



2007 Oregon's New Diploma

INTRODUCTION

The fate of empires depends on the education of youth.

- Aristotle

For more than a century, the high school diploma has embodied a promise: a free public education that prepares students for college or a family-wage job. In exchange, society expected a responsible citizenry ready to govern and innovative and skilled workers, supporting a robust economy, leading to decreased crime and poverty.

Today that promise is in jeopardy.

The basic structure of Oregon's current high school diploma was designed at a time when high school graduates had a reasonable expectation of immediately entering a well-paying job upon graduation. The 21st century economy demands much higher levels of preparation than those needed just a generation ago. Today, the skills and knowledge that prepare high school graduates for postsecondary education are viewed as the same skills and knowledge that prepare them for work and life. The education reforms of the last 20 years are an excellent foundation on which to build, enabling students to pursue their interests and dreams, as well as become active citizens and lifelong learners.

It is the State Board of Education's intent to increase the rigor, relevance, and personalization of the high school diploma, while allowing school districts the flexibility and autonomy to enact policies that are innovative or that better meet the unique needs of their district's students.

The Board recognizes that additional resources and supports will be needed for districts and students to meet these new challenges.

THE CASE FOR A MORE RIGOROUS DIPLOMA

Looking back over a decade and a half, the State Board can see significant statewide progress toward higher standards and expectations of student learning. Oregon students receive a solid education but the world continues to change rapidly and the educational system must respond to ensure that each and every student is prepared for the demands of the 21st century. Too many Oregon high school students are not adequately prepared to enter the workforce or postsecondary education. Many students lack the skills needed for today's high-skill jobs, while others require remediation in basic academic skills at the postsecondary level.

Recognizing the challenge, the State Board has, over the last two years, focused its attention on the high school diploma and directed a comprehensive review of Oregon's content standards, assessments, and high school diploma requirements. Building on national and state research, public input, expert advice, and two Board retreats devoted primarily to revising the high school diploma, the Board has made key decisions that will have a positive and lasting effect on student learning in Oregon. The Board is committed to maintaining a standards-based system with proficiencies and assessments that help students succeed and thrive in a democratic society. The following sections summarize key points of the Board's discussions and the decisions they have reached.

PREPARING STUDENTS FOR THE WORKFORCE, COLLEGE, AND CITIZENSHIP

A diploma conveys the assumption that students are ready for their next steps in life, but according to colleges and employers, many are not prepared. The National Center for Education Statistics estimates

that in fall 2000, 28 percent of first-time freshmen immediately enrolled in at least one remedial reading, writing, or mathematics course.¹ In the Oregon University System, 12.5 percent of the 1995 freshman cohort took remedial classes in their first year.² At Oregon community colleges, approximately 40 percent of students took some pre-college level courses in 2000.³ Students taking remedial courses are significantly less likely to complete a college degree. The chancellor of the Oregon University System and the seven state university presidents expressed support for the Board's proposal to increase diploma requirements.

Employers contend that most high school graduates do not have the knowledge and skills necessary for the workplace. Most new jobs—two-thirds during the next decade—will require education or training beyond a high school diploma.⁴ According to the Oregon AFL-CIO, a shortage of skilled workers in the manufacturing and skilled trades is expected. The AFL-CIO supports the proposed higher graduation requirements because students need to have a higher level of skills today than they did 50 years ago.⁵

Lack of post-high school training can have lifelong consequences. For example, the average college graduate earns 62 percent more than the average high school graduate, while the average high school graduate earns 43 percent more than the average non-graduate.⁶ By not preparing all of our high school students for workforce training and college, we are not living up to the promise of the high school diploma.

HIGH SCHOOL GRADUATION RATES

Too few Oregon high school students graduate. As a nation, a poorly educated workforce means we will continue to lose jobs to countries with better educated populations. Research shows that students placed in more challenging classes learn more, and have higher grades.⁷ In addition, states such as Indiana and Texas have shown that graduation rates can actually increase as requirements are increased. Similar results have been seen elsewhere.

For example, several years ago, San Jose Unified School District began requiring all students to complete the full set of courses required for admission to California's public colleges and universities. The percentage of San Jose students taking this rigorous curriculum and earning a "C" or better in all of the courses went from 37 percent to 65 percent between 2001 and 2004. This more rigorous course-taking also had a positive effect on test scores and helped increase the college-ready rate for Latinos from 17 percent in 1998 to 45 percent just four years later. Enrollment for Latinos in AP courses more than doubled.⁸

Raising Graduation Standards Increases Student Achievement

For 2003-2004, the North Clackamas School District raised its graduation requirements by requiring students to earn a CIM or by demonstrating CIM-level skills through additional work samples. The district aligned curriculum with state standards, trained teachers in CIM requirements, and educated students and families about the new academic demands. In 2002, 25 percent of North Clackamas students earned a CIM. In 2004, that number jumped to 60 percent, one of the highest success rates in the state. The percent of 10th grade students meeting state standards increased from 56% and 39% in reading and math respectively, in 1999, to 62% and 57% in 2005-06.

¹ Basmat, Parsad and Laurie Lewis. *Remedial Education at Degree-Granting Postsecondary Institutions in Fall 2000*. National Center for Education Statistics. November 2003, P. 17. "Postsecondary" included public and private two- and four-year colleges.

² North, Tom. *Looking Back Along the Long and Winding Road*. Oregon University System. January 2003. p. 33.

