

**The Role of Statewide End-of-Course Assessments in  
High School Assessment Systems:  
A Study for the Washington State Board of Education**

**Prepared by Education First Consulting, LLC**

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## Executive Summary

At the request of Governor Christine Gregoire in response to ESSB 6023 enacted by the Washington State Legislature in 2007, the Washington State Board of Education (SBE) contracted with Education First Consulting, LLC, a national education policy consulting firm, to conduct an independent study of statewide end-of-course (EOC) assessments. For this report, Education First Consulting reviewed journal articles and reports, state and national policy documents and conducted interviews with 30 education, government and business leaders.

High-quality high school assessment systems are an important tool for (1) supporting student learning by measuring achievement of state academic standards and diagnosing academic strengths and weaknesses; (2) holding students and/or schools accountable; and (3) determining readiness for postsecondary education and training. (4) Ensuring high-quality and efficient operations is a fourth major goal so that assessments produce sufficient information to meet the first three purposes well, while minimizing the costs and time spent on testing.

In this report, we show that standards-based comprehensive assessments and standards-based end-of-course (EOC) assessments, on balance, can serve these major purposes equally well. For example, both formats can diagnose student academic strengths and weaknesses; both formats are used as high school exit exams; and both formats can place students into credit-bearing college classes. But this report also shows that the formats also have different strengths and meet these major purposes in distinctly different ways.

### **The National Testing Landscape**

Comprehensive assessments are more common today than EOCs. The use of EOCs is growing, with 16 states now including EOCs in their high school assessment system and another 11 planning to implement these exams in the near future (Achieve, 2007, Center for Education Policy (CEP), 2007, *Education Week*, 2007).

Twenty-six states will have exit exams for students by 2012 and 13 of these states will use EOCs (CEP, 2007, *Indianapolis Star*, 2007). This is an increase of 11 states using EOCs for exit exams since 2002.<sup>1</sup> Twelve states use some or all of their EOCs to meet the testing and accountability requirements of No Child Left Behind (NCLB). However, some states with both comprehensive and EOC tests use only the comprehensive tests to meet federal requirements.

At least nine states have built college- and career-ready measures into their regular high school testing systems. These measures—including comprehensive assessments, EOCs and admissions and placement tests such as ACT, SAT or COMPASS—are used by postsecondary education institutions to place incoming students in credit-bearing courses (Achieve, 2007).<sup>2</sup>

Tables 1 and 2 summarize the national testing landscape. We also developed a 50-state table describing all states' high school testing programs and we produced 2-4 page "capsules" with specific information on nine states' EOC programs. The 50-state table, nine capsules and additional information on our research methods, interviewees and team members who developed this report for Education First Consulting are located in the Appendix to this report.

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<sup>1</sup> After the CEP report was published in October, Indiana's Governor and State Superintendent announced the decision to transition to using English I and Algebra I Core 40 end-of-course tests for high school graduation.

<sup>2</sup> ACT is the assessment of choice for Colorado, Illinois, Kentucky and Michigan. Maine administers an augmented SAT. Idaho recently mandated that all 11<sup>th</sup> graders take the SAT, ACT or COMPASS placement test.

**Table 1. Status of EOCs in State Systems (in Place or Planned)**

16	Have EOCs in place (or field-testing) in 2007-2008 school year: AR, CA, GA, IN, LA, MD, MA, MS, NJ, NY, NC, OK, SC, TN, UT, VA
11	Report plans to have EOCs in at least one subject area: AZ, FL, HI, KY, MI, NM, OH, PA, RI, TX, WV
7	Planning to keep both EOCs and comprehensive assessments: AR, CA, GA, LA, MA, MI, SC

**Table 2. States with EOCs for Exit Exams and School Accountability (In Place or Planned)**

26	All states currently or planning to have exit exams for students: AL, AK, AR, AZ, CA, FL, GA, ID, IN, LA, MD, MA, MN, MS, NV, NJ, NM, NY, NC, OH, OK, SC, TN, TX, VA, WA
10	States currently or planning to use EOCs to hold students accountable: AR (2010), IN (2000), MD (2009), MS (2006), NY (2000), NC (2010), OK (2012), TN (2005), TX (2012), VA (2004)
3	States that will use comprehensives in English/math and EOCs in other subjects: MA (English/math 2003, science EOCs 2010, U.S. History EOC 2012) NJ (English/math 2003, Biology EOC 2010) SC (English/math 2006, Biology and U.S. History EOCs 2010)
12	Use or plan to use some or all of their EOCs for school accountability under NCLB: AR, MA, MD, MS, NJ, NY, NC, OK, SC, TN, UT, VA

**Key Findings and Lessons Learned**

This report provides a thorough analysis of the relative strengths and limitations of comprehensive tests and EOCs in meeting the four major purposes of assessment. Overall, we found many important similarities and differences among comprehensive tests and EOCs.

State high school assessment systems that are built around comprehensive tests:

- Usually focus on 10<sup>th</sup> grade or lower standards;
- Assess a slice of the high school standards, rather than deep knowledge of subjects;
- Can potentially narrow the delivered curriculum to what is tested;
- Provide a “snapshot” of system performance at a common point in time for all students;
- Often take up less testing time overall and cost less;
- Take a more straightforward approach to exit exams and school accountability; and
- Rarely provide information on students’ readiness for postsecondary education coursework and training.

State high school assessments systems built around end-of-course testing:

- Vary widely with respect to the number and kinds of courses that are assessed;
- Will measure a broader and deeper range of standards, including advanced subject matter, but only if there are a sufficient number of EOCs in each subject;
- Do not assess all students against common standards unless states require all students to take a certain series of courses and/or require all students to take certain EOCs;
- Are typically implemented to promote more consistency of teaching and provide more timely information on learning and course quality;

- Motivate students to learn through exit exams as well as other forms of lesser student stakes, such as counting test results as a portion of course grades;
- Make it more complicated to hold students and schools accountable, yet offer the potential to produce more validity and reliability; and
- Can be better-suited for placing students in postsecondary education courses than comprehensive tests given by states in the 10<sup>th</sup> grade.

We also learned that changing test formats will not necessarily improve student learning of state standards or increase student performance. And states are now permitted to use EOCs to meet the requirements of No Child Left Behind. Finally, other studies have shown that alternative assessments to the WASL vary in the degree to which they measure the full range of skills and knowledge found in the WASL. Sections III and IV describe these findings in much more detail.

### Policy Implications for Washington

The summary table below shows clearly that, while the two formats can serve many similar purposes, they also have different strengths in different areas. Given that comprehensive and EOC assessments have much in common, and that neither format is in itself a panacea to problems of low student or school performance, we believe that Washington policymakers must first determine the extent to which the four purposes are most important in Washington, in order to choose the most appropriate testing format.

If, for example, Washington leaders want the high school assessment system to ensure greater consistency and bring teaching and learning more closely in line with statewide standards, then EOC assessments are probably better-suited to serve this goal. If state leaders instead place a higher priority on preserving simplicity and minimizing complexity in the testing system, then continuing to use the WASL as the state’s high school assessment is more appropriate.

**Table 5: How Well Do Comprehensive and EOC Assessments Meet the Four Major Purposes of Assessments?**

Issue Area	Advantage to...
<b>(1) Supporting Student Learning</b>	
Measuring the breadth and depth of standards	EOCs (slight)
Assessing students near the point of curriculum delivery	EOCs (strong)
Assessing students with the same test	Comprehensive
Choice and quality of test question types	No clear advantage
<b>(2) Holding Students and/or Schools Accountable</b>	
Validity and reliability of assessments	EOCs (slight)
Holding students accountable	No clear advantage
Reporting results at the classroom or course level	EOCs
Holding schools accountable	No clear advantage
<b>(3) Determining Readiness for Postsecondary Education</b>	
Measuring readiness for postsecondary education	EOCs (strong)
Providing access to rigorous courses while preserving flexibility	EOCs (slight)
<b>(4) Ensuring Quality and Efficient Operations</b>	
Testing window and turnaround time for results	No clear advantage
Costs and time spent on testing	Comprehensive
Impact of administration on schools	No clear advantage
Test security	No clear advantage

## Sequencing Education Policy Decisionmaking

Because assessments are a means to the end of understanding how well students, schools and districts are meeting state standards, we recommend that Washington policymakers coordinate the decisions about the format of high school testing with decisions about state standards, curriculum and graduation requirements. We believe it is important to consider the assessment policy within the larger context of the state's K-12 education system and the state's efforts to improve learning and teaching.

