Board of Education Agenda Item

Item: D. **Date:** November 29, 2006

Topic: First Review of Preliminary Report to the Governor and General Assembly on the Analysis of Statewide Data Relating to the Requirements for Obtaining a High School Diploma for Students with Limited English Proficiency (SB 683)

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Origin:

____ Topic presented for information only (no board action required)

_X_ Board review required by
- _X_ State or federal law or regulation
- ____ Board of Education regulation
- ____ Other: _____

_X_ Action requested at this meeting ____ Action requested at future meeting: _____ (date)

Previous Review/Action:

_X_ No previous board review/action

____ Previous review/action
date _____
action _____

Background Information:
Senate Bill 683 required the Virginia Board of Education (BOE) and the Virginia Department of Education (VDOE) to collect and analyze statewide data on students with limited English proficiency (LEP). The bill required the BOE and the VDOE to make recommendations relating to the requirements for obtaining a high school diploma for students with limited English proficiency.

To meet the requirements of SB 683, a study was conducted that used a snapshot of data from students in grades 9-12 enrolled during the 2005-2006 school year. Some of the data required to meet the General Assembly's request were not available for this report. A final report will be provided in January 2007 that will incorporate the complete data.

Summary of Major Elements:
Results of this study show the following:

- Virginia's LEP students in grades 9-12 are diverse, speaking over 130 languages, and represent more than 140 countries. The majority (55 percent) of LEP high school students are economically disadvantaged. Although the largest concentration of LEP students in

grades 9-12 is in northern Virginia, these students are geographically distributed throughout the Commonwealth.

- School divisions reported a wide variety of strategies to support LEP student achievement. These strategies are generally consistent with principles cited in the research literature as being effective in supporting LEP student academic achievement.
- School divisions also reported barriers to LEP student graduation. These included resource limitations, academic challenges, social challenges, and consideration for students' age and time in Virginia public schools.
- LEP high school students had similar scores to non-LEP students on the Algebra I and Algebra II Standards of Learning (SOL) end-of-course tests. Scores on the remaining SOL assessments were lower than for non-LEP students, with the largest gap in the science SOL assessments.
- There was a strong relationship between LEP students' scores on the English SOL assessments and their scores on all other SOL assessments. The results of a multiple regression analysis suggest that the skills required to succeed on the English 11 SOL assessments are also important for success on the other ten SOL end-of-course tests used in grades 9-12.
- Additional data to complete the study will be incorporated into a final report scheduled for completion in January 2007. The final report will include recommendations for statewide initiatives for LEP high school students.

Superintendent's Recommendation:
The Superintendent of Public Instruction recommends that the Board of Education waive first review and approve the Preliminary Report to the Governor and General Assembly on the Analysis of Statewide Data Relating to the Requirements for Obtaining a High School Diploma for Students with Limited English Proficiency (SB 683).

Impact on Resources:
This responsibility can be absorbed by the agency's existing resources at this time. If the agency is required to absorb additional responsibility related to this activity, other resources may be required.

Timetable for Further Review/Action:
With the Board of Education's approval, the report will be submitted to the General Assembly on or before December 1, 2006. Phase II of the report will be presented to the BOE for first review in January 2007.

VIRGINIA BOARD OF EDUCATION

REPORT

PRELIMINARY REPORT ON

The Analysis of Statewide Data Relating to The Requirements for Obtaining a High School Diploma for Students with Limited English Proficiency (SB 683)

PRESENTED TO THE

VIRGINIA BOARD OF EDUCATION

NOVEMBER 29, 2006

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Executive Summary

Senate Bill (SB) 683 required the Virginia Board of Education (BOE) and the Virginia Department of Education (VDOE) to collect statewide data on Virginia's public school students with limited English proficiency (LEP). The bill required information on demographics, school division programs and services, and academic indicators of success such as scores on Standards of Learning (SOL) assessments for these students. The bill also required that the BOE and the VDOE analyze the relationships between these factors as they relate to LEP students and the requirements for obtaining a high school diploma as set forth in the *Regulations Establishing Standards for Accrediting Public Schools in Virginia* and the *No Child Left Behind Act of 2001*, and make recommendations on the steps to take to resolve the issues relating to the requirements for obtaining a high school diploma.

To meet the requirements of SB 683, the VDOE and the BOE conducted a study that used a snapshot of data from students in grades 9-12 enrolled during the 2005-2006 school year. Some of the data required to meet the General Assembly's request were not available for this report. This preliminary report describes the results of the analyses completed thus far, and ongoing VDOE activities that support LEP student achievement. A final report will be provided in January 2007 that will describe the results of the additional analyses and recommendations for statewide initiatives for LEP high school students.

The results of available data show that Virginia's LEP students in grades 9-12 are a diverse group that speak over 130 languages and represent more than 140 countries. They are geographically distributed across the state in urban, suburban, and rural communities. The largest concentration of LEP students is in northern Virginia. However, several school divisions with smaller populations have a large percentage of LEP students in grades 9-12. A majority (55 percent) of LEP students are economically disadvantaged, and small percentages are migrant or are experiencing homelessness. Several school divisions reported difficulty evaluating LEP students for special education services. Eight (8) percent of LEP students in grades 9-12 receive special education services, compared with 14 percent of the non-LEP student population in the same grades.

On average, LEP students earn lower scores and pass the SOL assessments at lower rates than non-LEP students on 10 of Virginia's 12 SOL assessments in grades 9-12. LEP students and non-LEP students have similar average scores and pass rates on the Algebra I and Algebra II SOL assessments. The largest performance gap between LEP and non-LEP students exists on the science assessments.

To understand the relationship between performance on the different SOL assessments, the Department of Education analyzed the relationship between LEP student performance on the English 11 SOL assessment and LEP student performance on other SOL assessments. The results suggest that the skills required to be successful on the English 11 SOL are critical for success on the other SOL assessments. The relationship suggests that instruction focused on improving skills needed for the English 11 SOL will also support academic achievement in all other areas assessed through Virginia's SOL assessment program.

School divisions provide a variety of services to meet the educational needs of LEP students. More than 90 percent of Virginia's LEP students are in school divisions that:

- Exercise the option for LEP students to remain in high school until age 22;
- Provide targeted remediation for LEP students who fail the English 11 SOL;
- Offer after-school tutoring for English as a second language students; and
- Provide summer school ESL instruction.

Less than 16 percent of LEP students in grades 9-12 are served by school divisions that provide weekend-tutoring. School divisions reported using a variety of other programs and services to support LEP students' academic success. These include:

- Providing services that support students and their families that are linguistically accessible to speakers of other languages;
- Offering targeted subject area, literacy, language and life-skills classes for LEP students;
- Providing professional development for teachers that is focused on instructional methods for LEP students;
- Making available adult education classes and services to older LEP students; and
- Taking advantage of community resources that can support LEP students' academic achievement.

These services are consistent with the practices identified in the research literature as effective in supporting LEP student achievement (August & Shanahan, 2006; Center for School and District Improvement, 2004; Ladson-Billings, 1995; Thomas & Collier, 2002; Walqui, 2000).

VDOE asked school divisions to report the barriers LEP students encounter in graduating from high school. Ten (10) percent of school divisions serving LEP students reported no barriers to graduation. Those that reported barriers listed factors such as resource limitations, challenges mastering academic materials due to language barriers, social factors, and considerations for students' age and the time it takes to learn academic English.

Additional information is forthcoming. The Department is in the process of analyzing the data that will be incorporated into the final report. This includes the following information on grade 9-12 LEP students enrolled in the 2005-2006 school year:

- Graduation rates and diploma types;
- Drop-out rates;
- Class rank;
- College attendance;
- Amount of formal education obtained prior to entering Virginia public schools; and
- Age at entry into Virginia public schools.

In preparing the final report, the BOE and VDOE will consider the information provided by this study, existing VDOE programs and resources that support LEP student achievement, and best practices to support LEP student achievement, and provide recommendations to address the issues surrounding LEP high school students.

Introduction

Senate Bill (SB) 683 required the Virginia Board of Education (BOE) and the Virginia Department of Education (VDOE) to collect statewide data on Virginia's public school students with limited English proficiency (LEP). The bill required information on demographics, school division programs and services, and academic indicators of success such as scores on Standards of Learning (SOL) assessments for these students. The bill also required that the BOE and the VDOE analyze the relationships between these factors as they relate to LEP students and the requirements for obtaining a high school diploma as set forth in the *Regulations Establishing Standards for Accrediting Public Schools in Virginia* and the *No Child Left Behind Act of 2001*, and make recommendations on the steps to take to resolve the issues relating to the requirements for obtaining a high school diploma. A copy of SB 683 is provided in Appendix A.

To meet the requirements of SB 683, a snapshot of data was analyzed from the 2005-2006 school year. Data were obtained from three sources:

- VDOE student and assessment databases, which maintain data provided by local school divisions;
- A two-part survey requesting data directly from school divisions; and
- The National Student Clearinghouse[1] for information on college attendance.

Some of the data required to meet the General Assembly's request were not available in time to submit this report. Data that were unavailable include:

- Student data collected from school divisions to supplement VDOE records;
- Verified student graduation and drop-out data;
- College attendance data.

This report describes the study findings and the resources VDOE currently provides to support LEP student achievement. A final report will be provided in January 2007 that will incorporate the additional data and provide recommendations to address the issues surrounding LEP high school students.

Data collection from the school divisions was conducted in two parts. The first part focused on programs and services offered to LEP students and barriers to high school graduation. School divisions were asked whether their division offered each of the following programs and services to LEP high school students:

- The option to allow LEP students to attend school until age 22 as permitted by the *Code of Virginia*, Section 22.1-5. D;
- Targeted remediation classes to students who fail the English 11 Standards of Learning (SOL) assessment;
- Summer school English as a Second Language classes;
- After-school tutoring;

1 The National Student Clearinghouse collects and maintains data on post-secondary and secondary student degree, diploma, and enrollment. For more information, see www.studentclearinghouse.com.

