up the class. Further, at the end of a class, an interactive activity should be devoted to summarizing the new material and to reviewing student understanding as a form of reinforcement. Depending on time, the closing summary can be conducted by the teacher or students.

Example

In an automotive service technician program, an automotive mechanics teacher normally conducts a lecture on Environmental Protection Administration (EPA) regulations and refrigerant containment procedures. The teacher uses a PowerPoint presentation to describe the importance of the regulations and the nature of the

continued overleaf
Introducing and Connecting New Content
At the end of the previous class, the teacher hands out an article on the importance of EPA regulations and the need to recover and recycle refrigerants. The next class starts with a five-minute interactive activity during which students are paired with the purpose of discussing and summarizing—based on their assigned reading for the class—their answer to the question: “What would happen if car refrigerants were not recovered and recycled?” As this is a common procedure, students know what to expect and are ready to participate. In this case, the teacher makes sure to pair up ELL students with native speakers to ensure motivation and engagement. This is an opportunity for ELL students to think about the context of the new material and related ideas and pick up clues for further reference during the class. To make sure that students stay on task, the teacher may provide index cards to students and assign extra points for handing them in on time. Next, the teacher selects two or three cards at random and asks the authors to share their answers for another five minutes.

Facilitating Opportunities for Active Learning
The teacher moves on to summarizing common threads from given answers in the initial activity and uses resulting insights to transition into an overview of EPA regulations and refrigerant containment procedures. With the aid of visuals, the teacher first reviews related EPA regulations for about 10–12 minutes. Then, she pairs up students again and asks half of them to discuss and summarize their thoughts on liability issues for employers and employees if EPA regulations are not followed. The other half are asked to address the ecological implications of non-compliance. The purpose is to determine whether the students understand the underlying ideas and can explain the legal implications stemming from non-compliance. The instructor repeats the same process for the same interactive activity conducted initially for about 10 minutes. At least one pair in each group is asked to share their response to their question. The teacher takes this opportunity to evaluate responses, clarify ideas and understandings, and decides whether to move on to another topic or spend time reviewing ideas that appear unclear to students. When satisfied, the teacher moves on to the topic of refrigerant containment, recycling, and reclamation.

In the next segment, the teacher provides an overview of relevant concepts and terminology, and illustrates the process of refrigerant containment, recycling, and reclamation using pictures and other visual aids to set the context for an actual demonstration later on in the technical laboratory. This overview concludes with the teacher posing a concept-test question to students. She shows pictures illustrating different steps in the process and asks students to determine what is happening at regulations for refrigerant containment. At the end she addresses any questions and distributes a handout for students to review later on. The rest of the class is devoted to practicing the process for recovering refrigerant according to EPA regulations. However, this type of instruction, the teacher noticed, was not working well with her ELLs. Here is a suggested process to make the teacher’s class more interactive and engaging for all students, ELLs included.
that time. She probes for further explanations or definitions when students respond to ensure that ideas are clear for everyone.

**Reviewing Student Understanding**
During the last 10–15 minutes of the class, the teacher spends some time reviewing key ideas, terminology, and procedures addressed in class. She asks students to pair up again and summarize what they think were the key points of the topic addressed in class. When students hand in their index cards with their responses, the teacher selects two or three pairs and asks them to share their summary. Throughout the presentation, the teacher should develop a good idea of whether ELL students understand underlying ideas, terminology, and related procedures. Finally, the teacher reviews the common points and saves the index cards for the next class to be used as a reminder of what students already know.

**Adapting Interactive Strategies to Your Needs**
The example above can—of course—be adapted to fit specific needs. If the teacher is collaborating with other teachers in an integrated curriculum, the CTE teacher can then narrow the target content to actual EPA regulations, and the application to refrigerant containment. Other CTE teachers may prefer to conduct a longer activity through a research project in which the students are required to research and report the importance of EPA regulations and the process for refrigerant containment, recycling, and reclamation as a prerequisite for a demonstration of related procedures in the technical laboratory.

Likewise, teachers can use a variety of approaches to establish a relevant context for students at the onset of the interactive presentation, to facilitate student activities, and to elicit feedback and communication skills. Let us take a look at alternative interactive strategies that can be adapted to fit individual instructional needs.

**Using Visuals and Other Materials**
Visual and physical representations of ideas help students reflect and establish cues for later recall of information. Visual representations are particularly helpful for ELLs as a complement to teacher explanations. Using a variety of visual means contributes to student understanding. Here are some suggestions.

*Use Variations of Visual Representations*
Student understanding is further reinforced when they are able to see visual representations of target ideas and information. Teachers can use digital pictures and show them on a screen or as part of a slide presentation; posters with and without labels representing parts of interest; maps, drawings, charts, and so forth. The goal is to use a visual representation that clearly complements and helps explain ideas, background information, facts, or procedures of interest.

*Use Graphic Organizers*
Diagrams, charts, timelines, and concept maps can be used to facilitate the organization of information during an interactive presentation. The graphic nature of these pictorials can also be used
to elicit student reflection through peer learning activities. A chart or diagram may be used in lieu of a picture and students may be asked to react and summarize their thoughts on the graphic information. For reviewing purposes, graphic organizers can also be helpful (e.g. timelines, concept maps) to summarize major points on a given class. Concept maps, for instance, are graphic representations that help students organize information in logical ways and promote understanding of patterns and recall of related information. For example, students in a business and finance program learn how to organize their research findings by creating a graphic organizer of their own to graphically compare at least five credit cards offering “low” interest rates including the following basic information: credit card type, issuing bank, introductory annual percentage rate (APR), length of introductory APR, and annual fee. Using the graphic organizer, students are then required to determine which card makes the most financial sense. A sample of resources featuring the use of graphic organizers is presented below.

- **Schools of California Online Resources for Education (SCORE).** SCORE provides a great collection of examples appropriate for incorporation of graphic organizer strategies in lesson plans. Some examples include chain of events, fishbone diagrams, Venn diagrams, and other graphic organizers that can be used with ELLs. These free resources are available online at: www.sdcoe.k12.ca.us/SCORE/actbank/organiz.htm.

- **Graphic.Org.** This organization maintains a portal dedicated to graphic organizers and concept mapping for instructional purposes. Resources can be downloaded for free at: www.graphic.org/.

**Use Real Objects (Realia)**

The use of manipulatives provides even better representation of target concepts as students get to “work” with physical models serving as the vehicles for learning. For example, high school students in an applied mathematics class may work on an activity designed to help students understand and evaluate the strength of shapes and structural designs to be used for building a prototype of a pet shelter. Working in teams, students may work with a variety of empty household items including Styrofoam cups, empty milk cartons, cylinders from paper towels, aluminum drinks cans, and cereal boxes to run compression tests using a compressing device (Hernández-Gantes, Burrill, & Brendefur, 1998). In CTE programs, manipulatives often represent the real target of study, such as a tool, instrument, or a piece of equipment that can be shown in the classroom or used in the technical laboratory. For example, in an electronics class, students may work on an activity requiring the measurement of sound dispersion. To this end, the students would measure the sound pressure around a speaker cabinet using an audio level meter, and record and plot data on polar coordinate paper (Hernández-Gantes et al., 1998). In health occupations, for instance, cast models showing anatomic features and organs can be used in interactive activities. In general, the rich contexts of occupational programs provide many opportunities for using real objects in the classroom and actual technical equipment in the technical laboratories.

**Using Questioning Strategies and Advance Organizers**

The timely use of questions for instructional purposes can help students establish connections to prior knowledge and facilitate reflection on topics of interest. Questioning techniques can also be used to facilitate the organization and retention of information and to determine the level of student understanding. Throughout an interactive presentation, the use of questions provides structures for organizing instructional events. A complementary strategy is the use of advance
organizers to help students reinforce the connection to prior learning (this is what we already know) and signal the connection to new knowledge (this is what we are going to learn). Advance organizers are valuable planning tools and assist in sorting out essential target content for both students and instructors. Here are some examples of questioning techniques and advanced organizers.

Probing Questions

Questioning techniques include factual questions rooted on the “what,” “where,” “when,” and “how” aspects of topics of interest. In CTE programs, this type of questioning is sometimes useful when the teachers are addressing procedures, regulations, and background information. In other cases, analytical (“why”) and conditional questions (“what if”) can elicit critical student reflection. Review the Cummins Quadrants when planning instruction to identify the appropriate type of questions corresponding to the prevalent language proficiency of ELLs. For example, a “start-up question” can be used in class as a strategy to set the context for the new material. A question is developed and used to start a class reflecting on the new ideas. Either individually or in small groups, students are expected to discuss the questions, summarize their responses, and turn in their work. The start-up question should get at the core of the essential content targeted for the day. The start-up question can be stated verbally by the teacher or posted on the board. Another variation can include the use of appropriate visual representations (e.g. pictures, charts) and the question would be for students to reflect on the significance of what the graphic representation attempts to convey. Here is a sample of resources featuring questioning strategies:

- **Questioning Techniques for Active Learning.** This online resource provides general tips for using questioning techniques supporting active learning. The internet address is: www.cdtl.nus.edu.sg/ideas/iot2.htm.
- **Questioning Toolkit.** This is a free online resource maintained by the From Now On Organization. It is a comprehensive repository of questioning techniques appropriate for use with high school students for a variety of purposes. The internet address is: www.fno.org/nov97/toolkit.html.
- **Question of the Day.** This is a strategy that works well for classroom instruction with undergraduate students and can be easily adapted for use with high school students. It can be used at the beginning of a class and takes 5–15 minutes to complete. It requires the students to start class as active participants and involves them in the material. Additional information and examples are available at: http://serc.carleton.edu/introgeo/interactive/qotd.html.

Advance Organizers

An advance organizer is essentially a way to help teachers and students map the connections between prior and new knowledge. The visual representation provides an ideal complement to questioning techniques. To this end, advance organizers help sort out the essential target content through a variety of strategies. For example, “know, want to know, learn” (KWL) charts, developed by Ogle (1986), facilitate the activation of prior knowledge by asking students to write down what they know, set goals specifying what they want to learn, and summarize what they learned at the end of the class. Concept mapping is another strategy serving as an advance organizer. There are many variations of concept maps though they all share the same purpose of facilitating the understanding and related connections visually.
Using Peer Learning Strategies

These strategies represent forms of cooperative learning involving student interactions including discussion, sharing of ideas, and collaboration in teams. Some of the most popular strategies include buzz groups, affinity groups, think-pair-share, and summary activities. In buzz groups, students are divided into smaller groups of four or five and are asked to address an issue of interest. After a given period of time, a representative of each group shares the results with the whole class. In the affinity group, similar groups are required to research a question as an assignment to be reported on in a later class. In summary activities, students are asked to answer short questions at the end of a curriculum unit. Students are expected to work individually and compare notes with others when done. Students then discuss and justify their answers in a whole-class format. In the think-pair-share strategy, students are provided with questions on a topic of interest, are expected to work in pairs, and share the result of their work with the whole class. In CTE, for example:

Group discussion, students listening to one another’s ideas, completing various projects and research are an important part of a Business Professionals Of America Team Events. Through Administrative Support Team, Economic Research Project Team, Financial Analyst Team, Global Marketing Team, Network Design Team, Parliamentary Procedure Team, Presentation Management Team, Small Business Management Team, Software Engineering Team and Web Site Development Team students gain valuable skills in small-group problem-solving techniques and show solid achievement gains by working together to produce documents and products. This collaborative work allows learners to receive more extensive feedback from fellow students and business people than they can through one teacher. (Minnesota Department of Education, 2004: 10)

Feedback Strategies

One of the benefits of interactive instructional activities is the generation of opportunities to monitor and assess student understanding. This is particularly important for ELLs, whose language proficiency may be at different levels. For teachers, it is helpful to know the extent to which ELLs understand the process of the instructional tasks and the actual content knowledge. In addition, in some cases, the apparent lack of student understanding may stem from cultural behaviors preventing students from more expressive participation. When teaching ELLs, this is an instance when overall knowledge of your students can make a difference to provide appropriate feedback. Here are some suggestions for planning, collecting, and providing feedback during the course of interactive instructional activities.

Managing Interactive Activities

Your knowledge of ELLs can make a difference in making interactive activities a positive experience for all students involved. If you did the preliminary work suggested in Chapter 3.1, you should be able to determine who and how many students can be characterized as having pre-production, early production, speech emergence, or advanced language proficiency. Keep this in mind when forming groups for peer learning purposes, to make sure ELLs are appropriately matched with other students depending on their level of language proficiency. Whereas students with intermediate and advanced fluency may do well in any peer grouping, students with limited proficiency may need to be grouped carefully. Students in other stages of development (pre- and early production, speech emergence) will need to be placed in groups including peers with native
or advanced fluency to benefit from such arrangements. Appropriate groupings should facilitate meaningful feedback during interactive activities.

**Asking Questions and Collecting Feedback**

Knowledge of the overall language proficiency of your ELLs will also contribute when asking questions, whether to facilitate activities or for collecting feedback. Again, if the majority of your students are at intermediate or advanced fluency, the choice of questions and probes can involve more complex forms of inquiry (e.g. What would happen if . . . ? Why do you think . . . ?). In turn, if you have students at other stages of language development, be sure to become familiar with appropriate types of questions as you try to gauge their understanding of the new material. In general, questions can be used to facilitate peer learning activities (e.g. think-pair-share) and the communication of what student got out of the class (e.g. writing summaries). The key is to use simple sentences and avoid parochial language that ELLs may not be able to decode. Likewise, when probing students directly, asking questions appropriate to their language proficiency will be critical for productive exchanges. See the Stages of Language Development and possible questioning techniques in Part 1, if needed.

**Providing Feedback**

During the course of interactive instructional activities there will be many opportunities to clarify students’ understanding and guide their learning. When teaching ELLs, feedback needs to include clarification of appropriate terminology and speech proficiency to help students build BICS and CALP. Keep in mind that limited English proficiency brings about problems with self-esteem, motivation to participate in open exchanges, and overall anxiety about being understood. Whereas some students may be more willing to openly participate in class and respond eagerly to direct teacher probes, others may exhibit more reserved cultural–personal behaviors. As noted elsewhere, “not all ELLs are the same,” and any knowledge about your students should be helpful for providing culturally sensitive feedback. Regardless of students’ backgrounds, make sure to consistently acknowledge and reward students’ efforts to participate and communicate in class.

**Example**

In CTE the opportunities for using alternative assessment strategies involving reflection and feedback abound as students work on projects or in teams, and are required to demonstrate what they know and can do both in writing and orally. For example:

Students in a food service preparation class create and operate a small restaurant within their own school. Throughout the experience, students keep a journal that identifies what is going well and what needs improvement in terms of self-performance, customer service, coworker relationships, job task completion, menu choices, and cost effectiveness. They also record questions they have along the way. At the end of the experience, through group discussion, they share experiences related to what they have learned and how it affects goals for the future. (Minnesota Department of Education, 2004: 9)
The use of journals provides an outlet for insights into the issues and challenges students face when involved in project work. In this context, the journals serve as an alternative assessment strategy for identifying specific problems with individual students, and allow the instructor to give better feedback along the way. This is a promising strategy that should work well with ELLs to record some of the problems they are encountering with understanding of concepts and/or communicating what they know or want from others in the class. The journal entries can be useful for the instructor in identifying when students may need assistance, including conceptual understandings, skills applications, and/or English language proficiency. For example, in journal entries submitted by a student:

The written work [journal] included with the project contains some errors, e.g. “parameters” is misspelled in the proposal; and the journal contains errors such as “allot” and “to” (instead of “too”) and errors in the spelling of “available,” “interview,” and “awesome.” (National Center on Education and the Economy, 1997: 108)

In this example, it is evident the CTE teacher had the opportunity to provide feedback on conceptual understandings and applications as well as on English usage. Given the nature of CTE instruction in classroom settings, where students participate in active learning and are required to demonstrate what they know and can do in authentic ways (e.g. designing a product, solving a problem, presenting written reports and oral presentations), the use of questioning techniques, advance organizers, and alternative assessment strategies represents a natural complement to classroom instruction. The relevance and potential benefits for teaching ELLs are promising as well.
The demonstration method has a longstanding tradition in CTE and it is widely used for teaching procedures and skills associated with the performance of authentic occupational tasks. For example, students may design and create a product, solve a problem, or troubleshoot a system. Quite often, however, demonstrations are found to be highly structured, teacher-centered, and heavily reliant on rote practice of skills and concepts, taking for granted prior learning and occupational acculturation. Under such conditions, students may be performing authentic tasks, but they may not necessarily fully understand the nature of concept connections contributing to the tasks. Under such conditions, ELLs, in particular, may be at a greater disadvantage if no provisions are made to boost their understanding of how the tasks should be performed and the ideas behind successful completion.

In this chapter we describe interactive demonstration strategies aligned with research on contextual teaching and learning and practices that work with ELLs. Following the framework proposed in this book, we provide examples with implications for instruction in the classroom and in the technical laboratory.

Making Demonstrations Work for English Language Learners

The demonstration method represents learning experiences allowing students to first observe and then perform instructional tasks designed to help them develop understanding of procedures, operational techniques, and skills. Related instruction typically involves a combination of explanations and the application of knowledge and skills to complete authentic tasks such as troubleshooting systems or handling specialized equipment and materials.

The traditional demonstration method has its roots in behavioral conditioning ideas using a combination of “show-and-tell” components followed by rote practice of desired behaviors until
acceptable performance is accomplished. The incipient apprenticeship system is a good example of this approach. Throughout the longstanding evolution of CTE, the demonstration method has been widely used. In many occupations focusing on work skills and competencies (e.g. health sciences, the traditional “trades,” and others), demonstration is the method of choice.

In a traditional demonstration, a series of discrete instructional segments are involved. First, the teacher shows how to perform the procedures of interest, step-by-step, by talking aloud and explaining along the way. Second, students are expected to develop operational skills by practicing the procedures of interest under the watchful eye of the instructor. Third, the instructor conducts an assessment to verify that students can actually perform the tasks as expected. Though the sequential linearity of events may work well for mainstream students fully acculturated to the occupational context and ways of doing things in the specialized community, ELLs may need more interactive components to garner clues along the way and understand what is being said (and demonstrated) and effectively follow the flow of the instructional components.

How can teachers design interactive demonstration experiences in school to blend experiential learning and practices that work with ELLs? One way to make demonstrations work well for ELLs is to incorporate instructional strategies emerging from situated learning, interactive learning, and English language development.

The Basis for Interactive Demonstration Strategies

The demonstration method has its roots in learning-by-doing and experiential learning advocated through a variety of perspectives in educational research. Piaget, for example, promoted the use of authentic instructional tasks involving clear and discrete operations and active manipulations of physical objects to help students understand and operate in the physical world around them. In Piaget’s view, experiencing and working with manipulatives is the catalyst for knowledge production and understanding of how things work (Harel & Papert, 1991). In turn, other researchers argued that learning in physical and social situations was not enough for knowledge production and advocated the need for problematic learning experiences to help students make sense of their learning. According to that perspective, “learning-by-doing” viewed designing, making, and operating real things as critical to understanding. These ideas were further shaped by the notion that full understanding and acculturation in a specialized community can occur only gradually when scaffolding and modeling opportunities are also in place (Roschelle, 1995).

More recently, situated learning further clarifies the important role of meaningful contexts as the bridge for enculturation into a specialized community (e.g. an occupation). Situated learning makes more explicit the cognitive relationships between the nature of learning experiences, mediating materials, and the cultural expectations of particular communities. That is, knowledge and skills are shared from expert to novice members to keep work or cultural practices alive (e.g. craftsmanship, apprenticeship). In situated learning, the connection to prior knowledge is implicit only in that certain basic competencies are needed to perform more complex tasks. Therefore, learning becomes “situated” in the hierarchy of the tasks and the context of occupational practices (Brown et al., 1989; Rogoff, 1990; Newmann & Wehlage, 1995).

The process of enculturation into an occupation can occur through direct participation, i.e. performing tasks expected of community members such as workers in a specific occupation. For example, this can occur in school settings where students can practice operations and handle equipment needed to perform authentic occupational tasks in the academic or technical laboratories. As students observe and practice related skills, performing procedures and operations across a coherent sequence of courses in a program, they gradually become inducted into the
ways of doing things in a particular occupational context. However, this arrangement represents what some researchers call an approximation to formal induction because whatever students do in school settings is still only a representation of what happens in the real world of work (Lave & Wenger, 1990).

The common thread of these perspectives on learning is the idea of “learning-by-doing” through interactions between the learner and mediators (e.g. materials, equipment) of learning in the context of authentic tasks. In CTE programs, the goal is to create interactive experiences that help students in their progressive development of knowledge and skills leading to full membership in a specialized occupational community. Depending upon the nature of the CTE program design, such participatory experiences need to be planned within the constraints of the curriculum structures, available time, and existing resources. In some program designs students can only observe and practice through broader representations of authentic tasks in the classroom, whereas in programs with access to laboratories the opportunity for greater approximation to authentic practice is enhanced. In turn, greater levels of interactivity and authenticity in the context of learning tasks provide better opportunities for the successful participation of ELLs in CTE programs and the transition to further education or work.

The Basics of Demonstration Strategies

In CTE programs, demonstrations are used to introduce concept applications and occupational skills through guided instruction in the classroom and in the technical laboratory. Depending upon the nature of the learning setting, demonstration strategies allow students to develop practical understanding of conceptual applications and skills through repeated practice and collaboration when feasible. Traditional demonstration strategies involve explicit combinations of explanations and practice of knowledge and skills on actual authentic tasks requiring troubleshooting and handling specialized equipment and materials. As such, the traditional demonstration method is mediated through explicit instruction designed to keep students focused on specific pieces of information (e.g. procedures, steps) in a very structured format. Here is an example of how the demonstration method is portrayed in training programs:

Use the demonstration or “doing” method to teach skills. Demonstrate, step-by-step, the procedures in a job task, using the exact physical procedures if possible. While demonstrating, explain the reason for and the significance of each step. To be effective, plan the demonstration so that you will be sure to show the steps in the proper sequence and to include all steps. (Integrated Publishing Archives Service, 2007: 17)

Since this instructional method is primarily used to teach specific procedures and skills, target content is organized into small and complementary essential components including background information (e.g. facts), underlying concepts, procedural operations, and skills needed for practicing procedures of interest. Performance-based objectives are used to set the criteria for acceptable performance. These objectives involve a description of desired and measurable outcomes, the conditions under which related skills or procedures are to be demonstrated, and the standards to decide if acceptable performance was accomplished (Bloom, 1956; Dynamic Flight, 2003). Each performance objective is then the object of direct instruction using a combination of verbal explanations, demonstration, student practice, and assessment of performance. As described in traditional technical programs preparing individuals for specific occupations, the demonstration method:
gives trainees the opportunity to see and hear the details related to the skill being taught. Those details include the necessary background knowledge, the steps or procedure, the nomenclature, and the safety precautions. The repetition step helps the average and slow learners and gives the trainees an additional opportunity to see and hear the skill being taught. The performance step gives all trainees the opportunity to become proficient. In short, this method is recommended because it leaves nothing to chance. (Integrated Publishing Archives Service, 2007: 18)

In a typical traditional demonstration, often referred to as performance demonstration, instruction is highly structured around the steps highlighted below.