Over the next several months, the statewide system of standards, curriculum, instruction, assessment and accountability is being reshaped. For example, the mathematics and science standards are being revised at the direction of the Legislature, mathematics curriculum choices will be made more consistent and SBE is in the process of updating statewide minimum graduation requirements in all content areas.

These practical realities suggest that state policymakers should first address key questions about high school education policy and then determine which format for the high school assessments is most relevant. This will help ensure that the state's standards-based K-12 education system is coherent and that stakeholders will understand why certain choices have been made.

In our view, the key questions Washington policymakers should address include at least:

- What skills and knowledge do students need to be successful after exiting Washington's K-12 public education system? Does the state have a goal that all students gain the skills and knowledge that are needed for success in postsecondary education and training?
- Is it important for the state to assess the academic standards close to the time when students learn the content or to give a common assessment to all students in 10<sup>th</sup> grade?
- When the new graduation requirements are adopted, what course credits will all students be expected to earn in English, mathematics, science and social studies? Will EOCs help or hurt the state's goal that all students are held to common high standards?
- Should the main assessments given in high school also be used to signal students' readiness for postsecondary education without the need for remediation? Or should other assessments serve this purpose?
- Does the state want to identify additional/alternative ways of holding students accountable for meeting state standards, such as tying test results into course grades?
- Are more statewide measures needed to provide more data points on school performance or are the four currently in use sufficient for the state accountability system?

If, after addressing these questions, Washington policymakers consider transitioning to an EOC-based system, we recommend that policymakers:

- Minimize costs and development time by working in collaboration with other states to implement standards-based, criterion-referenced EOC assessments.
- Require all students to earn a common set of course credits (such as Biology, Chemistry and/or Physics and their equivalents), and require all students to take the corresponding EOCs in these subjects, to ensure equity of student experiences in high school.
- Maintain the comprehensive format for reading and writing, rather than attempt to create EOCs in these subjects.

## **Section I. Background and Introduction**

For more than 15 years, Washington policymakers have sought to continually improve public K-12 education so that all children are expected and taught to learn at high levels. The Washington State Board of Education (SBE) recently set ambitious goals for its oversight of the K-12 public education system: “Raise student achievement dramatically” and “Provide all students the opportunity to succeed in postsecondary education, the 21<sup>st</sup> century world of work and citizenship” (SBE, 2006). With direction from the Governor and Legislature—and in collaboration with other public agencies responsible for education—the SBE and the Office of Superintendent of Public Instruction (OSPI) provide leadership to accomplish these goals through the development and implementation of common academic standards and curriculum choices, minimum high school graduation requirements, statewide assessments based on the standards and student and system accountability.

In 2007, the Legislature enacted ESSB 6023, which directed the SBE to examine and recommend changes to high school assessments with a limited series of end-of-course (EOC) assessments. Governor Gregoire vetoed this provision because she felt the study should not predetermine that end-of-course assessments would be implemented. Instead, she asked the SBE to study policy and technical issues about EOCs.

In addition, OSPI will select a new testing contractor(s) in spring 2008. The Request for Proposals requires potential vendors to submit proposals to continue the 10<sup>th</sup> grade Washington Assessment of Student Learning (WASL) in reading, writing, math and science and to develop new EOCs in math and science.

To inform the deliberations of the Governor, SBE, OSPI, legislators and interested stakeholders, the SBE contracted with Education First Consulting, LLC, to conduct an independent study of statewide end-of-course assessments. This report summarizes the findings of our research study across several lines of inquiry:

- What lessons can Washington State learn from the literature on high school assessment and accountability systems, with a focus on EOCs and high school exit exams?
- What have been the experiences of other states in implementing EOCs?
- Do other assessments measure the same content and skills as the WASL?
- What are the policy implications for Washington’s high school assessment system, based on the literature and lessons learned from other states?

To address these questions, Education First Consulting conducted a thorough review of the primary and secondary literature on EOCs and high school assessment and accountability in general. To develop a picture of the diverse ways EOCs are deployed across the nation, we reviewed EOC programs in nine states—California, Indiana, Maryland, New Jersey, New York, South Carolina, Tennessee, Texas and Virginia. After this initial environmental scan, we conducted 30 interviews with key education, government and business leaders in six states—California, Indiana, New Jersey, Tennessee, Texas and Virginia—to obtain more in-depth knowledge of states’ experiences with EOC testing. The Appendix contains a 50-state chart displaying high school testing details and in-depth “capsule” descriptions of the nine states’ EOC programs. It also includes summaries of our methodology, individuals we interviewed, citations and background on Education First Consulting and the research team.

## **Section II. The National Assessment Landscape**

Nationwide, high school assessments have been around for well over three decades in various forms. State laws on the grades and subjects tested vary, but using assessments for accountability has traditionally driven what content gets tested at the high school level. A newer trend is using high school assessments to measure student readiness for postsecondary education and training.

### **Purposes of High School Assessment**

After reviewing the literature and the experiences of states for this report, we found that there are many ways to describe what are, in essence, four main purposes of high school assessment systems:

- (1) Supporting student learning (by measuring achievement of state academic standards and diagnosing academic strengths and weaknesses);
- (2) Holding students and/or schools accountable for meeting standards;
- (3) Determining student readiness for postsecondary education and training; and
- (4) Minimizing the costs and time spent on testing (by ensuring quality and efficient operations).

Every state purports to use its high school tests to meet the first and fourth major purposes, with varying degrees of success. More than half the states use high school tests to hold students accountable and all states hold schools accountable with high school testing. A growing number of states are incorporating tests into their high school assessment systems that meet the third purpose, determining readiness for postsecondary education and training.

Designing a single statewide assessment to meet all of these purposes equally well has proven challenging for states, which is one reason states are exploring new testing formats and expanding their high school testing systems. States have to grapple with a set of difficult design choices and tradeoffs for high school assessment systems, including:

- How to coordinate testing requirements with common standards and varied coursetaking patterns of high school students?
- How to attach stakes to assessment results for students and schools that motivate higher performance?
- How high to set the bar on high school tests used as exit exams?
- Whether to assess deeply within content areas or broadly across the curriculum?
- When and with whom to share test results and in what form?
- Whether and how to use high school testing to assess student readiness for postsecondary education and training?

As we show in Sections III and IV, comprehensive tests and end-of-course tests each have strengths and limitations and offer advantages and disadvantages. The rest of Section II summarizes the literature and national trends in the kinds and uses of high school testing.

### **Defining Comprehensive and End-of-Course Assessments**

We define comprehensive assessments (also known as end-of-grade tests) as measures that assess a range of material in a particular subject area. The material may have been taught in previous grades and via different courses, but this common test is administered to all students in the same grade near the end of the school year. Most states administer comprehensive

assessments just once in high school, typically in grade 10 or 11, and all eligible students in that grade take the test. While it is most common for states to administer comprehensive assessments in language arts and mathematics, many states offer comprehensive assessments in the four core academic subjects—language arts, mathematics, social studies and science.

We define end-of-course tests as assessments designed to measure mastery of standards for particular high school courses. EOCs are administered on a more flexible schedule, as the tests are taken only by those students taking the course. The major reasons states cite for giving EOCs are to assess learning of specific course content and administer the tests closer to the time of instruction. Unlike comprehensive assessments, which measure content areas such as mathematics, EOCs are designed to correspond with learning standards in specific courses, such as Algebra I, English II, U.S. History or Biology. EOC systems hold the course the student takes, not the grade level of the student, constant. For example, in the most extreme cases, students in middle school and in 12<sup>th</sup> grade may be included in assessments for Algebra I.

