

# **Quality Education Commission**

## **Quality Education Model**

**Preliminary Report**

**August 1, 2006**

**The Quality Education Commission**

**255 Capitol St. NE**

**Salem, Oregon 97310**

**Office: (503) 947 - 5679**

**Fax: (503) 378 - 5156**

## **Commission Members, Staff, and Consultants**

### **Chair**

Susan Massey, *Retired Member, State Board of Education*

### **Members**

Yvonne Curtis  
Ed Jensen  
Lynn Lundquist  
Frank McNamara  
Peggy Penland  
Deborah Peterson  
Lorenzo Poe  
Keith Thomson  
Duncan Wyse  
Larry Wolf

### **Staff**

Patrick Burk, *Chief Policy Officer, Oregon Department of Education*

Sarah Durant, *Research Analyst, Oregon Department of Education*

Brian Reeder, *Assistant Superintendent, Office of Analysis and Reporting, Oregon Department of Education*

Diane Rush, *Administrative Support, Oregon Department of Education*

### **Consultants**

William Duncombe, *Associate Director, Education Finance Accountability Program, Center for Policy Research, Syracuse University*

John Tapogna, *ECO Northwest*

# TABLE OF CONTENTS

<b>Topic</b>	<b>Page</b>
Preface	5
Executive Summary	7
Introduction	10
Previous Commission Recommendations	15
The State of School Funding in Oregon	17
The State of Student Performance in Oregon	23
The Quality Education Model and the Prototype Schools	27
Does Money Matter? The Relationship Between Funding and Student Achievement	39
Funding Trends—What Can They Tell Us About Effective Resource Use?	43
Communication Initiative	53
Next Steps	54



## PREFACE

In the Quality Education Model, the Quality Education Commission has adopted the principle that *not fewer than 90 percent of the students in our state should meet all the state's performance goals*. (The federal No Child Left Behind Act raises that standard to 99 percent.) Our specific charge is to develop a tool that assists the state in determining what it would cost to make this happen. The charge includes the admonition to identify and compare best practices with current practices and to describe the expected costs of each, the expected student performance likely to result from each, and finally to present some alternatives for meeting the state's goals.

This Model is not just about money—it is about accountability and understanding the relationship among funding, educational practices, and performance expectations.

The Quality Education Model is the tool developed to do all this. It is an interactive tool and can have inputs adjusted in ways that fit a decision maker's idea of what is necessary. It allows us to focus, for example, on the impact of the factors that affect learning and performance, such as changing student demographics, or the challenges in small rural schools, or the diminished real resources caused by rapid increases in the cost of employee benefits. Do we need math and reading specialists to work with students behind the curve for meeting standards? Do we need certified librarians in every middle and high school building? Do we need class sizes to be below twenty students at the primary grade level? What if we said 25 (never mind the research literature or the recent recommendations for even lower class sizes from the Chalkboard Project)? Are there any universal principles to be adhered to? Is research clear about any immutable practices?

Research literature has been clear for some decades on some points and the Quality Education Commission has incorporated these in its work. Funding does make a difference but it is not all that matters. Class size does affect schooling both on the teaching side and on the learning side. Qualified teachers are an imperative, with continuous training essential. Time is important for instruction, for preparation, for evaluation, for staff collaboration, and for continuous professional development. Support staff and sufficient materials, from textbooks to technology, must be available – a teacher alone can't do it all. Leadership must provide a common, accepted, in-school focus. Partnership with parents and with the community is critical.

The Oregon Small Schools Initiative, operating with a Gates grant through *E3: Employers for Education Excellence*, has distilled the research imperatives to three concepts: education that is personalized, rigorous and relevant. The Oregon Chalkboard Project, sponsored by five independent, nonpartisan Oregon foundations, has developed 15 actions from a base of what they call three crucial areas: educator and administrator quality (a great teacher in every classroom

and a great principal in every school), funding and accountability, and parental and community involvement.