**Introducing the Topic of Interest**

The teacher starts an instructional period with a brief explanation of the importance of the topic. How the objectives connect to what has been studied may be addressed at this time as well. This segment may be accomplished verbally or with the use of instructional aids such as handouts and/or slide presentations. Many CTE teachers treat this presentation step as a lecture component designed to summarize background ideas, concept connections, and relevance to actual practice in occupational context. Instructional materials are used at the discretion of the teacher in the tradition of a lecture depending upon individual preferences and instructional skills/comfort. For example, Dynamic Flight (2003) recommends introducing a lesson about aircraft weight and balance using a combination of instructional materials and props, combined with the use of chalkboard, marker boards, or slide shows.

**“Show-and-Tell” Component**

The teacher quickly moves to the next segment: actually demonstrating the procedures and skills of interest. In this segment, instruction is aimed at showing the standard operational procedures for performing a task to model for students how things should be done. As procedures are being modeled, the teacher explains aloud what he or she is doing for the benefit of the students so that they know what is going on and what to look for. The think-aloud method provides the needed verbal cues and helps guide students’ attention to what they should be considering when completing a specialized task (Fonteyn & Kuipers, 1993). The goal in this instructional step is for teachers to organize the demonstration in the “right” sequence and for students to observe the “correct” way of doing things and to account for safety measures (Dynamic Flight, 2003; Integrated Publishing Archives Service, 2007).

**“Hands-On” Practice Component**

After modeling performance, students are expected to participate in guided practice as a means to progressively develop independent performance. In the classroom, this component may rely on proxy materials for practice, whereas in the technical laboratory students often work with equipment and materials actually used in real-world operations of interest following safety measures. For example, after introducing the topic and conducting a demonstration on the use of a flight computer, the students may then proceed to practice using the flight computer to accomplish various tasks such as computing groundspeed, drift correction, or time en route. Corrective feedback from the instructor is usually provided to shape student practice (Dynamic Flight, 2003).
Evaluation of Performance

Finally, depending on time limitations, the teacher evaluates student performance of expected procedures and/or skills by observing student demonstrations to verify they have accomplished mastery. This is an integral component of the demonstration method. In programs in which skills and competencies need to be certified, the evaluation of performance must be recorded to vouch for the students’ competence based on the criteria and standards set for each performance objective.

In general, the goal of the method is to induct students into the work and culture of an occupation by shaping skills and the way individuals approach the completion of real-world tasks. Given the nature of this method, related strategies are often associated with “training” programs in the public and private sector, designed to teach specific procedures or skills.

For ELLs the traditional demonstration method may be problematic. First, the traditional demonstration is a highly structured, teacher-centered instructional process. Although the target content is organized and taught sequentially by the teacher in clearly identified segments (which is helpful for ELLs), the flow and pace is dictated entirely by the teacher’s plan for completing the demonstration. The sequence and flow of the traditional demonstration requires full attention and observation of instructional steps and events assuming that all students understand and follow what is being said and demonstrated. Second, when conducting the demonstration, the teacher is required to provide a verbal explanation to draw the students’ attention to any important points and considerations for successful completion of the procedures and skills as they are being shown. For ELLs, the concurrent need to observe how tasks are accomplished while processing verbal information may lead to faulty understandings. ELLs with lower levels of language proficiency, in particular, may struggle to process and understand what is being said while following the sequence of steps and procedures at the same time.

Interactive Demonstration Strategies: A Viable Alternative for English Language Learners

As noted in Part 1 of this book, ELLs benefit from teaching and learning strategies featuring meaningful contexts in which they can obtain cues for understanding, and opportunities to engage in interactive activities to improve interpersonal and academic communication skills. The question is “How can teachers turn traditional demonstration strategies into interactive activities to ensure the successful participation of ELLs?” The lessons learned from situated learning and language development point to three major considerations for designing interactive activities appropriate for ELLs: recognizing ELLs differences, focusing on deep understandings, and emphasizing student interactions.

Recognize English Language Learners’ Differences

As obvious as it may seem, this consideration is often overlooked. Aside from the fact that not all ELLs are the same in terms of ethnic backgrounds, they may represent different stages of language development and, most likely, different levels of prior knowledge. In this case, teachers should attempt to build upon what students know and can do to make learning experiences relevant and meaningful for them.

There is ample evidence suggesting that ELLs are most likely to succeed in school when instructional strategies take into consideration the students’ prior knowledge and experiences.
Standard instruction designed for mainstream students may not provide the conditions for promoting engagement and success in school (see Part 1 of this book for further insights on this issue). Teachers must make an effort to learn about their students as a prerequisite for designing appropriate instructional activities for ELLs (Reid & Railsback, 2003). See Chapter 3.1 for suggested activities to learn more about your students.

When recognizing the special needs of ELLs, teachers have to make instructional adjustments when using demonstration strategies to make them more effective for ELLs. This requires making a shift to more interactive strategies, drawing from practices that work with ELLs.

Focus on Deep Understandings

Providing opportunities for students to refine what they know and what they need to know is an important component of effective interactive strategies. In this regard it is important to recognize that it takes time for students to process and develop deep understandings that qualify as real learning (as opposed to mere recall of information). For ELLs, this realization is even more relevant as they are trying to negotiate both learning of a second language and new technical knowledge. To promote deep understandings, short and interactive activities should be designed with ELL needs in mind (e.g. facilitated with appropriate language, questions) and clearly signaling how what is being taught fits in the course and in the program.

Emerging from the study of cognitive apprenticeship, we have learned that deep understandings are best facilitated when content is organized around a few core concepts ("chunks of knowledge") representing the “big picture” of a target body of knowledge (e.g. a curriculum unit). For teachers, the challenge is to organize demonstrations into discrete segments representing key ideas or procedures needed for the completion of an authentic task. A demonstration involving too many steps or procedures may cause ELLs to miss cues and lag behind in understanding the flow of instruction. Although demonstration strategies are ideal for incorporating the concept of instructional “chunking,” the key lies in providing complementary and appropriate support for understanding beyond rote recall and reproduction of performance (Bransford, Brown, & Cocking, 2000).

The concept of “chunking” target knowledge has evolved from the study of how experts organize information to learn patterns and for easy recall of information. We have known for a long time that the capacity to process and recall information is rather limited and the way to enhance such capacity is to chunk information into manageable patterns (e.g. Simon, 1980; Brown, Collins, & Duguid, 1989). In the case of ELLs, providing learning experiences that allow them to identify patterns of information is even more critical as the meaning of embedded cues becomes more obvious. Drawing from instructional design principles on teaching for understanding, it is suggested that teachers focus on essential big ideas first (primary chunks of information) to facilitate learning for all students (Wiggins & McTighe, 2005). This strategy should be helpful in selecting what to demonstrate within a course or a program, and for designing, organizing, and conducting individual demonstrations.

Maximize Student Interactions

In teacher-centered activities, in which students play the role of passive recipients of information, students have few opportunities to interact and contribute to collective discourse. For ELLs, especially those with lower language proficiency, this instructional climate may lead to disengagement and lack of motivation as they struggle to follow what is being said and the logic of instructional activities. This type of instructional climate only preserves stereotypical perceptions of ELLs and misunderstandings about their capacity to learn.
Findings from cognitive science suggest that much of what we learn depends on social interactions with peers and with the instructor. Although some specialized content (e.g., technical procedures) can stand on its own as discrete pieces of knowledge that can be taught through explicit means, complementary details that add meaning and shape contextual applications are often constructed through interactive discourse. Research findings clearly indicate that students reach higher levels of understanding when teacher explanations are combined with participatory instructional strategies. For example, Sokolof and Thornton (1997) reported strong evidence of improved learning and retention of fundamental concepts by students who participated in classes taught using interactive demonstrations compared with students taught using traditional lectures. Interactive strategies showed that students were more likely to stay engaged in learning tasks as they actively participated in reflective activities.

In interactive demonstrations, the modeling and practice components provide students with unique opportunities to engage all senses and learning styles as participants observe, manipulate equipment and materials, and communicate what they are doing and finding. This is clearly aligned with research on practices that work with ELLs, including the incorporation of non-verbal cues such as demonstrations and the use of visuals and real objects. As the level of language proficiency increases, the use of graphic organizers, actual hands-on skills application, and peer learning becomes more effective (Reid & Railsback, 2003).

Ultimately, learning that is contextualized and anchored within the culture of a specialized community is most likely to be deep and transferable to other contexts. In the case of ELLs, given their language limitations, the potential benefits of interactive activities are even greater considering the bonus implications for interpersonal and academic communication skills.

Using Interactive Demonstration Strategies

Interactive demonstrations can be used for teaching concept applications and the development of practical skills in occupational contexts, including the operation of specialized equipment, reading architectural blueprints, welding, troubleshooting electrical systems, producing video programs, and so forth. The interactive demonstration method can be conducted emphasizing complementary components, including getting students’ attention, conducting the demonstration, facilitating student practice, and monitoring and evaluating performance. Planning considerations require instructional decisions on the following:

- Targeting content appropriate for teaching through demonstration strategies. Is the demonstration about procedures, skills, concept applications? The rule of thumb is to select essential content and to determine the appropriate learning setting (see Chapters 2.3 and 3.1 for a review of related issues).
- Adjusting the sequence and duration of the demonstration components. In some instances, it may be possible to carry out the demonstrations during a class period, whereas in other instances longer activities requiring preliminary and follow-up tasks may be needed.
- Considering the level of English language proficiency exhibited by ELLs in the class. What type of questions will be appropriate to facilitate interactive activities and guide ELLs through the demonstration process? Basic knowledge of English language development and the Cummins Quadrants should pay off for this purpose (see Part 1 in this book).
- Selecting appropriate interactive strategies that work with ELLs to build upon their prior knowledge and level of language proficiency. When teaching operational procedures and related skills involving student practice, scaffolding strategies and independent learning are particularly useful to help ELLs perform as expected (Platt, 1996).
Getting the Students' Attention

To gain the student’s attention and set the stage for the relevance of the new material, consider the following question: How can you help students with varying levels of English language proficiency understand the importance of the topic at hand, the relevance to prior material, and their overall learning? Depending upon the nature of the content, this instructional component may be conducted following the ideas and suggestions provided in Chapter 3.2 either as a preliminary activity (completed in a previous session) or as part of the planned demonstration for the day.

Start-Up Question

If the demonstration is building upon a preliminary class, make sure to include a “refresher” activity to establish the connection to the previous class when the context and relevance of the new materials was established. For example, the teacher may use a start-up question to bridge that connection. At the end of the previous class, a question should have been given to students as homework for the next class involving the demonstration component. The start-up question should also work when introducing the new material in a self-contained demonstration session. The goal is to organize verbal interactions following a question–response–feedback pattern triggered by the start-up question. When the teacher paraphrases responses, ELL students get verbal clues and the opportunities to craft responses with the help of the teacher and peers. See Part 1, Stages of Language Development section, for possible questioning techniques appropriate to students’ level of language proficiency, and Chapter 3.2 for additional suggestions on using questioning strategies.

Use Visual Representations

If conducted as part of a demonstration in a classroom setting with no access to real materials, visual representations may be used to illustrate the benefits or consequences of outcomes associated with target content. For example, in a demonstration on troubleshooting and brake maintenance in an automotive technician program, the teacher can begin with a picture of worn-out brake pads (Figure 3.3) to elicit student commentary. First, ask students to identify the parts (What is it?) and connect to prior knowledge (Have you seen brake pads before?). Next, ask students to share

FIGURE 3.3. Worn-out brake pads from a 1995 Ford F150 pick-up truck.
what they think about the condition of the brake pads. Then, ask students what would happen if worn-out brake pads were not spotted or incorrectly replaced. Conclude by summarizing the importance of proper diagnosis and maintenance of braking systems, the connection to prior material, and the need for learning related operational procedures and skills.

**Use Real Objects**

If a picture is worth a thousand words, seeing the real thing is even better. If the demonstration in the example above is conducted in a technical laboratory for automotive technology and maintenance, then it is obviously best to have various samples of brake pads available to show students following the questioning suggested for visual representations above. As students touch and see the actual condition of the brake pads, the questions should become even more meaningful for students in the process of gaining their initial attention and as a means for establishing relevance for the new material.

**Conducting the Demonstration**

Interactive demonstrations build upon process-oriented activities and the concept of content “chunking” as the basis for organizing new materials into discrete tasks better suited for engaging students, ELLs included. Clearly defined situational tasks also provide ideal opportunities for engaging students in the type of interactions expected in a specialized community (i.e. the workplace) (Long & Crooks, 1992).

**Identifying Target Content: What is the Demonstration About?**

The target content must be broken down into specific elements involving conceptual, procedural, and applied skills in the context of interest. Let us review the possibilities:

**Technical Content**

What are the core and essential complementary technical concepts and terminology associated with them? Examples of technical content may include the efficient use of spreadsheets (computer technology), writing business letters (business and marketing), double-entry accounting systems (finance), using computer-aided drafting technology (manufacturing technology), and so forth. In turn, examples of complementary content may include operational procedures associated with the core content such as locating, filtering, and diagnosing, to mention just some. Of critical importance when teaching ELLs are the identification of companion terminology for concepts, procedures, and equipment, and tools to bridge language and cognitive development in the instructional process.

**Transferable Skills**

What specific skills need to be emphasized in the demonstration at hand? To be sure, there will be some operational skills specific to the target tasks, as in the example on brake pads. For this type of skill, students should have the opportunity to clearly observe and practice using scaffolding strategies (Donato, 1994). In addition, there should be some transferable skills often used across various tasks involving reading and interpreting data from instruments (e.g. gauges, computer print-outs, graphs) and operational manuals. Technical conversations with teachers and peers
when diagnosing or troubleshooting technical problems may represent another form of transferable skills.

Reasoning and Problem-Solving Abilities

A key difference between traditional and interactive demonstration is the overt emphasis on higher-order thinking skills. Whereas in some traditional demonstrations the focus may be on rote application of skills, interactive demonstrations should provide students with opportunities for troubleshooting to help students develop reasoning and problem-solving skills. Related opportunities may include data collection and interpretation (see Transferable Skills above) and the organization, synthesis, and analysis of data as a means for diagnostic activities leading to the identification and communication of potential solutions to problems (Platt, 1996).

Communication Skills

In addition to basic interpersonal communication skills needed for functional participation in an occupational context, what are the key concepts and complementary terminology students should be able to know and perform? Examples of related communication skills involve providing and following instructions, asking and responding to questions simulating interactions with clients or potential co-workers, and being able to describe materials and equipment. Further, the teacher should plan for students to develop the ability to describe related processes, operational procedures, and outcomes of their work.

With the target content clearly identified and “chunked,” the demonstration component may be then conducted based on individual preference and comfort with interactive instructional strategies.

Interactive “Show-and-Tell”: How Are You Going to Organize the Demonstration?

Plan a sequence of instructional tasks representing the main procedures and skills students should be able to know and do. The goal of this type of demonstration is to demonstrate the basic and correct approach for completing a task. This is particularly important when performance is to be certified for occupational purposes. However, unlike traditional strategies, in which the teachers provide a concurrent explanation following a think-aloud strategy to indicate what is going on and the rationale of each procedure, the interactive demonstration should involve questioning techniques as well. The following are possible questions appropriate for the different stages of language development.

Preproduction

For students at this level of proficiency, teachers should ask simple questions and use frequent repetition aided by gestures (e.g. pointing) to provide additional clues. The questions should require short and straight answers appropriate to the limited vocabulary typical of this level of proficiency. Here are some examples of possible root questions:

How many . . .?
Point to the . . .
Find the . . .
Can you name . . . ?
Is this a/an . . . ?
Where is the . . . ?

**Early Production**

Students at this level of proficiency may now have a richer vocabulary but basic interpersonal communication skills are still restricted to short responses. Teachers should continue to use repetition, role-playing, labeling, and gestures when interacting with ELLs at this level of proficiency. Examples of possible questioning strategies may include the following: yes/no questions, questions requiring listing main events, steps, or items, description questions (can you describe . . . ?), and comprehension questions (can you give me an example of . . . ?).

**Speech Emergence**

Students in this stage of language development can interact using short phrases and sentences drawing from an even richer vocabulary. Further, students at this level of proficiency may be able to make sense of information and draw their own conclusions when asked simple rhetorical questions. Possible questioning techniques may include asking for alternative examples (Do you know another instance of . . . ?) or further elaboration (Tell me about what happens when . . . ?) and analytical questions (What is the difference between . . . ?).

**Intermediate Fluency**

Students at this level of proficiency should exhibit near-native speaking fluency in basic communication skills. However, students may still show difficulty understanding abstract concepts. Students at this level can carry a conversation and are ready to engage in more descriptive and analytical exchanges. Possible questioning strategies may include questions requiring students to provide alternative explanations (What do you think would happen if . . . ?), support their reasoning (How do you justify . . . ?), and articulate evaluative responses (How effective are the . . . ?).

Using the appropriate prompts for students, the teacher may begin each instructional “chunk” by asking students for suggestions or predictions to elicit prior knowledge and allow for clarification of underlying concepts and understandings. For example, in a demonstration about how to operate a stethoscope and sphygmomanometer, the teacher may solicit students’ suggestions about how to proceed or ask students to justify their thinking, making sure to use appropriate question formats when calling on ELLs. Questioning strategies provide an opportunity for the teacher to clarify concept applications and understandings while demonstrating a couple of suggested procedures to see if they work. This strategy should keep students engaged and allow for interactions involving the practice of communication skills. At each instructional “chunk” the teacher should repeat operational procedures, pinpointing what is happening and why, and drawing comparisons to students’ input to reinforce the areas where clarification is clearly warranted. At each of these segments, the teachers and students should be using real materials and equipment if working in the technical laboratory, or a combination including visual aids in the classroom to help students visualize operational procedures.

During the interactive demonstration, it is important that all equipment and tools are identified either by, for example, stickers clearly labeled in large letters or by commercial posters if readily available. During the demonstration, the teacher should make a point of showing the equipment
and tools being used and clearly refer to them in the context of the operational procedure in progress. It is also helpful to ask a student to name a tool or piece of equipment, and then to point to the label on the tool or a poster for students to check the spelling. Given the wide variety of tools and equipment, this interactive strategy may prove beneficial even for students with native English language proficiency.

Facilitating Student Practice

The hallmark of demonstration strategies is the opportunity for students to practice operational procedures and conceptual applications to demonstrate their level of understanding and performance. Thus, student practice should always be planned for students to perform target tasks under the supervision of the instructor to ensure safety when handling equipment and materials. In some cases, the goal is for students to achieve acceptable performance based on occupational standards. In other instances, the goal is to apply problem-solving and communication skills requiring the justification of selected operational processes or procedures, and results. Regardless of the underlying goal, individual practice for ELLs should be carefully monitored for safety reasons. With this caveat in mind, teachers can facilitate student practice individually or in small groups using three interactive strategies recommended when teaching ELLs in CTE programs: individual scaffolding techniques, cooperative learning strategies, and the promotion of independent learning (Hill & Flynn, 2006; Platt, 1996).

Using Scaffolding Strategies

The value of scaffolding instructional strategies for helping students shape their performance is well documented and appropriate for teaching ELLs in CTE programs (Platt, 1996). Scaffolding, by definition, refers to one-on-one assistance provided to students by experts (e.g. teachers, workers, advanced students) to help novice learners improve their performance on clearly identifiable tasks after determining the level of initial performance as a frame of reference (Tharp & Gallimori, 1991).

Initially, student practice is performed with the instructor’s guidance and feedback. The students should be allowed to perform the target procedures and/or skills so that the instructor can observe and assess what the students know and are able to do as a frame of reference to provide related feedback. At this time, the instructor concentrates on helping students with lower levels of performance and language proficiency to make sure that they follow safety measures, understand what they are supposed to be doing, and practice correct procedures and skills. To this end, the students should practice operational procedures and related skills in small segments following demonstration steps. As students practice each step, the instructor should use questioning embedded in scaffolding techniques to help students understand what they need to do and to improve what they are doing (see previous section, Interactive “Show and Tell,” for tips on questioning strategies). Below is an example of scaffolding strategies with ELLs in CTE program context described by Platt (1996: 14).

Example

This is an example of scaffolding strategies in the context of a CTE class on welding and involving a student with limited English language ability. The student is in the early stages of language development and is in the process of learning technical
terminology and procedures for using safety equipment. The CTE teacher uses the following scaffolding strategies to help the ELL student:

- The teacher lines up and names several pieces of safety equipment and demonstrates what can happen when the equipment is not used adequately. To this end, the teacher uses gestures to signal correct and incorrect procedures, especially when something can go wrong.
- As the teacher demonstrates each procedure, she asks the student to repeat what she said and to replicate the gestures clearly suggesting the consequences of correct and inappropriate use of safety equipment.
- During her demonstration the teacher establishes connections between actions and words. For example, as she holds a helmet, she clearly pronounces the word “helmet” and she points to her head and eyes while proceeding to put the helmet on and remarking: “to protect the head and eyes from sparks.”
- The teacher asks the student to make an effort and describe the uses of the safety equipment. As the student proceeds with the description, the teacher provides feedback as needed to correct pronunciation and speech patterns, and to reward effort and any improvements in language proficiency.
- The teacher asks the student to write key terminology in a glossary on index cards under the label of safety procedures for easy review.
- The teacher tests the student on the new material the following day formally (e.g. verbally or in writing) or informally to alleviate anxiety.

When teaching ELLs with very limited English language proficiency it is best to seek the help and complementary support of ESOL staff to follow up and provide concurrent assistance beyond the CTE classroom or technical laboratory.