³ Richards, Amanda. Department of Community College & Workforce Development.

⁴ Carnevale, Anthony, and Desrochers. *Standards for What? The Economic Roots of K-16 Reform*. 2003.

⁵ Chamberlain, Tom. Oregon AFL-CIO letter to board. December 21, 2006.

⁶ College Board. (2005 Revised Ed.). *Education Pays 2004*.

⁷ One such study: Southern Regional Education Board. (2002) *Middle Grades to High School: Mending a Weak Link*.

⁸ Achieve, Inc. *Will Raising High School Graduation Requirements Cause More Students To Drop Out?*

According to PSAT test score data generated by the College Board, more Oregon students are capable of achieving a score of “3” or greater on Advanced Placement tests than are currently taking them.⁹ Such a score may translate into college credit and give students a psychological and financial head start on earning a college degree.

Relatively low credit requirements create situations where seniors need not attend school for the full day, which is one of the factors attributed to remediation at the postsecondary level. The Board would like to see all students take better advantage of their senior year by engaging in more rigorous coursework and earning college credit through programs such as Advanced Placement, the International Baccalaureate, dual credit, Tech Prep, and Expanded Options, to name a few. These opportunities will improve students’ preparedness to successfully transition to the workforce or additional education and training.

STATE AND NATIONAL EFFORTS

Oregon has always been a leader in education and especially in pK-20 systems design, alignment, and integration. In 1991, the Oregon Legislature enacted the *Educational Act for the 21st Century*, with a goal “to demand academic excellence through a rigorous academic program that equips students with the information and skills necessary to pursue the future of their choice; to provide an environment that motivates students to pursue serious scholarship and to have experience in applying knowledge and skills and demonstrating achievement; and to provide students with lifelong academic skills that will prepare them for the ever-changing world.”¹⁰

With the enactment of the law, the Certificate of Initial Mastery (CIM) and the Certificate of Advanced Mastery (CAM) were awarded to those students who met the high standards required of the certificates. Fifteen years later, only about one-third of each graduating class earns the Certificate of Initial Mastery.¹¹ Schools and students have not readily embraced the certificates for several reasons, but most notably these certificates are not widely recognized in the workplace or in college admissions.

The State Board’s proposed diploma requirements build on the state’s earlier efforts to develop and implement a quality education system while striving for greater clarity of what is expected of students as they exit high school. The proposed changes will modify the CIM and CAM programs by eliminating the certificates, making the high school diploma the single credential for students’ demonstration of minimum proficiencies in core academic subjects and career-related skills. This proposal integrates the best features of the CIM and CAM program, signaling to students the importance of mastering essential academic and work-related skills.

States across the nation are similarly increasing graduation requirements to better prepare students for the 21st century. Since 2005, Oregon has been one of 29 states to join the American Diploma Project (ADP) initiated by Achieve, Inc., a bipartisan, non-profit organization created by governors and business leaders in 1996 dedicated to raising academic standards and improving assessments in order to prepare students for postsecondary education, work, and citizenship. According to Achieve, Inc., it has helped more than half the states benchmark their academic standards, tests and accountability systems against the best examples in the United States and around the world.

⁹ College Board. *Advanced Placement: Report to the Nation*. 2007.

¹⁰ Oregon Revised Statutes 329.015.

¹¹ The Certificate of Advanced Mastery requirement was postponed to 2008-09.

STATE BOARD DECISIONS

After months of deliberation, the State Board has identified a set of skills and knowledge students need in order to be successful individuals and citizens. This decision was informed by feedback from students, teachers, administrators, community college and university system personnel, parents, and the business community, and was based on research and best practices (bibliography of sources consulted is attached).

Implementing the new requirements will lead to significant changes in the way teaching and learning occurs at all levels of the education continuum. High schools, middle schools, elementary schools, and community colleges and universities will have to make adjustments to support these changes. Middle and elementary schools will need to modify their curriculum, instruction, and assessments and general practices to better prepare students to meet the high school requirements. All education sectors will need to align curriculum, course content and standards, proficiencies and assessments. A system of intervention and support will be required for students to meet these rigorous requirements.

This is a student-centered approach; the Board fully recognizes that some students will need more time to complete these requirements while others may be able to pursue them in a more accelerated timeframe. Resources and support systems such as tutoring, summer school, smaller classes, and extended learning opportunities will need to be in place to ensure the success of all students.

Making and sustaining these changes will require additional resources. The current budget outlook is promising and there is a potential increase of approximately \$760 million in the pK-12 budget. The Governor's budget also includes a \$60 million school improvement fund with \$10 million devoted specifically for the new diploma requirements. In addition, a proposed \$250 million innovations fund may be available to support this effort.

The Board intends to engage stakeholders and practitioners on the implementation of these requirements through the appointment of an Implementation Advisory Task Force and specialized panels. The committee, representing students, teachers, administrators, higher education representatives, Legislators, and workforce boards will advise the Board on key technical elements such as cost, capacity, teacher supply and demand, postsecondary alignment, and timeframe.

The State Board of Education asks its citizens, policy makers and education community to invest in today's students to make the future a better one for us all.