- Weekend tutoring; and
- Other programs, strategies, or services for LEP high school students and their families.

School divisions were also asked to report barriers LEP students encounter in graduating from high school.

The second part of the data collected from school divisions requested individual student information that VDOE does not collect on a regular basis from a random sample of 30 percent of the LEP students in grades 9-12 from each division. The random sample was generated with the qualification that all school divisions responsible for educating at least one LEP student in grades 9-12 be included. The sample size for each school division ranged from one to 2,771 students. School divisions were requested to provide the following information for each student included in the sample:

- The year the student first entered Virginia public schools;
- The number of years of formal education the student had prior to entering Virginia public schools;
- Whether the student's attendance since entering Virginia public schools was uninterrupted or interrupted; and
- The student's class rank (top, middle, or bottom third) of their high school class.

The data collections were conducted using the Department's secure data collection tool. The Department requested that local school divisions provide data about student programs and services in September 2006. One-hundred seventeen (117) of 132 divisions responded, resulting in an 89 percent response rate.

Data collection for the individual student data was completed in November 2006, and the data are currently being analyzed. Thus they were not available to include in this report. These data will be incorporated in a final report scheduled for completion in January 2007. Analyses of the following data will be incorporated into the final report:

- Number of years of formal education LEP students obtained prior to entering Virginia public schools;*
- Age of first enrollment in Virginia public schools; *
- Class rank or standing;*
- Graduation and dropout information for LEP students;
- Types of diplomas LEP students earned; and
- College attendance of Virginia's LEP students in grade 12, based on information provided by the National Student Clearinghouse.

The remainder of this report describes the results of the analyses conducted in response to SB 683. The first section of the report describes Virginia's LEP student population in grades 9-12. This is followed by information on the strategies and services school divisions implement to support LEP student academic success and the barriers that LEP students may

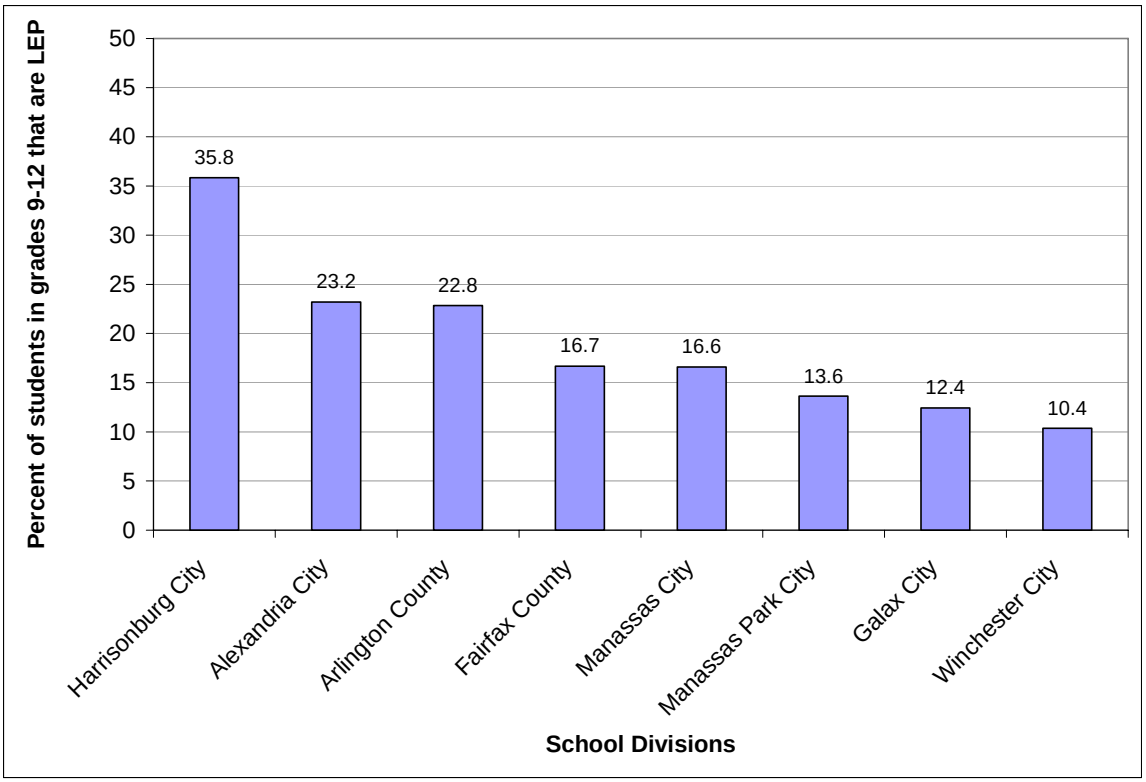
* This information will be based on a random sample of 30 percent of LEP students in grades 9-12 enrolled in the 2005-2006 school year. All school divisions that educated LEP students in grades 9-12 in the 2005-2006 school year were requested to participate in the data collection.

encounter while pursuing a high school diploma. The next section focuses on LEP student achievement as measured in terms of SOL assessment data. The final section of this report provides a summary of current VDOE resources to support LEP student achievement, and a summary of the next steps the BOE and VDOE are taking to complete the study and provide recommendations that address the issues surrounding LEP high school students.

Demographics of Limited English Proficient (LEP) High School Students

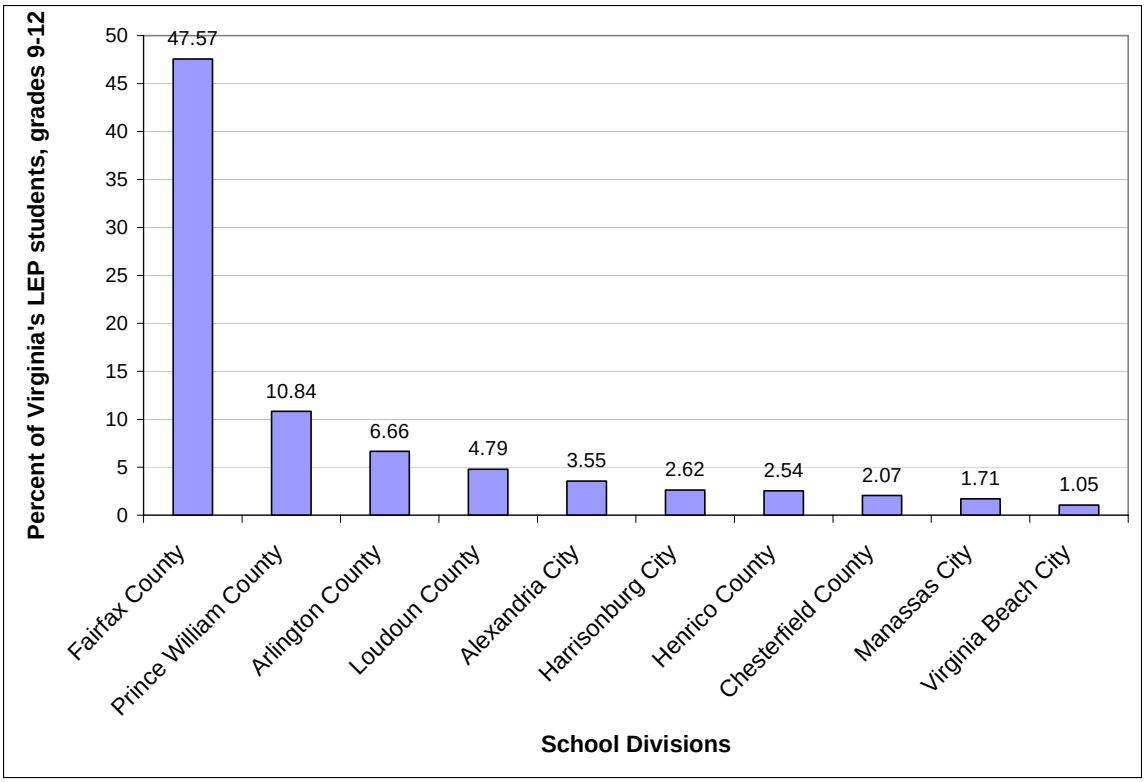
School divisions reported that 17,796 LEP students were enrolled in grades 9-12 in Virginia's public schools in June 2006. Of these, 952 (5.3 percent) moved at least one time during the school year, often between Virginia school divisions. Figure 1 shows that Harrisonburg had the largest percentage of LEP students in grades 9-12 relative to its total enrollment in grades 9-12. LEP students comprised more than 10 percent of the students enrolled in grades 9-12 in Alexandria, Arlington, Fairfax, Manassas, Manassas Park, Galax, and Winchester.

Figure 1. Percent of LEP students, grades 9-12, in school divisions in which more than 10 percent of students in grades 9-12 were LEP.



Fairfax was responsible for educating close to half of the LEP students in Virginia. Other school divisions serving more than 1 percent of LEP students in grades 9-12 were: Prince William, Arlington, Loudoun, Alexandria, Harrisonburg, Henrico, Chesterfield, Manassas, and Virginia Beach. These data are illustrated in Figure 2, and represent divisions serving 83 percent of the LEP students in grades 9-12. Maps representing the distribution of LEP students across Virginia are provided in Appendix B.

Figure 2. Percent of Virginia's LEP students in school divisions that educate at least one percent of all LEP students in grades 9-12.