We are all talking about the same things. Consequently, the Commission believes there *are* some fundamental principles that should guide decisions about funding and practice. When it is clear that full implementation (full funding) of the model is financially unreachable in one step, what should guide the trajectory of increasing that funding toward full implementation over time?

The ultimate goal is to have students leaving the system with strong literacy skills, meaningful evidence of academic proficiency, and a positive attitude about readiness for their next steps in schooling and career development. If invited by the Governor or the legislature to identify most important first steps for using increased funding we would be guided by these principles:

- Make literacy the standard for all students. Reading and writing are the gateway skills to all learning. The PK-12 system must maintain a consistent focus on these skills at every grade level and guarantee that any student has access to extra assistance if needed.
- Have all students demonstrate mastery of academic content. All students must show mastery over core academic content in order to graduate. To assure this, students must receive an instructional program that contains all of the elements of state standards and receive them in a timely way.
- Assure that schools provide assistance to all students who are not making appropriate progress in the curriculum and are in need of additional supports. Tutoring, remediation, extended day and year, credit retrieval, and other appropriate steps to assist struggling students to achieve the state's expectations should be available to all students.
- Continue systems improvements. The model provides for system support across the whole enterprise, including both data systems and accountability systems. This is necessary for instructional decisions to be based on good data and good research.

# EXECUTIVE SUMMARY

To give perspective to this report it is important to know that it is generated in response to Oregon law. ORS 327.506 declares that the Quality Education Commission shall:

1. Determine the amount of monies sufficient to ensure that the State's system of K-12 public education meets the quality goals established in statute.
2. Identify best practices in education that will lead to high student performance and the cost of implementing those best practices in K-12 schools.
3. Issue a report to the Governor and Legislature by August 1 that identifies:
  - Current practices in the state's system of kindergarten through grade 12 public education
  - Costs of continuing those practices
  - Expected student performance under those practices
  - The best practices for meeting the quality goals
  - Costs of implementing the best practices
  - Expected student performance under the best practices
  - Two alternatives for meeting the quality goals

Article VIII, Section 3 of the Oregon Constitution establishes that the Legislative Assembly shall provide by law for the establishment of a uniform and general system of Common schools. Further, Article VIII, Section 8 establishes that the Legislative Assembly shall appropriate in each biennium a sum of money sufficient to ensure that the state's system of public education meets the quality goals established by law. It further requires the Legislature to publish a report that either demonstrates that the appropriation is sufficient or identifies the reasons for the insufficiency, its extent and its impact on the ability of the state's system of public education to meet those goals. This report is referred to as the Ballot Measure 1 Report.

The Quality Education Commission has again issued a report. It was our intention that the report speak to relevant concerns of the day. We also knew that all data needed to be brought up to date. We present the most timely data available throughout the document.

It was important to us to explore in some depth the relationship between funding and student performance. That is why we solicited the help of Dr. William Duncombe in conducting and analyzing some production function studies. You will see the results of some of that work here.

The education establishment is confronted often with questions about the efficiency of the system. Are we adequately supporting our instruction in Oregon? How does our spending in this category compare with the spending in other states? We wanted to present our readers with a clear picture of school funding in Oregon over the last several biennia so that we might begin to see trending data supported by real numbers. John Tapogna of ECONorthwest assisted us in these efforts.

Our third area of concern is communication. It seems to us that there is far too much, and, unfortunately very mixed, information about what is happening in education. Policy makers and the public are left wondering which data set is accurate. Because the Quality Education Commission receives all its information directly from the Oregon Department of Education, which receives all its information directly from the schools in Oregon, we believe that we can be and are an unbiased and well-informed source. However, we also know that we have not been very effective in disseminating that information.

It is our purpose to diligently seek out ways to provide accurate and reliable information about the education system in Oregon's public schools. We are in a position to talk about things that work (best practices) and how much they cost. We have the latest test scores. We also are positioned to analyze stresses in the system and report some needed changes.