### **Uses of Comprehensive Assessments and EOC Assessments in State Systems**

Comprehensive assessments are more common today than EOCs, but the use of EOCs is growing, with 16 states now using EOCs and another 11 planning to implement these exams in the near future (Achieve unpublished research, November 2007). It is important to note that EOCs are a relatively new trend compared to comprehensive assessments; many states now using EOCs originally used comprehensive assessments and then added or completely transitioned to EOCs.

#### *Using EOCs as Exit Exams*

According to a multi-year study of high school graduation or “exit” exams conducted by the Center for Education Policy (CEP), a nonpartisan national organization, 26 states have or will have exit exams by 2012, including Washington. These states educate more than 75 percent of the nation’s high school students (Center for Education Policy, 2007).<sup>3</sup> Of these 26 states, 13 states will use EOCs to ensure that students meet minimum standards as a condition of high school graduation (CEP, 2007, *Indianapolis Star*, 2007). This will be an increase of 11 states using EOCs for exit exams since CEP’s first study in 2002.<sup>4</sup>

Exit exams have been controversial in states that have implemented them. Proponents of these exams argue that graduation tests improve student achievement for low-achieving students by setting clear expectations for schools and teachers, encouraging schools to direct remediation and resources to low-achieving students and by motivating low-achieving students to raise their academic performance (see Bishop, 1999, Bishop and Mane, 2004, Carnoy and Loeb, 2004, Hanushek and Raymond, 2005). Critics contend that graduation tests produce a number of negative unintended consequences including reducing the breadth of the curriculum, encouraging teachers to “teach to the test” and lowering the overall rigor of the high school curriculum (see Klein, Hamilton, McCafferty and Stecher, 2000, and McNeil, 2000).

Other research that looks closely at the implementation of high school graduation examinations suggests a more complicated and nuanced picture (see Center for Education Policy, 2004 and 2007, Martorell, 2004, Goldrick-Rab and Mazzeo, 2005, and Warren, Jenkins and Kulick, 2006).

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<sup>3</sup> Nineteen of these states use the same assessment to hold students and schools students accountable, though 10 (California, Florida, Georgia, Idaho, Louisiana, Massachusetts, Minnesota, Mississippi, North Carolina and South Carolina) set a lower cut score for high school graduation than for school accountability.

<sup>4</sup> After the CEP 2007 report was published in October, stating that 10 more states are using EOCs than in 2002, Indiana’s Governor and State Superintendent announced the decision to transition to using English I and Algebra I Core 40 end-of-course tests for high school graduation.



In studies of the mathematics and English language arts high school graduation exams in Florida, Hawaii, Maryland, Massachusetts, New Jersey, Ohio, Texas and Washington, Achieve found that the exams in these states assess the basic skills that students need later in life and demand levels of performance that most students could reasonably be expected to pass as a condition of graduation (Achieve, 2004, 2005, 2006). Yet Achieve also found that the exams do a poor job in measuring “the knowledge and skills high school graduates need to succeed in the real world” of postsecondary education and work.<sup>5</sup>

In Washington, students in the graduating class of 2008 must meet standards either on the 10<sup>th</sup> grade reading and writing WASL or through approved alternative measures, such as a collection of evidence or substitution of scores from other measures. ESSB 6023 delays the 10<sup>th</sup> grade mathematics and science WASL graduation requirement until 2013.

#### *Using EOCs to Hold Schools Accountable*

The federal No Child Left Behind Act (NCLB) enacted in 2002 requires states to administer tests in reading, mathematics and science at least once to students in grades 10 through 12 and to use these tests to identify schools meeting and not meeting Adequate Yearly Progress (AYP). States are using various tests to meet these requirements, with most focusing on comprehensive tests typically given in the 10<sup>th</sup> grade. Currently, twelve states use or report plans to use EOCs to meet NCLB testing and AYP requirements.

Yet some states with EOCs do not use them to meet federal testing and AYP requirements. For example, California relies on its 10<sup>th</sup> grade comprehensive exams in English and mathematics to report whether schools are making AYP and does not include EOC results in the AYP ratings.

#### *Using EOCs to Assess Student Readiness for Postsecondary Education*

Using assessments given in high school for postsecondary purposes, such as signifying whether students are ready to enter and succeed in entry-level higher education coursework in reading, writing or mathematics without the need for remediation, is a newer trend than exit exams. This trend is gaining steam nationwide to help students prepare for success while they are still in high school, streamline overall testing systems and make postsecondary education and workforce expectations more transparent (see Brown and Conley, 2007; Conley, 2003; Education Trust, 2007; Education Week, 2007; Goldrick-Rab and Mazzeo, 2005; Le, Hamilton & Robyn, 2000; Venezia and Kirst, 2004).

Many states are seeking to build college- and career-ready measures into their testing systems in addition to tests used as graduation exams or for school accountability. States are pursuing a variety of purposes and approaches for such assessments. According to a 2007 report from Achieve on high school policy plans in the 50 states, nine states currently or will administer tests

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<sup>5</sup> In its 2005 study of the 10<sup>th</sup> grade WASL, Achieve found that:

- The WASL writing test is exemplary in comparison to other states and measures a set of skills important for student experiences after high school;
- Much of the material on the reading and mathematics WASL is studied by Washington students early in their high school careers;
- The cut scores reflect modest expectations for students, as they are keyed to 9<sup>th</sup> grade levels or lower of mathematics and reading comprehension; and
- The WASL measures only a small subset of the skills students need to succeed in either college or the workforce.

Achieve offered a number of recommendations to strengthen the WASL, such as including more challenging content, asking questions with higher levels of cognitive demand and phasing in higher cut scores over time (Achieve, 2005).

as part of their high school assessment system that also are used by postsecondary education institutions as “placement” exams that can place incoming students in credit-bearing courses.

States are using a variety of testing formats for this purpose, including state-developed comprehensive assessments (California and Texas), state-developed EOCs (California and New York) and off-the-shelf and customized admissions tests—either the ACT or SAT (Colorado, Idaho, Illinois, Kentucky, Maine and Michigan).<sup>6</sup> An increasing number of states also reported to Achieve that they are planning to build or use EOCs in advanced subjects to measure student readiness for postsecondary education.

Washington lawmakers enacted legislation in 2007 to adapt the University of Washington's Washington Math Placement Test and administer it to interested high school students.

### Summary of States' Uses of EOCs

Tables 1 and 2 offer a snapshot of the use of EOCs and exit exams across the nation. In addition, we compiled a 50-state analysis of high school testing in the Appendix.

**Table 1. States with EOCs in Place or Planned  
(With or Without Exit Exam Requirements)**

16	Have EOCs in place (or field-testing) in 2007-2008 school year: AR, CA, GA, IN, LA, MD, MA, MS, NJ, NY, NC, OK, SC, TN, UT, VA
11	Report plans to have EOCs in at least one subject area: AZ, FL, HI, KY, MI, NM, OH, PA, RI, TX, WV
7	Planning to keep both EOCs and comprehensive assessments: AR, CA, GA, MA, MI, NJ, SC
12	Use or plan to use some or all of their EOCs for school accountability under NCLB: AR, MA, MD, MS, NJ, NY, NC, OK, SC, TN, UT, VA

**Table 2. States with Exit Exams  
(In Place or Planned)**

26	All states currently or planning to have exit exams for students: AL, AK, AR, AZ, CA, FL, GA, ID, IN, LA, MD, MA, MN, MS, NV, NJ, NM, NY, NC, OH, OK, SC, TN, TX, VA, WA
10	States currently or planning to use EOCs to hold students accountable: AR (2010), IN (2000), MD (2009), MS (2006), NY (2000), NC (2010), OK (2012), TN (2005), TX (2012), VA (2004)
3	States that will use comprehensives in English/math and EOCs in other subjects: MA (English/math 2003, science EOCs 2010, U.S. History EOC 2012) NJ (English/math 2003, Biology EOC 2010) SC (English/math 2006, Biology and U.S. History EOCs 2010)

<sup>6</sup> ACT is the assessment of choice for Colorado, Illinois, Kentucky and Michigan. Maine administers an augmented SAT. Idaho recently mandated that all 11<sup>th</sup> graders take the SAT, ACT or COMPASS placement test.