DIPLOMA PRINCIPLES

- ✓ Be flexible and student-centered; the student education plan and profile should guide student choices.
- ✓ Allow—indeed encourage—students to meet diploma requirements at their own pace, whether that is faster or slower than traditionally scheduled course length.
- ✓ Ensure that students will get the resources needed to meet the new, higher standards, whether that takes the form of after-school opportunities, tutoring, summer classes, or focused classes and ensure that additional funding is available to support these services.
- ✓ Award credits on the basis of proficiency rather than seat time. This principle will take a few years to implement in practice but should be pursued assertively.
- ✓ Encourage students to excel beyond minimum standards and support them in that endeavor.
- ✓ Phase-in changes at a rate that allows schools enough time to allow teachers to gain any additional skills that the new requirements may demand.
- ✓ Continue work to align standards from grade to grade and from high school to post-secondary options.

COMPONENTS OF THE OREGON DIPLOMA

- *Student Education Plan and Profile*
- *Credit Requirements (24 total)*
 - *English: 4 credits*
 - *Math: 3 credits*
 - *Science: 3 credits*
 - *Social Science: 3 credits*
 - *Health: 1 credit*
 - *PE: 1 credit*
 - *Second Language/Art/Professional Technical Education: 3 credits*
 - *Electives: 6 credits*
- *Essential Skills*
- *Extended Application*
- *Career-Related Learning Experiences*
- *Credit for Proficiency*

TIMELINE

To the extent possible, it is the Board’s intent to use the standards currently in place. However, with increased expectations, students must have adequate opportunity to meet the new standards. Schools must have time to adjust their pK-12 curriculum. The Oregon Department of Education (ODE) must have adequate time to modify content standards, develop new test items and create new achievement standards, if necessary. Resources must be in place to support the changes.

It is the goal of the Board to have all the changes in place for students graduating in 2014; this means 9th graders in 2010 will have a curriculum in place that enables them to meet the standards when they graduate four years later. The Implementation Advisory Task Force will assist in guiding the phase-in of these new requirements

STUDENT EDUCATION PLAN AND PROFILE

The education plan and profile, already in place for students in grades 7-12, is the centerpiece of the Oregon diploma and works to personalize a student’s education and experiences. The students’ plan will guide their coursework, educational and career goals, career-related learning standards and experiences, and extended application.¹² The profile will record students’ achievements and progress toward meeting individual goals including in-school and out-of-school activities and experiences. The plan and profile may also include additional certifications and credentials students obtain through high school such as industry-based certificates and awards. The plan and profile will connect students’ high school experience with their post-high school goals.

ESSENTIAL SKILLS

For the first time, the state will require that all students demonstrate they are proficient in certain “essential skills” — skills deemed critical for future success—before they will be awarded a diploma. Essential skills are process skills embedded in the existing content areas and can be demonstrated in a variety of courses, subjects, experiences, and settings. The Board views Essential Skills critical for success in the workplace, postsecondary education, and effective citizenship. The Implementation Advisory Task Force comprised of practitioners and stakeholders will be charged with the task of reviewing the Board’s proposed Essential Skills and recommending to the Board the best and most feasible methods of implementation, including state or local assessment options, and how any assessment will affect teaching and learning.

¹² “Extended Application” is the application and extension of knowledge and skills in new and complex situations related to the student’s personal and career interests and post-high school goals. OAR 581-022-0102.

Essential Skills

- ☑ Read and interpret a variety of texts
- ☑ Write for a variety of purposes
- ☑ Speak and present publicly
- ☑ Think critically and analytically
- ☑ Demonstrate career-related learning standards: personal management, teamwork, employment foundations, and career development.
- ☑ Apply mathematics in a variety of settings
- ☑ Use technology
- ☑ Demonstrate civic and community engagement
- ☑ Demonstrate global literacy

It is the Board's intent to hold students accountable for achieving these Essential Skills in a timeframe that parallels those of the credit requirements (see below); the Implementation Advisory Committee will return to the Board with recommendations.

CREDIT REQUIREMENTS

House Bill 3129 (2005) added one credit each of English and mathematics and increased the total credit requirement from 22 to 24. The State Board has built on this work by requiring an additional credit of science and expanding the Arts/Professional Technical/Second Language requirement from one to three credits, while keeping the total credit requirement at 24.

Subject	Current Credits	Class of 2010 (9 th grade class of 2005-06)	Class of 2012 (9 th grade class of 2007-08)	Class of 2014 ¹³ Credits
English/Language Arts	3	4	4	4
Mathematics	2	3	3	3 - all at Algebra I level and above
Science	2	2	3 - inquiry-based ¹⁴	3 – inquiry-based
Social Sciences	3	3	3	3
Physical Education	1	1	1	1
Health	1	1	1	1
Second Language	1	1	3	3
Arts				
Professional Technical Education (PTE)				
Electives	9	9	6	6
Total Credits	22	24	24	24

In addition, the Board is requiring all math credits be at the Algebra 1 level and above. Traditional courses that include this content are Algebra, Geometry, Statistics, Probability, and Trigonometry. However, the math standards may also be met through courses that incorporate the standards such as Integrated Math¹⁵, Applied Math, Construction Math, and Business Math. The Board will develop a process to determine whether applied and integrated courses include the content standards as part of their curriculum and instruction.

The study of both math and science enhance analytic skills, the skill set most often identified by those surveyed, and the addition of a science credit will provide students with much needed content,

¹³ Implementation Advisory Task Force may recommend different dates for some elements.

¹⁴ "Inquiry-based" science uses interrelated processes to pose questions and investigate the physical and living world.