LEP Students' Country of Origin and First Language

In addition to being enrolled in school divisions throughout the state, Virginia's LEP students in grades 9-12 are from at least 158 countries, including the United States. Table 1 lists the countries from which Virginia's LEP high school students originate. Data were available for 67 percent of the LEP high school students, as reported by school divisions. The largest group are the nearly 22 percent of LEP students in grades 9-12 that represent 137 countries. The next largest group represented is from El Salvador, followed by Mexico, and the Republic of Korea. High school LEP students whose home country is reported as the United States are in 10 school divisions. Although these students were born in the United States, a language other than English is the dominant language at home. These divisions include urban, suburban and rural municipalities throughout the state.

Virginia's LEP high school students' first languages are also diverse. Table 2 shows the data from 82 percent of Virginia's high school students for whom VDOE has language data. The most frequently reported language is Spanish, followed by Korean, Urdu, Arabic, Vietnamese, and Farsi. Fourteen (14) percent of the students represent a group that speaks 124 other languages. These languages are spoken by less than one percent of Virginia's LEP students in grades 9-12.

Table 1. Virginia's LEP students' country of origin, grades 9-12

Country of origin	Percent of students*
El Salvador	14.9
Mexico	9.3
Korea, Republic of	7.2
Bolivia	6.4
Peru	5.2
Honduras	4.7
Pakistan	4.6
Vietnam	3.2
Guatemala	2.9
China	2.5
Ethiopia	2.5
India	2.4
Afghanistan	2.1
Philippines	1.6
Ghana	1.6
Sierra Leone	1.3
Somalia	1.3
United States	1.1
Colombia	1.1
Bangladesh	1.0
Iran	1.0
137 Other countries	21.9

*Based on data available from 67 percent of LEP students in grades 9-12.

Table 2. Languages spoken, Virginia's LEP students, grades 9-12.

Primary language	Percent of students*
Spanish	54.1
Korean	7.4
Urdu	4.0
Arabic	3.3
Vietnamese	3.2
Farsi	2.5
Reported as unknown or unlisted language	2.5
Chinese, Mandarin	2.4
Amharic	2.0
Tagalog	1.5
Russian	1.1
Twi	1.1
French	1.0
Other languages	13.9

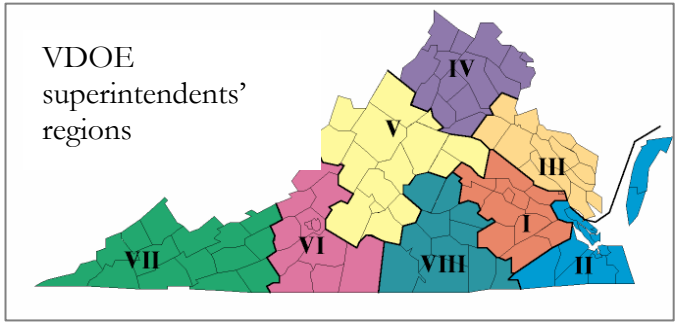
*Based on data available for 82 percent of LEP students, grades 9-12.

To understand regional variation among the languages that Virginia's LEP students speak, the Department calculated the five most frequently reported languages in each of Virginia's eight superintendents' regions. As shown in Table 3, Spanish is the most frequently reported language of LEP high school students in each of Virginia's eight superintendents' regions. However, the second most frequently reported language differs across regions. The second most frequently reported language in Regions II, V, and VI are not among the top five most frequently reported languages of the Commonwealth's LEP high school students. Regions VII and VIII educate a small percentage of LEP students in grades 9-12. Fewer than 10 students who speak languages other than Spanish comprise the groups of LEP high school students in these regions, and are therefore not reported.

Table 3. Top five most frequently reported languages of LEP students, grades 9-12, in Virginia's eight superintendents' regions.

Rank order of frequently reported languages	**Region I**	**Region II**	**Region III**	**Region IV**	**Region V**	**Region VI**	**Region VII**	**Region VIII**
1	Spanish	Spanish	Spanish	Spanish	Spanish	Spanish	Spanish	Spanish
2	Korean	Tagalog	Urdu	Korean	Russian	Chinese, Mandarin	~	~
3	Serbo-Croatian	Korean	Arabic	Urdu	Unknown or language not listed	Vietnamese		
4	Urdu	Vietnamese	~*	Arabic	Chinese, Mandarin	Farsi		
5	Chinese, Hakka	Chinese, Mandarin	~	Vietnamese	Farsi	~		
Percent of LEP students in region, grades 9-12	**5.61**	**4.18**	**2.41**	**79.01**	**5.48**	**2.33**	**< 1%**	**< 1%**

*~There were too few students to report.



Other Descriptive Information

Greater than 55 percent of LEP high school students are identified as economically disadvantaged. Economically disadvantaged students are defined as students who are: 2

- Eligible for a free or reduced price lunch; or
- Are receiving Temporary Assistance for Needy Families (TANF); or
- Eligible for Medicaid; or
- Identified as either migrant or experiencing homelessness.

Virginia's LEP population in grades 9-12 is comprised of 41 percent immigrants. According to Title III, Part C, Sec. 3301, (6) of the *No Child Left Behind Act of 2001*, the term 'immigrant children and youth' is defined as individuals who:

- Are aged 3 through 21;
- Were not born in any state; and
- Have not been attending one or more schools in any one or more states for more than 3 full academic years.

Approximately 8 percent of Virginia's LEP students, grades 9-12, are identified as eligible for special education services. As a point of reference, approximately 14 percent of all students enrolled in grades 9-12 receive special education services. The percent of students in each of these categories is shown in Table 4.

Table 4. Percent of LEP high school students identified in other categories.

	Disadvantaged	**Immigrant**	**Experiencing homelessness**	**Migrant**	**Special Education**
Percent of LEP high school students	55.07%	40.97%	< 1.00%	1.14%	8.45%

In summary, Virginia's LEP students in grades 9-12 during the 2005-2006 school year represented a diverse group. This diversity can create instructional challenges for school divisions. The next section of this report discusses the strategies Virginia's school divisions use to support this diverse group of students as well as the barriers they face in providing services.

School Division Programs Designed to Assist LEP Students in their Academic Achievement

As part of the data collection effort for this study, the Department of Education requested that school divisions report on the programs and services they provide to LEP high school students. One-hundred seventeen (117) of 132 school divisions (89 percent)

2 Specifications for Completing the Student Records Data Collection, 2005-2006. Virginia Department of Education. Division of Technology. Revised: 6/29/2006.

responded to the survey, including 14 that did not have any LEP students enrolled in grades 9-12 during the 2005-2006 school year.

SB 683 specifically requested that the BOE and the VDOE collect data to learn whether school divisions:

- Exercise the option to allow LEP students to attend school to age 22;
- Provide targeted remediation classes for LEP students who have failed the English 11 Standards of Learning assessments;
- Offer summer school ESL; or
- Offer after-school and weekend tutoring to assist LEP students in their academic achievement.

The results of the data collection on LEP programs and services are provided in Table 5. More than 90 percent of Virginia's LEP students in grades 9-12 are served by school divisions that offer all of the services requested in the legislation except weekend tutoring. Weekend tutoring is offered in school divisions serving 16 percent of Virginia's LEP students in grades 9-12. Forty-one (41) percent of school divisions offer ESL classes in the summer, and these divisions reach 93 percent of Virginia's LEP students in grades 9-12. This reflects the concentration of LEP students in particular school divisions (see Figures 1 and 2, and Appendix B).

Table 5. Number and percent of school divisions that offer LEP services.

Service offered	Number (percent) of divisions offering service[1]	Percent of LEP students served by divisions offering the service[2]
Exercises the option to attend school to age 22	89 (86%)	94%
Remediation for LEP students that fail the English 11 SOL	84 (82%)	95%
After-school tutoring	83 (81%)	96%
Weekend tutoring	20 (19%)	16%
ESL summer school	41 (40%)	93%

[1]Based on 103 divisions that responded to the data request and reported serving LEP students enrolled in grades 9-12. An additional 14 divisions reported no LEP students enrolled in grades 9-12.
[2]The percent of LEP students, grades 9-12, that the service has the potential to reach, calculated as the number of LEP students, grades 9-12 in each school division offering the service divided by the total number of LEP students enrolled in grades 9-12, 2005-2006.

In addition to the specific services requested in the legislation, 71 school divisions (69 percent) serving 93 percent of Virginia's LEP students in grades 9-12 offer other programs and services to support students' academic achievement. School divisions reported a wide

variety of services. The services were grouped into the following categories:

- Family support and services;
- Administrative services;
- Adult education and General Education Development (GED) certificate preparation classes and testing;
- Instructional resources and tutoring;
- Targeted classes and instructional activities for LEP students; and
- Other.

The following information provides a more detailed description of the strategies school divisions reported for each category.

Family Support and Services

School divisions reaching more than 87 percent of Virginia's LEP students reported that they provide services to the families of LEP students. There were a wide variety of programs and services reported throughout Virginia, such as: 1) LEP family nights; 2) workshops and meetings; 3) ESL, literacy or other classes that parents can take at the school; 4) parent or family liaisons for LEP students; 5) migrant outreach and support programs; and 6) Spanish language radio programs that provide school information regularly to Spanish-speaking citizens.

Administrative Services

School divisions that reach more than 70 percent of LEP students in grades 9-12 reported that they provide administrative services to support LEP students and create systems that support the accessibility of the school and school community for LEP students and their families. Examples of these services include: 1) intake and welcome centers to facilitate school registration and assess students' English and other academic skills; 2) use of an informal transcript evaluation network to support the schools' ability to transfer credits from prior school experiences; 3) interpreters for students and their families during registration, school events, and conferences; and 4) translated documents during registration and throughout the school year.