### **Section III. Key Findings and Lessons Learned**

Standards-based comprehensive assessments and standards-based EOCs—while sharing some similarities—can also be quite different in how they are implemented at the state level. While both types of assessments can be used confidently to measure achievement of state standards and diagnose academic strengths and weaknesses; hold students and schools accountable; assess readiness for postsecondary education and training; and reduce impacts on schools, the different formats have different strengths and meet these four purposes of testing in distinctly different ways.

#### **Overarching Findings**

Comprehensive assessments, for example, tend to reduce the impact of state testing on time (for students and schools) and resources. EOC assessments, on the other hand, often provide distinct advantages to states that want to exert more influence over the consistency, quality and alignment of curriculum with standards.

State high school assessment systems that are built around comprehensive tests:

- Usually focus on 10<sup>th</sup> grade or lower standards;
- Assess a slice of the high school standards, rather than deep knowledge of subjects;
- Can potentially narrow the delivered curriculum to what is tested;
- Provide a “snapshot” of system performance at a common point in time for all students;
- Often take up less testing time overall and cost less;
- Take a more straightforward approach to exit exams and school accountability; and
- Rarely provide information on students’ readiness for postsecondary education coursework and training.

State high school assessments systems built around end-of-course testing:

- Vary widely with respect to the number and kinds of courses that are assessed;
- Will measure a broader and deeper range of standards, including advanced subject matter, but only if there are a sufficient number of EOCs in each subject;
- Do not assess all students against common standards unless states require all students to take a certain series of courses and/or require all students to take certain EOCs;
- Are typically implemented to promote more consistency of teaching and provide more timely information on learning and course quality;
- Motivate students to learn through exit exams as well as other forms of lesser student stakes, such as counting test results as a portion of course grades;
- Make it more complicated to hold students and schools accountable, yet offer the potential to produce more validity and reliability; and
- Can be better-suited for placing students in postsecondary education courses than comprehensive tests given by states in the 10<sup>th</sup> grade.

#### **Detailed Findings**

Finding 1: Both comprehensive test systems and EOC systems can share many characteristics of high-quality testing systems, such as assessing skills as well as knowledge through a variety of item formats and turning around test results in a timely fashion.

Both comprehensive and EOC assessments can be designed to measure standards with substantial validity and reliability. In both systems, states involve teachers and subject experts in

ensuring that the tests align to standards and states commission alignment studies to confirm the alignment of assessments with standards (CEP 2004 and interviews).

High-quality EOCs, like high-quality comprehensive tests, measure student knowledge as well as how well students apply their knowledge. For example, New Jersey's new Biology EOC (which will serve as the high school science exit exam) includes more than 50 multiple choice questions ranging from beginning- to advanced-level, as well as an open-response essay question. The New York State Regents EOC exams include both multiple choice and constructed response items across the subject areas. The 2007 Algebra A assessment includes 30 multiple choice and nine constructed response questions. The Global History assessment includes 50 multiple choice, an essay and eight short answer questions based on source documents. The comprehensive English assessment includes 16 multiple choice and two essays from prompts.

It is possible to design and administer both comprehensive and EOC examinations to quickly return results. Turnaround time constraints are more related to scoring methods and the number of constructed response items than to whether a test is an EOC or comprehensive test.

However, scoring costs may increase if there are an increased number of assessments and test forms that need to be developed, refreshed regularly and scored. And, though we did not find evidence in the research literature on this issue, we heard in interviews that some stakeholders criticize EOC systems that include a full battery of assessments across the core subject areas for consuming a great deal of testing time.

Finding 2: State EOC systems vary widely with respect to the number and kinds of courses that are assessed. EOC systems with many tests in multiple subject areas assess a broader and deeper range of content and skills than comprehensive assessments.

EOC systems that include multiple assessments per subject area (e.g. when math is assessed with Algebra I, Algebra II and Geometry assessments and when science includes Biology, Chemistry and Physics) can assess a wider range of content, provide more data about student learning of standards and therefore provide more inferences about school performance across grades 9-12. If EOC systems have only a few tests measuring introductory skills and knowledge typically taught in 9<sup>th</sup> or 10<sup>th</sup> grade, then it is less clear whether EOC systems will be more valid or reliable than systems based on comprehensive tests.

Most states with comprehensive assessments measure content at or below the 10<sup>th</sup> grade level. Even in the minority of states with 11<sup>th</sup> grade comprehensive assessments, analysts argue that these tests measure basic, not advanced, content and skills. Some EOC systems also focus only on 9<sup>th</sup> and 10<sup>th</sup> grade content. For example, South Carolina's EOC tests are Algebra I/Math Technologies II, English I, Biology I/Applied Biology II and Physical Science. Maryland only offers four EOC exams, in English II, Algebra/Data Analysis, Biology and Government.

Yet many EOC states assess advanced subjects. Indiana has only a handful of EOCs, but assesses, for example, English 11 and Algebra II as well as introductory courses. Virginia administers 13 EOCs across the four core content areas. California offers comprehensive tests in grades 9, 10 and 11; EOCs in social sciences; and EOCs in math and science for "traditional" course sequences (e.g., Algebra I, Geometry and Algebra II and Biology, Chemistry and Physics) and "integrated" sequences (e.g., Integrated Mathematics I, Integrated Mathematics II and Integrated Mathematics III).

We found that it is common for states with EOC-based systems to still use a comprehensive assessment for English. Virginia’s English/Reading and English/Writing EOCs, for example, are given to all students in the 11<sup>th</sup> grade and incorporate grade 9-11 English language arts standards. For an English assessment to be considered an EOC, it must measure a specific curriculum or course and be taken at the completion of the course. Few states have chosen this route.

One significant downside of the EOC approach is that—unless states require all students to take a certain series of courses and/or require all students to take certain EOCs—different groups of students will be tested on different content. For example, California law requires all students to earn a credit in Algebra I and state policy requires students to take a corresponding EOC if they take a course. In 2006, more than 700,000 students in California took the Algebra I assessment—but only about 370,000 California students took the Geometry assessment the next year, suggesting that many students may not end up taking higher-level math classes. This can create equity concerns for students and also make it difficult to determine accountability for schools when students in the same system are held accountable for different standards.

States like Tennessee have addressed this dilemma by only using three of nine statewide EOCs—Algebra I, English II and Biology I—for school and student accountability. While this has made accountability calculations for both students and schools easier and fairer, policymakers recognize this approach emphasizes lower-level content, rather than the skills needed for demanding jobs or postsecondary education.<sup>7</sup> This is one reason Tennessee leaders are currently rethinking how its “Gateway” EOCs will be used for student and school accountability.

Finding 3: Both formats are designed to measure state academic standards. EOCs are typically chosen by states that want to promote more consistency of teaching.

EOC exams are designed to measure the impact of a specific course curriculum on student learning, while comprehensive exams are designed to measure the impact of instruction over several years on student learning.

Although both formats are rooted in measuring students’ mastery of state learning standards, they appear to have varying impact on the high school curriculum. No single assessment can cover the full range of a state’s content standards (Baker and Linn 2004). When single assessments are intended to cover several years of standards, states will necessarily be representing a large range of material with a relatively small number of test items. Critics of comprehensive assessments argue that schools feeling the pressure of low performance in high stakes contexts may end up “narrowing” their curriculum around the tested domains, rather than all of the state’s standards (McNeil). This can result in widely varying curriculum across schools and disparity in implementing standards across classrooms.