¹⁵ "Integrated math" is an alternate sequencing of the topics in the traditional Algebra 1-Geometry-Algebra 2 sequence.

understanding, and skills. Board members expressed concern that the addition of a science credit would eliminate an elective that made school relevant for students; the cost and availability of laboratories was also discussed. To mitigate these issues, the State Board added the credit, but broadened the definition of science beyond traditional science courses to include applied and integrated science courses, such as Computer Science and Agriculture Science, to maintain relevance and reduce capital needs of laboratories.

While the Board did not make changes to the current credit requirements in social sciences, physical education, and health education, it does plan to review the standards in all these categories to ensure that the content and rigor are at the levels needed for students to be successful in the workplace, college, and life.

CREDIT FOR PROFICIENCY

In December 2002, the State Board of Education approved a policy that allowed districts to award credit based on proficiency, as an option for students. “Proficiency” is defined as sufficient evidence that the student’s knowledge and skills meet or exceed defined levels of performance.

The purpose behind the Board’s policy is as follows:

- To support Oregon’s standards-based system by providing students opportunities to earn graduation credits through demonstration of what they know and can do.
- To offer flexibility to districts and schools as they meet each student’s diverse needs, interests, level and rate of learning.
- To create additional options for students to earn credit based on Oregon’s high standards and broad accountability system.
- To empower and encourage local decision-making and creativity.

The State Board supports expanding the current credit-for-proficiency rules in the new diploma; all students must have the opportunity to earn credit for demonstration of proficiency. The emphasis is on demonstrating proficiency rather than “seat time.” The State Board will develop policies and guidelines to ensure that credit for proficiency rules are applied consistently throughout the state.

THE COMMUNITY WEIGHS IN

Changes in the diploma will mean nothing without the support of the community.

Duncan Wyse, State Board member

What skills and knowledge do high school graduates need to be successful individuals and citizens?

The State Board of Education has asked Oregonians this question and others over the last 18 months. This was an historic outreach effort, ultimately reaching nearly one million citizens.

From September 2005 to May 2006, newspapers published editorials from Board members; an online survey was available from September to December 2005; and written comments were mailed to the Board—about 300 total responses. Using this community feedback, the State Board proposed a set of specific graduation requirements in June 2006.

Feedback was again requested. School administrators were surveyed at their summer conference. The proposal was the centerpiece of the State Board’s August retreat, where 150 stakeholders were invited to provide input. Following the retreat, over 300 presentations to focus groups and targeted interviews were conducted outlining the proposals and soliciting feedback. Over 5000 surveys were returned.

The Board sincerely thanks those who responded to its request for feedback, especially the many thoughtful ideas about improving education to Oregon’s students.

CHALLENGES

The feedback from the community indicates support for higher diploma standards, but concerns about how and when the changes would be put into effect. As one respondent said, “a good idea poorly implemented is a bad idea.”

Major challenges are outlined below.

FUNDING

Funding was identified by stakeholders as the number one concern in implementing the higher diploma requirements. Feedback from the field noted that additional money would be needed for additional staff, staff development, facilities, student coursework documentation, curriculum, and supports for struggling students and dropouts.

The Governor’s 2007-09 Budget proposes an additional \$760 million above the 2005-07 State School Fund budget, of which \$200 million is above the Essential Budget Level (the prior level of budget rolled up for inflation and enrollment growth). Another \$60 million education fund was created, of which \$10 million is earmarked toward implementing the new diploma requirements. While this represents additional funds for this biennium, efforts will need to be made to ensure adequate funding in future biennia in order to continue implementation.

Determining the cost for implementing the standards will require a detailed analysis of the proposed requirements, and the systems currently in place by the schools, districts, and state, and measuring the gap. In any case, new revenue is essential to the success of the new diploma requirements.

TEACHER SHORTAGES

The Board recognizes the challenges faced by the federal *No Child Left Behind Act* and especially on the small and rural schools in the state, which requires that teachers be highly qualified; in Oregon that means certified in the area of which they teach. The current production of new teachers from both Oregon and other states appears adequate to meet the state’s needs for teachers in most fields and in most locations. With an estimated demand of some 3,368 licensed educators per year and a supply pool of 7,000+, the state appears able to meet its needs for educators generally in the near future. However, Oregon expects to face several challenges in staffing schools in the future, including meeting federal Highly Qualified Teaching (HQT) requirements.¹⁶ This raises significant issues for professional development of the current teacher workforce.

Oregon’s shortages in key areas will likely continue despite recent increases in the production of newly licensed teachers, as a result of stepped-up recruitment efforts of students in several Oregon college/university preparation programs. For example, in 2001 Oregon produced only 57 newly licensed math teachers and 119 science teachers. By 2006, Oregon produced 331 newly licensed math teachers and 289 science teachers. The Oregon Teacher Recruitment and Mentoring (OTRM) project aims at reducing teacher shortages by recruiting highly qualified mid-career professionals, school paraprofessionals, and recent college graduates to prepare in high-need subject areas and teach at high-need schools.

¹⁶ Critical shortage areas in Oregon include advanced math, sciences, speech language pathologists, special education, second language and bilingual, school psychologists, counselors, and technology teachers.

There is evidence that school districts have successfully recruited additional teachers they need from other states in key shortage fields.¹⁷ However, continued successful out-of-state recruitment by Oregon schools may not be sustainable given the attractive incentives available now to teachers in shortage areas in many other states.