**In our work as a Commission this cycle, we have made the following findings:**

- Student progress in reaching the benchmark standards has slowed in most grades.
- Per-student funding in Oregon has dropped below the national average.
- Special student populations, particularly special education students and students with limited English proficiency, are increasing faster than the general student population. These special populations require greater resources to meet the state's academic standards.
- Class sizes continue to rise.
- Course offerings outside of the subject-areas tested on the state's standardized tests have diminished, resulting in a narrowing curriculum in many schools.
- Oregon's Pre-kindergarten, K-12, and post secondary sectors are not well aligned in either their curricula or their resource use.

**As a result of the findings, we make these recommendations:**

- Provide adequate and stable funding for Oregon's schools.
- Continue achievement gains by targeting additional resources to the areas where added resources have the greatest impact. Areas such as early childhood development policies, early reading initiatives, and high school restructuring appear to show the most promise.
- Conduct more research into best practices and effective resource use.
- Continue efforts to improve the governance and accountability structures that promote more effective use of resources across all three sectors of Oregon's educational system: Pre-kindergarten, K-12, and post secondary.
- Continue efforts to build integrated data systems to foster alignment and coordination among all three education sectors as well as with social service agencies, business, and the public.
- Develop capacity to evaluate education's role in improving Oregon's economy and lowering social services costs.

# INTRODUCTION

## OREGON SETS HIGH GOALS FOR K-12 STUDENTS

The Oregon Legislature has set high goals for our K-12 schools which are embodied in the Oregon Education Act for the 21st Century. These goals call for a world-class education system with rigorous academic standards for all students and expectations that all children are challenged to meet their full potential. The State Board of Education has developed standards to implement the legislative goals. These standards that set out what students are expected to know and be able to do at the benchmark levels at grades 3, 5, 8 and 10. Under the requirements of the federal No Child Left Behind Act (NCLB), Oregon also administers benchmark tests in grades 4, 6, and 7 and reports test results for categories based on ethnicity, English Language Proficiency status, and economic status. The state assessment system measures student progress over time against state standards so that schools are held accountable for student performance.

Oregon's statutorily defined quality goals for education can be found in ORS 329.025:

### **ORS 329.025**

It is the intent of the Legislative Assembly to maintain a system of public elementary and secondary schools that allows students, parents, teachers, administrators, school district boards and the State Board of Education to be accountable for the development and improvement of the public school system. The public school system shall have the following characteristics:

- (1) Provides equal and open access and educational opportunities for all students in the state regardless of their linguistic background, culture, race, gender, capability or geographic location;
- (2) Assumes that all students can learn and establishes high, specific skill and knowledge expectations and recognizes individual differences at all instructional levels;
- (3) Provides special education, compensatory education, linguistically and culturally appropriate education and other specialized programs to all students who need those services;
- (4) Provides students with a solid foundation in the skills of reading, writing, problem solving and communication;
- (5) Provides opportunities for students to learn, think, reason, retrieve information, use technology and work effectively alone and in groups;
- (6) Provides for rigorous academic content standards and instruction in mathematics, science, history, geography, economics, civics and English;
- (7) Provides students an educational background to the end that they will function successfully in a constitutional republic, a participatory democracy and a multicultural nation and world;
- (8) Provides students with instruction in, but not limited to, health, physical education, second languages and the arts;
- (9) Provides students with the knowledge and skills that will provide the opportunities to succeed in the world of work, as members of families and as citizens;

- (10) Provides students with the knowledge, skills and positive attitude that lead to an active, healthy lifestyle;
- (11) Provides students with the knowledge and skills to take responsibility for their decisions and choices;
- (12) Provides opportunities for students to learn through a variety of teaching strategies;
- (13) Emphasizes involvement of parents and the community in the total education of students;
- (14) Transports children safely to and from school;
- (15) Ensures that the funds allocated to schools reflect the uncontrollable differences in costs facing each district;
- (16) Ensures that local schools have adequate control of how funds are spent to best meet the needs of students in their communities; and
- (17) Provides for a safe, educational environment.

While the high standards set by the state are an example of Oregon's commitment to excellence in education, they provide a difficult challenge for our state to meet federal requirements. Some states have redefined their testing benchmarks by lowering standards in order to comply with federal expectations, but Oregon has maintained its high standards for all students.