Critics of comprehensive exams favor linking assessments to specific courses because the assessments can—when offered as a series of EOCs—include more concepts and coverage of the state standards and focus schools’ and students’ attention on standards for particular courses. CEP suggests that EOC assessments “set clear expectations for students and teachers by driving the enacted curricula, what is actually taught in classes, into closer alignment with the state standards” (CEP 2004). CEP also notes that EOCs allow schools, districts and states to keep better track of students’ progress by monitoring alignment with standards and the consistency of curriculum. State administrators we interviewed in California,

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<sup>7</sup> See Appendix A for more details on the proposed changes in Tennessee.

Indiana, Tennessee and Virginia all cited this fact as a main reason for including EOCs in their state systems.

Still, EOC systems do not ensure perfect alignment of local curriculum with state standards. Goertz and Massel (2004) report that in New York, where Regents exams have long been used to assess students' performance in certain courses, teachers argued that performance on the Regents exams do not always reflect the performance of students in their class. Local and state officials we interviewed in California and Tennessee felt that EOCs have not completely eliminated the variation and inequality in curriculum statewide. This suggests that testing alone will not improve classroom teaching, curriculum quality or student learning. Additional efforts beyond testing are needed to increase the quality of students' high school learning experiences, such as enhanced professional development and tighter curriculum choices and supports.

**Finding 4: Changing test formats will not necessarily improve student learning of state standards or increase student performance.**

Performance on both EOCs and comprehensive tests varies widely across the nation. Performance does not depend on or correlate in any predictable or consistent way with the test format. The factors that do affect student performance on tests include the nature of the content measured; the rigor and complexity of the test questions; the performance standards (also known as “cut scores”); the alignment of content standards, local curriculum and teaching with the assessment; and students' opportunity to learn the tested material.

Most states giving exit exams—regardless of whether the state has an EOC or a comprehensive test—have very high levels of student performance overall (and many have closed performance gaps), especially when results from retakes are added (CEP, 2007).

Within the sample of states we studied, student proficiency ranges widely. Within states that have both comprehensive measures and EOCs, performance on tests with similar names varies widely. For example, consider results from various tests in California and South Carolina. The performance on the comprehensive tests in both states—the 10<sup>th</sup> grade CAHSEE in California and the HSAP in South Carolina—is much higher than performance on the EOCs.

**Table 3: California: Percentage of Students Proficient or Above Standard on the EOCs and Comprehensive Tests**

	All Students					African American	Low-income	English Learners
	2003	2004	2005	2006	2007	2007	2007	2007
General Math EOC	20	20	22	22	21	12	13	8
Algebra I EOC	31	18	19	23	24	11	15	7
Integrated Math I EOC	7	8	7	10	9	6	8	2
Geometry EOC	26	24	26	26	24	8	13	7
Integrated Math 2 EOC	28	21	29	31	21	9	14	6
Algebra II EOC	29	24	26	25	27	10	16	14
Integrated Math 3 EOC	21	27	32	34	21	11	23	18
Summative Math 9-11 (Comprehensive)	43	41	45	46	47	22	31	34
CAHSEE Math (Comprehensive used as exit exam)	43	74	65	59	76	58	65	47

**Table 4: South Carolina: Percentage of Students Scoring an A, B, or C on the EOCs or Meeting Standards on the Comprehensive Tests**

	All Students			African American Students	Free or Reduced Lunch Students
	2004	2005	2006	2006	2006
Algebra 1	58	61.1	68	42	46.9
English 1	n/a	46.2	49.6	30.5	33.5
HSAP-English	85	86.2	84.9	75.5	75.4
HSAP Math	80.1	76.4	80.2	67.1	69.2

Overall, it is not possible to conclude that test format type has any consistent or predictable influence on how many students will meet the state standards. Thus, changing test formats will not necessarily improve student learning of state standards or increase student performance.

Finding 5: Both EOCs and comprehensive assessments can be used as exit exams. EOCs also can be used as part of student course grades.

States can and do use both comprehensive and EOC assessments to hold students accountable. The primary difference with regard to student accountability is the range of stakes. Stakes attached to comprehensive assessments, for example, range from assigning no stakes to students, reporting test scores on transcripts or tying the test to high school graduation.

States using the EOC format can take advantage of more variety in the level and type of stakes assigned to students—none, transcripts reporting and using for course grades and graduation.

A handful of states with EOCs, including California, Indiana, Louisiana and Utah, currently assign no stakes for students at all to EOCs.<sup>8</sup> Another group of states, including Georgia, North Carolina, South Carolina and soon Tennessee and Texas, require that EOC results count for a portion of the corresponding course grade (usually 15-25 percent). For example, North Carolina has ten EOCs in a range of lower- and upper-level subjects; in addition to requiring that the tests count for at least 25 percent of the course grade, students in the class of 2010 in North Carolina also will be required to pass five EOCs in lower-level courses to graduate.

Thirteen states currently require or plan to require students to pass at least one EOC to earn a high school diploma. In Indiana, policymakers recently announced their intent to eliminate the 10<sup>th</sup> grade comprehensive test in English and mathematics that is used for graduation and use the Algebra I and English I EOCs as exit exams (*Indianapolis Star*, 2007). In Louisiana, students must pass the 10<sup>th</sup> grade comprehensive test in English and math to graduate; the Board of Education is piloting a series of EOCs in math, science and history, but has not determined yet whether these will replace the 10<sup>th</sup> grade graduation tests.

Massachusetts, New Jersey and South Carolina policymakers recently decided to add EOCs to their exit exam requirements. All three states have comprehensive tests in math and English. In Massachusetts, state leaders chose the EOC format for their Biology and U.S. History tests

<sup>8</sup> California uses its 10<sup>th</sup> grade California High School Exit Examination (CAHSEE), a comprehensive assessment, to hold students accountable, rather than its series of EOCs.

because they believe that format is more appropriate than the comprehensive format in these subject areas. New Jersey is considering transitioning its entire system to EOCs. South Carolina will use existing EOCs in science and history instead of developing new comprehensive tests.

None of the states with high school exit exams that are transitioning from comprehensive tests to EOCs (including Indiana, Massachusetts and Texas) have delayed the timeline for holding students accountable because they are changing the test format.

Finding 6: It can be more complicated to hold schools accountable with EOC tests.

Both testing formats can be used in school accountability systems. However, the different formats affect the complexity of the school accountability ratings and reporting.

Comprehensive assessments tend to offer more straightforward indicators of performance at the school level. For example, Washington holds its high schools accountable based on the performance of all eligible 10<sup>th</sup> grade students and the four-year high school graduation rate. This method ensures that all students enrolled in 10<sup>th</sup> grade are tested on the same content in reading, writing, math and science and that the public reporting of results about a given high school is relatively easy to understand. However, it also means that there are fewer data points about a particular high school in a given year—just the four test results aggregated at the school level and the four-year graduation rate.

EOCs can paint a more complex—and more reliable—picture of high school performance. States that use results from a number of EOCs to hold schools accountable are basing these decisions on multiple data points that cover multiple grade levels and multiple subject areas. These additional data points provide more inferences about a school's performance.

Yet, to avoid counting each EOC test as an independent measure for which schools must be accountable, some states roll up a series of assessment results into one indicator. This can result in complex algorithms for computing and rating school performance. For example, California uses a weighted average of nine different assessments in computing the Academic Performance Index, while Virginia combines all EOCs in a subject area to report, for example, "math" results for each high school.

Finding 7: States can use EOCs to meet the requirements of No Child Left Behind.

Upon the passage of NCLB in 2002, many interpreted the law as requiring states to administer one common assessment to all students in a single high school grade. Indeed, early state system approvals from the U.S. Department of Education denied some states the right to use EOCs for NCLB purposes. North Carolina and Georgia, for example, opted to supplement their existing EOC assessments with a comprehensive assessment administered at a common high school grade, though this decision was not without controversy in each state. California, which developed a 10<sup>th</sup> grade comprehensive assessment to use as its exit exam, opted to use the same test for NCLB.