As the Board considers increasing high school graduation requirements for all students, with greater emphasis in science, foreign languages, and math, there will likely be increasing challenges to staff Oregon schools with high quality teachers in these content areas over the next several years.

The Board will work with policymakers to find resources and to consider strategies to help new teachers remain in the classroom and to improve on the state's attrition rate of new teachers within their first five years in the classroom. Many states have instituted and found very successful induction and mentoring programs for new teachers. Oregon has piloted these models in the past with great success, and would benefit from a statewide approach.¹³

STRUGGLING STUDENTS

Concern has been voiced that many students, including students with special needs, will struggle with the new requirements, especially math. Others question whether all students will appreciate the benefits of learning higher math in enriching their lives or if the dropout rate will increase if students believe they will never meet the higher standards to attain a graduation diploma.

Funding intervention strategies at early grades or as soon as students first begin to struggle is one likely strategy. A panel of special education stakeholders plans to meet to discuss how to get at least the 85 percent of special education students who participate primarily in general education classrooms to reach standards. Discussions will also include what options and accommodations may need to be in place for those students who, despite the best intervention and accommodation, cannot meet the higher standards due to a disability.

WORK STILL TO BE DONE: ASSESSMENT AND ALIGNMENT

ASSESSMENT

The enactment of the Oregon Educational Act for the 21st Century mandated the development of state academic standards and state assessments designed to measure student attainment of those standards. This was a significant step in equalizing educational opportunity for students across the state.

Currently, students take state assessments that are not mandated by the state to count toward graduation, college entry, or placement. Some districts do, however, use the state assessment as a measure of readiness for graduation and some universities currently use the state assessment to determine eligibility for admission. College-bound students take national admissions exams that may not align with the high school curriculum the students have been taught. If they reach college, students may face an assortment of placement tests unrelated to any of the tests they have taken already, and these tests may vary from campus to campus.

¹⁷ For example, 29% of the new licensees in Oregon from other states in 2006 in the sciences were in chemistry and physics, compared to 21% prepared in Oregon in the sciences in these fields. Likewise, 84% of the new licensees from other states in foreign languages were in Spanish, compared to 62% prepared in Oregon in foreign languages.

State education assessments may serve more than one purpose, including:

- State and federal accountability measures for schools and districts
- Measure of student proficiency
- Inform instruction
- College placement
- College admission

Are the current local and statewide assessments designed to serve all these purposes well, particularly at the individual student level? Should they serve all of these purposes equally? If not, what purposes are primary and what are secondary? What is best assessed on the local level rather than by the state assessments?

In light of changing expectations, state assessments need continuous review. We must ensure that assessments accurately measure student knowledge and skill, and meet the purposes for which they are intended. A review of all Oregon standards and assessments is in progress and will inform the discussion.

In addition, the assessments need to be more meaningful to students, teachers, and the community. The Board will consider whether using national achievement or aptitude tests would be useful (and for what purpose), and other nationally-recognized tools such as Lexiles.¹⁸ Considerations will include the ramifications on instruction, local control, and budgets.

ALIGNMENT

Alignment refers to an education system that integrates a student's education from pre-kindergarten through a four-year college degree and beyond. Agreeing on a common set of standards that describes what students should know and be able to do at all levels, aligning those standards, and providing students with accurate and reliable information as they prepare to transition to their next steps will help remove artificial barriers that hamper student success and access to further education and training. Although pK-20 alignment tends to focus on transitions to college, our definition of alignment includes student transition from grade to grade as well as to all post-high school options. In essence, students will need to have the skills necessary to be successful within pK-12 and be prepared for the rigors and demands of both college and the workplace.

Through the Joint Boards of Education, members of the State Board of Education and the Board of Higher Education are working to better align pK-12 expectations with those of community colleges and the Oregon University System. The Unified Education Enterprise (UEE) is a committee of the Joint Boards of Education focused primarily on aligning standards and assessments across all sectors to facilitate a smooth and uninterrupted transition for students as they exit high school. Fruits of this work include consensus on Advanced Placement (AP) score/credit relationships at all community colleges and OUS institutions for all 33 AP exams.

Alignment will help clarify the array of high school examinations and college entrance and placement procedures into a logical, understandable process. This will make it easier for high school students to enroll in college courses prior to graduation and to ensure that these courses count towards college credit

¹⁸ The Lexile Framework for Reading is an approach to reading measurement that matches students to appropriately challenging reading materials. The Lexile Framework measures both reader ability and text difficulty on the same scale.

and eliminate unnecessary repetition of courses and assessments. Such a system will also account for a student's ability to demonstrate proficiency through a variety of methods including traditional assessments, course completion, proficiency-based assessments and credits, and other viable means.

CONCLUSION

The challenges facing education in preparing students for the future are fundamentally different from the past, due to technological advances and changes in global, social, environmental and economic structures. Research suggests that high schools are in need of significant change to adequately prepare students for the challenges of the 21st century. Graduates themselves say they would welcome more challenging requirements and raised expectations for high school graduation.

For the last 15 years, Oregon's pK-12 education system has labored under the strain of reduced funding through property tax collections, a volatile state tax structure, the shifting of control from local communities to the state, severe budget cuts that resulted in larger class sizes, the elimination of programs and lost class days, and a variety of state and federal education reforms that demanded more with less funding.