Using Cooperative Learning Strategies

At should be apparent in the above example, individual assistance using scaffolding strategies is time-consuming and unrealistic when many ELLs are enrolled in a class. In this event, peer coaching strategies may allow the teacher to facilitate guided practice, placing ELLs and knowledgeable peers with native or native-like English language proficiency in cooperative learning situations. ELLs benefit from working in small groups of two or three including peers who are fully English proficient (Hill & Flynn, 2006). Knowledgeable peers can model both language patterns as well as the practice of targeted conceptual applications, procedures, and skills. Heterogeneous groupings force students to negotiate interactions and meanings in functional—context-relevant—situations, in which the level of anxiety for communicating and interacting is lower for ELLs (Kagan, 1995). In essence, knowledgeable and fluent peers fulfill some of the teacher’s scaffolding strategies for skills and language development. In this instance, teachers can maximize their assistance by monitoring the larger group and focusing on assisting groups including ELLs with very limited language proficiency to ensure productive participation for all members of the group. Below are some examples of cooperative learning strategies suggested by Hill and Flynn (1996) with some modifications taking into consideration the context of relevant CTE content.
Groupings with Students in Preproduction to Speech Emergence Stages

For example, preproduction students can be grouped with knowledgeable and fluent peers and charged with developing a presentation describing safety procedures to be shared with the entire class (e.g. how to use the guard on a table saw). When working on the presentation, ELLs can contribute to the development of presentation materials such as writing key terms and definitions, graph sequence of procedures, and other related activities involving word identification, spelling, and writing skills. Scaffolding should be provided by knowledgeable peers along the way.

Groupings with Students in Intermediate and Advanced Fluency Stages

ELLs, working in small groups with knowledgeable and fluent peers, should be able to contribute in all aspects of the expected presentation on safety procedures including the development of presentation materials, conducting the actual presentation, and producing a related report. Scaffolding supports are most likely to be needed for minor corrections on speech patterns and mistakes involving written materials.

Promoting Independent Learning

Although peer learning strategies can be used regularly as a means for assisting ELL students reach expected levels of performance, it is important to determine when the students are ready for independent practice and can meet performance standards on their own. This is particularly critical when performance will be evaluated for certification purposes. When the instructor is sure that students can practice with minimal supervision and without concern for their safety, some additional strategies are needed to provide opportunities for independent learning. In this case, the support of ESOL staff is often necessary for the promotion of independent learning beyond the technical laboratory. Consider the following example suggested by Platt (1996: 14–15) and presented with some modifications relevant to conducting interactive demonstrations:

Example

This is an example of independent learning strategies featuring the collaboration of ESOL staff and CTE teachers to help a small group of ELLs understand machining operations on a step-by-step basis.

- If available, locate and refer students to video materials describing the operational procedures of interest. The students can then view the video materials in the media center or library. If such materials are not readily available, the teachers should plan to videotape their demonstrations with the assistance of a colleague or student.
- Upon determination of the level of student performance, select portions of the video featuring content that needs to be reviewed by the student with the assistance of ESOL staff in the case of preproduction and early production students. Students at other stages of language development may choose to review the material on their own or mediated with the assistance of ESOL staff.
- If students are taking an ESOL class, this represents an opportunity for collaboration with ESOL instructors. In this case, students may be required to talk
Evaluating Performance

When students are ready to demonstrate what they know and can do, the CTE teacher is required to clearly explain the expectations, conditions, and the standards for performance. Regardless of certification implications, students should have a frame of reference for successful performance. For students, this frame of reference can be used to determine progress and gauge their progressive level of competence. For instructors, this frame of reference allows for pointed feedback on specific areas in need of improvement.

The evaluation of student performance in the context of CTE programs and interactive demonstrations is best conducted using alternative (also referred to as authentic) assessment strategies aligned with real-world problem situations or tasks. Authentic assessment strategies require students to demonstrate their capacity to perform a task instead of completing a traditional paper-and-pencil test. In CTE this is usually done by means of a “performance test,” which lists the process, expected product, and criteria by which mastery will be judged. In some instances, the evaluation of performance may include a combination of knowledge testing, the completion of a task, and/or the development of a portfolio to show improvement in a particular area or the range of student skills. The multiple assessment strategies result in various points of evidence illustrating what the students know and can do (Stecher, Rahn, Ruby, Alt, & Robyn, 1997).

Testing of the student's knowledge base can be conducted through a series of multiple-choice questions to determine the extent to which students know basic concepts, background information, and terminology associated with authentic occupational tasks. This is the standard option in instances where demonstration of performance is required for certification purposes. In CTE programs, often those with higher levels of integration with academics and where official occupational certification is not a concern, alternative open-ended questions are used, placing an emphasis on understanding, reasoning, and communication skills—more demanding but better suited for ELL students.

Demonstration of performance is usually arranged in one way or another, regardless of the program design, to determine what students can do. The only difference among programs is the emphasis on performance criteria. In programs emphasizing education for work (e.g. ornamental horticulture, marine mechanics, respiratory therapy), demonstration of performance may be highly regulated and students may have to meet a minimum level of acceptable performance for program completion and for certification purposes. In this case, students are required to demonstrate their competence under conditions similar to how the tasks are conducted in the real world.
of work. In contrast, in programs emphasizing education about and through work (e.g. career exploration, introductory courses in an occupational cluster) the demonstration of performance may involve broader transferable skills such as completing a project or product and demonstrating results.

Portfolios are an alternative form of performance evaluation involving the selection of samples of student work showing the range of skills or the progression of student competence in a certain area. A student portfolio may include evidence of the student's best work, a justification for selection, and an evaluation of quality clearly aligned with an appropriate frame of reference (e.g. project expectations, skills standards). The development of portfolios represents a great tool for evaluating the performance of ELLs as a stand-alone or in combination with other assessment strategies depending upon the underlying instructional purpose. Portfolios require active student involvement, purposeful selection of materials, demonstration of progressive competence, and concurrent demonstration of communication abilities over time.

Because authentic assessments of performance require the active demonstration of what students know and are able to do, performance assessments may yield a more accurate idea of student competence. When evaluating the performance of ELLs, data from multiple assessments, including questionnaires, demonstration of performance, and portfolios, should provide a better picture of the student's comprehension of background information, conceptual understandings, technical and operational competence, and communication skills. The richness of information generated by performance assessments can then become very useful for assisting ELLs in specific areas in need of improvement that may not have otherwise been identified through traditional testing strategies. Further, the foundations of alternative assessment strategies are supported by research on active learning and align with the premises of contextual teaching and learning in CTE programs and practices that work for ELLs.

Example

Skills certificate programs represent an example of alternative assessment strategies involving multiple sources of information. In the state of Utah, for example, skill certificate programs are used as the equivalent of academic standards for accountability purposes. Skills standards are set for CTE program areas and assessment data are used to report technical skill attainment required by the Perkins Vocational and Technical Education Act of 1998. Skills certificate tests are available to evaluate student performance in a variety of competency strands in the following areas: agricultural education, business and economic education, family and consumer sciences education, health science and technology education, information technology education, marketing education, industrial arts education, and technology and engineering education.

Skill certificate tests are developed based on identifiable sets of skills in specific areas and are designed to evaluate the extent to which students perform against those standards. Skill tests require students to complete a multiple-choice assessment to demonstrate what they know and a performance assessment component administered by their CTE teacher before taking the multiple-choice exam. Depending upon the state or district requirements, students must pass the performance assessment at a level of moderately to highly skilled, and pass the written assessment (e.g. 80
Adapting Interactive Demonstrations to Particular Needs

Interactive demonstrations strategies can be adapted for use in the classroom when a technical laboratory is not available, such as in programs featuring an integrated curriculum (e.g. career magnet schools). Demonstration strategies can also be adapted for longer instructional activities involving problem/project-based learning requiring a demonstration of performance or results in the classroom or technical laboratory. In addition, complementary interactive activities can be used to meet specific needs encountered when teaching ELLs (see Resources section in this book).

The following examples offered by Platt (1996: 16–24) illustrate potential adaptations stemming from interactive demonstration in the technical laboratory and, in some instances, requiring collaboration with ESOL staff.

Preproduction Level

In a machine technology and auto body program, instructors required students to use the correct terms for tools and equipment during practice in the tool room. For ELL students taking ESOL classes, the CTE instructors arranged the integration of related terminology into ESOL learning activities. For example, students may use technical terminology in short sentences describing a related action such as: “A lathe is for making tools.”

Early Production Level

In an industrial education program, a welding instructor required students to correctly identify metal alloys based on particular characteristics and properties. As the course progressed, students developed competence matching different metal alloys with appropriate uses in manufacturing technology. With concurrent practice in ESOL classes, students were able to expand their language level from knowledge of technical terms to matching of potential use in occupational context.

Intermediate Level

During the practical component of a demonstration, two ELL students in a cosmetology program participated in a step-by-step procedure for giving a facial. One of the students described and acted out a diagram in a textbook and the second student performed the facial procedures on a “student client,” while an aide asked questions during each step. A suggested adaptation for ELLs is to require students to research and produce their own chart for giving facials and to justify each step during performance.
Advanced Level

In an electronics program, the CTE instructor introduced new concepts on the use of the oscilloscope. After introducing the topic, terms, and an approach for measuring frequency, the instructor divided students into small groups of three and asked them to role-play a situation in which a technician had to demonstrate competence in handling the oscilloscope as part of a job interview. Students in each group took turns playing the role of the technician, a supervisor, and an observer. These interactive demonstration elicited different performance styles and peer assistance. In the process, students had to troubleshoot the instrument and answer questions. Students in this interactive demonstration practiced communication skills expected in related occupations.

Interactive demonstrations can be adapted to many program designs and CTE program contexts and, in some instances, collaboration with academic and ESOL teachers may be required. For further reading and reference on interactive demonstrations, the following resources are available online:

- *Teaching with Interactive Demonstrations*. This is a free resource available online featuring useful tips for the use of hands-on, inquiry-based, interactive demonstration strategies with undergraduate students that can be easily adapted to CTE in the classroom or in the technical laboratory. The website address is http://serc.carleton.edu/introgeo/demonstrations/index.html.

- *Understanding Explicit Instruction*. This is a PDF document available on the internet. It describes a basis approach for conducting demonstrations in the classroom that can be adapted for use in CTE program context. It also includes useful prompts for interactive purposes that should work with ELLs. The resource can be accessed at www.maupinhouse.com/pdf/twr-ch4.pdf.
3.4 English Language Learner Strategies for Work-Based Learning

We want to accomplish two things in this chapter. The first is to help convince policymakers, academic teachers, and those in leadership positions, such as high school principals, community college academic deans and others, that one of the most effective ways for youth and young adults to learn English is for them to participate in work-based learning (WBL) experiences that are a part of today’s CTE. Our second goal is to provide CTE instructors, academic teachers working with them, workplace mentors, ESOL personnel and others who work with LEP students with ideas, suggestions, and strategies for more effectively using WBL as a vehicle to help students learn written and spoken English. This is not intended to be a comprehensive “how-to” guide for implementing WBL experiences; there are numerous excellent resources at the conclusion of this chapter that do that.

What is Work-Based Learning and Why is it so Important for English Language Learners?

As was mentioned in an earlier chapter, WBL is now an important component of CTE programs. To recap, “Work-based learning (WBL) includes a range of activities that extend beyond traditional cooperative education, such as job shadowing, service learning, internships, and apprenticeships—all of which provide CTE students with valuable experience in the world of work” (Brown, 2003: para. 2). Stern and Rahn (1995: 38) described the multiple goals of work-based learning:

Work-based learning plays a key role in the new models of career-related education. Unlike cooperative education or school-based enterprises tied to vocational classes, however, the new programs also relate students’ work experience to non-vocational
subjects including math, English, science, and social studies. In many instances, the new models also ensure that students satisfy the course requirements for admission to four-year colleges and universities.

WBL experiences can range from simply shadowing employees for a few hours or several days to spending an entire semester or more in increasingly demanding jobs across multiple worksites. WBL can take place in businesses, health care facilities, government offices, or almost any other “real-world” location out in the community. Students can be engaged in working with the public, working alongside regular employees, or in work simulations or operating a school-based business. The hallmark of good WBL is its authenticity; students are engaged in “real” work alongside “real” expert workers and are often serving “real” customers, clients, or patients. For ELLs, the key point is that they will be speaking, listening, reading, and writing English for “real” purposes. WBL activities help students come to understand the nature of expertise in a career area and also help them understand how they can pursue their own career interests. And, very importantly, WBL works! Statsz and Stern (1998) wrote:

It may seem paradoxical that WBL . . . can increase students’ desire for schooling, but this is not an uncommon finding. Apparently, students gain confidence in their ability to master school subjects when they connect academics to activities they understand and value.

Four key requirements cited by Johnson (1995) for a language acquisition-rich learning environment are:

1. creating contexts of language use in which students have a reason to attend to language;
2. providing opportunities for learners to use the language to express their own personal meanings;
3. helping students to participate in language-related activities that are beyond their current level of proficiency;
4. offering a full range of contexts that cater for a “full performance” in the language.

What Types of Skills and Contexts are Typically Involved in Work-Based Learning?

We strongly believe that having ELLs engage in demanding workplace experiences alongside competent adults and supported by a workplace mentor provides just the kind of language acquisition-rich environment suggested by Johnson. While at their worksite, LEP students have a meaningful context that makes language learning important to them. They can readily and genuinely use English to talk, write, and read about things that have immediate personal importance. They are stretched well beyond their current level of comfort and competence in English and they encounter a wide range of contexts that requires full performance on their part.

Why work-based learning? What is fundamentally different about WBL experiences that are part of today’s CTE programs and the work experience students typically engaged in as a part of vocational education during times past? In today’s WBL model, there is almost as much attention placed on “learning” as there is on “working.” And research shows that a great deal of learning takes place in the work setting. Kerka (1997: 3) talked about the rigor of work-based learning:
Research on how people learn in the workplace demonstrates that what is taking place is constructivist, situated learning, often through cognitive apprenticeship . . . Activity is a key factor in knowledge construction, and participation in everyday work activities “forces” learners to access higher-order procedural and propositional knowledge.

WBL in today’s CTE programs is an integral part of the curriculum, and the workplace experience is planned and coordinated with the student’s school-based experiences by “connecting activities.” A further distinction is that often employees in the workplace work with CTE instructors so that the students’ school-based and work-based activities are linked and become complementary learning experiences.

The goal of WBL is to place students in intellectually demanding workplace settings before they complete their high school or postsecondary CTE program so that they can see at first hand what goes on in their chosen career field. They will be able to interact authenticly with working adults and can engage in intellectually demanding work and see how academic and technical content and skills are used in the modern workplace. This is an ideal place for those learning English to hear the language spoken by positive adult role models and to hear and read the specialized terminology of an occupation used routinely. A further rationale for involving ELLs in WBL is that some companies report that one of their reasons for providing WBL sites for students is to recruit promising minority students as future employees. Such opportunities might pay off for recent immigrants. There are many stories in the WBL literature chronicling how well most students—including low and moderately achieving students—rise to the challenge of their WBL assignments. The benefits of WBL are summarized in Box 3.1.

Box 3.1. Benefits of work-based learning

**Benefits to Students**
- Improved academic achievement
- Appreciation of the relevance of their education and the application of knowledge in a meaningful way
- Opportunity to explore career options
- Increase self-confidence
- Acquisition of real workplace experience and work-readiness skills
- Connection with an adult role model
- Expanded opportunities

**Benefits to Parents and/or Guardians**
- Become partners in the education of their child
- Collaborate with others assisting their child to make informed career choices

**Benefits to Schools**
- Improved academic achievement by participating students
- Improved student motivation resulting in better attendance and graduation rates
- Improved relationships with the community

*continued overleaf*
Reading the book and answering the questions cannot possibly compare with such rich, authentic experience! And students respond accordingly. Many students, including those learning English, have been hired as full-time employees at the conclusion of their WBL commitment.

What are the Most Common Forms of Work-Based Learning?

We are all familiar with the idea that in the health sciences students complete internships in hospitals and clinics to become a dental hygienist or a cardiac surgeon and in the traditional building trades apprentices spend several years learning and working under the supervision of experienced workers to become a plumber or mason. Other forms of WBL beyond these familiar ones have become more and more widespread as part of CTE programs since the enactment of the School-To-Work Opportunities Act (STWOA) in 1994 (U.S. Congress, 1994). Troubled by the lack of a coherent system for assisting youth to successfully make the transition from school to work, Congress built three major components into the act:

- school-based learning, to include academics, career exploration, and career counseling, instruction that integrates academic and occupational learning, and better transition between secondary and postsecondary programs;
- WBL, to include the development of pre-employment and employment skills leading to the awarding of occupational certificates, exposure to “all aspects of the industry,” and workplace mentoring;
- connecting activities, which includes employer participation, integration of school-based learning with WBL, support for transitioning into employment, and liaison among parents, employers, teachers, and students.

The aim of the WBL component of the STWOA was to “extend the academic and occupational instruction of schools, offer opportunities for students to learn the use of tools and equipment found in the workplace, introduce students to the norms of adult work environments, and give them chances to market-test their capabilities” (Office of Technology Assessment, 1995: 3). The use of workplace mentors was built into the design to provide guidance and support for the students’ intellectual, occupational, and career development. The intention was that the kind of WBL spawned by the STWOA would be supplemented by activities that "apply, reinforce, refine, or extend the learning that occurs during work, so that students develop attitudes, knowledge, skills and habits that might not develop from work experience alone" (ibid.). Very important to the task of learning about working in a new country and learning a new language are the five types of learning processes involved in WBL:
1. experiential learning, which comes from actively reflecting on the work experience;
2. work group learning, in which students interact substantively with members of a work group;
3. mentoring, in which an experienced worker takes on the task of helping a novice develop through a one-to-one relationship by providing challenges, guidance, and encouragement;
4. workplace instruction, whereby the student learns the processes and skills of the occupation by observing, modeling, being coached, etc;
5. technology-assisted instruction, which provides the student with additional learning opportunities through the use of simulations, online materials, etc.

It is easy to see the vast learning opportunities these experiences can provide for learning English as an integral part of learning about an occupation. All of the above learning processes present powerful opportunities not only for picking up the unique language of a career field but for practicing and reinforcing English in general.

**Work-Based Learning and Types of English Language Skills**

Why is WBL important for teachers who work with LEP learners? Before we explore the use of various forms of WBL, we need to consider how workplace experiences can aid ELL students in mastering the two major types of language skills categorized by Cummins (1986): (1) basic interpersonal communication skills (BICS) and (2) cognitive academic language proficiency (CALP). As you may recall from Part 1, BICS are those practical, everyday, real-life communications that students might engage in on a daily basis as they interact with their normal environment. CALP, on the other hand, represents more academic-type language competencies that are more useful in formal school settings.

CTE instructors and others working with LEP students should keep these two types of language skills in mind as they work with students directly and as they work with workplace mentors and with those who set up and monitor WBL experiences for students. The case can be made that WBL involves perhaps more BICS than CALP; however, this might not always be the case. Certainly, while in the workplace and engaged in authentic work tasks, ELL students will often be using practical and informal English language skills—particularly when interacting routinely with coworkers. There may be times, however, when they are engaged in more “scholarly” activities, such as conducting research, collecting data, preparing reports, presenting information to others, reading occupational materials, and similar activities, when CALP is more important. The key is for those responsible for establishing and monitoring WBL situations to be aware that both types of language skills are involved but that somewhat different strategies and supports may be needed depending on which type of language skill is being learned or reinforced.

**Work-Based Learning and Cognitive Demand**

Again, as a reminder from Part 1, Cummins (1986) developed a model to depict varying degrees of “cognitive demand” as well as the amount of context that might be involved in a given teaching/learning situation that ELLs might be engaged in. This model, referred to as “Cummins’ Quadrants,” consists of four increasingly difficult levels ranging from high context and low cognitive demand (easiest) to low context and high cognitive demand (most difficult).

Cummins’ theory is that it is far easier for students to learn a new language when they are in a context-rich environment with lots of environmental clues and the new terms they are learning
are not very difficult or not too abstract in nature (Quadrant I—the easiest) than when they are in an environment with little context or are being asked to learn very difficult or complex language (Quadrant IV—the most difficult). These two extremes represent the end points on a continuum with varying levels of difficulty in between. The implication for the CTE instructor and WBL supervisor is that, when the instructional situation places ELL students in Quadrant I (the easiest), language learning might be expected to go fairly smoothly and proceed somewhat rapidly, or more might be expected of students. On the other hand, when ELLs are operating in Quadrant IV (the most difficult), it is reasonable to expect that they will have more difficulty and feel more frustrated and stressed. The instructional pace, the need for higher-quality teaching/learning materials, and the amount and frequency of feedback and level of support should all be adjusted as appropriate. With that in mind, let us look at some of the typical activities that LEP students will find themselves engaged in during common WBL settings:

A review of these typical activities (Box 3.2) indicates that ELLs will be in a high to very high context environment while engaged in work-based learning and are often in a moderate to high cognitive demand environment (Quadrant III) while participating in the more common work-based learning formats—internships, apprenticeships, and clinical settings. In less demanding or briefer forms of WBL such as field trips and job shadowing, the ELL student would be in a high context, low cognitive demand situation typically.

**Box 3.2. Activities in common work-based learning settings**

- **Help an experienced employee.** The student helps an experienced employee with various tasks. The student usually begins by doing the simplest and least critical parts of the job, and gradually moves up to the more skilled activities. The experienced employee explains, demonstrates, and guides the student in practicing.

- **Work under close supervision.** The student assumes work responsibilities under close supervision. The supervisor may provide orientation to the responsibilities, directions, feedback on performance, warning of impending problems, and correction of mistakes, encouragement, and advice on handling unexpected contingencies.

- **Work with minimum supervision.** The student works with minimum supervision, usually after proving himself or herself when working under close supervision.

- **Participate in a “community of practice.”** The student participates in informal exchanges of reformation and assistance among employees with similar responsibilities. At first, the student is generally the beneficiary of such exchanges, but with growing experience the student increasingly becomes a contributor.

- **Participate in “occupational communities.”** The student participates in professional organizations, industry associations, or unions that span more than one organization. The student may read the communities’ publications, attend their meetings, and socialize with their members.

- **Explore and innovate.** The student seeks to develop superior work procedures, and then tests, refines, and incorporates them into his or her work. The procedures may also be adopted by other workers or throughout the organization.

- **Orient, train, and supervise.** The experienced student orients, trains, and supervises entering students and perhaps other entering employees.