Adult Education and General Education Development (GED) Certificate

More than 87 percent of Virginia's LEP students in grades 9-12 attended a school in a division that reported offering older LEP students the opportunity to participate in adult education classes or programs that support students' ability to earn a GED certificate. Some of Virginia's school divisions also offer alternative high schools, which LEP students may attend. School divisions offering adult education, alternative high schools or programs, and GED programs reported different policies with regard to LEP student attendance. In some school divisions, students 18 years of age and older were reported eligible for these programs; other school divisions offer GED and adult education classes to younger students that meet specific eligibility criteria, such as the Individualized Student Alternative Education Plan (ISAEP). In addition, students may participate in alternative and adult education classes to supplement their education in K-12 programs, or to substitute for the K-12 programs. Students who enter adult education programs may seek a high school diploma, GED, or

continue to improve their English and other academic skills without seeking a diploma or certificate of completion. In the survey, one school division reported that 6 percent of its LEP high school students left the K-12 system to attend the adult education program.

Instructional Resources and Interventions

More than 60 percent of Virginia's LEP students in grades 9-12 are served by divisions that reported offering interventions or other resource services that were not specified in the Department of Education survey. Examples include: 1) scheduled periods of ESL support for content classes; 2) resource or study periods for language building; 3) daily living, community life, and study skills classes; and 4) in-school tutoring services.

Targeted Classes and Instructional Activities for LEP Students

More than 29 percent of LEP students in grades 9-12 attended a school in a division that reported they provide targeted classes and instructional activities for LEP students. These classes include: 1) intensive English; 2) transitional English; 3) sheltered instruction observation protocol (SIOP)3; 4) computer software and laboratory-style classes that support language learning and literacy development; and 5) Spanish for Native Speakers courses.

Other

More than 30 percent of the LEP students in grades 9-12 attended a school in divisions that reported using other strategies that do not fall into any of the above categories. These include: 1) collaborating with colleges and universities to support teacher education; 2) incorporating ESL staff development into teachers' professional development training; 3) providing citizenship classes; 4) creating buddy-systems for LEP students; 5) partnering with local agencies, such as health services agencies, to provide students and their families with community referrals; and 6) encouraging LEP students to participate in college and job fairs, college information sessions, and other programs that increase LEP students' awareness of the opportunities beyond high school.

Barriers to Graduation

This study used two approaches to understanding LEP students' barriers to graduation. In the survey sent to school divisions, the VDOE requested that school divisions provide information on the barriers LEP students encounter in graduating from high school. In addition, VDOE obtained data regarding LEP students' graduation and reasons for dropping out of high school from the student records collection. Data about LEP students who graduated and dropped out were not available for inclusion in this report. They will be incorporated in the final report scheduled for completion in January. The information derived from the data collected from school divisions is summarized below.

3SIOP is a program model for teaching grade-level content by controlling vocabulary and language structures, while at the same time promoting students' English language development. Teachers adapt grade level content lessons to the students' levels of English proficiency and incorporate language development into the instruction.

The Department requested that school divisions provide information on barriers to graduation that LEP students encounter. Ten (10) percent of the school divisions responding to the LEP survey reported that no barriers exist, and several stated that to date, all of their LEP students in grades 9-12 have graduated from high school or been promoted based on academic achievements. Some offered more detail about the positive experiences of their LEP students. For example, one school division reported the following:

> *Over the past several years, we have noted a positive trend reflected in our LEP students. Our LEP students are proud of being affiliated with [our high school], proud of their academic and social achievements, and anxious to demonstrate their attachment to their school and community. This positive attitude is contagious and welcomed. An example of this positive attitude can be seen upon entering the front doors to the high school. The high school mascot … is soaring above the photos of our athletic teams. The mascot was designed … by a LEP student.*

Despite many positive responses to the question, most school divisions reported some barriers to LEP student graduation. Responses to the LEP survey question about barriers to education fell into the following categories:

- Resource limitations;
- Academic challenges;
- Social factors;
- Age and time constraints; and
- Other.

The following information provides a more detailed description of the barriers reported for each category.

Resource Limitations

School divisions commented that the lack of consistent resources throughout the state has adverse effects on this population, which can be highly mobile. Divisions also reported more specific details about the resource limitations that affect LEP students.4

Several school divisions reported that they lack the qualified staff and other resources necessary to support their LEP students, and many commented on the need for improved and additional preparatory programs for Virginia's teachers to earn ESL endorsements. In some school divisions, the few LEP students that require services are distributed throughout a wide geographic area. This requires the staff (often one ESL teacher) to spend considerable amounts of time traveling to meet students' needs. Other staff positions that were mentioned as lacking were bilingual counselors and translators, and staff trained to evaluate LEP students for learning disabilities. School divisions also reported that they are constrained by a lack of transportation, which prevents LEP students from being able to participate in after-school activities such as tutoring, sports, and clubs. School divisions also reported a lack of programs for LEP students. Examples included community programs, newcomer programs, and career and technical education programs that are accessible to LEP students.

4 Some of these issues may also affect students that are not LEP.

Academic Barriers

A majority of the divisions that provided information on barriers reported academic barriers to graduation. These barriers include:

- Students' lack of credits when transferring into Virginia's public schools;
- Limited access to course materials due to language barriers;
- The inability to meet standard course requirements and pass required core classes, in large part due to language barriers; and
- Difficulty passing SOL assessments.

School divisions also reported that some LEP students enter Virginia's public high schools with lower education levels than are expected of Virginia's students in grades 9-12. These students are at a particular disadvantage as research indicates that schooling in a primary language is the strongest predictor of student achievement in a second language (Thomas and Collier, 2002). This and other research on LEP students typically focus on achievement in the younger grades. There is little research that focuses on language development for students who begin school at the middle and high school levels (Center for School and District Improvement, 2004; Genesee, Geva, Dressler, & Kamil, 2006; Lesaux & Geva, 2006).

Social Factors

School divisions frequently cited social factors that were barriers to LEP students graduating from high school. For example, school divisions report that students often have little support for their educational achievement and English language development outside of school. In addition, LEP students often have family responsibilities, such as working and providing childcare, that interfere with their ability to fully participate in school and activities.

Age and Time Constraints

School divisions reported that many LEP students enter Virginia public schools in their teen years with low levels of English proficiency, and that such students do not have enough time to learn English and earn enough credits to graduate before they age out of the system. Research suggests that it can take up to five years of English language instruction before a LEP student will be able to read and write proficiently in academic English. Research also indicates that LEP students who have little or no prior education and who may be illiterate in their first language may take seven to ten years to achieve grade level proficiency (Thomas & Collier, 2002). Achieving academic fluency is a long, gradual process that is strengthened with effective instructional strategies (Peregoy & Boyle, 2005). The ongoing data collection on individual students and the summary of LEP student dropout data that will be provided in the final report in January 2007 will provide information that will enable the Department to estimate the proportion of LEP students affected by entering school in their teen years.

Other Reported Barriers

Several school divisions reported barriers to graduation that did not fit into a particular category. Some school divisions reported that some LEP students lack the motivation to succeed because of a perceived lack of opportunity beyond high school. Some divisions further specified that students may believe that they can never attend college because of their

immigrant status. In addition, school divisions reported that some LEP student-achievement suffers due to inconsistent attendance in Virginia's public schools, which was reported to result from trips to the home country, need to work, and health and medical issues. The final report to this report will contain data provided by school divisions that will support the Department's ability to estimate the percentage of LEP students affected by interrupted education in Virginia public schools, and to understand the relationship between consistent schooling and academic achievement.

LEP Student Academic Achievement and Future Educational Plans

VDOE collects limited data that relate to student graduation requirements. Information on standard credits earned and courses taken are maintained at the local level. The Department maintains data on students' SOL assessment scores. With the Department's Educational Information Management System (EIMS) in place, for the first time in the 2005-2006 school year these data could be linked so that students' scores on one SOL assessment can be linked to that students' performance on other SOL assessments during the 2005-2006 school year. However, the Department cannot make this link with previous years' data, and therefore does not have records on students' earned verified credits.

Performance on Standards of Learning (SOL) Assessments

In Virginia, LEP high school students are required to take the SOL assessments when they complete each course for which there is an associated SOL assessment. According to the *Regulations Establishing Standards for Accrediting Public Schools in Virginia*, 8 VAC 20-131-30, *Student achievement expectations*, "All students identified as limited English proficient (LEP) shall participate in the Virginia assessment program. A school based committee shall convene and make determinations regarding the participation level of LEP students in the Virginia assessment program." In 2005-2006, Virginia reported that 99 and 100 percent of LEP students across the Commonwealth participated in the appropriate SOL English and mathematics tests, respectively.

Table 6 shows the number of students who took each SOL assessment, average SOL scale scores, and the percent of LEP high school students that passed the exams. The table also shows the same information for non-LEP students in 2005-2006, and the difference in the percent of LEP and non-LEP students who passed the exams.

Average scores for both LEP and non-LEP students are above passing (i.e., $\geq$ 400) for all assessments. For all SOL assessments, fewer LEP students passed than non-LEP students, with the difference ranging from 2 to 32 percent. LEP students passed the Algebra I and II tests at similar rates as the non-LEP students, with only 2 to 4 percent fewer LEP students passing the tests than non-LEP students.