The State Board action articulates a vision for the direction of our schools, and sets the stage toward creating the necessary resources to make that vision happen. It views these changes to the diploma as part of a long-range plan of systems improvement and alignment that will enable teachers and schools to restructure curriculum delivery and infrastructure to assist students to access a quality education wherever they live, and wherever they move. Students will be well-prepared for college, apprenticeship training, the workplace, the military, and most importantly, they will possess the foundational skills and knowledge needed for lifelong learning and active citizenship.

The Board is committed to working with its partners on a smooth, adequately funded, implementation of these new standards—well-thought-out processes that implement common sense changes to help our students, our state, and our country continue to enrich the world through innovations in art and science.

It is time for the Governor, Legislature, teachers, school administrators, institutions of higher education, business leaders, and state and local boards of education to come together to create a long-range plan of education excellence. For, when the vision is shared, the goals are attainable: Every student, every day, a success.

Annotated Bibliography of Research

provided to support the

State Board of Education

High School Diploma

Discussion

Over the last eighteen months, the State Board of Education has been discussing high school diploma requirements. To support the Board's efforts, the Department of Education has provided the Board with background documents and recommendations to aid their discussion. The documents were prepared utilizing a wide array of research-based evidence, statistical studies and expert opinions.

What follows is a partial list of some of the sources cited. To make a full listing of the papers, publications and reports would lengthen this list considerably. Many of the sources given below were footnoted in Board docket items. Others were used to inform department documents, even if not specifically cited in Board materials.

The sources fall into several categories. The first category consists of research papers and reports that are based on experimental or quasi-experimental studies or statistical studies of either census or long-term trend data or significant populations. The second category consists of surveys of current policy and practice. The third category consists of reports from various educational organizations who also synthesize the available research to arrive at recommendations.

The State Board would also like to acknowledge the valuable public input it received on these issues, as well as the work done by the Chalkboard Project.

Research Publications: These reports are based on studies of national or state education data; longitudinal data for large cohorts; or results of experimental or quasi-experimental research conducted on smaller populations.

- National Center for Education Statistics. 1997. *Access to Postsecondary Education for 1992 High School Graduates*.
This report uses data from the National Education Longitudinal Study of 1988 (NELS:88) to examine access to postsecondary education of 1992 high school graduates by 1994, two years after high school graduation. The report study considered family income, race-ethnicity, parental levels of education, college costs and financial aid, student educational expectations and academic preparation, among other factors. **Major Finding:** Indicates that roughly 70 percent of high school graduates enter college within a year. This finding has been substantiated by numerous findings since 1997. See the next citation.
- Oregon University System. 2005. *Where Have Oregon's Graduate's Gone? Survey of the Oregon High School Graduating Class of 2004*.
This report is based on a survey of recent graduates from Oregon High Schools. It indicates postsecondary attendance patterns of the graduating class.
Major Finding: More than 70% of Oregon high school graduates immediately enroll in postsecondary education and many of those who don't enroll have postsecondary education as an aspiration.

- The American Diploma Project. 2002. *Connecting Education Standards and Employment: Course-taking Patterns of Young Workers*. Data based on the NELS:88 study.

Examined high school course-taking patterns of sophomores in 1990 (eventual class of 1992) and their place in the workforce by 2000 by job class and salary.

Major Findings: Algebra 2 is a gateway course for students to enter well-paid skilled white collar or professional jobs. Geometry is the gateway for well-paid, skilled, blue-collar jobs. Taking grade level English, as opposed to remedial English coursework had a similar correlation.
- National Center for Education Statistics. 2003. *Remedial Education at Degree-Granting Postsecondary Institutions in Fall 2000*.

This report provides national estimates of remedial course enrollment in degree-granting institutions in fall 2000 and changes from fall 1995. The report compares course offerings, student participation in remedial programs, institutional structure of remedial programs, and the delivery of remedial courses through distance education.

Major Finding: 40% of students in postsecondary education require remediation.
- Adelman, C. *Principal Indicators of Students Academic Histories in Postsecondary Education, 1972-2000*. U.S. Department of Education.

This document is a descriptive account of the major features of the postsecondary academic experience during the period 1972-2000, with an emphasis on the period 1992-2000. Report includes data on college enrollment, degree attainment, remediation rates, and other factors, with data disaggregated by both socioeconomic and by race and ethnicity.

Major Findings: Among the many findings are high remediation rates (around 40%), as well as high rates of postsecondary study (78% of graduates enroll at some time after high school.)
- Adelman, C. 1999. *Answers in the Tool Box: Academic Intensity, Attendance Patterns, and Bachelor's Degree Attainment*. U.S. Department of Education.

Perhaps the most commonly cited study in the citations given in the third section of this bibliography. Discussed what contributes most to long-term bachelor's degree completion of students who attend 4-year colleges (even if they also attend other types of institutions). Studies high school and college transcript records, test scores, and surveys of a national cohort from the time they were in the 10th grade in 1980 until roughly age 30 in 1993.

Major Findings: Study shows that rigor of coursework, especially the completion of Algebra 2, is the most important factor in degree completion. This correlation is even more pronounced for minority populations.
- Adelman, C. 2006. *The Toolbox Revisited: Paths to Degree Completion from High School Through College*. U.S. Department of Education.

The Toolbox Revisited follows a nationally representative cohort of students from high school into postsecondary education, and asks what aspects of their formal schooling contribute to completing a bachelor's degree by their mid-20s. Studies students who attended a four-year college at any time, thus including students who started out in other types of institutions, particularly community colleges.