Perhaps the key implication of this reality is that ELLs need to be adequately prepared to engage in highly demanding work-based experiences before they can complete them successfully and before the experience can contribute positively to their mastery of English. The high level of context provided by being in the workplace should work in the ELL student’s favor whereas the high cognitive demand required of their work tasks as part of an internship or apprenticeship might tend to work against them. The goal is for WBL to be a value-added experience, not a source of extreme stress and frustration. This is where the role of the workplace mentor and the WBL coordinator can help. If they are aware of these language learning concepts, they can work together with the CTE instructor to adequately assess an ELL student’s readiness for a high-demand WBL experience before it begins, monitor the student’s performance, and intervene if need be.

Another implication of Cummins’ Quadrants and his two types of language skills is that CTE instructors and those who plan and monitor WBL experiences might want to consider phasing in such experiences beginning with high context, low cognitive demand (Quadrant I) experiences, such as inviting guest speakers from various workplaces to visit the CTE program, followed by brief job shadowing experiences as a student’s English skills progress, then finally a youth apprenticeship or internship placement when his or her command of English advances. CALP can be acquired during the school-based component of the CTE program (especially if there is a high degree of integration of technical instruction with academics) with the WBL component focusing more on applying CALP.

Keep in mind that the cognitive demands of various WBL sites and different types of WBL assignments vary considerably. Hughes and Moore (1999: 1) conducted a three-year study involving 14 school-to-work programs around the country that “were selected on the basis of their strong work-based learning components and solid employer involvement.” Their goal was to look closely at the WBL activities that students engaged in. Based on this, the researchers suggested that potential worksites that might be selected for students’ WBL experiences are not equally well suited as far as learning potential goes. This finding has added implications for placing ELLs in WBL experiences. Among the ways of analyzing potential worksites suggested by Hughes and Moore are consideration of the sociocognitive demands of the work, how knowledge can be accessed at work, organizational context, and the workplace culture as well as the larger context in which the employer is located.

Formal and informal instructional strategies documented by Hughes and Moore (1999) as being used in WBL situations include:

- front-loaded instruction: direct instruction before engaging in a work task;
- on-the-job-training: the new worker performs tasks and is coached;
- just-in-time instruction: as the learner performs tasks, he or she determines if some instruction is needed to proceed;
- back-loaded instruction: new workers perform work tasks but in a peripheral role to get the feel of an operation or task;
- mutual self-instruction: several newcomers are assigned work tasks and figure things out among themselves in a collaborative manner without instruction;
- sink or swim: the new worker is charged with completing a work task without any instruction at any point;
- observation: the learner is not directly involved in the task but has opportunities to observe and ask questions about what is happening.

Hughes and Moore (1999: 3) added that, within these broad situations, specific strategies are often used to “engage the newcomer with situated knowledge-use”: “Lectures, tours of the
workplace, modeling/demonstrating, dry runs, giving orders, helping out, coaching, Q&A, critical feedback, testing and checking, storytelling, reminding, trial and error, and practice.” Significantly, they found that, at every worksite they observed, students were required to keep a journal of their WBL experiences with daily entries required. Teachers and worksite supervisors periodically collected and read their journals. Required entries ranged from simply describing what the student does at the worksite to expressing their feelings or responding to structured themes or questions. This presents marvelous opportunities for ELLs to practice their English writing skills both informally and formally in a non-classroom-based, low-pressure environment. A suggestion is to provide ELLs engaged in WBL with a dictionary to help them craft their journal entries. Students much prefer writing a journal entry in the evening, for example about their reaction to a confrontation between two coworkers they observed earlier in the day, over practicing writing English phrases out of a workbook.

Another important element identified by Hughes and Moore was that many CTE teachers created a “learning plan” to outline to students and supervisors what students were expected to do and learn as a result of their WBL experience. Some of these plans were generic for use with any student in any worksite whereas others were more individualized. CTE teachers can develop increasingly more demanding plans for their ELL students, for example initially requiring them to report back verbally on their reactions to their first few days on the job or later in their WBL experience and requiring them to locate and interpret their employer’s sexual harassment policies.

A final component of WBL observed by Hughes and Moore and that has implications for ELLs is the use of final papers, projects, and presentations at the culmination of the experience. In these products students reflected on their WBL experiences, reported on interviews with their supervisors and provided some kind of overall assessment of their experience. As with the classroom experiences in which WBL students come together to collectively share their experiences, end-of-program activities, such as crafting a final paper or developing and delivering a PowerPoint presentation, present opportunities for ELLs to further apply their English skills. Such activities also reinforce the acquisition of CALP as ELLs engage in research and formal writing as well as making formal presentations.

Types of Work-Based Learning in which English Language Learners can Participate

There are many forms of WBL that ELLs can choose in high schools, technical institutes, or community colleges. Some have been used for many years whereas others are relatively new. They all have similar but not identical goals and they differ in how formal they are, the degree of control the school has over the experience, the duration, and the kinds of work-related experiences students engage in, whether the experience is paid or unpaid, whether it generates academic credit or not, and in other ways. Table 3.1 shows a chart that includes work-based and related activities organized around various stages of career awareness, exploration, preparation, and application.

Keep in mind that different WBL models are appropriate for different settings, for varying age levels, and for varying levels of English proficiency. The selection of a particular work-based learning experience for an ELL student should be consistent with where he or she is along the continuum of English proficiency described earlier in Part 1. As you may recall, four stages along this continuum are

1. preproduction (barely able to speak and interpret English);
2. early production (understand about 1,000 words);
3. speech emergent (use short phrases and sentences); and
4. intermediate fluency (near native skill in social settings).
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*Source: Vermont Department of Education (1998: 27).*
It would not be appropriate to place a preproduction student in a semester-long internship during which he or she would have to interact with angry customers. Nor, on the other hand, would you want ELLs of intermediate fluency to spend all of the time available for WBL engaged only in exploring careers of interest by job shadowing. So, as with most decisions in education, it is a matter of appropriateness and fit between the individual learner and the strategy to be selected.

Below is a brief description of some of the most common forms of WBL in use today at the secondary and postsecondary levels and suggestions and strategies to take advantage of the unique opportunities that WBL presents for assisting students in learning English.

Youth Apprenticeship

Apprenticeship has been around since medieval times and was brought to the United States by early settlers. Apprenticeship is a staple of workforce education in many countries, such as Germany. In addition to the more common “registered” apprenticeship programs operated by trade unions, which typically span two to four years in length and are aimed at young adults, a newer form of apprenticeship has recently emerged: youth apprenticeship (sometimes called pre-apprenticeship). In the youth apprenticeship (or “student apprenticeship”) model (Office of Technology Assessment, 1995: 58):

The students participate in a coordinated program of school-based and work-based learning that provides career counseling, integrated academic and occupational instruction, training and mentoring in a workplace, progressively higher levels of work experience, and the opportunity to earn an industry-recognized skill credential. The programs extend from high school through at least one year of postsecondary education.

The term “youth apprenticeship” is used for formal school sponsored programs that involve coordinated school-based and WBL experiences aimed at high school juniors and seniors and those enrolled in postsecondary technical education programs.

One feature of the traditional apprenticeship model that has made it very successful is its blend of formal instruction in the technical aspects of the occupation along with instruction in related academics such as math and reading coupled with extensive authentic work experience under the watchful eye of experienced tradespeople. The youth apprenticeship approach is based on this time-proven model but incorporates several new features, such as career exploration, workplace mentoring, and extensive coordination between the school-based and work-based components. We usually think of building trades such as carpentry and electrician when we think of apprenticeship, but today youth apprenticeship programs are available in almost every career field, including information technology, health care, aerospace, and manufacturing.

Since youth apprenticeship would be considered a “submersion” ESOL model, a caution for those assisting students who are learning English while participating in youth apprenticeship programs is that CTE and academic teachers (and WBL coordinators) should work closely with those supervising the student’s WBL experience to be careful that the student is not overwhelmed by exposure to too much new specialized jargon too soon. For example, the authors of a report from the Office of Technology Assessment (1995: 21) caution “Linguistic skills involve the use of occupational jargon and its translation for nonspecialists. Automotive technicians use terms such as ‘dogging,’ ‘tramming,’ ‘zerk,’ and ‘chuggle,’ when talking among themselves, but most translate those terms into common English terms when talking with customers.” CTE teachers should, as
far as possible, anticipate what specialized terminology and unique jargon ELL students are likely to encounter and try to help them “get up to speed” in its use and meaning before they begin their apprenticeship experience. Students will likely pick up this terminology fairly quickly given its importance and the opportunity for immediate and repeated use on the job.

Further Information

For more information on youth apprenticeship see:

National Center for Research in Vocational Education—Youth Apprenticeship: Lessons from the U.S. Experience (http://vocserve.berkeley.edu/CenterFocus/CF1.html).
North Central Regional Education Laboratory (www.ncrel.org/sdrs/areas/issues/envrmnt/stw/sw3preap.htm).
Wisconsin’s Technical Colleges High School Options (www.witechcolleges.com/y_apprentice.htm).

Cooperative Work Experience

Cooperative work experience, or “co-op” as it is often called, has been around for many years and has been one of the most common forms of WBL in high schools (and some postsecondary institutions) during the past several decades. Cooperative education is a structured educational program which integrates classroom learning with structured work experience that is directly related to the student’s career goals (Box 3.3). The student is typically placed in a job setting directly related to the CTE program in which the student is enrolled. The co-op experience might span months or a year or more. It usually combines paid or unpaid work experience with formal classroom instruction. There is a formal, written agreement between the school and employer spelling out everyone’s role and what the student’s objectives are.

Box 3.3. Connecting cooperative work experience to the classroom

It is important to enhance the co-op experience by connecting it to classroom learning. This can take many forms and should take place at all stages of the co-op experience.

Pre-experience activities

- Students research the career field and specific organizations in which they will be working.

continued overleaf
Students write about their preconceptions and expectations related to the organization in which their experiences will take place.

- Students and teachers discuss professional standards for behavior and dress.
- Teachers emphasize practical applications of the concepts and skills they teach in class.
- Students learn the job skills they will need at the worksite in their technical education program.
- Students and teachers develop training plans which outline the students’ learning objectives.

**On-site activities**

- Students learn actual job and employability skills by participating in work activities.
- Students observe and participate in practical applications of academic concepts.
- Students work toward achieving individual goals and objectives.

**Seminars**

Seminars provide students with opportunities to better understand their co-op experiences and enhance their learning. Seminar schedules can vary from three meetings per term to as often as once a week. Curriculum can include:

- job search skills and techniques (such as résumé writing and interviewing skills);
- how to develop goals and objectives;
- reflective assignments (such as weekly logs and journals);
- education and discussion on workplace issues such as sexual harassment, workplace ethics, managing conflict, responding to criticism, labor laws, discrimination, and professionalism;
- workplace skills and techniques related to student placements;
- guest speakers;
- round-table discussions;
- collaborative learning activities;
- term projects in which students extend beyond the work experience through in-depth investigation; and
- career exploration activities, including informational interviewing and research on continuing educational opportunities.

**Post-experience activities**

- Students write about the difference between their expectations and the reality of the workplace.
- Students and teachers discuss the connections they see between classroom learning and the workplace.
- Students write, revise, and send thank-you letters to employers.
- Students continue their career development in light of what they have learned during the work experience.
Students and the co-op coordinator together evaluate students’ progress toward their learning objectives.


A suggestion for co-op teachers (or teacher-coordinators as some states call them) who have ELL students in their programs is to use as much of the in-class time as they can afford to in helping students become familiar with the culture of the various jobs they may be taking and to master basic work-related English words and phrases that they can be confident in using. Another suggestion is, since co-op coordinators might be working with students in a wide variety of occupations from retail to hospitality, try to be aware of any unique language-related situations ELL students might encounter at work that might cause them undue stress, embarrassment or problems with their employers. An example is to anticipate any awkward situations that might arise from the conflict between a student’s cultural norms regarding gender and what is expected by employees and customers on the job. Co-op teachers might also want to use classroom time to work with their ELLs in crafting their résumé and letter of application, which gives them valuable practice in writing English. Early production or speech-emergent students might generate their résumé and letter of application in their native language and then translate it into English using a dual-language dictionary.

Further Information

For more information on co-op education see:


Linking School and Work-Based Learning: La Guardia’s Co-op Seminars (http://ncrve.berkeley.edu/ProductBriefs/1046.html).

Internship

Just as teaching interns spend a semester or so gradually taking on the full responsibilities of a teacher, CTE students in internships are placed in worksites, usually for a fixed period of time such as a term or semester, to see at first hand what that occupation is all about. This is usually done in an occupational field in which the student is interested in working immediately after high school or community college. Internships (an internship is sometimes called a practicum) can be paid or unpaid and sometimes involve a school-based component in which students formally reflect or report on their internship experience at key points and/or at its conclusion (another great opportunity for language reinforcement both in writing and in spoken form!). In an experimental program in Lawrence, MA, companies participate in a unique work study program which began at Notre Dame High School and has spread to other Catholic high schools. High school students, most of whom are Hispanic immigrants, spend one day per week in an office setting. Four
students share a single job slot. For their service, the company pays the school the market rate for the students’ services, which reduces the cost of students’ tuition.

Internships, like apprenticeships, might be considered a submersion ESOL model since students are thrust into complex, cognitively and otherwise demanding work settings. A point for instructors to keep in mind as they prepare their ELL students for an extended internship experience is that many language minority students are from cultures where values such as speaking one’s mind, being assertive, speaking back to an authority figure, and displaying ambition are valued differently than in the United States. For example, following directions without comment (even if the directions are incorrect or not understood) and not drawing attention to oneself are behaviors sometimes valued by Southeast Asian cultures. ELLs may have had these values instilled in them from their parents and other adults. For these students, being appropriately assertive and advancing oneself in the U.S. workplace needs to be taught, just as the English language and literacy skills need to be taught (Burt & Saccamano, 1995). Other suggestions include:

- pair low-level English speakers with higher-level or native speakers for internship assignments;
- place those with low-level English skills in bilingual settings;
- place those with higher skills in English-only settings;
- as appropriate, place students in work settings that might contribute to their remaining in the local area and starting their own business some day;
- seek foundation and other funding sources as a means of paying wages for non-documented students.

An excellent example of effectively incorporating the needs of ELLs into the planning and implementation of internship experiences is that of International High School (IHS), which is on the campus of LaGuardia Community College in New York City (Allen, DiBona, & Reilly, 1998). IHS focuses on students who are recent immigrants who have limited English ability and are from many different countries around the world. The school is organized around interdisciplinary teams and uses contextual teaching and learning and peer group strategies for learning English. Students learn English within their content classes while working in small multilanguage groups. An important element of the school’s curriculum is the personal and career development program. “In the first year, students complete initial career research, then select an internship site from an ‘internship bank’ collected over the years by International High School and similar collaborating high schools” (Allen et al., 1998: 18). During their second year, IHS students participate in a second internship experience after examining societal and family structures among the different cultures represented at the school. This is followed by a third and fourth internship course in which students focus on decision-making and exploration of postsecondary and career choices. Internship sites range from computer repair businesses to airports to health centers. Often ELL students are placed in internship settings that are completely English-speaking environments. Other key components of IHS’s internship program for ELLs include:

- regular contact with teachers through phone calls and visits;
- participation in an ongoing seminar class to talk about common issues;
- development of an internship album to enable students to analyze and reflect on their internship site;
- use of students’ internship experiences by academic teachers as the basis for lessons;
- peer assessment of the internship experience.
According to PCD teacher Claire Sylvan, students learn English best in multiple settings. “If anything, these students need learning rich work experiences more than anyone else. That’s how they learn English best.” (Allen et al., 1998: 21)

Further Information
For more information on internships see:


Job Shadowing
Shadowing involves visits to worksites to observe and “shadow” workers as they carry out their routine work duties. Job shadowing experiences can range from a few hours to a day, a week, or even longer. This is an excellent strategy for younger students because the experiences can be brief, fairly tightly controlled, and closely supervised. If students have some input into which type of workers they shadow, their level of interest and motivation might be enhanced. A recent form of shadowing includes taking a child to work for a day. As with other forms of WBL, it is wise to make sure that those students who have been in the United States only a short time and those who have very limited knowledge of the American workplace have a basic understanding of proper dress, appropriate use of humor, and other workplace norms. Even on a brief job shadowing visit a student can poorly represent him- or herself, the school, and the CTE program by inappropriate dress or behavior.

Ideas to facilitate learning English during job shadowing include interviewing the person being shadowed and then summarizing the responses in a brief report, collecting non-proprietary brochures and other documents from the worksite and reading them aloud to the class, and generating a list of equipment, technology, tools, and processes observed and later writing out a description of each item (Box 3.4).

Box 3.4. Connecting the job shadow to the classroom

It is important to make the job shadowing experience meaningful by connecting it to classroom learning. Connecting activities can take many forms and should take place at all stages of the shadowing experience.

Pre-experience activities
- Students research the general career fields and specific organizations in which they will be shadowing.
- Students write about their preconceptions and expectations for the job shadow.

continued overleaf
Students prepare questions based on their research and writings to ask their hosts.
Students and teachers discuss professional standards for behavior and dress.
Teachers emphasize practical applications of the concepts and skills they teach in class.

**On-site activities**
- Students ask their hosts about the ways in which different academic subjects relate to their work.
- Students observe practical applications of academic concepts.
- Students ask their hosts about their career paths and suggestions they have for others who are interested in the field.

**Post-experience activities**
- Students write about the differences between their expectations and the realities of the workplace.
- Students and teachers discuss the connections they see between classroom learning and the workplace.
- Students write, revise, and send thank-you letters to employers.
- Students continue their career research in light of what they have learned during the job shadow experience.


**Further Information**

For more information on job shadowing see:

Job Shadow for Your Career (http://content.monstertrak.monster.com/resources/archive/jobhunt/jobshadowday/).
Job Shadow Program (www.uwplatt.edu/careercenter/resources/JobShadow.pdf).
Job Shadowing (www.jobshadow.org/).
Junior Achievement (www.ja.org/programs/programs_high_shadow.shtml).
State of New Jersey Department of Education (www.state.nj.us/education/voc/shadow.htm).

**Service Learning**

Service learning is quite common in community colleges and universities and is becoming more common in the K–12 system. It involves the rendering of service to individuals, families, groups, agencies, or others by students, who usually prepare for the service by reading about the setting in which they plan to provide service and then actively reflecting on their service during and after it is completed. For example, Patti Kozolowski’s family and consumer science class at Community High School in West Chicago created a puppet show in Spanish aimed at showing recent Hispanic immigrants how to use the local library. The local cable station replays the show
throughout the year. Her students link up with families to show them how to get a library card and access library services. Service learning experiences can be completed by individual students, or in pairs or small groups, or by an entire class. Such experiences are language rich and provide excellent authentic situations to practice and reinforce written and spoken English. When the setting of the service is connected to the career area of interest of the student, it becomes more of a true WBL experience, although service in any arena can be highly beneficial. For example, an entire electrical class might participate in Habitat for Humanity during one weekend to install the wiring, or a single nursing student might monitor blood pressure for nursing home residents during a month-long service project. Not only are these electrical and nursing students authentically engaged in the enterprise for which they are being prepared, they are rendering valuable service to those who need it (and reinforcing their English). When they reflect on their service it becomes a true learning experience and part of the curriculum. Simply volunteering can also provide real-world experiences for students, but without the learning component the impact on students will be more limited. In its WBL manual, Minnesota offers excellent examples to help focus on what kind of experiences are truly service learning (Minnesota Department of Children, Families & Learning, 2003: 32):

- Service is: cleaning up a riverbank.
- Learning is: sitting in a natural resources classroom, looking at water samples under a microscope.
- Service-learning is: natural resource students taking samples from local water sources, then analyzing the samples, documenting the results, presenting the scientific information to a pollution control agency, and reflecting on the impact these results may have on future pollution control issues and our own behaviors and attitudes.
- Service-learning is not: the same as community service, field trips, time away from class, stand-alone projects, or a course add-on.

A suggestion for CTE teachers who use service learning is to have their ELL students keep a journal of their reactions and thoughts as they engage in service. An adaptation of that idea is to use a two-column format and ask students to jot down their reactions and thoughts in their native language in one column and translate it into English in the other (or vice versa). Having students report orally to their fellow classmates about their service experiences is great practice in speaking English and for working on accent reduction.

Further Information

For more information on service learning see:

Carter, G. Is it good for the kids? The power and promise of service learning (www.ascd.org/educationnews/kids/kids072002.html).
Learn and Serve America (www.learnandserve.org/).
Learning-In-Deed (www.learningindeed.org/research/slsresearch/slsrchcsy.html).
National Service Learning Clearinghouse (www.servicelearning.org/).
National Service Learning Partnership (www.service-learningpartnership.org/site/PageServer).
Clinical Experience

Most health-related programs, particularly at the postsecondary level, include a formal clinical component. Clinical sites are workplaces (hospitals, nursing homes, and similar facilities) that enter into formal agreements with schools, colleges, or other institutions. Clinical experience may be a recurring experience every week or month or occur towards the end of the educational program, or both. Students in clinical are usually supervised by instructors from the educational institution. Most often associated with clinically based WBL is the requirement that students also pass a certification examination in order to practice their profession in the open market. Students are seldom paid for their time in clinical experience, and an outside accrediting body, government agency, or both often regulate much of the process.

Owing to the fairly low teacher–student ratio during the clinical experience, CTE teachers have some valuable time they can spend with their ELL students. One suggestion is to use as much of this time as is feasible to instruct students in the nuances of the occupation (e.g. office politics, work culture) and other behind-the-scenes knowledge they may find useful when employed. As the ELL student in clinical experience may be the only student (or one of a few) interacting with the CTE instructor in that particular work setting at that time, his or her full attention will be on the instructor’s behavior, dress, mannerisms, and language. This is a great opportunity for some positive role modeling!

CTE teachers may need to spend additional time with some ELLs to get them ready for their certification examination. Having ELLs complete mock exams can help ease their anxiety. Creating question and answer flash cards with English on one side and their native language on the other has been tried. On a positive note, the prospect of having to pass the examination can give ELLs very powerful motivation to master English—particularly the technical terminology of the occupation. Try to use that built-in motivation effectively.

Workplace Mentorship

The use of workplace mentors is an integral part of EBL approaches such as clinical, internships, and youth apprenticeship but can be used with other forms of EBL as well and can, therefore, be a useful form of WBL in itself. The STWOA defines a workplace mentor as an employee or other individual, approved by the employer at a workplace, who possesses the skills and knowledge to be mastered by the student, and who instructs the student, critiques the performance of the student, challenges the student to perform well, and works in consultation with classroom teachers and the employer of the student.