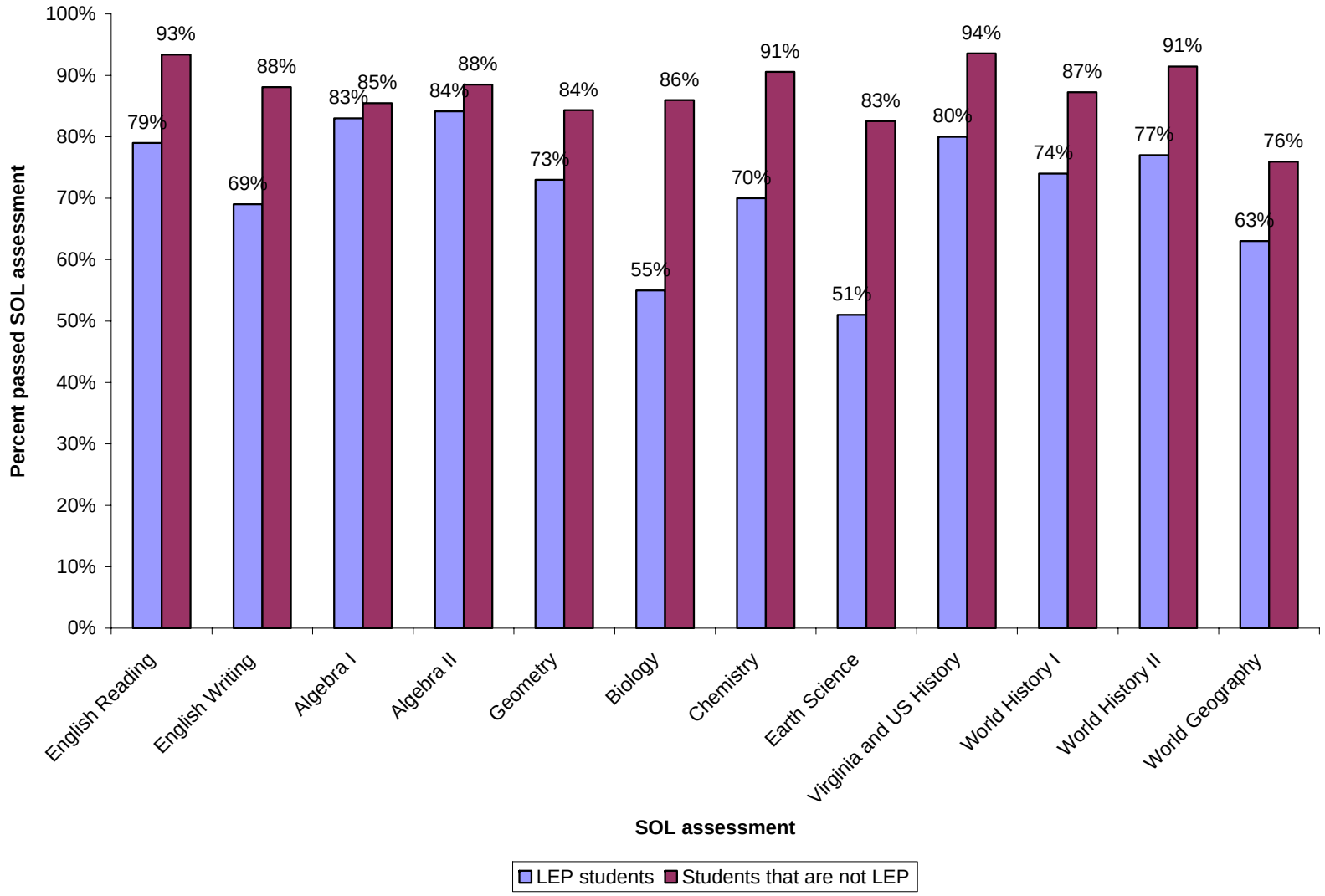
The largest difference in performance was in the sciences, where 21 to 32 percent fewer LEP students passed the SOL assessments than non-LEP students. This difference is larger than that of student performance on the English writing SOL, often considered the most difficult for LEP students. Figure 3 illustrates the pass rates for LEP and non-LEP students in each SOL assessment.

Table 6. Average score and pass rate in SOL assessment scale scores for LEP and non-LEP students, grades 9-12 during the 2005-2006 school year.[1]

	SOL assessment	Number	Average score	Pass rate	Percent difference in pass rates
English/ language arts	**English Reading**				**14%**
	LEP students	**2,087**	**435**	**79%**	
	non-LEP students	69,573	495	93%	
	English Writing				**19%**
	LEP students	**2,737**	**421**	**69%**	
	non-LEP students	83,594	465	88%	
Mathematics	**Algebra I**				**2%**
	LEP students [2]	**3,158**	**444**	**83%**	
	non-LEP students	53,080	442	85%	
	Algebra II				**4%**
	LEP students	**1,741**	**462**	**84%**	
	non-LEP students	53,360	463	88%	
	Geometry				**11%**
	LEP students	**2,617**	**438**	**73%**	
	non-LEP students	66,362	456	84%	
Science	**Biology**				**31%**
	LEP students	**4,122**	**404**	**55%**	
	non-LEP students	77,530	448	86%	
	Chemistry				**21%**
	LEP students	**1,844**	**425**	**70%**	
	non-LEP students	46,875	445	91%	
	Earth Science				**32%**
	LEP students	**2,709**	**402**	**51%**	
	non-LEP students	67,110	449	83%	
History and social science	**Virginia and US History**				**14%**
	LEP students	**2,483**	**438**	**80%**	
	non-LEP students	69,690	487	94%	
	World History I				**13%**
	LEP students	**3,414**	**438**	**74%**	
	non-LEP students	56,944	470	87%	
	World History II				**14%**
	LEP students	**2,943**	**442**	**77%**	
	non-LEP students	58,481	477	91%	
	World Geography				**13%**
	LEP students	**517**	**424**	**63%**	
	non-LEP students	21,752	452	76%	

[1]Pass rates are calculated based on each student's best score, regardless of the number of times the student participated in the assessment, and may not correspond to pass rates calculated for other purposes, such as calculations used to determine adequate yearly progress (AYP).
[2] Includes students that participate in the plain English version of the Algebra I SOL assessment.

Figure 3. Percent of LEP and non-LEP students passing the SOL assessments, grades 9-12, 2005-2006 school year.



Relationship Between Performance on the English SOL and Other SOL Assessments

The VDOE used the SOL assessment scale scores to statistically assess whether performance on the English 11 reading and writing SOL assessments was related to performance on the remaining 10 SOL assessments during the 2005-2006 school year. The analyses tested the hypothesis that students' academic English proficiency, as measured by the reading and writing components of the SOL assessment, is related to performance on all other SOL assessments. The prediction was that as performance on the English 11 reading and writing SOL assessment increased, so would performance on the other SOL assessments.

These analyses included simple correlations between the English 11 reading and writing SOL assessment and all other assessments, and a more complex multiple regression analysis. The regression analysis used the combination of the reading and writing components of the English 11 SOL assessment to estimate scores on each of the other SOL assessments. The statistical calculations included data for students that participated in the English 11 SOL assessments, and the other SOL assessments of interest in the 2005-2006 school year. For example, the statistical correlation between performance on the English 11 reading SOL and performance on the Virginia and U.S. History SOL assessment was calculated for students that participated in both assessments. Details of the statistical models used in these analyses are provided in Appendix C.

The results of these analyses showed that performance on the English 11 SOL reading and writing components were strongly related. As performance on the reading component of the SOL assessment increased, so did performance on the writing component of the SOL assessment. Further, the results suggested that the skills required for success on the English 11 SOL reading and writing assessments are important for success on all of Virginia's SOL assessments. More specifically, the results suggest the following:

- There is a strong relationship between LEP student performance on the English 11 SOL reading and writing assessments and performance on other SOL assessments.
- This relationship suggests that the skills required to pass the English 11 SOL assessment are also required to pass the other SOL assessments.
  The relationship is strongest in World History II and Virginia and U.S. history;
  The relationship is smallest, but statistically significant for Algebra II and Geometry.
- The skills that contribute to performance on the reading or writing components of the English 11 SOL assessment contribute uniquely to performance on all but two of the other SOL assessments. Performance on the reading SOL assessment does not contribute to LEP student performance on the Algebra I and World Geography SOL above and beyond the contribution that performance on the reading and writing tests account for together. See Table 2 in Appendix C for further details.

Other Academic Indicators

As part of their support of students' academic achievement in high school, school divisions must prepare LEP students for college. One indicator that students are being prepared for

college is the degree to which students attend college. The Department's end-of-year data collection from local education agencies includes a request that school divisions report students' plans after graduation. The information is not typically reported by the students, but rather by a teacher, counselor, or school administrator. Table 7 lists the plans reported for LEP students in grade 12 in the 2005-2006 school year. Nearly 55 percent of the 2,193 grade 12 LEP students plan to continue their education, and more than 50 percent of the students plan to attend two- or four-year colleges. As described earlier, the Department of Education has requested data from the National Student Clearinghouse on actual enrollment of Virginia's LEP students who graduated in 2006. The information will be provided in the final report in January 2007.

Table 7. LEP 12th grade students reported plans after graduation, 2005-2006 school year.

	Number	Percent
Two-year college	682	31.10 %
Four-year college	437	19.93%
Employment	176	8.03%
Other educational plans	85	3.88%
None	76	3.47%
Military	28	1.28%
Not reported	709	32.33%
Total in grade 12	2,193	100%

Adequate Yearly Progress and the Federal *No Child Left Behind Act of 2001*

To comply with the *No Child Left Behind Act of 2001* (NCLB), the VDOE calculates LEP students' adequate yearly progress (AYP) towards the goals of NCLB in accordance with the *Virginia Board of Education Consolidated State Application: Amended Accountability Workbook*. On an annual basis, VDOE calculates SOL assessment pass rates on the SOL assessments at the school, division, and state level for all students that participated in the assessments, and for particular subgroups, including LEP students. These pass rates are compared to annual target pass rates established by the BOE for English (reading/language arts) and mathematics. Table 8 shows the pass rates for LEP and all students participating in high school SOL assessments. The table also shows Virginia's target pass rates established by the BOE for the past three years.

Table 8. LEP and all students' pass rates for high school SOL assessments as calculated to determine Virginia's adequate yearly progress toward NCLB goals.