There is a natural conflict that exists in Oregon regarding desired outcomes and the capacity to produce those outcomes. On one hand, Oregon has a vision that students should have the best education system in the nation. Oregon is also pulled by the mandate of the NCLB Act which requires that *all* students meet the state-defined benchmarks by 2014. In the middle of this vision and mandate is the fact that Oregon has experienced a diminished delivery capacity caused by an increasing funding gap brought about by revenue-reducing tax reforms and, more recently, sluggish economic growth.

In prior reports the Quality Education Commission has focused on the K-12 education system from a best practices, cost, and student performance perspective in achieving Oregon's goal of having 90 percent of its students meet the state's academic standards. In this year's report, we reinforce some of this previous work, update the cost and best practices requirements of our charge, and move into some new territory by looking more closely at the relationship between education funding levels and student achievement. We also evaluate trends in school spending patterns to identify barriers to getting resources to where they have the most impact on student learning.

## **PUBLIC PERCEPTION CONCERNING K-12 EDUCATION**

In 2004, the Chalkboard Project surveyed Oregonians about their attitudes toward public education in Oregon. Their report, entitled “Public Attitudes Toward K-12 Education in Oregon”, revealed the following:

1. Most Oregonians have a more favorable opinion of their local schools than of the Oregon education system as a whole.
2. About one-half believe school funding is not adequate or stable and want it to be equitable, with mandates adequately funded.
3. About one-half don't believe schools spend funds efficiently, and they want more accountability.

In addition, most Oregonians:

4. believe Oregon schools should be among the best in the U.S.
5. believe students need to master the basics in reading, writing and math.
6. believe teachers need time for preparation, cooperation, and more one-on-one time with students.
7. give student achievement a high priority, and feel we need to close the gap on underachieving.
8. want local control of their schools.
9. want strong principals in their schools.
10. believe there is a lack of parental support of the learning process.
11. believe the role of education is to prepare students for college (42%) or for work (33%).

While these perceptions have many positive elements and provide a good basis to build on, when it comes to statewide funding of schools, Oregon voters continue to turn down proposals to increase state-level funding for schools.

As seen above, the citizens of our state appear to be divided in their opinions about the adequacy of school funding. Because such a large percentage of our state general fund goes to education, some people find it hard to believe that such a big number is not enough. As the burden for funding has shifted from local communities to the state, our method of representing our investment has changed, as well. Most of us find the spending of several billion dollars quite hard to imagine in terms of the way that amount affects a single student.

Some feel it is important to understand more completely the way that the money is spent on the local level. Is there waste and inefficiency? We all want to know that each dollar is used wisely and effectively.

The public does not seem to agree on a strategy for adding more revenue to the state system. It is widely acknowledged that Oregon's heavy reliance on the personal income tax results in an unstable revenue system, but there is no consensus on what should be done about it. There does seem to be agreement that the results of a poor education system are not acceptable: they lead to more welfare dependence, more criminality, and, in turn, to more broken homes and neglected children.

The Quality Education Model is intended to serve as the standard for accurate reporting of information in a world where many voices compete to be that standard. Data used in the creation of the Model come directly from the Department of Education which receives it directly from the local schools. It is intrinsically free of political bias, and reveals the characteristics of the Oregon education system, warts and all.

While the funding level represented in the QEM is often seen as hopelessly unattainable, it nevertheless simply reports best practices if we intend to achieve the goals stated in the law. The political challenges facing Governors and Legislators who must deal with the realities of tax limitations and economic downturns hinder the easy development of increased budgets for schools, yet without the needed funding the schools will lag in improvements.

According to recent data released by the US Census Bureau, Oregon's schools are now funded at below the national average, reflecting a growing disconnect between citizens and the educational system as the control of school funding has shifted from local voters to the Oregon legislature. It also speaks to the need for a better communicated vision, strategy, and plan that can better engage Oregonians in the future of education in Oregon. This is not just a K-12 problem but one that also impacts Pre-K, community and four-year colleges, and ultimately the overall cost of state government and our economy.