Experienced workers (particularly if they are trained as mentors) can be very effective in helping young people and adults understand the culture and expectations of the modern workplace—particularly those who have few successful adult role models in their lives. A look at some of the typical responsibilities of the workplace mentor listed in Box 3.5 reveals what a wonderful opportunity this can be to have a positive impact not only on English language acquisition but also on the personal and career development of young people and adults.
Box 3.5. Mentoring: benefits and responsibilities

**Benefits for students**
- Facilitates research into a career area through a role model in the field.
- Allows the development of career goals and strategies for meeting them.
- Promotes exploration of further educational opportunities.
- Provides an opportunity to apply classroom learning to the job.
- Stresses the development of communication and support systems.
- Practices applied numeracy and literacy skills via problem solving and report writing.

**Benefits for mentors**
- Mentors’ skills and competencies are sharpened by teaching others.
- Businesses have a larger and better equipped pool from which to hire.
- A valuable link is forged between education and the business world.
- Mentors achieve ongoing support and recognition is provided.
- Mentors achieve personal satisfaction from helping students attain personal goals.

**Student responsibilities**
- Meet with mentor and teacher to develop support activity schedule for year.
- Abide by school and business rules when participating in career activities.
- Be punctual and dress appropriately when meeting with mentor.
- Research your career; prepare questions for mentor.
- Invite mentor to visit your class/school.
- Invite mentor to meet your parents.
- Notify teacher and mentor immediately if you **must** miss a meeting.
- Establish a positive, enjoyable relationship with mentor.
- Complete evaluation form at end of mentoring year.
- Thank mentor for their interest and support (after each activity and end of year).
- Follow up on suggestions and recommendations made by mentor.

**Mentor responsibilities**
- Develop agenda for the year’s support activities and coordinate with classroom teacher and mentee.
- Examples of activities include researching a career, developing career goals and strategies for reaching them, applying classroom learning to a job and improving communication.
- Serve as role model by demonstrating acceptable work habits and attitudes.
- Schedule regular meeting times (e.g., one hour per week for 18 weeks).
- Meet with mentee at school, within a group, on the job, or on the phone.
- Establish monitoring relationships, encourage mentee to maintain contact, and report back after follow-up on recommendations.
- Provide feedback on year’s activities and return evaluation form.

West Virginia Department of Education (n.d.: 57).
The importance of mentors in the lives of at-risk youths and young adults—particularly those who have limited or negative role models in their homes and communities—has been widely reported in the literature. We should not overlook this opportunity to engage responsible role models from the workplace in the positive development of our young people—especially recent immigrants and refugees.

Box 3.6 provides suggestions offered by Allen et al. (1998: 25) for work-based mentors and others supervising English language learning students in the workplace.

Box 3.6. Tips for supervisors of English language learners

In many communities, worksite supervisors have little opportunity to interact with students from other cultures. A teacher or school-to-career practitioner may need to prepare supervisors to make the worksite a productive learning experience for ELLs. The following are some suggestions from current supervisors of ELLs:

- Hold ELLs to the same work standards as other employees. Some supervisors are tempted to make different rules for different students, especially those from backgrounds different than their own. Experienced supervisors insist that ELLs should be held to the same standards as other employees, although extra effort may be necessary to communicate workplace expectations.
- Speak English at work, even if you know the student’s native language. It may be tempting to speak a common language other than English, but ELLs will benefit from hearing adults from their own language group speaking English in the workplace.
- Prepare other employees to work with ELLs. In Boston, a supervisor provided an orientation for employees who would be working with an ELL. This ensured that the student felt welcome and that staff were patient in explaining tasks and expectations.
- Acknowledge employees’ cultural differences and celebrate bilingualism. Supervisors have found that some English language learners come into the job with low self-esteem and a feeling that bilingualism is a hindrance. Successful supervisors let these students know that bilingualism is an asset and take opportunities to celebrate their organization’s cultural diversity.
- Initially, place ELLs in jobs that require employee contact rather than public contact. After students gain familiarity with a work setting, they often take gradual responsibility for communicating in English with the public. At first, however, they will be most comfortable in positions that require them to speak only with fellow employees.

A suggestion for CTE programs that employ workplace mentors as a formal part of their students’ WBL experiences is to consider the possibility of securing mentors who speak the same native language as some of their ELL students or the ones having the most difficulty. Such matching might provide an extra level of psychological safety for students who might need that and allow them to interact with a positive role model who speaks their own language. Of course, having ELLs work with mentors who speak only English can be a positive experience as well. Students can hear English spoken and see it written correctly by someone whom they respect and with whom they have a one-on-one relationship.
Further Information

For more information on workplace mentors see:


Mentor (www.mentoring.org/program_staff/research_corner/work_based_mentoring.php?pid=al).

North Central Regional Educational Laboratory (www.ncrel.org/sdrs/areas/issues/envrnmnt/stw/sw300.htm).

Responsibilities of the Workplace Education Teacher & Workplace Mentor (www.coe.unt.edu/DrD/4520/module7/module7intro.ht) (Dr. Roger Ditzenberger of the University of North Texas).


Workplace Visits

This is an excellent form of WBL for younger students or older students who need to be exposed to a variety of workplaces to spark their career interests and to get them thinking about career choices (also called worksite or workplace field trips). Similar to a regular field trip, workplace field trips can be done by small groups or an entire class. A guide who is employed by the worksite usually conducts a tour of the workplace showing students samples of work-stations and processes that are representative of that employer. Students can ask questions, and they are often given small gifts as reminders of their visit. Workplace visits might be particularly appropriate for ELLs who are at the preproduction or early production language levels as they will not be called upon to converse in English very much during the experience.

One way to use of workplace visits to reinforce English acquisition is to give ELL students a list of machines, people, tools, and materials to locate during the visit in a type of “scavenger hunt.” As each item is sighted, students have to write down the word for it in their own handwriting, thus visually reinforcing the correct English word or phrase for the item. Another idea is to stop the group periodically and ask a student volunteer to read all or portions of signs and messages posted throughout the workplace, ranging from simple exit signs to more complex warnings of toxic substances or postings of worker rights.

Viewing a video tape of the worksite or reviewing printed materials from the company or its website prior to the trip and giving students an opportunity to practice the pronouncing the names of people, equipment, and instruments can be helpful. Another “upfront” activity might be to have students work in pairs and generate several questions to ask during their visit and check one another’s grammar and spelling. Reviewing digital pictures of the workplace visit back in class can provide additional practice in identifying and pronouncing the words for equipment, processes, or people. Another idea is to have students compose letters to their worksite host expressing their appreciation. KAPOW (Kids and the Power of Work) is an example of an organization that arranges school visits by volunteers from the workplace followed by worksite visits by students.

Further Information

For more information on workplace visits see:


For the Host: Enhancing a Student’s Workplace Visit (www.class2careers.com/employers/enhancing_a_student.pdf).

Kids and the Power of Work (KAPOW) (www.kapow.org/).
Alternative Community-Based Learning

This is a term we are using to refer to a newer form of alternative, experiential schooling in which students (often at-risk students) spend the majority of their time out in the community in workplaces, community-based organizations, museums, retail establishments, and similar settings and only occasionally receive formal instruction in the classroom. The best example of this is, perhaps, the City-As-School founded in New York in 1972, which “utilizes the facilities of over 500 New York City businesses at which students participate in professional activities” (go to www.city-as-school.org/).

This type of extensive off-campus experience might be useful for more advanced ELLs, enabling them to spend extended time immersed in an English-speaking environment in order to polish and refine their vocabulary, pronunciation, and reading, writing, listening, and speaking skills. Another idea is to place ELL students in carefully selected settings where they can interact with particular types of individuals, groups, or professions, such as actors, artists, blue-collar workers, and social workers. A combination of this model and workplace visits and job shadowing involves newly enrolled ELLs job shadowing or visiting (and perhaps interviewing) more experienced students in their community-based setting. If they speak the same native language, that might be a bonus.

Further Information

For more information on community-based learning see:


School-Based Enterprises

A school-based enterprise (SBE; also sometimes defined as school-based entrepreneurship) involves students in conceptualizing and actually launching and operating a business after conducting market research and developing a business plan. Such enterprises might operate on the school property or at a remote site such as in a mall. Students assume all of the roles of workers in a real company including president, chief financial officer, and salespeople and sometimes even raise capital by selling shares. Stern, Stone, Hopkins, McMillion, and Crain (1994: xi) describe the SBE as

a possible means to accomplish the two main missions of American high schools: preparing students for work and for further education. Students in thousands of high schools every year perform substantial productive activities that add to their academic and vocational preparation. They build or rehabilitate houses, staff child-care centers, publish books or magazines, run restaurants, raise crops or livestock, fix cars, operate retail outlets and provide other services as part of their school programs.

The primary aim of an SBE is not to run a successful business, but to learn from the process, which might include analyzing why the business failed. Operating SBEs helps reinforce the use
of academics, including the acquisition of English skills, which makes it “college prep and work prep.” Stern et al. (1994: 5) speak about the impact of enterprises on both the college-bound and the career-bound high school student:

In a house-building project, for example, students could acquire construction skills and also work out the mathematics of structural forces. Students in a school restaurant could make soups and sauces as well as analyze their nutritional content. Students running a child-care center could learn how to organize games for three-year-olds in addition to theories of child development.

Enterprises have long been a part of career and technical education; examples include a wide range of “businesses” such as campus-based restaurants and auto repair shops. Many successful school-based enterprises have been spun off as stand-alone businesses. Additional benefits are listed in Box 3.7.

**Box 3.7. Additional benefits of student entrepreneurship**

Students gain valuable knowledge of the business world including:

- the vocabulary of the business world, and our economic system;
- the characteristics and behaviors of successful entrepreneurs, exploration of career possibilities provided by running one’s own business;
- the process of planning, financing, and writing a viable business plan;
- the legal requirements of operating a small business, including structure, taxes, licenses, permits, and bookkeeping; and
- the self-knowledge and aptitude required of entrepreneurship, the ability to know one’s own strengths and weakness, to analyze feasibility, and to take risks.


One idea that might work well for ELLs involved in SBEs with the aim of acquiring CALP (this is a good example of the alphabet soup ELLs will be faced with in many occupations) is to involve them extensively in participating in and then documenting the upfront planning that goes into deciding on the product, the market, pricing, and other important decisions. Such activities involve a lot of reading, research, and writing. Another element might be having ELLs spend more time than other students in analyzing results. This will give them valuable experience in “crunching numbers” and reporting the results in narrative form. And during the normal course of “doing business” their BICS will be reinforced.

Another aspect of enterprises that should be very helpful for ELLs is interacting with the public. Such authenticity (along with a bit of pressure) can be powerful motivation to master vocabulary related to the enterprise and become adept at working with people (including irate customers), pronouncing words correctly, and actively listening. Tips for carrying out SBEs are shown in Box 3.8.
Box 3.8. Fifteen tips for instructional activities

1. When developing a school-based enterprise project, be very clear about where fund-raising ends and learning begins.
2. Remember that students learn better by doing than by listening and watching.
3. Base school-based enterprise projects on real needs of the students, teachers, and community such as school items, snack items, school spirit gear, seasonal items (Christmas wreaths, Valentine flowers, and candy), etc.
4. Rotate students who are involved. Don’t just include the same “clique.”
5. Entrepreneurship projects are usually also an opportunity to enter CTSO competitions.
6. Junior achievement, community/school mentoring, leadership programs, etc. are excellent resources for surveying project ideas.
7. Be sure to correlate entrepreneur and school-based learning projects with the curriculum.
8. Consider using bilingual students to serve as translators and have them available in the welcome centers of your schools.
9. Have students use PowerPoint to present and advertise items, instructional projects, items for sale, and programs for ninth and tenth graders. Use students to answer questions and recruit ninth and tenth graders.
10. Publicize the great activities and projects in your school and local newspapers. Take pictures for billboards and articles so that students’ skills are showcased for the businesses and communities.
11. Have students learn and showcase their skills through demonstrations during middle school visits, parents’ nights, registrations, parent conference nights, etc.
12. Require neat, complete, and accurate financial records for school-based enterprises and entrepreneurial projects. Keep an accurate record of students who worked the books and handled the currency in case of any discretionary questions.
13. Survey your community about what they believe is missing from their local economy such as movie theaters, places for teens to socialize, etc. Have parents and business partners contribute ideas as to how to fill the gaps for meeting the needs of their community.
14. Get local religious communities involved in your school enterprises. Ask them to announce key dates and activities in their church bulletins.
15. Recruit from among the local police and fire officers mentors to visit classes and address school safety measures when sponsoring project presentations and demonstrations.

Georgia Department of Education (2007: 4-7, 4-8).

A good example of an SBE tailored to the needs of and learning opportunities offered by ELLs is the Student Entrepreneur Center in Ysleta, TX, where 80 percent of ELLs are Latino. The center has two components: K–12 students from throughout the district study concepts of owning and operating a business as part of the center’s academic program, and students operate small businesses in the center’s “mercado,” or marketplace, where students sell their products and services to the public on the weekends. Features of the center include:
The center is overseen by a board made up of people from local businesses and organizations.

Board members provide input into the curriculum and offer related workshops.

Classes from schools in the district and individual students can participate in the center.

An attorney offers advice on legal issues and handles rental agreements.

Limited English speakers are paired with more advanced speakers in the Mercado.

Students take a companion ESOL class on business concepts taught in their native language.

Bilingual parents volunteer to serve as tutors.

Further Information

For more information on school-based enterprises see:

Distributive Education Clubs of America (DECA) (www.schoolbasedenterprises.org/).


School-Based Enterprise (http://kytech.ky.gov/pawbschoolenter.doc).

School-Based Enterprise (http://vocserve.berkeley.edu/abstracts/MDS-771/MDS-771-School-B.html).


Students Make a Business of Learning (www.edutopia.org/students-make-business-learning).

Virtual Enterprises

A close cousin of the traditional SBE, the virtual enterprise is a “simulated” business that sells virtual products or services. Students might go through all of the same start-up activities as a full-blown enterprise but stop short of producing or selling actual goods or services. Often, several virtual enterprises will “do business” with each other to help make the simulation more realistic.

Currently, more than 2,800 Virtual Enterprises (referred to as Practice Firms in Europe, Canada, and Australia) in 34 countries are part of the European Practice Enterprises Network (EUROPEN). While practice firms have been in operation in Europe since World War II, the Virtual Enterprises, International™ program in the United States is in its third year of existence. The U.S. program was developed by the New York City Board of Education in September 1996 with the creation of seven enterprises. By September 2001, the program has expanded to over 80 enterprises in New York and over 100 enterprises in California. (Virtual Bank of California, www.virtualenterprise.org/virtubank/aboutus.html)

Virtual businesses in New York’s high schools “sell” products ranging from flowers to sporting goods. Although the student-workers who operate a virtual SBE are not involved in some aspects of running a real-life business, they may also be involved in some business practices not carried out by real companies (e.g. import and export—more language learning opportunities!).
ELLs’ involvement in virtual enterprises can extend to designing or updating company websites, producing online marketing materials, responding to email inquiries, and dealing with “customers” over the telephone. Another interesting approach might be to have a group of ELLs who speak a common language “do business” with a virtual company in a country that speaks their language but have them do so only in English.

Further Information

For more information on virtual enterprises see:

South Carolina Virtual Enterprise Network (www.scven.org/).
Virtual Enterprise (www.tnellen.com/school/ve.html).
Virtual Enterprise California (www.virtualenterprise.org/).
Virtual Enterprise International (www.veinternational.org/).
Virtual Enterprise Virginia (http://nnadmin.sbo.nn.k12.va.us/ve/).

Workplace Simulations

Although not as authentic as actual worksites, the workplace can be simulated fairly accurately using modern technology. For example, some business education classrooms are run almost like fully operational offices using the very same hardware, software, and workflow found in an actual workplace. Most cosmetology programs have long operated almost as if they were fully functioning businesses, with “clients” receiving “services” for payment. Such scenarios are very close simulations of how actual businesses operate. This approach can be especially useful for younger students who cannot work in real workplaces because of labor laws or those who cannot drive. ELLs with limited English skills might serve in support roles early on and gradually progress through roles with more and more responsibility and that require higher and higher levels of English proficiency.

A great example of a real-world simulation for younger students is the Micro-Society, developed in Massachusetts. In “micro,” as students call it, elementary and middle school students operate simulated businesses. They levy taxes, pay wages, assume jobs, enforce laws, and engage in many of the actual activities of the real world, many of them work related.

A more narrow application of simulation is to mimic a single process or aspect of the workplace in a school setting so that the process is controlled, safe, and affordable. In air conditioning, heating, and ventilation programs, for example, a simulator is often used to teach the refrigeration cycle without having to use loud, expensive odor-producing equipment. Another example is a component of the engineering design and development course that is part of the Project Lead The Way (PLTW) pre-engineering program. Students tackle authentic engineering design problems suggested by industry partners with their guidance and support and then simulate the production of a solution. The background reading and research involved in working with complex simulations presents a golden opportunity for ELLs to apply more advanced English language skills. Also, explaining simulated processes and outcomes is excellent practice in speaking English.
Further Information

For more information on workplace simulations see:

Micro Society (www.microsociety.org/).
Project Lead The Way (www.pltw.org).
Simulation Nation (www.edutopia.org/magazine/ed1article.php?id=Art_1794&issue=mar_07#).

In-School Exposure to the World of Work

This is a broad label we have given to a myriad of strategies for bringing the world of work into the classroom (or home) rather than placing students into the workplace. This has obvious advantages, such as exposing younger students (especially younger children) to workplaces that would be too dangerous or too distant for them to visit in person. It is also makes very efficient use of time and resources. A well-orchestrated visit by a guest speaker who brings video clips, samples of work, and an enthusiastic presentation can be completed in an hour or two at no cost! A wide range of media is now available to expose students to a wide variety of occupations. They can see workers actually going about their daily tasks in their places of employment.

A suggestion for CTE instructors who have a number of ELLs with the same native language or who have an ELL student who is struggling with English is to arrange for guest presentations from time to time by workers from the occupational field who have similar backgrounds and speak these students’ native language. The ELLs can hear successful role models from their own culture using English, can emulate their accent reduction techniques, and will become familiar with the native language and English equivalents of occupational terms when the speaker points those out. Another strategy is to give students a list of questions about the guest presentation and have them work in cooperative groups to try to answer them. Yet another is to have students (including those learning English) briefly tell the class several key points they learned from or enjoyed about the presentation.

Further Information

For video clips of workers in various occupations see:

Career InfoNet (www.acinet.org/acinet/).

In-School Work-Based Learning Seminar

As was mentioned earlier, one important element that distinguishes today’s WBL, which is a part of modern CTE programs, from co-op and similar more informal work experience that was a part of vocational education in the past are the “connecting activities” that are aimed at helping students link their school-based learning to their WBL and to use one to reinforce the other. A growing number of WBL programs around the country are beginning to use formally scheduled in-school classes or seminars as a way to do this. Typical topics in such seminar courses are shown
in Box 3.9. There are obvious opportunities within these experiences to reinforce all aspects of English from spelling to listening. One aspect of successful WBL programs identified by Hughes and Moore (1999) is the use of a regular seminar or class in most programs in which several WBL students get together to discuss their experiences. “The goal is to help students think about and understand larger issues such as work design, productivity, inequality and work, and gender issues in the workplace.” (p. 4) Stern and Rahn (1995: 39) reinforced the importance of reflection when they wrote “An essential part of work-based learning is reflection. Students write about what they have seen and done in the workplace, and they discuss their writing in class.” Again, these are great opportunities for ELLs to practice and refine their reading, writing, listening, speaking, research, and similar skills. And, of course, the key is that it all focuses on ELLs’ authentic experience in the workplace so motivation is not an issue.

### Box 3.9. School-based curriculum seminar topics

- Self awareness—interests, abilities, aptitudes, and skills
- Career planning—awareness, exploration, preparation
- Seeking, applying for, and accepting employment
- Employee rights and responsibilities
- Responsibilities of the employer
- Communicating on the job
- Succeeding in the workplace
- Meeting employer expectations
- Problem solving and critical thinking
- Maintaining a safe and healthy work environment
- Work ethics and behaviors
- Interpersonal relationships
- Teamwork and conflict resolution
- Specific skills used in the work situation (e.g. skills that build upon CTE skills)
- Personal finances—money management
- Portfolio
- College options and opportunities


### Strategies for Supporting English Language Learners in Work-Based Learning

Of course, most of the principles and practices surrounding sound WBL for regular students apply to those learning English as well. Among additional suggestions to consider for ELLs, however, are some offered by the Minnesota Department of Children, Families & Learning (2003: 66) in its excellent WBL manual:

- Whether in the classroom or on-the-job, it is important for teachers, supervisors, and employers to speak slowly and clearly, not louder.
- Repeating a phrase, sentence, or directions in a variety of ways will help the ELL to better understand what is being communicated.
- Allow time for the student to think about what was communicated. The student may understand but not be able to express back to the teacher what was said.
The WBL seminar curriculum should include getting a job and keeping a job. ELLs need to be equipped with the skills to be orally interviewed, to read a recruitment advert, and to complete an application.

ELLs may need to be able to read a manual. Reading a technical manual could be a cooperative learning experience in the classroom.

SCANS skills can be practiced in class. Inform ELLs how the skills they are learning will be used in the workplace.

Collaboration with the employer is crucial. The employer/worksite supervisor needs to be aware that the student is learning English, to be given some helpful hints to work with an ELL student, to spend time listening to students to get a sense of their English skills, and to be reminded that ELLs are not disabled.

An ELL student in a WBL program can be a very enriching experience for the student, other students, the employer, and the WBL coordinator. Everyone involved can learn a lot.

### Box 3.10. Characteristics of high-quality work-based learning

- Connected to school-based learning (e.g. a refined curriculum, use of authentic assessment, career fields, and applied instruction) and connecting activities (e.g. career counseling, job and career fairs, job shadowing, and labor market information).
- Aligned with local, state, national, and industry standards.
- Demonstrates a sequential building of knowledge and skills.
- Well-planned sequential experiences.
- Collaboration between business and education is clearly defined (e.g. roles, responsibilities, expectations).
- Staff are qualified and properly trained. A “licensed” WBL coordinator is on staff when required.
- Supportive and involved parents/guardians.
- Students are properly prepared before participating in a WBL experience (e.g. safety training, worksite rules of conduct, school and business expectations)
- Industry standards, when available, are used in developing worksite performance measures.
- Documentation is maintained.