However, a number of states have received approvals and figured out how to use EOCs to meet NCLB requirements. Virginia successfully made the case to the U.S. Department of Education that their system of EOCs in 13 subjects assessed students to a higher standard and with greater precision than a comprehensive assessment and that, because all students would have to take at least one reading and math assessment during their high school career, all students



would, in fact, be assessed as the law required. Virginia was permitted to use their EOC system to meet NCLB testing requirements by aggregating the EOC results by subject area.

Currently, 10 states use EOC assessment results to determine AYP (CEP, 2007) and two additional states are planning to use EOC assessments for this purpose. Many states that told Achieve they are transitioning to EOCs also said they anticipate using the assessments to meet NCLB requirements (Achieve, 2007).

Finding 8: EOCs are better-suited than most comprehensive tests given by states in the 10<sup>th</sup> grade to determine student readiness for postsecondary education and training.

Most states planning to incorporate or use existing high school tests for readiness and placement purposes are moving towards using EOCs (Achieve unpublished research, 2007). Using comprehensive exams to place students in postsecondary courses may be difficult for most states, given that most of these exams assess only 10<sup>th</sup> grade level content. Only two states, California and Texas, use their 11<sup>th</sup> grade comprehensive tests in mathematics and English to identify readiness for postsecondary education and training. In both states, the cut score that higher education uses for determining college readiness is above the cut score reported by the K-12 system as proficient. California also uses its Algebra II EOC to signal student readiness for postsecondary education in the California State University system.

New York's Regents EOC exams in mathematics and English language arts are used by the City University of New York and State University of New York to place incoming students in credit-bearing postsecondary courses. In Indiana, in addition to plans to use the lower-level Core 40 EOCs for high school graduation, state policymakers are interested in using the English 11 and Algebra II EOCs to assess students' readiness for postsecondary education in Indiana and make course placement decisions (Indiana Education Roundtable, 2005).

In 2007, Texas lawmakers decided to phase out the 9<sup>th</sup>, 10<sup>th</sup> and 11<sup>th</sup> grade comprehensive tests in favor of EOCs. One of the expressed purposes for this change is to align high school expectations with readiness for postsecondary education and work. Beginning in the 2011-2012 school year, entering freshmen enrolled in the default graduation course of study, the Recommended High School Program (RHSP), or the even-higher Distinguished Achievement High School Program (DAHSP) will be assessed by 12 EOCs in math, English language arts, science and social studies, including specific EOCs for Algebra I, Geometry, Algebra II, English I, English II and English III. These courses are mandatory for graduation. Students that opt down into the minimum graduation plan (which is the lowest diploma option and is not college- and career-preparatory) will be assessed by EOCs only in subjects in which they enroll.

The legislation also specifies that EOC results will count toward students' course grades and scores will be reported on transcripts. Students on the RHSP must earn a minimum average score in each core content area (e.g. a minimum score averaged across all three English tests) as a condition of graduation. Given how new the law is, education leaders are still working to determine how the test results will count for school accountability and how higher education leaders will use the test results for placement purposes.

Similarly, Tennessee's State Board of Education recently proposed a plan to raise graduation course credit requirements for all students to align with readiness for postsecondary education. Under the proposed plan, EOC scores for all required courses in this "default college- and career-ready diploma" will count for 25 percent of course grades.

In New Jersey, beginning in spring 2008, a Biology EOC will replace the comprehensive 11<sup>th</sup> grade science test. New Jersey education leaders plan to transition away from the 11<sup>th</sup> grade comprehensive tests in English, mathematics and science to a series of EOCs because their goal is to align high school expectations with readiness for postsecondary education and they believe EOCs are a better testing format to work toward this goal.

Finding 9: Other studies have shown that alternative assessments to the WASL vary in the degree to which they measure the full range of skills and knowledge found in the WASL.

An additional section of ESSB 6023 directed the SBE to examine opportunities for approved alternatives for the CAA assessment system, including one or more standardized norm-referenced student achievement tests and the possible use of reading, writing, or mathematics portions of the ACT ASSET and ACT COMPASS tests as alternatives, and how these relate to state standards.

While a full review of these issues is beyond the scope of this study, which is focused not on actual content analyses but instead on a description of the differences among test formats, at the request of the SBE, we reviewed existing data and reports generated by the Center for Educational Policy at the University of Oregon and the Washington State Institute for Public Policy (WSIPP).

The ASSET and COMPASS tests are used to place students into credit-bearing entry-level courses at two- and four-year institutions. These tests are not aligned with specific courses and are, therefore, comprehensive assessments rather than EOCs. In some ways, then, these assessments have the relative advantages described in the above decision framework. In addition, since the ASSET and COMPASS are explicitly designed to serve as college placement tests, they have the distinct advantage of predicting students' readiness for postsecondary education.

WSIPP issued a review of student performance on the WASL and alternative assessment options in December 2007. WSIPP also compiled data on the correlation between college placement tests and WASL subject-area scores. These data showed a correlation of 0.60 (on a scale of .00 to 1.0, with 1.0 meaning perfect correlation) between the ASSET and math WASL tests and a correlation of 0.43 between the COMPASS and math WASL tests. Correlations between these tests and reading and writing WASL scores were lower. Also according to this analysis, the mathematics sections of the SAT and ACT tests have the highest correlation with WASL math content (at 0.75 and 0.71, respectively).

The WSIPP study concluded that nationally-available, standardized tests, including college placement assessments such as ASSET and COMPASS, do not measure comparable content to the WASL. The study found that such alternatives do have comparable rigor to the WASL, are reliable, low-cost, easy to implement and have potential for standardization.

## **Section IV. Evaluating the Strengths and Limitations of Comprehensive and End-of-Course Tests: A “Decision Framework”**

Our research revealed relative strengths and limitations of each type of assessment. This section summarizes the core concerns and trade-offs among EOCs and comprehensive tests when it comes to the four major purposes of assessment: (1) supporting student learning; (2) holding students and/or schools accountable; (3) determining student readiness for postsecondary education and training; and (4) ensuring high-quality and efficient operations. When analyzed as a whole, these issues can serve as a “decision framework” for state policymakers.

### **Supporting Student Learning**

Assessments are a means to an end; they measure student achievement of state learning standards and can help diagnose student academic strengths and weaknesses. States interested in using assessment to guide districts and schools toward more faithful delivery of state standards should not only consider if the assessment can be designed to align with state standards, but also the range of content that can be tested.

#### **Measuring the breadth and depth of state standards**

*What are the core concerns?* Most states have implemented extensive standards that cover a wide range of subjects and levels. Assessments can only measure a slice of what the state standards expect students to learn. States need to consider what range of this content should be assessed with standardized assessments.

*What are the trade-offs?* Both comprehensive and EOC assessments can be designed to align with state standards. A series of EOC assessments in multiple courses and subjects will likely assess a wider range of standards because students are ultimately assessed with more items. And because comprehensive assessments at the high school level are only given once during a student’s career while EOC assessments are offered in several courses and levels, an EOC system typically assesses a wider range of content and curriculum.

*Where is the advantage?* When enough EOCs are included in the state system, EOCs have an advantage over comprehensive tests.

#### **Assessing students near the point of curriculum delivery**

*What are the core concerns?* Some assessment experts prefer assessing students directly after the delivery of content, arguing that the results will provide a fairer and more accurate reflection of the instruction and learning.

*What are the trade-offs?* EOCs are administered nearer to the delivery of curriculum content than are comprehensive assessments. Comprehensive assessments, because they are administered only once, usually include material students have been exposed to over a number of years. When students’ skills are below that typical for their grade level, or if students are not given access to challenging high school courses, they may even take the assessment *before* they have been exposed to the content of the assessment. Because EOC assessments are associated with a specific course or a smaller cluster of content, students are assessed relatively soon after receiving the content and, as long as the instructor completes the course material, students will not be assessed before they receive the content.

*Where is the advantage?* EOCs have a strong advantage over comprehensive tests in this case because EOCs are administered immediately after the course.

#### Assessing students with the same tests

*What are the core concerns?* In choosing a testing format, states need to consider who will be tested and when.