Major Findings: The academic intensity of the student's high school curriculum is the most important factor contributing to student completion of a bachelor's degree.
- American Federation of Teachers Policy Brief. 1999. *Lessons from the World: What TIMSS Tells Us About Mathematics Achievement, Curriculum and Instructions*.

Reviewed the Trends in International Mathematics and Science Study (TIMSS) results of 1999 that show math and science achievement in the U.S. lags that of other industrial nations, especially at the high school level. U.S. 12th grade math achievement exceeded only Cyprus and South Africa, among nations studied.

Major Findings: The U.S. needs a more focused curriculum, more rigorous content and more student accountability for reaching the standards.

- Schmidt, W., Houang R., Cogan, L. 2002. *A Coherent Curriculum: The Case of Mathematics*. Compares mathematics content, rigor and sequences of mathematics curriculum in high achieving TIMSS (Trends in International Math and Science Study) countries to typical state standards in the U.S.
Major Findings: International standards for high achieving countries tend to cover fewer topics each year and in greater depth, in a sequence that shows clearer progression of skills. In comparison, U.S. content is less demanding and more repetitive. Algebra 1 is viewed as a middle school subject by most of these countries.
- American Institutes of Research. 2005. *Reassessing U.S. International Mathematics Performance: New Findings from the 2003 TIMSS and PISA*. U.S. Department of Education.
The Trends in International Math and Science Study results are restricted to the 12 countries that have participated in 4th grade TIMSS, 8th grade TIMSS and 9th grade PISA (Program for International Student Assessment): Australia, Belgium, Hong Kong, Hungary, Italy, Japan, Latvia, Netherlands, New Zealand, Norway, the Russian Federation and the United States. This study analyzed key features of the three tests to determine more detailed comparisons among the countries.
Major Findings: In this group the U.S. ranked 8th, 9th and 9th respectively on the three assessments. The U.S. students' strongest area was data and statistics, and the weakest were measurement and geometry.
- Hallinan, M. 2002. *Ability Grouping and Student Learning*. Brookings Papers on Educational Policy. Examined data from approximately 2,000 high school students. The 9th grade English and Mathematics test scores that the students actually received are compared to predicted test scores based on placement in a higher or lower ability group.
Major Findings: Regardless of the initial achievement level, assigning a student to a higher ability group increases the student's learning and assignment to a lower group depresses a student's learning regardless of the student's ability level. This study raises critical questions about whether American schools sufficiently challenge students to attain optimal performance.
- California Department of Education. 2005. *A Study of the Relationship Between Physical Fitness and Academic Achievement in California Using 2004 Test Results*.
Studies the relationship between academic test scores and a fitness test score.
Major Findings: There was a strong positive relationship between physical fitness and academic achievement. The relationship between fitness and achievement was stronger for females than for males and stronger for higher socio-economic status (SES) students than for lower SES students.
- The Arts Education Partnership. 1999. *Champions of Change: The Impact of the Arts on Learning*, pp. 47-62.
In Chicago, inner-city schools with integrated arts curriculum were compared to those without and arts curriculum.

Major Findings: The number of students performing at or above grade level in mathematics was as much as 20% higher in schools with an integrated Arts curriculum.

Analysis of Current State and Local Policies

Summaries of current state and local practices, as well as student achievement data. Recommendations are also given.

- Dounay, J. 2006. *Ensuring Rigor in the High School Curriculum: What States are Doing*. Education Commission of the States.
Reviews current policies aimed at increasing rigor for the high school diploma and identifies those policies that have a real effect on student achievement. Some policies intended to increase rigor do not necessarily translate into a more challenging curriculum.
Major Findings: End-of-course exams, formative assessments, proficiency requirements, teacher professional development, and raising academic standards are the most effective policies.
- Council of Chief State School Officers. 2005. *Key State Education Policies on PK-12 Education 2004*. Summarized current (as of 2005) state policies regarding graduation requirements, content standards, teacher licensure and student assessments.
Major Findings: Gives comparison of other state graduation requirements to our own, and gives the latest data on trends in raising rigor for high school expectations.
- ACT, Inc. 2005. *Crisis at the Core: Preparing All Students for College and Work*.
ACT has developed college readiness benchmarks. These benchmarks are indicators of college success, (a 75% chance of earning a “C” or better in credit-bearing core college courses) rather than college entrance.
Major Findings: Less than half of ACT test-takers met the College Algebra benchmark and only one-fourth of the ACT test-takers met the benchmark for College Biology.
- ACT, Inc. 2005. *College Readiness Begins in Middle School*. ACT Policy Report.
Examined the career and educational aspirations of middle school students and the amount of preparation towards those goals that occurs in middle school.
Major Recommendations: Postsecondary educational and career planning should begin in middle school. Many middle school students do not take the courses that prepare them for advanced high school classes.
- NACAC Admissions Trends Survey, 2001.
Profiles trends in admission policies for U.S. colleges.
Major Finding: Grades in college prep courses are the most important factor in admissions.
- College Entrance Examination Board. 2005. *2005 College-Bound Seniors: Total Group Profile Report and State of Oregon Profile Report*.
This profiles SAT test-takers, including their academic history and postsecondary expectations, correlated with their SAT scores.
Major Findings: There are strong correlations between SAT Verbal and Math scores and study in other subjects, such as the Arts and Second Language.
- ACT, Inc. 2005. *2005 ACT National and State Scores Report and State Composite for Oregon Report*.