Additionally, Minnesota (ibid.: 67) offers some principles of adult learning to keep in mind when working with older students in technical centers and community colleges in WBL experiences:

- People of all ages are capable of learning new information.
- Adults have different styles of learning that require a variety of instructional techniques.
- Adults come to learning situations with many experiences. Therefore, they most often learn best when new information builds on their past knowledge and experiences. They often enjoy opportunities to share their experiences with others.
- Adult student-learners perceive themselves as autonomous and self-reliant people and reflect these perceptions in their learning expectations.
Adult student-learners’ willingness to learn is influenced by a combination of complex, innate, and extraneous forces that inhibit and encourage their learning expectations.

Adults enter learning situations with their own agendas (personal goals and objectives) that may or may not be the same as those the coordinator holds.

Adult student-learners are concerned with actual practice and want to apply their learning to present situations.

Adults can be easily threatened and learn best in a situation that is both environmentally and psychologically comfortable.

Effectiveness of Work-Based Learning

So far in this chapter we have provided a rationale for and an overview of the most common forms of WBL that are finding increased use in modern CTE programs for both high school and postsecondary students. As you can see, these authentic, real-world experiences provide excellent opportunities for ELLs to learn, practice, and reinforce English language skills as they interact with work tasks, coworkers, mentors, and the public. However, in these times of increasing pressure to add rigor to the curriculum and for students to perform better on high-stakes tests, the question always arises: Will taking students out of the classroom for days or weeks or even months hurt their academics and their English learning? Will it not damage their performance on high-stakes tests? To answer these questions, the following is a brief discussion of what the evidence reveals about the impact of WBL on academic achievement and high-stakes test performance. Reviewing much of the recent research on WBL, Wonacott (2002) wrote:

As a general rule, studies and evaluations have found positive associations between participation in approaches involving WBL and students’ educational outcomes at both the secondary and postsecondary levels. Positive effects have been reported throughout the whole range of high school experience, from attendance to course taking to graduation, whereas too little time has passed for the longer-term effects in postsecondary education to be investigated.

Wonacott goes on to say:

Typically, approaches involving WBL proceed from the premise that learning set in the real-world context of work not only makes academic learning more accessible to many students but also—even more fundamentally—increases their engagement in schooling. Such fundamental effects have been found over and over.

He reported on a five-year study of almost 3.5 million Texas high school students that found that tech prep students (who typically complete a WBL experience) had higher on-time graduation rates and higher attendance rates and had lower dropout rates than both CTE students not completing a tech prep program and the general population of students. Decreased dropout rates and increased attendance rates have been found in studies of youth apprenticeship programs (Hollenbeck, 1996; Silverberg, Bergeron, Naimson, & Nagatoshi, 1996).

Although not typical of most settings, MetWest High School in Oakland, California, has had phenomenal success with WBL in the form of internships. “Real-world experiences are stressed as more important learning tools than direct instruction and testing,” reports Sebastian (2006). MetWest has no final exams, no traditional letter grades, and no bells that herd students from class to class. Students at MetWest spend only three days out of every school week on the school
campus. On the other two days they serve as interns at schools, hospitals, government agencies, and community organizations. How well have internships worked?

Today, all 25 seniors—among them a girl in foster care, an undocumented immigrant, and several students from families where high school diplomas are rare and college degrees nonexistent—will walk the stage with a diploma in one hand and college-acceptance letters in the other. Every senior in the unorthodox school’s first graduating class has been accepted to a four-year college, a rare achievement for many urban public schools. (Sebastian, 2006)

Check out a great video clip highlighting MetWest at www.edutopia.org/met-passion-learning on the Edutopia magazine website. Among their educational experiences, MetWest students consistently rate their internship experience as one of the most demanding and most valuable reports Sebastian.

“[In most high schools], you go to your different classes, turn in your homework and you go home. We actually have to think critically about what we’re doing,” said MetWest senior Perla Cantu, 18, who moved with her family from Mexico when she was 3 years old. Principal Matt Spengler talks about the value of students’ work-based learning experiences: “They’re doing things that matter and have value outside our classrooms,” said Spengler. “It’s the difference between doing an English paper and a brochure for an animal hospital that will improve the well-being of folks’ pets. It builds independence and responsibility. Students are doing something they naturally want to do and are good at, so they come to school more.” (Sebastian, 2006)

Research looking at students’ attitudes toward WBL has been quite positive. Haimson and Bellotti (2001) reported on an ongoing national evaluation of WBL in which most students reported that WBL experiences such as internships and job shadowing were helpful to them in clarifying career goals. As might be expected, student ratings were highest for WBL activities that were tailored to their individual needs. Students also rated WBL experiences that provided one-on-one personal contact more highly than group activities such as SBEs and workplace tours. And, importantly, both paid and unpaid internship placements set up by their school had reported advantages over more casual work experiences that were arranged by students themselves.

Wonacott (2002) reported on a qualitative national longitudinal study conducted by Hernández-Gantes and Sanchez (1996) that focused on 82 students participating in programs such as tech prep, youth apprenticeship, and career academies. Students enrolled in these programs reported that their WBL experiences helped them acquire and produce new knowledge and helped them apply knowledge to real-world situations. They also reported that such experiences enhanced their level of motivation for taking personal responsibility for their own learning and career development. Brown (2003) summed up the findings of others who have examined the outcomes of WBL:

One of the desired outcomes of work-based learning is workplace readiness—the development of work-related skills and knowledge that evolve from exposure to work in selected occupations. A study of factors thought to facilitate readiness for the transition from school to work revealed that opportunities for WBL and exploration greatly facilitate work.
WBL experiences help students explore careers of interest in greater depth and helps them acquire important understanding of the work environment by incorporating real-life experiences into the learning process (Harnish and Wilke-Schnaufer, 1998; Wagner, Childs, & Houlbrook, 2001). Opportunities for teamwork, exposure to organizational practices, and real-world problem solving all contribute to vocational achievement. “Studies show that students who participate in work-based learning have greater attendance and are less likely to drop out of school, keeping the options of college and postsecondary education open to them” (Brown, 2003).

Taylor (2001) reported that WBL provides students with educational, personal, and career-related benefits as well as providing benefits to employees in the businesses who participate in WBL programs with schools. Brown (2003) wrote:

> Engagement in their own learning through personal involvement in the real-life activities at the worksite, resilience developed by learning to work independently and with others to solve problems that have a number of viable solutions, and success in applying academic and technical knowledge in the workplace serve to increase student self-confidence and motivate them to pursue learning.

Thomas Bailey and his colleagues at the Institute for Education and the Economy at Teachers College, Columbia University, have conducted a great deal of research on WBL and have reviewed previous research conducted by others. In Working Knowledge—Work-Based Learning and Education Reform (2004), Bailey and colleagues Katherine Hughes and David Moore carefully examined the claims typically made about the positive impacts WBL and what the data indicate the documented outcomes of WBL are. In their book, they first lay out many of the often cited reasons and rationales for using WBL and then present an analysis of research findings for each and then draw some conclusions about whether such outcomes are supported by data. A brief summary of some of the typical claims made for WBL along with conclusions drawn by Bailey and his colleagues follows.

### Reinforcement of Academics

Advocates of WBL and other forms of integrating academic and CTE claim that one of the positive benefits is that students will have authentic opportunities to apply and reinforce the academic concepts and skills they are learning in their academic classes (such as English). After all, one of the major criticisms of the traditional academic curriculum is its lack of perceived relevance by students and the lack of much opportunity to apply what is learned. Bailey and colleagues found some support for this claim but not as much as advocates might have hoped for. Their research discovered that students involved in WBL do have opportunities to reinforce academics they are learning but that not all WBL settings offer such opportunities, nor does WBL reinforce a wide range of academic skills and concepts taught throughout the academic curriculum. The implication is that WBL sites need to be more carefully selected to enhance this potential benefit.

### Career Exploration and Broad Workplace Competencies

Bailey et al. found that student interns were exposed to multiple jobs in the occupational field of interest and that they did learn broad, transferable skills and concepts such as problem solving and teamwork. Disappointingly, however, some student interns—even while serving in work teams—failed to be fully integrated into what Bailey et al. call participants in “communities of practice” (2004: 214). That is, students in WBL settings sometimes remained at the margins.
Further, some WBL students did not learn as much about the broader aspects of the occupational field of interest as WBL advocates hope for. Again, the implication is that for WBL experiences to be fully beneficial they need to be well planned and adequately monitored.

Youth Development

Another claim often made by supporters of WBL is that working in an authentic setting alongside adults promotes the maturation process of young people and helps in their psychological development. WBL, advocates suggest, can be instrumental in students making a successful transition from youth to adulthood. Bailey's group found that this outcome of WBL may be one of the most prevalent. The authors reported that:

The interns we studied did have opportunities to take on responsibility, to develop an understanding of who they were and what interested them, and to feel a sense of accomplishment and expertise; they often reported with satisfaction that they were “treated like an adult.” (ibid.: 214)

The authors went on to report, however, that such positive developmental outcomes were not always reported, and that some interns found their WBL experience to be restrictive and boring. The researchers concluded that appropriate WBL experiences can, in fact, contribute significantly to the maturation and development of young people.

New Modes of Thought

A rationale for WBL that the authors put forward and tested with their research was the notion that being in a real-life, demanding work environment performing authentic activities contributes to students' developing new modes of thought unlike those most common in the classroom. The researchers found that student interns in their study did have opportunities to approach problems more flexibly than they do in school and that they were often able to call upon the expertise of others around them to solve problems using what the authors call “collective cognition” (in the classroom this is usually called cheating). They even found that students in WBL settings sometimes performed “cognitive tasks that could be called executive functions or that entail higher-order thought” (ibid.: 214).

Based on their latest research with student interns in formal work-based learning experiences and their many years of experience dealing with work-based learning issues, Bailey et al. (ibid.: 3) concluded that:

Although students can learn job-specific skills in internships or apprenticeships, these types of experiences can have broader academic and developmental benefits as well. Thus work-based learning can be a productive part of a secondary school education designed explicitly to prepare students for college.

And they went on to say “We believe that work-based learning is worth pursuing and expanding” (ibid.: 219). They used several examples of workplace experiences reported by student interns they studied to support their point:

a young woman in Vermont moves from child to child in a 5th-grade music class, helping each one grasp the meaning of harmony and rhythm; a law-firm intern in New York
pores over the transcripts of court testimony, digging out the most salient points for her lawyer-supervisors; a tourism-academy student inspecting the halls of a hotel finds himself the target of resentment from frontline housemen who object to his unearned managerial position. The first student experiences herself in new ways in relation to children, and discovers a calling in teaching. The second intern challenges herself to use new analytical and expressive skills, and is taken seriously by legal professionals. And the third begins to understand the complexities of power and status in a work organization, and to ask questions about where he stands in that system of relationships. None of these experiences would likely be found in a classroom. (ibid.: 221)

As you will recall, WBL is one of three key components of the School-to-Work Opportunities Act of 1994 and has produced positive results. In the special section devoted to school-to-work (which is now a generic term referring to this approach to education reform rather than the 1994 legislation, which has expired) in the December 2002 issue of the Phi Delta Kappan journal, Hughes, Bailey, and Karp (2002: 274) wrote:

Research indicates that participation in School-to-Work can improve high school students’ attendance, grades, and graduation rates. School-to-Work students are just as likely to attend college as comparison-group students and in some cases even more likely. School-to-Work also contributes significantly to students’ career preparation, through exploration activities and work-based learning experiences. Participation in school-to-work yields benefits for young people by fostering planful behavior, maturation, self-confidence, and an understanding of the importance of school.

Work-based experiences support the academic and career development purposes of schooling when they are connected to school-based learning. A major study conducted by the National Center for Research in Vocational Education (NCRVE) (Stern, 1997) collected data from 2,000 high school and 1,000 community college students. Some were working in jobs linked to their school experience and some were not. The researchers found that, among the high school students, those whose jobs were linked to school had consistently more positive perceptions of their jobs and of the relationship between work and school. Stern (1997: 2) reported that, after reviewing the literature on WBL, the NCRVE team found that the positive outcomes of work experience for students include:

- acquisition of knowledge or skill related to employment in particular occupations or industries;
- career exploration and planning;
- learning all aspects of an industry;
- increasing personal and social competence related to work in general;
- enhancing students’ motivation and academic achievement.

The evidence suggests, however, that, to benefit from WBL, great care must be taken to link worksite experience to the classroom, which is not always easy to do.

**Work-Based Learning for Teachers**

A final word on WBL is that such experiences can be very beneficial for teachers as well as for students—particularly for academic teachers, counselors, principals, ESOL specialists, and oth-
ers. Many academic teachers have a difficult time answering the age-old question students always raise: “How am I ever going to use this?” This is as true for ELL students as it is for native students. Teachers in Industry and similar programs are aimed at helping teachers collect “ammunition” to answer such questions. By spending a few days, a week, or an entire summer (or even longer) in the modern workplace, teachers can see at first hand how the academic content and skills they teach are actually used by workers in the real world. And, just as importantly, they can sometimes see how some of the things they teach are rarely if ever used. If academic teachers become more aware of the competencies, skills, technology, and processes that are used in the workplace their students will inhabit, they can more effectively tie what they teach to work-based contexts of application. As ESOL teachers and others who support ELLs become more familiar with what goes on in today’s workplaces, they also can help tie the English language skills they are helping their students acquire to meaningful contexts.

A good example of such a program is the PASS program in Arizona, which has served hundreds of teachers so far. Teachers spend 45 hours working in five different businesses. Another example is the “externship” program operated by the Industry Initiatives For Science and Math Education in California. In this program math and science teachers from kindergarten through community college spend the summer working in high-tech companies to better grasp the skills and knowledge that their students will need in the future. The program began in 1985 and pays teachers a salary during their summer work experience. Other examples are the Boston-based Leadership Initiatives for Teaching and Technology, which offers a 13-month-long program that combines work experience in local companies with graduate coursework. In Delaware, teachers can spend three days at various businesses and non-profit organizations.

Further Information

For more information on teacher WBL experiences see:

3.5
A Challenging Task

As we conducted our research for this book, we realized the task of teaching ELLs in CTE programs is even more daunting than we thought. How can CTE teachers help ELLs succeed in schools and beyond in the midst of limited preparation to meet their special needs, lack of instructional resources, and the increased pressure imposed by high-stakes testing? Searching for answers, we visited a postsecondary technical institute and several high schools, and interviewed CTE instructors, ESOL support staff, and ELL students enrolled in CTE programs. One CTE program we visited was located in a high school facing the same ELL-related challenges that many schools and CTE programs in the United States face: Leto High School. Leto is part of the Hillsborough County Public School (HCPS) district in Tampa, Florida. The state of Florida is unique in the country in having county-based school districts. In some cases, large counties mean huge school districts, such as the HCPS district, which also mean large enrollments and complex bureaucratic structures. The district has over 200 schools, including 25 high schools, all of which offer a range of CTE programs, four secondary career centers, and four postsecondary technical institutes. HCPS is the ninth largest school district in America, serving over 200,000 students annually, and continues to grow every year. Part of that growth, not surprisingly, is accounted for by ELLs from many different countries. The district is currently serving 25,000 ELLs speaking over 100 different languages. Among them, Spanish, Vietnamese, Haitian Creole, and Korean are the most common languages spoken by the district's ELLs.

A Familiar Trend

Part 1 of this book highlighted the increasing growth of ELLs and the rich diversity of family and linguistic backgrounds represented in American schools today. It also outlined the challenges
to schools and teachers, especially in those communities with increasing numbers of ELLs and limited economic resources. In this context, the HCPS district is similar to school districts in other parts of the country that serve large numbers of minority students, including many who are recent immigrants. In HCPS, only 44 percent of students are white. The largest minority groups are Hispanic (26 percent), Indian (32 percent), and black (22 percent). A serious challenge is recruiting teachers who are representative of the student body. Over 75 percent of teachers in the system are white; only 9 percent are Hispanic and fewer than 1 percent of the teachers are of Indian ethnicity.

Leto High School serves more ELLs than most schools (almost 25 percent are classified as limited English proficient) in the district. The school website (www.sdhc.k12.fl.us/schools/School_Info.asp accessed 12/12/07) reports that the majority of the student body is Hispanic (65 percent), and Caucasians (18 percent), African-Americans (10 percent), and other ethnicities constitute the minority groups. Further, the majority of the students are considered economically disadvantaged (60 percent) and a significant number have a disability (13 percent).

Leto High School is rated a “D” school based on a complex state-developed formula dominated by the state’s high-stakes test, the Florida Comprehensive Assessment Test (FCAT). The FCAT is the centerpiece of Florida’s plan to increase student achievement and is administered to students in grades 3–11 to measure student performance in mathematics, reading, science, and writing. The school rating system has created a great deal of controversy because, for example, the financial rewards go to schools that are rated high (typically schools in higher socioeconomic areas); whereas schools rated low (often those located in lower socioeconomic areas) are publicly humiliated as failing schools. Leto High School belongs to the latter category. The school is located in an area of modest older homes and light industrial sites, and also failed to meet “adequate yearly progress” (AYP) based on No Child Left Behind criteria.

Ironically, schools such as Leto High School are the ones in need of further support as they struggle to meet the instructional challenges posed by the growing enrollment of students with special needs. In these schools, there are many hard-working, dedicated teachers and administrators who go beyond the call of duty to help all students succeed—including students with limited English proficiency. We found this to be the case at Leto High School as well as at the other schools we visited. Under such conditions, though, how do teachers and administrations manage to help students, ELLs in particular?

Because of its large number of ELLs, Leto High School has a full-time ESOL coordinator and four paraprofessionals who work with academic and CTE teachers. We interviewed the ESOL coordinator, and observed the paraprofessionals at work. In general, we were struck by the complex nature of their work and the many hats they must wear: counselor, social worker, tester, translator, academic advisor, and broker of resources for teachers, students, and parents. Though dedicated and committed to meeting the needs of Leto’s ELLs students, ESOL support personnel certainly have their work cut out.

Also, as many ELL students arrive at Leto throughout the school year, ESOL personnel administer an oral English proficiency test or a modified version of a standardized written English comprehension test for placement purposes. Throughout these and other multiple interactions, ESOL personnel get to know each student and develop a good understanding of individual needs. This level of understanding reinforces the suggestion made to CTE teachers at various points in this book: Reach out to ESOL staff, get to know and build a rapport with them, and seek their assistance as a standard procedure for understanding the level of English proficiency and other special needs of your ELL students.
Career and Technical Education at Leto High: All English Language Learners Welcome

The HCPS district, as with all school systems in this country, places a clear emphasis on college preparation. Fortunately, HCPS has a solid CTE system offering alternative options for students. One such option, the career academy model, is gradually being implemented in many of the high schools, and there has been a longstanding and successful partnership between the school district and Hillsborough Community College (and other nearby colleges) as part of the career pathways (tech prep) program. Overall, Florida has followed the evolution of CTE described in Part 2 of this book and has many options available throughout the state depending on local needs. However, it is important to keep in mind that the educational climate in Florida—as in most states—is driven by the state’s high-stakes test, the FCAT. The influence of FCAT on the states’ public schools is perhaps second to none throughout the country. It literally dominates almost every policy, curricular, and programmatic decision in the state. For example, HCPS has recently experienced significant reductions in the number of CTE teaching positions and might lose a double-digit number of positions again next year as a result of budget reductions and the continued emphasis on FCAT preparation. Increasingly, more students are being shunted into intensive reading and mathematics preparation and remediation courses at the expense of electives such as CTE. Unfortunately, ELLs are no exception to this trend.

At Leto, knowing the impact that learning technical skills can have on the future lives of students, CTE teachers allow and even encourage low English-proficient students to enroll in their programs. ELL students are often part of families who were brought to the United States by extended family members who immigrated previously. Interestingly, as reported by ESOL staff, more CTE than academic teachers seem to be at least partially fluent in one or more languages other than English, perhaps because of their extensive work background and exposure to other languages in multiple workplaces.

To get an idea of what one CTE program at Leto looks like and what is done to help ELL students under the current educational climate, we visited the computer systems technology (CST) program, which is staffed by a single instructor. This CTE program has the goal of preparing students for immediate employment and/or further education or training in the computer field. Graduates might be involved in supporting local area networks, servicing or installing computers or software, or performing other related work. Students can enroll in the program for up to four years, but most are in the program for only two. During the 2007–2008 school year, 61 percent of students in the program were Hispanic, 6.5 percent black, and 24 percent white. ELL students in the program have come from Cuba, Laos, Puerto Rico, Colombia, China, Haiti, Ethiopia, and many other countries.

Many of the students in the program struggle in their academic courses, and some were enrolled in the district’s dropout prevention program. In contrast, most of the same students excel in the computer systems technology program because it is of personal value to them. Knowing this, the instructor pushes students to achieve industry certification if at all possible (e.g., A+ and Network). The instructor noted that graduating with a diploma in addition to one or more industry-recognized certificate gives the program graduates far more credibility and leads to higher starting wages. To encourage this, he has copies of students’ industry certificates prominently displayed on a bulletin board to serve as a motivator for other students. He also sponsored the creation of a computer club and fund-raising activities to cover the expense related to seeking industry certification.

The commitment of the program instructor, and other CTE instructors we interacted with at Leto and other schools, to helping ELLs was commendable. The computer systems technology
instructor at Leto has one advantage that the majority of CTE instructors around the country lack, and one advantage that all CTE instructors have in common. “I have two important advantages,” he pointed out. “First, I speak Spanish and, second, students are doing something in this program they are interested in.” The latter advantage, in particular, supports one of the key points stressed in this book: ELL students (and any student for that matter) will find relevant, personally meaningful educational experiences in a CTE course or program where they can learn and use English for an authentic purpose.