*What are the trade-offs?* Ensuring that all students are assessed on the same content is best accomplished with comprehensive assessments. In EOC systems, the cleanest way to assess all students on the same content is to require all students to take a certain course and to take its corresponding EOC assessment (e.g. U.S. History). Otherwise, students in different coursetaking patterns will be assessed differently in their high school careers.

*Where is the advantage?* Comprehensive assessments have a strong advantage in ensuring that all students are assessed with the same test, unless EOC systems are tightly linked to common coursetaking requirements.

#### Choice and quality of test question types

*What are the core concerns?* Tests can include multiple-choice and constructed-response items. Questions requiring students to construct responses have grown in popularity across the nation and are often incorporated in order to measure problem-solving, reasoning and communication skills.

*What are the trade-offs?* Both EOCs and comprehensive assessments can include multiple-choice and constructed-response questions. Both EOCs and comprehensive assessments can include poor-quality items and high-quality test items. Multiple-choice formats can be designed to measure problem-solving, reasoning and communication skills and vice versa.

*Where is the advantage?* Because both assessment formats are equally compatible with both question types and item quality is not related necessarily to test format, there is no clear advantage for either assessment.

### **Holding Students and Schools Accountable**

Having high-quality testing measures is necessary to determine if students have met common standards and support a statewide accountability system for schools.

#### Validity and reliability of assessments

*What are the core concerns?* Validity refers to the accumulation of evidence to support the uses and inferences made from an assessment. The extent to which the assessment measures the targeted content and the degree to which what is measured on the assessments aligns with the material students have had the opportunity to learn enhances the validity of the inferences one can make about student learning in a given year. Reliability refers to the consistency or precision of a measure. This precision impacts how measures can reasonably be used for accountability. Whereas reliability is a quality more directly associated with a particular test or test form, validity is a quality that is less test-specific. The credibility of the state's accountability system rests on the quality (including validity and reliability) of the state's assessments.

*What are the trade-offs?* Both comprehensive and EOC assessments can be designed to measure standards with substantial validity and reliability. EOC systems that include multiple assessments per subject area (e.g. when math is assessed with Algebra I, Algebra II and Geometry assessments and when science includes Biology, Chemistry and Physics) can assess a wider range of content, provide more data about student learning of standards and therefore provide more inferences about school performance across grades 9-12.

*Where is the advantage?* When a number of EOCs are used in a given subject area and more data points are produced, EOCs have the potential for greater validity and reliability, giving EOCs a slight advantage over comprehensive assessments. This depends, of course, on the quality of test design and coverage of the content standards.

### Holding students accountable

*What are the core concerns?* Assessments used for student accountability, much like assessments used for school accountability, must accurately and fairly measure students' mastery of state standards. States can hold students accountable with high stakes—such as making test passage a condition of graduation—or lower stakes like counting test results in course grades or reporting scores on transcripts.

*What are the trade-offs?* Comprehensive assessments are a more straightforward measure of student performance. But some students may not have been taught all of the skills and content covered on a comprehensive test by the time the test is administered. Retake options help overcome this opportunity to learn issue. In contrast, EOCs imply a tighter link between what is tested and what is taught.

EOCs can be used for a wider range of stakes than can comprehensive assessments, while the range of possible stakes is more limited for comprehensive assessments. Both types of assessment are used for high school graduation or for reporting results on student transcripts. Because comprehensive assessments are not associated with a particular course, it is inappropriate for the test results to contribute to students' course grades.

When using EOCs for student accountability, states must determine which courses will be required and for how many assessments will students be held accountable.

*Where is the advantage?* Both formats can be used for low or high stakes. EOCs may be slightly more complicated to use for student accountability because states need to decide which courses and how many tests students need to take and pass to graduate. Yet EOCs have the tighter link to what is taught and give states more ways to motivate student performance, such as tying test scores to course grades. On balance, there is no clear advantage either way.

### Reporting results at the classroom or course level

*What are the core concerns?* Reporting student achievement at the classroom level is a hotly contested issue with many political and technical concerns that extend well beyond the scope of this report. However, educators often desire data and feedback on the performance of students in different courses and coursetaking patterns.

*What are the trade-offs?* It is more difficult at the high school level to link performance on comprehensive exams to specific teachers, especially in reading and writing. EOC assessments in mathematics, science and social studies, because they are linked to specific courses, more

accurately reflect the work of individual teachers and teachers in subject area departments than do comprehensive assessments. However, the use of assessments for measuring classroom or teacher productivity has been hotly contested by teachers' unions in several states. Virginia specifically addressed the state teacher association's concerns by agreeing *not* to use EOC results for teacher accountability.

*Where is the advantage?* Because EOCs have the best potential to capture classroom level performance, these assessments hold a considerable advantage in providing classroom level measures.

#### Holding schools accountable

*What are the core concerns?* Assessments used for school accountability systems must provide a reasonable indicator of the whole school's performance. Tests are more likely to be publicly accepted if schools, parents and the public can readily interpret the results and school ratings.

*What are the trade-offs?* Both comprehensive assessments and EOCs can be used to generate schoolwide performance measures; both testing formats are now accepted as in compliance with NCLB. Comprehensive assessments may provide a more straightforward measure of school performance, or at least of 10<sup>th</sup> or 11<sup>th</sup> graders' performance.

*Where is the advantage?* Given the potential complexity of reporting school performance with EOCs, comprehensive assessments appear to have a slight advantage in setting stakes for schools. Yet EOCs offer more data about schools that may more accurately reflect the range of teaching and learning at a particular school. Overall, neither test format has a clear advantage.

#### **Measuring Readiness for Postsecondary Education and Training**

The third major purpose – and newest purpose – of high school testing is to determine if students are ready to succeed in postsecondary education and training.

#### Providing access to rigorous courses while preserving flexibility

*What are the core concerns?* High school students today take widely-varying course sequences. States that are redesigning high schools to prepare students for postsecondary education and training are seeking to ensure that all students get access to rigorous college- and career-preparatory courses, while preserving flexibility for students to pursue their interests.

*What are the trade-offs?* Determining which format helps give access to rigorous courses while preserving flexibility in coursetaking is difficult. It might appear that EOCs would constrain course sequences more than comprehensive assessments would. However, to do well on comprehensive assessments, students must learn the common content by a certain point – typically 10<sup>th</sup> grade. While the comprehensive format does not prescribe that students take certain courses, the timing of the test does mean that all students need to be exposed to common content by the same time.

It might also seem that EOCs would limit the course offerings in schools, prescribe the sequencing of courses or restrict schools' ability to innovate and use nontraditional curriculum such as project-based learning. States are finding different ways to address this concern. In Virginia, students can take the EOCs at any time in high school. Some states also offer assessments that correspond with multiple curriculum approaches. For example, California

offers EOCs for Integrated Math and Integrated Science sequences<sup>9</sup>. Despite the potential for flexibility, interviewees in California and Virginia indicated that schools have shown greater convergence around the traditional curriculum. And many states that are encouraging students to take college- and career-preparatory diploma options are moving toward EOCs.

*Where is the advantage?* Assessment systems using either format can be designed to respect coursetaking flexibility or restrain coursetaking flexibility. Yet states that want to provide greater access to college- and career-preparatory diploma options are moving toward EOCs. This gives EOCs a slight advantage.

### Measuring advanced subjects that prepare students for postsecondary work

*What are the core concerns?* In order to reduce remediation in postsecondary education and increase preparation for demanding careers, states need to measure high school students' readiness for credit-bearing courses.

*What are the trade-offs?* EOC assessment systems that assess what is typically considered 11<sup>th</sup> grade content or higher (e.g. Algebra II or Physics) hold the greatest potential to assess college- and career-preparatory content. Because most comprehensive assessments assess students at the 10<sup>th</sup> grade, few comprehensive assessments are capable of being used for higher education purposes.

*Where is the advantage?* Because states with EOC assessments are more likely to assess high level content, EOCs offer a strong advantage in providing college readiness indicators.