	Reading/language arts			Mathematics		
School year	**2003-04**	**2004-05**	**2005-06**	**2003-04**	**2004-05**	**2005-06**
Adequate yearly progress (AYP) target pass rates	**61%**	**65%**	**69%**	**59%**	**63%**	**67%**
All students	89%	88%	90%	84%	86%	85%
LEP students	75%	70%	73%	78%	81%	80%

Statewide, Virginia's LEP high school students have exceeded the annual target pass rates for the past three school years in English (reading/language arts) and mathematics, the priority disciplines in NCLB. LEP student progress on the high school assessments each year has not consistently increased over these same three years in either subject area. In 2006, pass rates in mathematics increased by two percentage points compared to performance in 2004, although there was a one percentage point decrease from 2005 to 2006. Pass rates in 2006 on English assessments have decreased by two percentage points since 2004, although there was a three percentage point increase in pass rates from 2005 to 2006. Complete information on Virginia's pass rates as calculated for AYP for the past three years is available at: https://eb02.vak12ed.edu/reportcard/report.do?division=All&schoolName=All.

Graduation Requirements

The Virginia BOE graduation requirements include flexibility that can assist LEP students in their academic achievement, and successful completion of the requirements to earn a Standard or Advanced Studies Diploma. To earn a Virginia diploma, students must earn a combination of standard credits and verified credits. Standard course credits are earned by passing a course provided by school divisions; verified credits are earned by passing a course *and* passing the SOL assessment or BOE approved substitute assessment. Table 8 shows the number of standard and verified credits required to graduate for students entering ninth grade for the first time in 2003-2004; these are students who, if they graduate in four years, will graduate in the 2006-2007 school year. 5 BOE approved policies provide flexibility in the tests for science and history and social sciences, in that students may substitute assessments, credentials, and licenses earned from BOE approved career and technical education programs to meet verified credit requirements.

5 Information on BOE policies that apply to students who transfer into Virginia public schools later than 2003-2004 or entered ninth grade for the first time before 2003-2004, is available at http://www.doe.virginia.gov/VDOE/studentsrvcs/gen-grad-req.pdf.

Table 9. Standard and verified credits required to earn a standard diploma for students entering ninth grade for the first time in 2003-2004 (8 VAC 20-131-50.B).

Discipline	Required standard	Required verified
English Language Arts	4	2
Mathematics	3	1
Laboratory Science[1]	3	1
History and Social Sciences[1]	3	1
Health and Physical Education	2	
Fine Arts or Career and Technical Education	1	
Electives	6	
Student Selected Tests[1]		1

[1]BOE policy allows students who complete a career and technical education program sequence and pass a BOE approved examination or occupational competency assessment, or acquires a professional license in a career and technical education field to substitute the certification, credential, or license for the 1) student selected credit or 2) the science or history and social science verified credit.

Ongoing Activities and Next Steps

The VDOE provides ongoing support and assistance to school divisions responsible for educating LEP students. These resources may be organized into the following five categories: 1) curriculum and instruction; 2) assessment; 3) parental involvement; 4) professional development opportunities; and 5) general resources. The resources available to the school divisions that support LEP student achievement at all grade levels are described below.

Curriculum and Instruction

English Language Proficiency Standards of Learning (currently under revision)

The English Language Proficiency Standards of Learning support the English language development of LEP students. The goal of these standards is to provide the foundation that will enable LEP students to be successful in the English Standards of Learning and in other content areas. The current version is available at: http://www.doe.virginia.gov/VDOE/Superintendent/Sols/EnglishSOL02.html.

Mathematics: Strategies for Teaching Limited English Proficient (LEP) Students – A Supplemental Resource to the K-12 Mathematics Standards of Learning Enhanced Scope and Sequence, April 2004

This document serves as a supplement to the K-12 Mathematics Standards of Learning Enhanced Scope and Sequence, which helps teachers align their classroom instruction with the Mathematics Standards of Learning. The purpose of the document is to provide mathematics teachers with a brief overview of second language acquisition theory and

suggest effective strategies for differentiating instruction for LEP students. The resource is available at: http://www.doe.virginia.gov/VDOE/Instruction/ESL/#elpsol.

Language Arts: Strategies for Teaching Limited English Proficient (LEP) Students – A Supplemental Resource to the K-12 English Standards of Learning Enhanced Scope and Sequence, January 2006

This document serves as a supplement to the K-12 English Standards of Learning Enhanced Scope and Sequence, which helps teachers align their classroom instruction with the English Language Arts Standards of Learning. The purpose of this document is to provide language arts and content teachers with a brief overview of second language acquisition theory and suggest effective strategies for differentiating instruction for LEP students. The document is available at: http://www.doe.virginia.gov/VDOE/Instruction/ESL/#elpsol.

Using the mathematics and language arts documents as a framework, VDOE is preparing a supplemental resource to the K-12 Standards of Learning enhanced scope and sequence materials for science instruction to support LEP student instruction.

Assessment

Plain English version of the Mathematics Standards of Learning Assessment for LEP Students

A plain English version of the mathematics SOL assessment for grades three through eight and Algebra I is available for LEP students at the lowest levels of English language proficiency. The plain English versions assess the same content as the regular mathematics assessments but have language modifications. More information is available at: http://www.doe.virginia.gov/VDOE/Instruction/ESL/#elpa.

A plain English version of a science end-of-course SOL assessment is being developed for use in the 2007-2008 school year. The plain English version will assess the same content as the regular assessment, but will have language modifications.

Parental Involvement

Best Practices for Inclusion of LEP Parents Guide in partnership with USED Office of Civil Rights

The purpose of this document is to help school divisions develop parental involvement programs that are accessible to LEP parents, address their unique needs, and, ultimately, have a positive influence on LEP students' academic achievement. This document serves as a vehicle for school personnel working with LEP parents to share effective practices and network with other school divisions. The document is available at: http://www.doe.virginia.gov/VDOE/Instruction/ESL/increasing-LEP-parent-involvement.pdf.

Selected Examples of Professional Development Opportunities

The VDOE offers professional development opportunities to Virginia's teachers. The following opportunities are available to support LEP student achievement.

Technical Assistance Academy for New Title I, Title II, and Title III Coordinators

Held annually, this technical assistance academy focuses on providing new coordinators with guidelines and information related to implementing the requirements of the *No Child Left Behind Act of 2001*. More information is available at: http://www.doe.virginia.gov/VDOE/suptsmemos/2006/inf051.html.

From Vision-to-Practice Annual Academy: Implementing the No Child Left Behind Act of 2001

Held annually, this technical assistance academy focuses on providing schools and school divisions with strategies and scientifically-based research for improved student achievement. More information on this academy is available at: http://www.doe.virginia.gov/VDOE/suptsmemos/2006/inf055.html.

Parents Educating Parents (PEP) Training Academy for Title III Coordinators

Offered annually, this training academy provides school divisions with a structured program for including parents of LEP students in the education of their children. Along with a companion framework document, *Increasing Limited English Proficient (LEP) Parent Involvement*, the academy is designed to help school divisions develop parental involvement programs that are accessible to LEP parents, address their unique needs, and have a positive influence on LEP students' academic achievement. More information about this program is available on the Department's ESL Web site at: http://www.doe.virginia.gov/VDOE/suptsmemos/2006/inf122.html.

Graduate-level course, Reading and Writing Strategies for LEP Students

VDOE in conjunction with George Mason University offers a graduate level course to support LEP student instruction. The course, offered three times per year since 2004, focuses on: 1) literacy development; 2) the reading and writing process in first and second languages; 3) research on reading comprehension; and 4) effective teaching and assessment approaches for students from diverse cultural and linguistic backgrounds. The course has been offered during the fall, spring, and summer semesters in different locations throughout the Commonwealth. More information is available at: http://www.doe.virginia.gov/VDOE/suptsmemos/2006/inf161.html.

Sheltered Instruction Observation Protocol (SIOP) Academies

To support school divisions' ability to improve instruction for LEP and other students, VDOE is conducting a series of SIOP training courses for selected school divisions. SIOP is a research-based approach to planning and implementing sheltered content lessons that has proven effective with English language learners throughout the United States (Guarino, Echevarria, Short, Schick, Forbes, & Rueda, 2001).

General Resources to Support LEP Students

The Department of Education's ESL Web site provides school divisions with information on several LEP resources, such as the *ESL Handbook for Teachers and Administrators*, several documents translated into Spanish, information on how to reach interpreters, and presentations from professional development academies and conferences. The Web site and LEP resources are available at: http://www.doe.virginia.gov/VDOE/Instruction/ESL/.

Next Steps

Additional information is forthcoming. The Department is in the process of analyzing the data that will be incorporated into the final report that is scheduled for completion in January 2007. This includes information on grade 9-12 LEP students': 1) graduation rates and diploma types; 2) drop-out rates; 3) class rank; 4) college attendance; 5) amount of formal education obtained prior to entering Virginia public schools; and 6) age at entry into Virginia public schools. In preparing the final report, the BOE and VDOE will consider the information provided by this study, existing VDOE programs and resources that support LEP student achievement, and best practices to support LEP student achievement. The final report will provide recommendations to address the issues surrounding LEP high school students.

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Appendix A: Legislative Mandate — 2006 General Assembly

CHAPTER 526, 2006 ACTS OF GENERAL ASSEMBLY

An Act relating to the requirements for obtaining a high school diploma and students with limited English proficiency.