Teaching English Language Learners at Leto High School

What is the instructor in Leto’s computer systems technology program specifically doing to help his ELLs succeed in the program? One obvious reason for their perceived success is the instructor himself. He is a bit unusual in that he was born in Guyana in South America, learned Spanish while studying in Russia, and now teaches in the United States. He spent over 20 years in the computer industry so he has that precious commodity that most academic teachers lack, lots of rich, varied real-life experience in the workplace, as well as bilingual communication skills, and first-hand understanding of English learning issues. Drawing from his personal experiences, he purposefully emphasizes a welcoming climate to make new ELLs less self-conscious about their limited English proficiency, their heavy accent, or feeling an outsider. He has had some students who speak English quite well but who come from a very different culture so this is something to be attuned to. He also makes sure to learn a few phrases in each new ELL’s native language so that he can establish a rapport and as a sign of respect for the student. He also tries to stay aware of other events going on in the lives of ELLs that might affect their ability to concentrate (e.g. having to miss school for a court appearance). He has also learned important instructional strategies over the years and he shared some tips for teaching ELLs. For example:

- Although he is fluent in Spanish, he rarely intervenes, interprets, or answers questions in Spanish. He tries to use English almost exclusively, to push his Spanish-speaking students to improve their English proficiency.
- He usually pairs a new ELL up with a more experienced student who speaks the same native language. However, he cautions the experienced student not to do the work for the new student—only to interpret or otherwise provide help and support.
- One of the strongest motivators he has found is frequently inviting previous students who are successfully working in the industry to come back and share their stories with current students.
- He has found that trying to locate translations of the textbook (or have sections translated) is not very helpful and that most students—even native English speakers—rely very little on the textbook. Most of the concepts, information, and procedures they need to learn are increasingly available online. Both ELLs and non-ELLs seem to be more likely to read material on their computer screen than they are from a textbook or reference book.
- Even though some students have access to some online learning materials in their native language (e.g. Cisco Academy in Spanish and French), students tend to use the English version.

From this instructor’s perspective, the best instructional strategies are those truly representing authentic tasks. For instance, to learn about computer hardware, students could work on computers in the program (which they do), but they also repair computers brought in by students and teachers, and upgrade and reinstall the local area network serving the program every fall. In
addition, he encourages his students to work in the computer industry part-time while still in school (remember the chapter on WBL). This is a source of invaluable experience and contacts, sometimes leading to full-time employment for students after graduation.

Regarding personal interactive style, the CST program instructor recommends not relying too much on non-verbal expressions to determine if students understand what he is saying. Rather, he suggests using questioning techniques to assess whether students understand the material (see Parts 1 and 3 of this book for suggestions on questioning strategies). He offered the example of Wen, a Chinese student who politely nodded and smiled but did not understand anything that was being said. For this instructor, the greatest challenges are those ELLs who speak a native language not spoken by him (or any nearby instructor) or by the ESOL support staff. Nevertheless, he pointed out that these students can be surprisingly successful early in a CTE program if they are engaged in practical learning and working collaboratively with other students.

The feedback from the CTE instructors we talked to at Leto and other schools and the ESOL staff was consistent with and reinforced the ideas expressed in Parts 2 and 3 of this book. Given the right conditions and supports, ELLs should exhibit enhanced motivation and performance, and display fewer behavior problems in CTE classes than they do in academic classes. The common explanation is the fact that students in CTE classes are engaged in relevant, meaningful learning through hands-on activities. Leto's ESOL staff provided additional insights to this effect:

- CTE teachers seek out the help of the ESOL staff much less frequently than do academic teachers largely because of the early success CTE teachers have forming relationships with their students, and the early success students experience learning English through practical applications and in workplace contexts.
- One successful strategy has been summer workshops to assist CTE teachers in modifying specific areas of their curriculum for their ELLs to address specific issues. For example, ELLs have more difficulty with vocabulary on tests than they do with the content. A proven strategy that CTE teachers have learned is the use of fewer essay questions and fewer distracters for multiple-choice questions to make written tests less language dependent.
- CTE instructors tend to use more visuals, models, objects, etc. than academic teachers, which contributes to the English learning success of their students.
- Teachers have the rewarding experience of seeing more growth and development among their ELL students than among their regular students.

Building upon the Hidden Value of Career and Technical Education

Like many CTE instructors, the CST program instructor at Leto High School faces challenges and frustrations from time to time. In spite of these challenges, he is having great success with his ELLs due to his unique background and commitment to meeting their needs. However, he finds that his most powerful tool is the inherent interest and built-in motivation of the CTE program itself. His students are interested in what they are learning and, as this book has stressed several times, there is absolutely no substitute for that. Unlike most academic teachers, who have to constantly challenge their ELLs (as well as other students) to stay focused and to pay attention, he was quick to say that this is not something he has to worry about.

For students, the motivation to become acculturated and “make it” in this country is found in the value of doing relatively well in a CTE program. Many of the program graduates go right to work after graduation, and others continue their education or go into the military. Even those who are not able to complete the program because of their family situations or other reasons
learn basic yet important skills allowing them to progress toward economic self-sufficiency. For example, Natalie—a 14-year-old Cuban immigrant—left the program after only one year when her family moved away. Nonetheless, while in the program she achieved A+ industry certification, which will serve her well in the job market. Then there is Emanuel from Colombia, who earned over $20 an hour in a computer firm a year or so after completing high school and the computer systems technology program. Further, there is Sebastian, who went on to the University of Miami and later told the CST instructor that he would most likely be in trouble with the law today if it were not for the computer technology program at Leto High School. The program gave Sebastian a reason to stay in school and finish.

In our preparation for this book we have come to greatly respect and admire the CTE teachers in our nation’s high schools, adult technical centers, and community colleges, who are truly making a difference in the lives of their students—notably those who are learning English. These CTE instructors and other support staff are not only helping their students master English, but assisting them in acquiring the skills and knowledge that will help them build a productive future, earn a decent living, and make it possible for them and their families to more fully partake of the American experience.
The following resources can help with some of the ELL-related instructional challenges teachers face in the classroom, in the laboratory, and in WBL settings. Some of these resources are accompanied by selected annotations and/or websites that provide handy hints and guides to best practices. Some chapters of this book also contain resources related to specific topics discussed in the chapter.

**Understanding English Language Learners and Meeting Their Needs**

**www.celt.sunysb.edu/ell/tips.php**
Created by the Center for Excellence in Learning and teaching at Stony Brook University. The site offers readers a range of tips on how to accommodate individual ELL needs in the classroom.

**www.ncela.gwu.edu/pubs/pigs/pig19.htm**
Working With English Language Learners: Strategies For Elementary And Middle School Teachers.

**www.thirteen.org/edonline/concept2class/mi/index.html**
Created by the Educational Broadcasting Corporation. This site offers a range of detailed workshops for online use. This particular site allows readers to explore through online demonstrations and explorations how multiple intelligences can be used to accommodate ELLs.

**http://eslinfusion.oise.utoronto.ca/index.asp**
A site developed by the Ontario Institute for Studies in Education. This site offers a practical guide for content-teachers on how to infuse their curriculum to meet the needs of ELLs.
Resources

www.netc.org/focus/challenges/ell.php
English Language Learners.

www.frsd.k12.nj.us/rfmslibrarylab/di/differentiated_instruction.htm
Provides information on understanding your heterogeneous classroom as well as providing teaching strategies to facilitate learning in a heterogeneous classroom.

www.alliance.brown.edu/tdl/tdl-strategies/crt-principles.shtml
Succinct account of what culturally responsive pedagogy is.

www.ankn.uaf.edu/standards/standards.html
Standards developed by Alaska Native educators to provide a way for schools and communities to examine the extent to which they are attending to the educational and cultural well-being of the students. These “cultural standards” provide guidelines or touchstones against which schools and communities can examine what they are doing to attend to the cultural well-being of the young people they are responsible for nurturing to adulthood.

www2.alliance.brown.edu/dnd/dnd_links.shtml
Created by the NYC Board of Education & Office of English Language Learners as well as the Education Alliance at Brown University. This site offers viewers a gateway compendium to sites that allows teachers to think about how to incorporate and embed language learning for ELLs into their content classes.

Using Technology

http://members.shaw.ca/priscillatheroux/introduction.html
Created by P. Theroux, a teacher in Alberta, Canada, this site comprises over 100 pages on how to effectively use technology to cater to a heterogeneous classroom.

http://eslwritingtech.wikidot.com/2006-latesol-cool-online-tools
This is a wiki site that is dedicated to using online tools to aid ELLs in their writing development and provides useful information about how to use blogs and wikis.

www.thirteen.org/edonline/concept2class/webquests/index.html
Created by the Educational Broadcasting Corporation, this site offers a detailed online workshop to explore the use of webquests to accommodate ELLs.

www.ncrel.org/sdrs/areas/issues/methods/technlgy/te900.htm
Critical Issue: Using Technology to Support Limited-English-Proficient (LEP) Students’ Learning Experiences.

General ELL Resources

www.usingenglish.com/
This site provides resources for ELLs to learn English.

http://shop.ascd.org/productdisplay.cfm?productid=706088
Strategies for Success With English Language Learners. A 350-page “action tool” available for purchase from the Association of Supervision and Curriculum Development (ASCD).
www.sitesforteachers.com/
This site is a gateway compendium of ELL resources for content teachers.

www.nwp.org/cs/public/print/resource/2476
Resources for Educators of English Language Learners: An Annotated Bibliography. An excellent, comprehensive compilation of ELL resources.

www.esl-galaxy.com/worksheetmakers.htm
This is a site created by Futonge Nzembayie Kisito. It provides online downloadable activity templates to use with ELLs to help them build on their English skills.

Project, Problem, and Inquiry-Based Learning

www.techlearning.com/db_area/archives/TL/2003/01/project.php
An interactive site explaining how to use project-based learning in a classroom. Easily adapted for ELLs.

www.bie.org/pbl/pblhandbook/tools.php
Provides downloadable rubrics to use in assessing project-based learning.

www.pbl.cqu.edu.au/content/online_resources.htm
This is a compendium gateway site by created by Central Queensland University in Australia on problem-based learning. Lots of useful links, examples, and simulation role plays teachers can adapt for ELLs.

www.thirteen.org/edonline/concept2class/inquiry/index.html
Created by the Educational Broadcasting Corporation. This site offers an online workshop designed to assist teachers with principles of inquiry-based learning. This particular site allows readers to explore through online demonstrations and explorations how inquiry-based learning can be used to facilitate an ELL’s understanding of the curriculum.

Traditional, Alternative, and Authentic Assessment

www.thirteen.org/edonline/concept2class/assessment/index.html
Created by the Educational Broadcasting Corporation. This site offers an online workshop designed to assist teachers with principles of assessment. This particular site allows readers to explore through online demonstrations and explorations how inquiry-based learning can be used to measure an ELL’s learning trajectory.

www.ncela.gwu.edu/resabout/assessment/
This site was created by the National Clearinghouse for English Language Acquisition and Language Instruction Educational Programs. It offers handy resources about assessment and accountability for ELLs.

www.fairtest.org/nattest/NCLB_assessing_bilingual_students.pdf
A PDF link that leads to a document detailing the problems and solutions associated with assessment of ELLs under NCLB legislation.
Resources

Instructional Concepts, Methods, Materials, and Other Resources

www.thirteen.org/edonline/concept2class/constructivism/index.html
Created by the Educational Broadcasting Corporation. This site offers an online workshop designed to assist teachers with principles of constructivism.

http://a4esl.org/q/h/
This site is a part of the Internet TESOL Journal. It is dedicated to providing online activities for ELLs to improve their English independently.

www.ncela.gwu.edu/practice/itc/index.htm
In The Classroom—A Toolkit for Effective Instruction of English Learners (especially Secondary Grade Level Content, Addressing Diverse Needs and Interrupted Formal Schooling sections).

www.free-english.com/
Free-English.com (free assessments, workbooks, activities, etc.).

www.ncela.gwu.edu/pubs/nysed/languagearts/ch00fm.pdf
The Teaching of Language Arts to Limited English Proficient/English Language Learners.

http://slincs.coe.utk.edu/gtelab/find.html
Southern Links: The Workforce Education LAB (Learning Activities Bank) is an interactive resource of work-related basic skills lessons for use by instructors in the workplace or in traditional adult education programs and by adult learners.

http://bogglesworldesl.com/
“Lanternfish”; free worksheets, flash cards, and classroom-exercise downloads that combine a fun approach with activities that help students learn vital English skills.

www.enchantedlearning.com/Home.html
Enchanted Learning; a wealth of resources and materials (nominal subscription fee).

www.onestopenglish.com/
One Stop English; online learning resources.

www.flyworld.com/
LeapFrog’s Fly pen allows students to hear their own handwritten English translated into Spanish. The gadget interacts with what the user writes, so students will stay engaged with their learning.

Cooperative and Collaborative Learning

www.thirteen.org/edonline/concept2class/coopcollab/index.html
Created by the Educational Broadcasting Corporation. This site offers an online workshop designed to assist teachers with principles of cooperative learning. This particular site allows readers to explore through online demonstrations and explorations how cooperative and collaborative learning can be used to effectively with ELLs.
Connecting with Parents and the Family

**www.missouri-pirc.org/esol_downloads.html**
A compendium gateway site created by the Missouri Parent Information and Resource Center. This site offers a range of downloadable resources in English and in Spanish for parents and the facilitation of home–school communication.

**www.isbe.state.il.us/bilingual/htmls/ellparents.htm**
Created by the Illinois State Board of Education. It details resources for schools and parents on how to promote home–school communication.

**www.colorincolorado.org/aftoolkit.pdf**
AFT Toolkit for Teachers: Reaching out to the Hispanic Parents of English Language Learners (CO).

**http://education.state.mn.us/mdeprod/groups/EnglishLang/documents/Announcement/007884.pdf**
This site links to a resource of videos available in nine languages on helping the parents of ELLs understand their local school.

**www.aelweb.vcu.edu/publications/famlitcurric/**
The Fairfax County Family Literacy Curriculum, written by B.L. Wong.

Legal Aspects

**www.aft.org/topics/nclb/downloads/QAEEL0404.pdf**
Created by the American Association of Teachers to inform through question and answers what the legal requirements to assessing ELLs are under NCLB.

**www3.ksde.org/sfp/esol/federallawandenglishlanguagelearners.htm**
This website details the legislative acts that govern ELLs in education.

**www.elc-pa.org/english/policy.html**
Created by the Education Law Center and the Pennsylvania School Reform Network. This site details the laws and regulations governing ELLs in education.

English Language Learners and Career and Technical Education

**www.icsps.ilstu.edu/info/resources/ell/index.html**
Illinois Center for Specialized Professional Support.


Guide to Involving English Language Learners in School-To-Career Initiatives.
Working with Adult English Language Learners

www.cal.org/caela/tools/program_development/prac_toolkit.html

www.cal.org/caela/esl%5Fresources/collections/factsheets.html

www.escueleaelectronica.com
This website is useful for adults wanting to complete their high-school equivalency diplomas. This site offers courses in Spanish to prepare for the General Educational Development.

Miscellaneous and Resources of General Interest


www.publicagenda.org/specials/immigration/immigration.htm

www.ncela.gwu.edu/
National Clearinghouse for English Language Acquisition and Language Instruction Educational Programs.

http://jccdrc.jobcorps.gov/ELL
Resources for ELLs.

www.eplc.org/clearinghouse_ell.html
Education Policy Information Clearinghouse.

www.ncela.gwu.edu/
National Clearinghouse for English Language Acquisition and Language Instruction Educational Programs.

www.ed.gov/about/offices/list/oela/index.html?src=mr
Office of English Language Acquisition, U.S. Department of Education.

www.thecenterweb.org/irc/index.html
The Illinois Resource Center provides assistance to teachers serving linguistically and culturally diverse students.
www.iamme.org/
The Illinois Association for Multilingual/Multicultural Education (IAMME) promotes professional competence and standards in educational services for linguistically and culturally diverse students.

www.itbe.org/
The Illinois Teacher of English to Speakers of Other Language and Bilingual Education (TESOL-BE) is a non-profit professional organization of individuals involved in the teaching of English to speakers of other languages and bilingual education.

www.colorado.edu/education/BUENO
The BUENO Center for Multicultural Education promotes high-quality education and cultural pluralism through a range of research, training, and service projects, and disseminates research findings and related information.

www.cal.org
The Center for Applied Linguistics engages in the study of language and the application of language research to educational, cultural, and social concerns.

www.clmer.csulb.edu
The Center for Language Minority Education and Research provides information and technical assistance on diversity and language-minority education. Focus areas include two-way bilingual immersion education and educational technology.

www.usc.edu/dept/education/CMMR/home.html
The Center for Multilingual, Multicultural Research (CMMR) at USC provides a variety of resources for bilingual and ESOL students, Asian-American, Latino/Hispanic, Native American, and African-American students, and for professional development and technology in education.

www.cal.org/crede
The Center for Research on Education, Diversity, and Excellence (CREDE) helps identify and develop effective educational practices for linguistic and cultural minority students, and those placed at risk by factors of race, poverty, and geographic location.

www.idra.org
The Intercultural Development Research Association (IDRA) advocates for the right of every student to equality of educational opportunity. IDRA fulfills its mission through professional development, research and evaluation, policy and leadership development, and programs and materials development.

www.nabe.org
The National Association for Bilingual Education (NABE) is a national organization exclusively concerned with the education of language-minority students in American schools. NABE promotes equal educational opportunity for language-minority students and academic excellence through research, professional development, public education, and legislative advocacy.

www.eduhound.com/espanol
A division of T.H.E. journal (Technological Horizons in Education) has launched a Spanish/English educational companion to its website. The new site is designed to serve as a resource for
the Spanish-speaking educational community and foreign language teachers and students. Use its searchable links on a broad range of topics relating to Hispanic and ESL education for elementary and secondary students.

http://easternstream.org/?q=
Eastern Stream Center. National resource center dedicated to improving educational opportunities for all children.

http://escort.org/?q=
ESCORt: a national resource center dedicated to migrant education.

www.tesol.org/
Teachers of English to Speakers of Other Languages (TESOL) offers a wealth of conferences, workshops, and grants, plus ideas for ELL teachers.

www.coursecrafters.com/ELL-Outlook/index.html
The ELL Outlook. A bimonthly e-newsletter published by Course Crafters dedicated to providing the latest research, news, program models, and interviews with ELL researchers, educators, and policymakers.

Translation and Dictionaries

www.mezzofanti.org/translation/index.html
This site offers free online translation engines and dictionaries.

www.longman.com/ae/dictionaries
Longman Learner Dictionaries (including Business English Dictionary).

http://grammar.quickanddirtytips.com/default.aspx
Grammar Girl—Quick and Dirty Tips for Better Writing.

www.visualthesaurus.com/
Online thesaurus.

Resources for Career and Technical Education Programs

Career and Technical Student Organization (CTSOs)

www.fbla-pbl.org/

www.deca.org
Marketing education: DECA (Distributive Education Clubs of America).

www.deltaepsilonchi.org or www fldex.org
Delta Epsilon Chi (DEX) for postsecondary students.
Teaching English Language Learners in Career and Technical Education Programs

www.skillsusa.org/
Industrial education: Skills USA/VICA.

www.hosa.org
Health occupations education: Health Occupation Students of America.

www.fcclainc.org/
Family and consumer science education: Family, Career and Community Leaders of America.

www.tsaeb.org/
Technology education: Technology Student Association.

wwwffa.org
Agriculture and natural resources education: Future Farmers of America.

www.nationalpas.org/
National Postsecondary Agricultural Student Association.

www.nyfea.org/
National Young Farmer Educational Association.

Career and Technical Education Curriculum Resources

www.acteonline.org/resource_center/lpl/lessonplans.cfm
ACTE; lesson plans by topic.

www.aavim.com/main.html
American Associate for Vocational Instructional Materials.

www.eduscapes.com/tap/tapapplied.html
Teacher Tap.

www.internet4classrooms.com/career_tech.htm
Internet 4 Classrooms.

www.khake.com/page93.html
Career curriculum resources.

www.khake.com/page60.html
Vocational curriculum resources.

National Career and Technical Education Resource Centers/
Networks

www.cete.org/
Center on Education and Training for Employment (Ohio State).

www.cew.wisc.edu/
Center on Educational and Work (University of Wisconsin).
www.nccte.org/
National Research Center for Career and Technical Education. Note: The National Center is now located at the University of Louisville. It was previously located at the Ohio State University, the University of California, Berkeley, and most recently the University of Minnesota. Not all documents produced by the center at these previous locations are still available.

www.familiesandwork.org/
Families and Work Institute.

http://casn.berkeley.edu/
Career Academy Support Network.

www.ncacinc.org/ncacinc/site/default.asp
National Career Academy Coalition.

www.jff.org/
Jobs for the Future.

www.cord.org/index.cfm
Center for Occupational Research and Development.

www.aypf.org/
America Youth Policy Forum.

www. engr. washington.edu/cwd/
Center for Workforce Development (University of Washington).

http://main.edc.org/
Education Development Center.

www.cete.org/acve/
ERIC Clearinghouse on Adult and Vocational Education.

www.eric.ed.gov/ERICWebPortal/Home.portal?_nfpb=true&_pageLabel=Home_page
ERIC Clearinghouse.

www.sreb.org/programs/hstw/hstwindex.asp
High Schools That Work (Southern Regional Education Board).

www.tc.columbia.edu/iee/
Institute on Educational and the Economy.

www.khake.com/page50.html
Vocational Information Center.

www.cord.org/ncpn-index.cfm
National Career Pathways Network.

www.khake.com/page36.html
State CTE resources.
Professional Organizations

http://acteonline.org/
Association for Career and Technical Education.

www.ateaonline.org/
American Technical Education Association.

www.aacc.nche.edu/
American Association of Community Colleges.

Miscellaneous Career and Technical Education Resources

http://worklink.coe.utk.edu/glossaryb.htm
Glossary of workforce education terms.

www.careerclusters.org/
States’ Career Cluster Initiative.

www.nccte.org/exemplary/index.html
Exemplary and promising programs.

Resources for Work-Based Learning

General Information, Rationale, Research Base, Legal Aspects, Examples

Publications


Websites

http://vocserve.berkeley.edu/CenterPoint/CP1/CP1.html
Work-Based Learning for Students in High Schools and Community Colleges

www.ed.gov/pubs/SER/SchoolWork/study7k.html
Critical Elements of School-To-Work Reform—Element Seven: Work-Based Learning Strategies.

www.dol.gov/odep/categories/youth/career.htm
U.S. Department of Labor, Career Preparation and Work-Based Learning Experiences.

www.work-basedlearning.org/index.cfm
Work-Based Learning.org.

Handbooks, Manuals, and Forms

www.state.vt.us/stw/WBLMInfosheet.html
Work-based Learning Manual (Vermont).

www.icsps.ilstu.edu/info/resources/ell/Supporting%20Limited%20English%20Proficient%20Learners%20for%20Success.pdf

Connecting Youth To Work-Based Learning—Blueprint for a quality program (MN).

www.wblconnections.com/index.htm
Work-Based Learning Connections (California Community Colleges).

www.calworkplace.org/wbl.pdf
Work-Based Learning Handbook (California Community Colleges).

www.cal.org/caela/tools/program_development/prac_toolkit.html
Practitioner Toolkit: Working with Adult English Language Learners (The National Center for Family Literacy and The National Center for ESL Literacy Education at the Center for Applied Linguistics).