### **Ensuring Quality and Efficient Operations**

The fourth major goal of statewide high school assessments is to produce enough information to meet the other purposes of testing while minimizing negative impacts on schools and districts. Logistical and operational concerns include development, administration, security and scoring issues, as well as less capacity issues such as the demands on instructional time and schools' capacity to administer and manage the testing process. These concerns, if not well-attended to, can undermine the entire testing system. As such, these issues should be part of any thorough conversation about a state's ability to invest in a particular testing format.

### Testing window and turnaround time for results

*What are the core concerns?* Tests administered to millions of students each year can take a long time to be scored, especially when open-ended items are included and hand-scored. Educators, students and other stakeholders often ask for test results to be returned near the end of the same school year in which the tests were administered. As a result, some testing windows are as early as March when as many as 2-3 months remain in the school year. Teachers and administrators often want later testing windows to maximize instructional time.

*What are the trade-offs?* The challenges of testing windows exist regardless of the testing format. However, if EOCs are going to be incorporated into students' final course grades, then all EOC results must be returned before the end of the school year. This is undoubtedly a challenge for all states. New York, by placing primarily responsibility for scoring on teachers,

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<sup>9</sup> Notably, adding assessments for alternative curriculum formats does increase costs. Moreover, California is considering eliminating their integrated sequence assessments out of concern that schools are using these alternative curriculums to create a tracked, less-rigorous curriculum.

and Virginia, by moving to online administration, have found ways to return assessment results reasonably quickly.

*Where is the advantage?* Deciding when to administer the tests and how to score and return results is generally not affected by the testing format. There is no clear advantage to either format.

### Costs and time spent on testing

*What are the issues?* States have limited budgets and ambitious education agendas. The number of assessments and the complexity of assessment systems add to overall state costs for assessment. With limited time in the school year, policymakers should consider how much testing is needed in order to support quality teaching and learning.

*What are the trade-offs?* An EOC system typically implies that states will need to develop more items, larger test item banks, more testing forms and more tests overall than is required in a comprehensive assessment system. Data from our case studies indicate that the EOC systems are more costly than comprehensive systems. However, a separate and more thorough review of testing costs is recommended to get a more precise indicator of the cost differences. Students will spend fewer high school hours taking comprehensive assessments than if they take a series of EOC tests. Notably, states like Virginia have designed their assessments to be roughly comparable in length to the typical course final exam.

*Where is the advantage?* With fewer tests, comprehensive assessments will generally require less time spent on testing and costs may be lower.

### Impact of administration on schools

*What are the issues?* The quality of the assessment administration is in large part a function of how well districts and schools receive and secure the assessments, administer the assessments, provide conducive environments for students to take assessments and collect completed forms, securely return the forms and, in some cases, assist with scoring. States must consider the impact of all of these responsibilities on school resources and personnel.

*What are the trade-offs?* Given that EOC assessment systems typically require several more assessments than do comprehensive assessment systems, concern over the demands of the testing system on the school is warranted. However, none of the individuals we interviewed reported any additional or unacceptable demands from EOCs on schools.

*Where is the advantage?* Our study did not uncover additional demands as a result of EOCs. Therefore, demands appear roughly comparable across both assessment formats and there is no clear advantage from either format.

### Test security

*What are the core concerns?* The integrity of the testing system requires that the assessments and its items remain secure. Maintaining security not only requires strict protocols for assessment storage, delivery, administration, and return, but also a commitment to multiple assessment forms.



*What are the trade-offs?* While it might seem that security with an EOC assessment system might be more challenging, several assessment directors we interviewed indicated that they use very similar security measures (such as precise directions and training on delivery and storage and multiple testing forms) to what is used in comprehensive assessment systems. The director of assessment in Virginia indicated that online assessment reduces the security risks.

*Where is the advantage?* There is no clear advantage for either test format since security measures are roughly comparable for both assessment formats.

## Section V. Policy Implications for Washington State

Given that comprehensive and EOC assessments have much in common, we believe that Washington policymakers must first determine what their policy priorities are, and the extent to which the four purposes are most important for student assessment, in order to choose the most appropriate testing format.

In the previous section, we provided a “decision framework” to help policymakers compare how well each format meets the four major purposes of assessment. Table 5 summarizes the decision framework. This summary table shows clearly that, while the two formats can serve many similar purposes, they also have different strengths in different areas.

If, for example, Washington leaders hope that the high school assessment system will ensure greater consistency and bring teaching and learning more closely in line with statewide standards, then EOC assessments are probably better-suited to serve this goal. If state leaders instead place a higher priority on preserving simplicity and minimizing complexity in the testing system, then continuing to use the WASL as the state’s high school assessment is more appropriate.

**Table 5: How Well Do Comprehensive and EOC Assessments Meet the Four Major Purposes of High School Assessments?**

Issue Area	Advantage to...
<b>(1) Supporting Student Learning</b>	
Measuring the breadth and depth of standards	EOCs (slight)
Assessing students near the point of curriculum delivery	EOCs (strong)
Assessing students with the same test	Comprehensive
Choice and quality of test question types	No clear advantage
<b>(2) Holding Students and Schools Accountable</b>	
Validity and reliability of assessments	EOCs (slight)
Holding students accountable	No clear advantage
Reporting results at the classroom or course level	EOCs
Holding schools accountable	No clear advantage
<b>(3) Determining Readiness for Postsecondary Education</b>	
Measuring readiness for postsecondary education	EOCs (strong)
Providing access to rigorous courses while preserving flexibility	EOCs (slight)
<b>(4) Ensuring Quality and Efficient Operations</b>	
Testing window and turnaround time for results	No clear advantage
Costs and time spent on testing	Comprehensive
Impact of administration on schools	No clear advantage
Test security	No clear advantage

### **Sequencing Education Policy Decisionmaking**

Because assessments are a means to the end of understanding how well students, schools and districts are meeting state standards, we recommend that Washington policymakers coordinate the decisions about the format of high school testing with decisions about state standards, curriculum and graduation requirements. We believe it is important to consider the assessment policy within the larger context of the state’s K-12 education system and the state’s efforts to improve learning and teaching.

Over the next several months, the statewide system of standards, curriculum, instruction, assessment and accountability is being reshaped. For example, the mathematics and science standards are being revised at the direction of the Legislature, mathematics curriculum choices will be made more consistent and SBE is in the process of updating statewide minimum graduation requirements in all content areas.

These practical realities suggest that state policymakers should first address key questions about high school education policy and then determine which format for the high school assessments is most relevant. This will help ensure that the state's standards-based K-12 education system is coherent and that stakeholders will understand why certain choices have been made.

In our view, the key questions Washington policymakers should address include at least:

- What skills and knowledge do students need to be successful after exiting Washington's K-12 public education system? Does the state have a goal that all students gain the skills and knowledge that are needed for success in postsecondary education and training?
- Is it important for the state to assess the academic standards close to the time when students learn the content or to give a common assessment to all students in 10<sup>th</sup> grade?
- When the new graduation requirements are adopted, what course credits will all students be expected to earn in English, mathematics, science and social studies? Will EOCs help or hurt the state's goal that all students are held to common high standards?
- Should the main assessments given in high school also be used to signal students' readiness for postsecondary education without the need for remediation? Or should other assessments serve this purpose?
- Does the state want to identify additional/alternative ways of holding students accountable for meeting state standards, such as tying test results into course grades?
- Are more statewide measures needed to provide more data points on school performance or are the four currently in use sufficient for the state accountability system?

If, after addressing these questions, Washington policymakers consider transitioning to an EOC-based system, we recommend that policymakers:

- Minimize costs and development time by working in collaboration with other states to implement standards-based, criterion-referenced assessments.
- Require all students to earn a common set of course credits (such as Biology, Chemistry and/or Physics and their equivalents), and require all students to take the corresponding EOCs in these subjects, to ensure equity of student experiences in high school.
- Maintain the comprehensive format for reading and writing, rather than attempt to create EOCs in these subjects.