[S 683]

Approved April 4, 2006

Be it enacted by the General Assembly of Virginia:

1. *§ 1. Certain data collection and analysis required.*

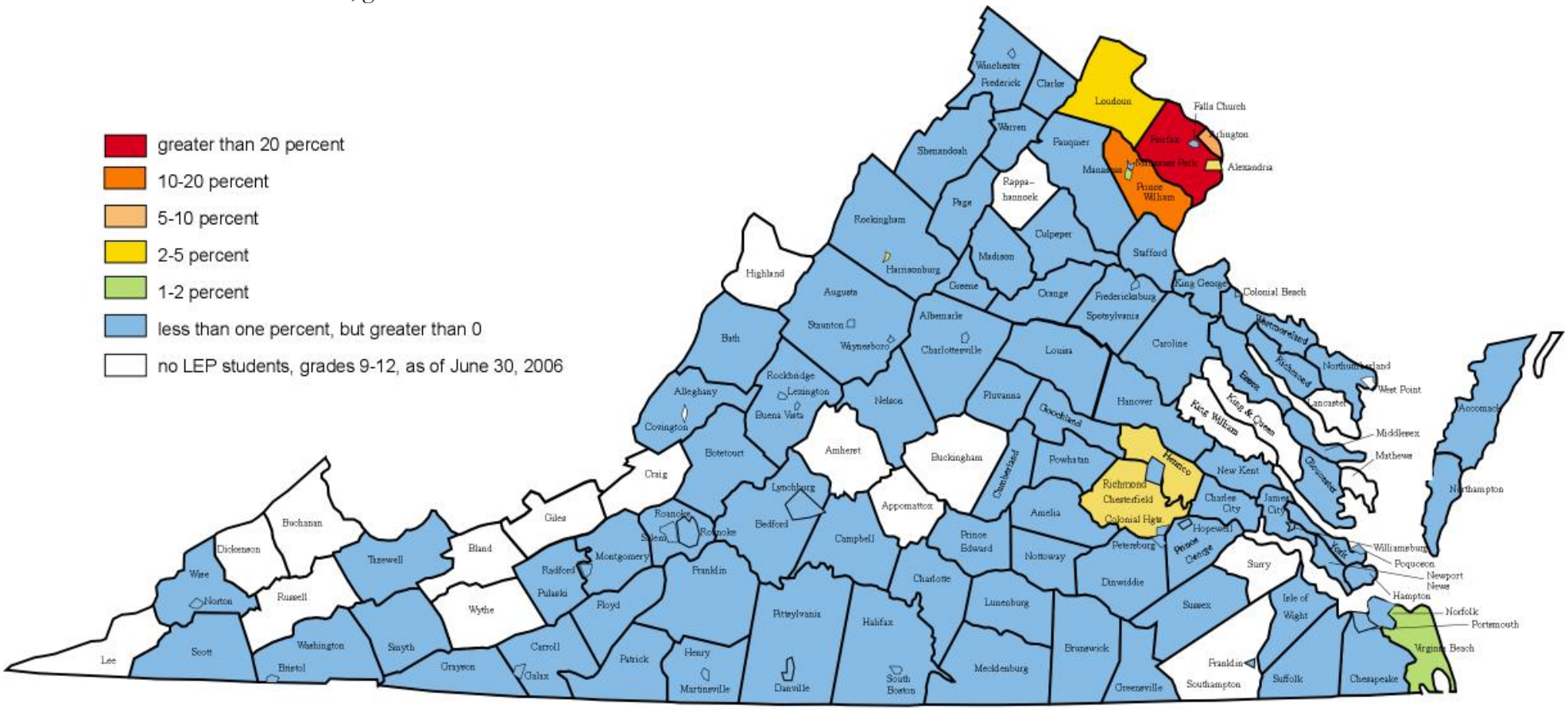
A. The Board and Department of Education shall collect statewide data on Virginia's public school students with limited English proficiency (LEP) and school division programs for LEP students that shall include, but need not be limited to, (i) the demographics of Virginia's LEP students, including country of origin, first or native language, school attendance in the country of origin, and age and grade of first enrollment in a Virginia public school; standards of learning assessment scores; reasons for dropping out of high school; barriers to high school graduation; graduation rates; kinds of diplomas awarded to LEP students, class standing, and college aspirations and attendance; and (ii) school division programs designed to assist LEP students in academic achievement, such as exercising the option to allow LEP students to attend until attaining the age of 22, providing targeted remediation classes for students who have failed the English 11 standard of learning assessments, summer school English for Speakers of Other Languages (ESOL) classes, after-school and weekend tutoring, and other strategies to assist older high school LEP students in meeting graduation requirements.

B. The Board and Department shall (i) analyze the data required to be collected by subsection A in relationship to the requirements for obtaining a high school diploma as set forth in the Standards for Accrediting Public Schools in Virginia, the federal No Child Left Behind Act, and the needs of LEP students; and (ii) by December 1, 2006, recommend to the Senate Committee on Education and Health and the House Committee on Education steps to resolve the issues relating to the requirements for obtaining a high school diploma and students with limited English proficiency that will retain high academic standards and accountability, while assisting such students in their endeavors to obtain an education and to become productive Virginians.

Appendix B: Distribution of Grade 9-12 LEP Students in Virginia, 2005-2006

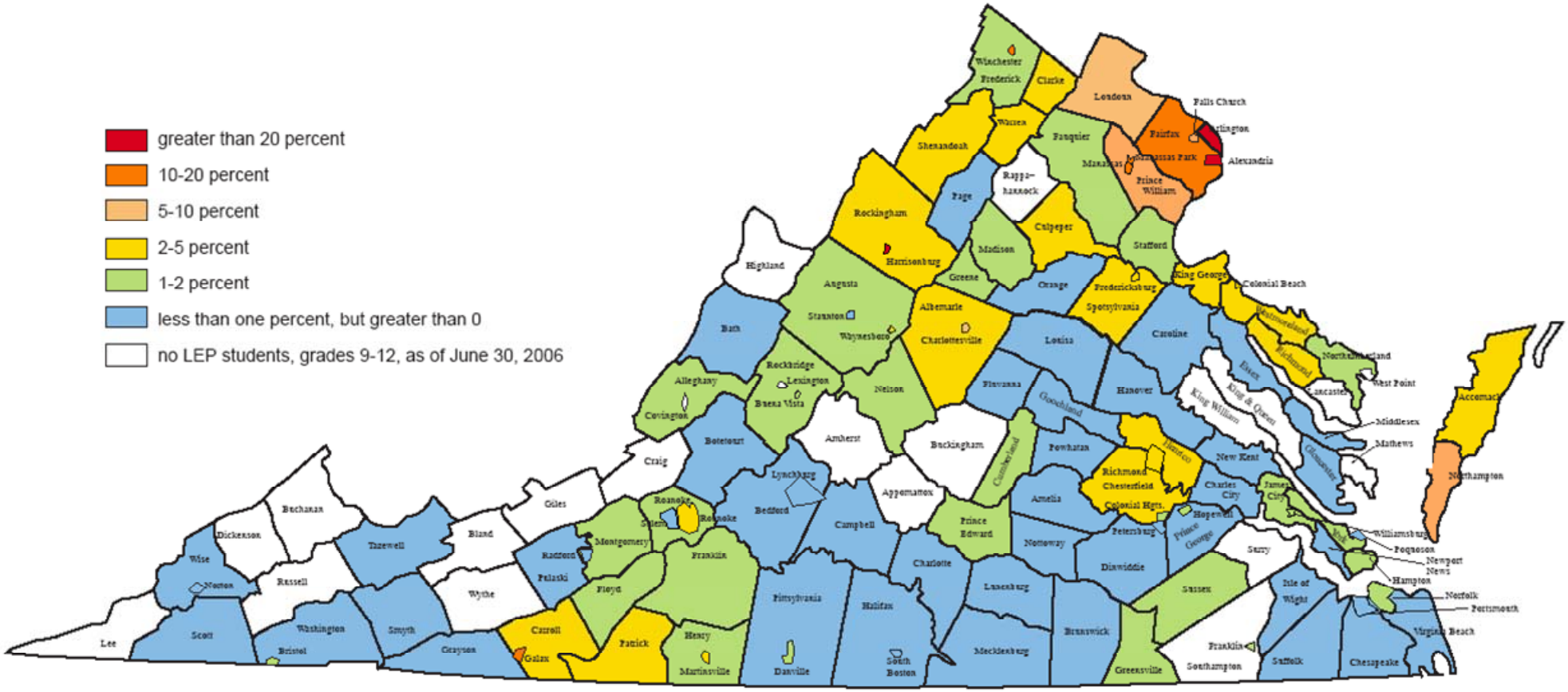
Virginia's LEP students are largely concentrated in Northern Virginia. Figure 1 shows the distribution of LEP students in grades 9-12 relative to the entire grade 9-12 LEP population in Virginia. Several school divisions with relatively small numbers of LEP students educate significant percentages of LEP students relative to their total grade 9-12 student population. This is illustrated in figure 2.

Figure 1. Percent of LEP students in grades 9-12 enrolled at the end of the 2005-2006 school year, as a function of Virginia's total enrollment of LEP students, grades 9-12.



Information is based on data reported by local school divisions to the Virginia Department of Education

Figure 2. Percent of LEP students in grades 9-12 enrolled at the end of the 2005-2006 school year, as a function of each divisions' total enrollment in grades 9-12.



Information is based on data reported by local school divisions to the Virginia Department of Education

Appendix C: Details of the Statistical Models of SOL Assessment Data

The Department of Education analyzed the SOL assessment scale scores to determine whether performance on the English 11 reading and writing SOL assessments was related to performance on the remaining ten SOL assessments during the 2005-2006 school year for individual students that participated in more than one assessment in 2006. For these analyses, it is noteworthy that longitudinal analyses would not be appropriate, as the underlying hypotheses of this analysis is that students' underlying academic English proficiency at a given point in time, as measured by the reading and writing components of the SOL assessment, is related to performance on all other SOL assessments. Further, it was predicted that as performance on the English 11 SOL reading and writing assessments increases, so does performance on the other SOL assessments.

Results of the analyses show that performance on the English 11 SOL reading and writing assessments are related. The Pearson correlation coefficient, $r = 0.63$, indicating a strong relationship between scores on the two components of the English 11 SOL assessment for LEP students. Table 1 shows the correlations between the English 11 SOL reading and writing assessments and the other SOL assessments. These relationships were moderate to strong for all SOL assessments, which indicate that for individual students, higher scores on the English 11 SOL assessments are associated with higher scores on the other SOL assessments.