Career Related Education Manual-Including Standards & Guidelines For Work-Based Learning (Georgia).

www.ncset.org/publications/essentialtools/flsa/
Handbook for Implementing a Comprehensive Work-Based Learning Program According to the Fair Labor Standards Act (for students with disabilities—National Center on Secondary Education and Transition (NCSET)).

www.k12.wa.us/CareerTechEd/workbasedlearning.aspx
Work-Based Learning Handbook (Washington).
www.nww.org/qwbl/tools/kcktoolkitGuides/Teachers_Guide_WBL.PDF
Quality Work-Based Learning Tool Kit (Kansas City).

http://wvde.state.wv.us/hstw/docs/WORKBASED%20HANDBOOK%20REVISED%20November%202005.pdf
Work-Based Learning Handbook (West Virginia).

www.mentoring.org/program_staff/research_corner/work_based_mentoring.php?pid=al
Handbook of Youth Mentoring.
Additive bilingualism  Theory that the acquisition of a second language does not interfere in the learning of the native language; second language can be acquired either simultaneously or after native language development.

BICS (basic interpersonal communication skills)  In effect, language skills needed for everyday personal and social communication.

Bilingual education  Instruction conducted mostly in English but during which concepts are explained in students’ primary language and a sheltered English approach is used for academic subjects.

Bilingualism  The ability to communicate effectively in two languages.

CALP (cognitive/academic language proficiency)  Language skills needed for cognitive/academic tasks in the mainstream classroom.

Comprehensible input  Language presented at the student’s level of comprehension. Input is made comprehensible through the use of visuals, context, and other cues.

Developmental bilingual education  Instruction provided in the student’s native language for an extended time period while the student simultaneously learns English, resulting in bilingualism; often used synonymously with “late exit bilingual education.”

Dual-language program  Instruction in both a student’s native language and English to develop strong skills and proficiency in both. Also known as two-way immersion.

Early exit bilingual education  Transition to English as quickly as possible, often using sheltered instructional strategies; some content instruction in the native language is provided; transition to mainstream in 2–3 years.

*Major portions of this glossary were contributed by Dr Barbara Cruz and Dr Stephen Thornton, University of South Florida.
English language learner (ELL)  A student whose limited proficiency in English affects his or her academic achievement in school. Also known as a limited English proficient student.

English as a new language (ENL)  An alternative term for English as a second language used by the National Board for Professional Teaching Standards.

English as a second language (ESL)  The learning of English by speakers of other languages; often used synonymously with ESOL (see below).

English to speakers of other languages (ESOL)  The learning of English by speakers of other languages; often used synonymously with ESL (see above).

Heritage learner  A student who is exposed to a language other than English at home. Heritage learners usually have varying degrees of knowledge of the home language.

Immersion  Instructional approach in which 100 percent of the instructional time is spent communicating through the target language; in comparison with submersion, the class is composed mostly of speakers of the target language with only a few non-native speakers.

Immersion language instruction  Instruction—including academic content—in a student's non-native language. Students are mainstreamed into regular, English-only classrooms with no special support.

Language minority student  A student whose primary home language is not English. Language minority students may have limited English proficiency or may be fluent in English.

Late exit bilingual education  In contrast to early exit bilingual education, transition to mainstream over a period of 4–6 years; a significant amount of instruction takes place in the student's native language while gradually increasing instruction in English.

Limited English proficiency (LEP)  A term used for students whose limited proficiency in English affects their academic achievement in school. Such students are also known as English language learners.

Mainstreaming  The practice of integrating English language learners into regular classes.

Maintenance bilingual education  Instruction delivered in both the native language and the target language; often used synonymously with late exit bilingual education.

Native language  Also called the mother tongue or home language. This is generally thought of as the first language a person learns.

Pull-out  The practice of pulling students out of their regular, English-only classrooms for special instruction to develop English language skills.

Self-contained  Used to describe classrooms located in “regular” schools but separate from regular education classrooms in which English language learners receive special instruction apart from their peers.

Sheltered English instruction  The use of comprehensible content and strategies to teach grade-level subject matter in English while simultaneously also developing English language skills. Also known as specially designed academic instruction in English.

Sheltered immersion  An instructional approach that promotes English language development while providing comprehensible grade-level content.

Silent period  Common, varying period of time during which a new language learner listens to, but does not speak in, the new language.

Specially designed academic instruction in English (SDAIE)  See sheltered English instruction.

Structured immersion  Instructional approach in which students' proficiency in English is taken into account so that subject matter is comprehensible.

Submersion  Instructional approach in which the class is composed entirely of students learning a target language; 100 percent of the instructional time is spent communicating through the target language.
**Subtractive bilingualism**  The process whereby the acquisition of a second language interferes with the maintenance of the native language, effectively replacing the first language.

**Total physical response**  Instructional approach integrating both verbal and physical communication (and often movement) so that students can internalize and eventually “code break” a new language; especially effective with beginning language students, in vocabulary instruction, and with students who are primarily kinesthetic learners.

**Transitional bilingual education**  Language acquisition theory emphasizing fluency in a learner’s native language first, before acquiring fluency in a second language.

**Two-way immersion**  See dual-language program.

**Vocational English as a second language (VESL)**  The learning of English skills specific to a particular occupation field. Often involves collaboration between career and technical education and VESL instructors, who work together to identify the specific oral and written English skills appropriate for the VESL course.

**Workplace literacy programs**  Programs designed to upgrade current workers’ English-language reading and writing skills. Workplace literacy programs can also serve LEP workers by providing workplace ESL instruction.
### Appendix A*  
**Strategies for Working Effectively With Special Needs Students**

<table>
<thead>
<tr>
<th>Techniques</th>
<th>Desired outcomes</th>
<th>Examples</th>
<th>Special considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alternative methods for response</td>
<td>Students respond to questions or assignments in a manner compatible with their needs</td>
<td>Allow a student who has difficulty with writing activities to tape-record answers in either the first language (L1) or the second language (L2)</td>
<td>Ensure that students know that varied responses are acceptable</td>
</tr>
<tr>
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<tr>
<td>Individualized instruction</td>
<td>Learners are motivated and complete tasks appropriate to their needs, interests, and abilities</td>
<td>The individualized learning program (IEP) may state that student will be able to use particular sociolinguistic cues and responses in appropriate first-culture (C1) and second-culture (C2) settings</td>
<td>IEPs must include language (L1 and L2) needs</td>
</tr>
<tr>
<td>Learning centers</td>
<td>Students are able to reinforce specific skills while working at their own pace; individualization</td>
<td>Create an area in the classroom where several different activities exist for reviewing sight words in both L1 and L2</td>
<td>The learning center could have visual and auditory stimuli from the students’ cultural backgrounds</td>
</tr>
<tr>
<td>Modify presentation of abstract concepts</td>
<td>Students are gradually and systematically introduced to abstract concepts</td>
<td>Supplement the presentations of abstract concepts with visual aids, manipulatives, examples from students’ previous experiences, or other direct hands-on experiences</td>
<td>This is an application of cognitive/academic development. The concepts as well as the language of cognitive and academic tasks must be taught and built upon students’ prior cultural experiences</td>
</tr>
<tr>
<td>Peer tutoring</td>
<td>Learning gains are experienced by both the tutor and the student being tutored</td>
<td>A student who has mastered a list of sight words or math facts presents these items on flash cards to another student needing assistance in this area</td>
<td>If the student needing assistance is limited English proficient, it would be most effective to have the peer tutor be bilingual in L1 and L2</td>
</tr>
<tr>
<td>Planned ignoring</td>
<td>Reduce possible confrontations over minor misbehaving; eliminate inappropriate behavior after a few moments</td>
<td>Teacher elects to ignore some whispering between two students during independent work time</td>
<td>This must be done consistently and with equal frequency with non-minority students</td>
</tr>
<tr>
<td>Planned physical movement</td>
<td>Prevent or minimize behavior problems in the classroom</td>
<td>Allow students to move to a learning center or study booth for part of their independent work time instead of remaining seated at their desks for the entire time</td>
<td>Effective technique if cultural variations in mobility and interaction patterns among students are considered</td>
</tr>
<tr>
<td>Positive reinforcement</td>
<td>Increase the frequency of appropriate responses or behaviors</td>
<td>Provide the student with extra free time when a math or reading assignment has been completed</td>
<td>Cultural as well as personal relevance must be considered</td>
</tr>
<tr>
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<tr>
<td>Prompting</td>
<td>Increase the students’ probability of generating a correct response</td>
<td>Underline one letter of a pair of letters that a student is studying (e.g. b versus d). This helps focus the learner’s attention on characteristics of both letters, thus reducing confusion</td>
<td>Cues or prompts must be culturally appropriate and meaningful to the student</td>
</tr>
<tr>
<td>Providing choices</td>
<td>Reduce fears associated with assignments; alleviate power struggles between teacher and student</td>
<td>Select two reading selections of interest to the student, both of which address the same desired objective. Allow the student to select one of them for the assignment. If student does not select either of these, introduce a third selection and ask student to choose</td>
<td>Both L1 and L2 development should be incorporated into assignments when choices are provided</td>
</tr>
<tr>
<td>Providing success</td>
<td>Improve confidence; student views self as a successful person</td>
<td>Initially, reduce the difficulty level of material and gradually increase the level as easier tasks are met with success</td>
<td>Must consider L1 and L2 development to ensure success with academic tasks</td>
</tr>
<tr>
<td>Proximity control</td>
<td>Increase students’ time on task; reassure frustrated students</td>
<td>Periodically circulate throughout the classroom during group or independent activities, spending time next to particular students</td>
<td>Cultural implications of proximity must be considered, as personal space varies considerably from culture to culture</td>
</tr>
<tr>
<td>Role playing</td>
<td>Students learn to confront the reactions of others and ways to deal with the situations similar to the role-play event</td>
<td>A specific problem, such as discrimination, is identified and described. Students role-play how they would confront the problem and discuss their roles or behaviors upon completion</td>
<td>This is an effective technique in assisting with the acculturation process</td>
</tr>
<tr>
<td>Self-monitoring</td>
<td>Reduce inappropriate behaviors; increase time on task; students assume responsibility for their own behaviors</td>
<td>Instruct the students to record a check mark on a separate sheet of paper each time they catch themselves tapping their pencils on their desks during spelling class</td>
<td>This may assist minority handicapped students to learn behaviors appropriate to the culture of the school and classroom</td>
</tr>
<tr>
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<tr>
<td>Shortened assignments</td>
<td>Complex or difficult tasks are more manageable for students</td>
<td>Structure the presentation of weekly spelling words so that two or three new words are introduced and studied each day throughout the week, rather than presenting all words at the beginning of the week</td>
<td>This technique may assist the teacher to check whether students have the preskills necessary for selected tasks</td>
</tr>
<tr>
<td>Signal interference</td>
<td>Prevent minor inappropriate behaviors from escalating while not paying specific attention to the students’ misbehaviors</td>
<td>Flick the classroom lights on and off when the noise level in the class becomes too loud</td>
<td>Students experiencing acculturation will have difficulty adjusting to unfamiliar signals</td>
</tr>
<tr>
<td>Simplify reading level</td>
<td>Students study content similar to other classmates but at a level commensurate with their reading abilities</td>
<td>Provide student with lower level reading material that covers the same topic others are studying</td>
<td>The materials can be in both L1 and L2 with different reading levels for either student</td>
</tr>
<tr>
<td>Student accountability</td>
<td>Students become aware of the connection between their actions and the consequences of these actions</td>
<td>Establish rewards and consequences for completing work or exhibiting appropriate behavior, ensuring that these rewards and consequences are consistently implemented</td>
<td>Limited English-speaking students experiencing acculturation may require some role playing, mediation, or other teaching of expectations to best understand accountability</td>
</tr>
<tr>
<td>Student input into curricular planning</td>
<td>Facilitate students’ ownership in their education</td>
<td>Allow students to select some specific topics to be covered in an upcoming unit of study</td>
<td>Ensure that minority learners with disabilities know how to contribute in the planning process</td>
</tr>
<tr>
<td>Time out</td>
<td>Helps students regain control over self; student thinks about own behavior and behavioral expectations</td>
<td>Remove a student to a quiet or time-out area for 3–5 minutes when student is unable to respond to a situation in a non-aggressive manner</td>
<td>Sociocultural implications of the time-out must be considered to ensure students understand the purpose of time out</td>
</tr>
<tr>
<td>Touch control</td>
<td>Increase time on task and awareness of one’s behavior</td>
<td>If a student is looking around the room during independent work time, gently tap student on shoulder as a signal to continue working</td>
<td>As with proximity control, the cultural implications of the touching must be considered or the effect of this technique will be lost</td>
</tr>
</tbody>
</table>

Appendix B
General Suggestions for Working with ELLs

- Use a multisensory approach to teaching involving photographs, multimedia presentations, video clips, drawings, schematics, charts, diagrams, and similar materials.
- Provide students with written versions or summary notes of any lengthy “talks” you might give.
- Give ELL students a bit more time to read assignments outside of class if necessary.
- Limit your use of slang and idioms.
- Encourage ELL students to engage in informal talk with other students throughout the day while working on projects and taking breaks. This mimics the social structure of the occupation and involves the use of the “dialect” of the particular age group involved.
- Set up situations where ELLs can socialize and interact with English-speaking students (e.g. ask an English speaker to take an ELL to lunch or assign a newly enrolled ELL to shadow an experienced student the first week or two).
- Set up portions of the classroom and/or laboratory to exactly replicate the work setting and label equipment, instruments, tools, and work areas.
- Be careful with your use of humor.
- Try to build in student choice for reading activities and assignments.
- When ELL students are ready, ask them to make a brief presentation to the class about their native country including information on the culture, food, and dress as well as the labor market and jobs. Ask them to make use of flip charts and PowerPoint presentations. This will give them valuable practice in using English.
- Using student portfolios as part of the grading process will give ELL students added incentive to read and interpret written English.
- Try your best to help ELLs become accepted “citizens of the class.”
- Encourage ELLs to indicate in their résumés that they speak English and another language.
Remind them to specify the level of fluency they possess in each language. Research shows that those who speak two or more languages have access to more jobs and are more likely to be employed. Spanish is the most sought-after second language among U.S. employers, although Asian languages and Russian are becoming more in demand.

- Try to avoid calling something by several different names or technical terms.
- Avoid intricate sentences with several clauses; use short sentences.
- When speaking to low-level English language students, speak just a bit more slowly than normal with a little more time between phrases and sentences.
- Encourage ELLs to read English newspapers and websites and listen to English television and radio daily.
- Encourage ELLs to participate in discussions and to ask and answer questions; this may not be the norm for students in their country.
- Encourage students learning English to chat online with language exchange partners using sites such as My Language Exchange at www.mylanguageexchange.com/ and Friends Abroad at www.friendsabroad.com/. They can sign on as an English speaker and chat with someone who speaks their native language.
- Try to have extremely critical safety information translated into students’ native languages as a precaution. You might then discuss this with them and have students repeat the critical information in English.
- Be aware of what your body language is saying.
- Help ELLs gain access to a computer at home or at a local library after school hours. The vast resources available in multiple languages can be a wonderful resource for them.
- Remember that a picture is worth 10,000 words! Use photos liberally in your handouts, instruction sheets, PowerPoint presentations, and other instructional materials, especially when teaching complex processes or procedures.
- When students are working on software or the internet consider pairing an ELL with an English speaker to encourage informal dialog and practice.
- Arrange the classroom and laboratory around work teams, pairs, or other small groupings of students to encourage dialog, collaboration, and teamwork.
- If you pair students for activities, try to pair an ELL with a native English speaker rather than another student who speaks his or her own language.
- Use graphic organizers, flow charts, and diagrams to aid understanding of processes and concepts.
- If you write on a white board, Smart Board or other surface, write legibly.
- Show ELLs how to take and review notes.
- As appropriate, begin with lower-order questions to pull ELLs into the conversation and move on to higher-level questioning.
- Do not force a student to speak, recite, or read aloud if they are hesitant.
- Where possible, import ELLs’ home culture and language into your classroom or laboratory.
- Make sure that you, any fellow teachers, and your students know how to pronounce the name of your ELL students.
- Do a bit of research on the country of origin of your ELLs (and have your students do the same); learn a bit about their culture, food, dress, and customs.
- Keep your language and explanations simple but do not water down the content.
- Recognize that your ELLs will make many mistakes with their English. Avoid “overcorrecting” them.
- Keep in mind that, just because ELL students may progress rapidly with their English, this does not necessarily mean that they are progressing as well with the content of your program.
Try to prepare your native English speakers for the arrival of new ELL students. Talk about the challenges they will face and how it would be for them to be “dropped” into a foreign country tomorrow.

If you have large numbers of ELLs, try to recruit volunteers to work with them on a regular basis to extend your reach. Having volunteers who have work experience in your CTE program area would be plus.

See if you can find appropriate material for students to listen to on their audio devices (you will be amazed at how fast new arrivals will get an iPod!) such as recorded instructions, podcasts, or segments that you or other students record.

Get new ELL students engaged in English language learning as soon as possible. Don't “protect” them too long.

Assign an experienced student to be a “buddy” to each new ELL to show them around and to help them fit in. Using a bilingual peer might be a good idea.

Read aloud to your ELLs every now and then so they can see how you pronounce technical and occupational terminology.

Encourage students to read outside school.

Have a few bilingual dictionaries in your classroom or laboratory if possible.

If appropriate, in each major unit, identify the “must know” terminology and display it prominently on bulletin boards, handouts, and other materials. Work with students intensely to make sure that they know these terms and how to use them in context.

Ask others to save you the instructions that come with electronics, lawn equipment, appliances, and other consumer or commercial products (especially those associated with your CTE program area). These are often printed in multiple languages and include technical terms and diagrams. Manuals for tools and equipment purchased for your program may also be available in other languages from the supplier or manufacturer.

Consider putting labels on all your equipment, instruments, and tools in your shop or laboratory in English and in other languages. Periodically during the day ask different students to read a randomly selected label and describe what each piece of equipment does.

Learn a few basic phrases in the native language of your ELLs to make them feel welcome and to show that you have a genuine interest in them as an individual.

Avoid the common mistake of speaking louder to students who do not speak English.

Paring native English speakers with limited English speakers for certain activities or certain periods of time can have benefits.

Put time and energy into translating instructional materials for only the most critical, most dangerous, and most difficult to master learning tasks.

Fully recognize that most CTE instructors are a bit reluctant to fully embrace ELLs initially. It might take some serious self-examination to warm up to the idea of having students in your program who speak little or no English.

Be aware of the many differences in cultural norms among students from various countries. For example, looking someone in the eye might be a very positive or a very negative social practice, depending on the country.

Avoid interrupting students to correct their pronunciation or grammar.

Keep in mind that many immigrants and refugees may be dealing with very serious emotional issues related to leaving their own country. This may involve separation from family members, the trauma of a long journey to the United States or being in hiding to avoid danger or capture by authorities.

Encourage your ELLs to remain proud of their own country and language while, at the same time, learning English.
- Try to locate a member of the community or a businessperson who speaks the same language as each of your ELL students to serve as a tutor, guide, or mentor.
- Keep a look out for bilingual materials from publishers and online.
- If possible, attend workshops and seminars on working with ELLs.
- Do not hesitate to get help if you need it. Your school or college may have bilingual counselors, ESOL specialists, bilingual curriculum specialists, and others who can help.
- Try to keep your lecturing to a minimum when you have students who speak limited English.
- Throughout the time ELLs are in your program, continue to reinforce what it will be like to work in your particular career field. Set them up for success in WBL experiences that will follow.
- Frequently share video clips with students from sites such as CareerInfoNet (http://careerinfonet.org/) and Career Voyages (www.careervoyages.gov/index.cfm) depicting what working in your occupational field is actually like.
- Even if students know no English, do not delay their participation in the CTE program. They can begin listening, watching, and learning their first day in school!
- Try to instill in your ELLs a positive attitude and confidence that they can learn English, finish school, and secure employment and/or further education in the career field.
- Regardless of the career aspirations of your ELLs, expose them to the entire career ladder in their field of interest. For example, if they are interested in becoming a child care worker, help them learn how they can become a certified teacher later on by completing a degree.
- Use your ELL success stories to motivate future students. If students who spoke little English when they began your program do exceptionally well, try to get them to return to speak to your new students. Get their comments on video tape and take photographs.
- Introduce the specialized terminology and jargon unique to your career field as students need it. Avoid overwhelming them with such new information upfront.
- Asking students if they understand and taking their “yes” response as proof might not be enough. Ask them to paraphrase, demonstrate back to you, or repeat key points to make sure they followed you.
- Be sensitive to issues of gender equity that might be different in other countries, especially when dealing with students who are not of your gender.
- Be aware that ELL students may experience other demands and stresses from time to time. This might include financial difficulties at home, a parent losing their job, difficulty securing immigration services, visas expiring, or other stresses.
- Do not overplay the English language skills necessary for a particular entry-level occupation that a student might be preparing for. If writing lengthy text or speaking publicly are not required in the occupation, avoid pushing ELLs beyond their capabilities in those areas before they are ready.
1.1 Orientation

Proposition 227 was part of a referendum in California to abolish bilingual education for ELLs in favor of more instruction in English. The No Child Left Behind legislation is a federal initiative to oversee teacher performance and student improvement in literacy and numeracy through such accountability measures as standardized testing in schools.

1.7 Not All Parents are the Same

Two research studies from the Center for Research on Education, Diversity & Excellence (CREDE) have recently been published through the Center for Applied Linguistics. The two books, arising out of a four-year and a three-year study respectively, center on the solidification of home–school ELL communication. The first, entitled Creating Access: Language and Academic Programs for Secondary School Newcomers, describes the ins and outs of an effective education model—newcomer programs for immigrant students—and is designed to help district personnel create a newcomer program or enhance an existing program. The second book, called Family Literacy Nights: Building the Circle of Supporters within and beyond School for Middle School English Language Learners, discusses a project to improve students' education through a home–school collaboration called "Family Literacy Nights." The program brought parents of linguistically and culturally diverse students together with teachers and students, resulting in greater parental involvement and improved student learning. This report offers practitioners strategies for implementing similar programs.


Part 1


A handbook for improving education for English language learners through comprehensive school reform. Providence, RI: Education Alliance at Brown University.


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