This profiles ACT test-takers, including their academic history and postsecondary expectations, correlated with their ACT scores.

Major Findings: Shows strong correlation between rigor of coursework and scores on the ACT.

- Zinth, C and Dounay, J. 2006. *Mathematics and Science Education in the States*. Education Commission of the States.
This report reviews state policy and identifies the types of policy activities most likely to impact the skills of teachers and student participation in advanced math and science.

Policy and Position Papers

These are often position papers by major non-profit organizations and provide syntheses of research studies in education, together with the organization's own conclusions and recommendations. Many of these sources have extended bibliographies.

- The American Diploma Project. 2004. *Ready or Not: Creating a High School Diploma That Counts*.
Reviews data and research on student aspirations and actual achievement. Highlights the 90% of 8th graders aspire to postsecondary education, but few achieve a degree.
Major Recommendations: States need to anchor their high school diploma expectations in the knowledge and skills that colleges and employers expect. States need to specify specific courses/content required for graduation.
- ACT, Inc. 2006. *Ready for College or Ready for Work: Same or Different?*
A study that provides empirical evidence concerning whether planning to enter college or workforce training programs after graduation, high school students need to be educated to a comparable level of readiness in reading and mathematics.
Major Findings: High school students need to be educated to a comparable level of readiness in reading and mathematics to either succeed in college level courses without remediation or to enter workforce training programs ready to learn job-specific skills.
- Achieve, Inc. 2005. *Rising to the Challenge: Are High School Graduates Prepared for College and Work?*
A study of recent high school graduates, college instructors and employers to examine perceptions of student preparedness for college and the workforce.
Major Findings: College Instructors and employers estimate that over 40% of the recent high school graduates they see are either not prepared for college level work or to advance beyond entry-level jobs. Looking back, two-thirds of high school graduates would have taken more rigorous coursework, and would have worked harder if expectations were higher in high school.
- Carnevale, A. and Desrochers, D. 2003. *Standards for What? The Economic Roots of K-16 Reform*. Educational Testing Service.
Reviews the shift in the U.S. economy toward jobs that require postsecondary education. Correlates training and education with earnings potential. Lists the skills and abilities that employers want.
Major Findings: For most Americans, education and training beyond high school is a necessary condition for developing skills required by most well-paying jobs. Workers in the best-paying jobs have typically completed Algebra 2 in high school.
- Venezia A., Kirst M., Antonio A. 2003. *Betraying the College Dream: How Disconnected K-12 and Postsecondary Education Systems Undermine Student Aspirations*. The Stanford Bridge Project.

Examined the gap between student postsecondary expectations in 8th grade and actual postsecondary enrollment. Oregon was one of six states studied for the report.

Major Findings: States create unnecessary barriers between high school and college. These can be lowered through alignment of K-12 standards and postsecondary placement exams, linking senior year courses to postsecondary general education courses, and expanding dual enrollment to include all students, not just college-bound students.

- Public Agenda. 2002. *Reality Check 2002*.
Includes data from a survey of professors and employers regarding the skills of recent high school graduates.
Major Findings: A substantial majority of respondents rated the typical high school graduate as “fair” or “poor” in writing, grammar and basic math.
- National Commission on the High School Senior Year. 2001. *The Lost Opportunity of Senior Year: Finding a Better Way*.
Studied the nature of the disconnect between K-12 and postsecondary education, resulting remediation rates, and low expectations for the senior year.
Major Recommendations: The senior year often represents a year of decreased motivation and expectations. It should be the most rigorous year of high school, preparing students for the increased rigor of postsecondary education.
- Achieve, Inc. 2004. *The Expectations Gap: A 50-state Review of High School Graduation Requirements*.
Synthesized research reports on graduation rates, remediation rates in college, skill levels of recent graduates, and policies of states with rigorous diplomas.
Major Findings: Students taking more rigorous high school coursework are better prepared to succeed in college and the workforce.
- Achieve, Inc. 2005. *Oregon Data Profile*.
Compares state data on Oregon students’ progress through the education pipeline to other states and the nation. Provides data on high school diploma rates, high school coursework, and enrollment in college and degree completion.
Major Findings: Oregon students’ continuation rates in the education pipeline are below the national average and lag significantly behind those of the top states. Oregon students are near or below the national averages in number of 8th graders taking Algebra and in national achievement in math and reading.
- National Research Council. 2006. *America’s Lab Report: Investigations in High School Science (2005)*
Reviews and gives recommendations regarding the instructional practices for high school science.
Major Recommendations: Outlines the role of laboratory experiences in the 21st century classroom as well as guidelines for proper conduct of laboratory experiences.
- Partnership for 21st Century Skills. 2005. *Results That Matter: 21st Century Skills and High School Reform*.
Including participation by major companies such as Intel, Ford, Microsoft, Apple, TimeWarner, and the American Federation of Teachers, this group outlines a list of skills needed to be successful in the 21st century workforce.

Major Recommendations: To ensure that high school graduates are ready for next steps, school reform needs to go beyond increasing the rigor of course requirements to include skills necessary for success in the new century.

- National Governor's Association for Best Practices. 2002. *The Impact of Arts Education on Workforce Preparation, Issue Brief*.
- Western States Arts Federation. 2000. *The Economic Impact of Oregon's Nonprofit Arts Sector*. Prepared for the Oregon Arts Commission.