Table 1. Pearson correlation coefficients (*r*) between the English 11 SOL reading and writing assessments and other SOL assessment scale scores for LEP students grades 9-12, enrolled in the 2005-2006 school year.

	English reading	**Number***	**English writing**	**Number***
Algebra I	0.37	184	0.47	241
Algebra II	0.40	551	0.37	650
Geometry	0.39	633	0.34	756
Biology	0.39	260	0.51	378
Chemistry	0.46	507	0.46	573
Earth Science	0.53	464	0.49	544
VA and US History	0.61	1,305	0.57	1,377
World History I	0.41	75	0.46	106
World History II	0.70	146	0.66	197
World Geography	0.40	39	0.59	45

*Number of students who had scores in both the English component of the SOL assessment and the other SOL assessments in the analysis.

In addition, the Department conducted a multiple regression analysis in which the combination of the English reading and writing components of the English 11 SOL

assessments were used to estimate student scores on the other SOL assessments. The results of this analysis provide answers to the following questions:

- How well can scale scores on the combination of English 11 reading and writing SOL assessments estimate scores on each of the other SOL assessments?
- Do the components of the English 11 SOL reading and writing assessments independently contribute to a multiple regression model estimating performance on each of the other SOL assessments?

The Venn diagrams in figures 1 and 2 illustrate the information that these analyses provide. The results of these analyses are shown in table 2.

Figure 1 illustrates the relationship between performance on the English reading and writing components of the English 11 SOL assessment, and performance on the World History II SOL assessment. English writing and reading together account for 57 percent of the variance in performance on the World History II SOL assessment. In figure 1, this is illustrated by the overlapping areas between English reading, writing, and World History II, or the combination of the sections marked A, B, and C (A+B+C). The English 11 reading component uniquely accounts for 11 percent of the variance in performance on the World History II SOL assessment. In figure 1, this is illustrated by the section marked "A", which is the area of overlap between performance on the reading component of the English 11 SOL assessment—to the exclusion of the overlapping area that includes World History II, English reading and English writing, which is marked "C." Also, English writing accounts for 7 percent of the variance in World History II scores, above and beyond the variance accounted for by the two English SOL assessments combined, as marked by "B" in figure 1. These results suggest that the scale scores on the English 11 SOL assessment are strong predictors of performance on the World History II SOL assessment, and that the skills required on the writing and reading components of the SOL assessment contribute independently to the performance on the World History II SOL assessment.

For comparison, consider the smaller overlapping areas in figure 2. This figure illustrates the smaller amount of variance that the combination of performance on the English reading and writing SOL assessment account for in performance on the biology SOL assessment. In this analysis, results show that performance on the English 11 reading and writing SOL assessments combined account for 22 percent of the variance in performance on the biology SOL assessment (A+B+C). Performance on the English 11 reading and writing assessments uniquely account for 6 and 8 percent of the variance, as illustrated by "A" and "B" respectively.

Figure 1. Illustration of the results of a multiple regression analysis using English 11 SOL assessment scores to predict performance on the World History II SOL assessment.

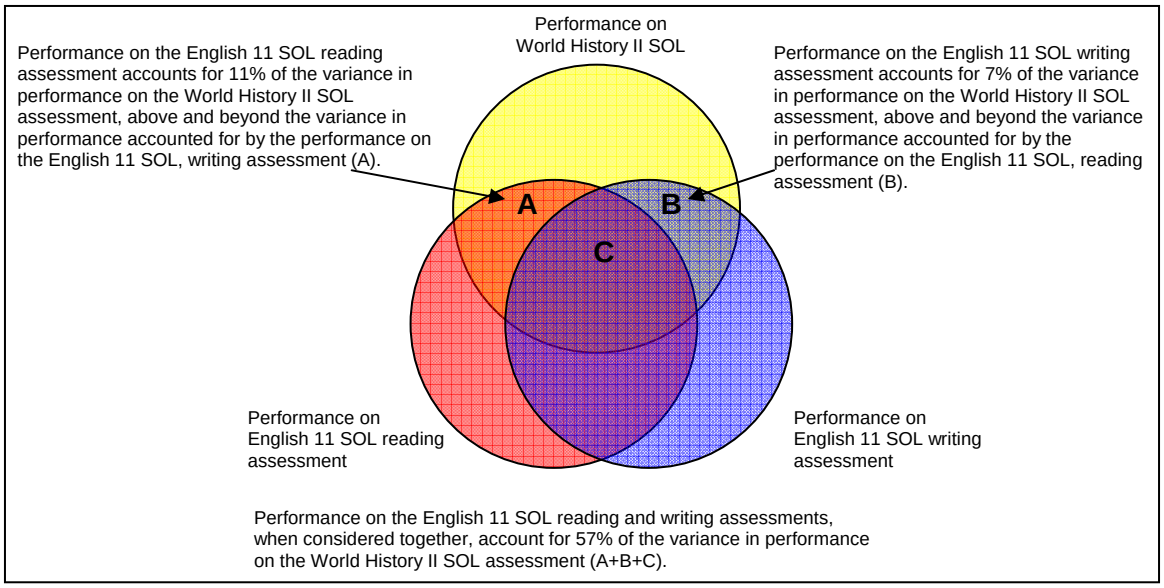
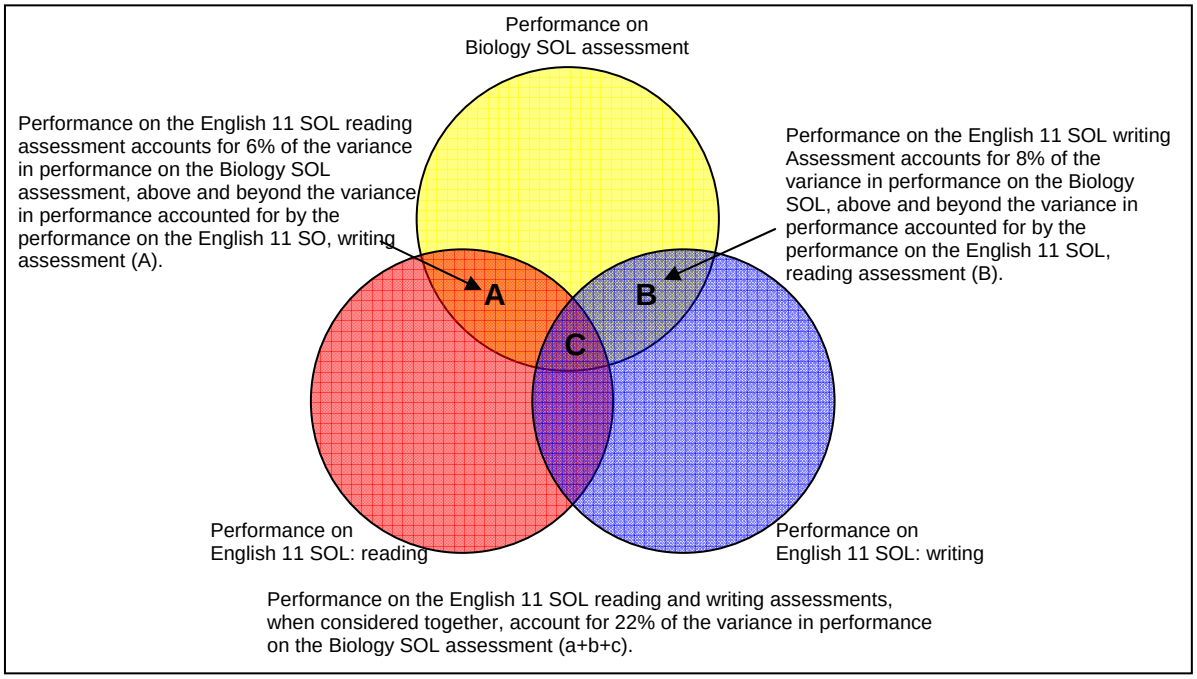


Figure 2. Illustration of the results of a multiple regression analysis using English 11 SOL assessment scores to predict performance on the Biology SOL assessment.



The results of these analyses and the multiple regression that uses performance on the English 11 reading and writing assessments to predict performance on all other SOL assessments are shown in table 2.

Table 2. Results of the multiple regression analysis predicting SOL assessment scores with the English 11 SOL.

			Unique proportion of the variance accounted for by	
SOL assessment	**Number***	**Variance accounted for by writing and reading combined**	**Writing**	Reading
Algebra I	173	30%	15%	ns+
Algebra II	527	19%	4%	5%
Geometry	595	20%	4%	6%
Biology	249	22%	8%	6%
Chemistry	481	27%	5%	5%
Earth Science	451	36%	8%	8%
VA and US History	1,224	42%	5%	10%
World History I	75	27%	13%	7%
World History II	141	57%	7%	11%
World Geography	37	38%	25%	ns+

*Number of students for which assessment data were available for three SOL assessments
+ns: the results of this component of the analysis were not statistically significant, which indicates that performance on the component of the SOL assessment does not contribute uniquely in the equation, or that there were not enough students in the sample to identify the relationship statistically.

These results suggest that the skills required for success on each component of the English SOL assessments are important for success on all of Virginia's SOL assessments. More specifically, the results suggest the following:

- There is a strong relationship between performance on the English 11 SOL assessment and performance on other SOL assessments.
- This relationship suggests that the skills required to pass the English 11 SOL assessment are also required to pass the other SOL assessments.
- The relationship is strongest in World History II and Virginia and U.S. History.
- The relationship is smallest, but still significant for Biology and Geometry.
- The skills that contribute to performance on the reading and writing components of the English 11 SOL assessment contribute independently to performance on all but two of the other SOL assessments.