## **CHALLENGES AND OPPORTUNITIES**

The challenges facing Oregon's education system are significant. They include the following considerations:

- The requirements of the Federal NCLB legislation, which requires 99 percent of students to meet state academic standards by 2014.
- The lack of sufficient funding to meet Oregon's education goals, which results in large class sizes and shortened school years in some districts.

- The need for improved data systems on which to make sound policy decisions, which results in a failure to deliver an acceptable level of accountability to the system. While Oregon continues to be a leader in building improved education data collection systems, much work remains to be done.
- The continuing high dropout rate in Oregon, particularly for minority students.
- Middle and high schools do not achieve the levels of student performance that elementary schools do.
- Changing demographics, with minority populations increasing much faster than non-minority populations. Increasing numbers of special education students, students with limited English proficiency, and students in poverty require higher levels of resources if they are to meet Oregon's academic standards. The table below shows that these trends are expected to continue in the future.

### Exhibit 1

Student Growth Trends in Oregon School Districts				
	Special Education Students	English Language Learners	Students in Poverty*	All Students (ADM)
2000-01	67,768	42,104	78,452	522,753
2001-02	69,201	47,912	78,964	528,346
2002-03	70,519	49,940	79,012	530,653
2003-04	69,720	53,272	82,372	528,180
2004-05	70,230	55,936	82,684	530,575
2005-06**	71,238	59,012	82,972	532,432
Forecast				
2006-07	72,353	62,554	83,348	534,828
2007-08	73,076	66,306	83,512	535,898
2008-09	73,442	70,284	83,596	536,434
Avg % Change	1.0%	6.6%	0.8%	0.3%
* Large increase in 2003-04 is due to revisions based on 2000 Census data.				
** Preliminary				

## PREVIOUS COMMISSION RECOMMENDATIONS

In its 2004 report, the Quality Education Commission made the following three top-priority recommendations:

- Provide State resources to complete an overview of the existing cost and effectiveness of the State's data management system for PK-20 grades.
- Create a Governance and Accountability taskforce to develop recommendations about how the educational system needs to be structured to provide maximum learning outcomes to students.
- Provide additional resources targeted at the elementary grades, with emphasis on early reading programs.

In addition, the Commission also made the following four secondary-priority recommendations:

- Provide resources to support restructuring of educational services at the high school level consistent with the new graduation requirements and the need for more personalized, contextual learning.
- Provide the training and skill development that teachers and principals need to deliver on all of the academic goals, but particularly to support the reading priority.
- Improve the alignment between the K-12 school curriculum and Oregon's post-secondary education and employment needs and develop a sound funding solution that includes federal, state, private and nonprofit sources that supports the education of our students.
- Continue the line item in the state budget to pay for the highest cost special education students, and look for efficiencies to provide services to these students at lower cost.

Two years later, progress has been made on most of the Commission's recommendations:

- With the Department of Education's K-20 Integrated Data System project (KIDS), the state is developing a state-of-the-art data system that will connect Pre-Kindergarten, K-12, and post-secondary institutions in the state.
- Work by the Annenberg Foundation and the Gibson Consulting Group will provide guidance to policymakers for improving the efficiency of education delivery in Oregon.
- The State Board of Education, with grant funding from the Gates Foundation, is engaged in a year-long effort to develop new high-school graduation requirements and other reforms aimed at improving high school achievement.
- The Department of Education's Literacy Initiative is working to improve student literacy through skill development for teachers and principals.
- The Joint K-14 and Higher Education Boards are working on curriculum integration between K-12, community colleges, and higher education institutions, and the Governor's

office is leading an effort to develop more consistent financial reporting across the education sectors with a goal of better integrating the budgeting process.

- The legislature has continued to fund the special education high-cost disability fund, which provides school districts with additional funds for the highest-cost special education students.

# THE STATE OF SCHOOL FUNDING IN OREGON

In November of 2000 Oregon voters enacted Ballot Measure 1 in an attempt to increase education funding levels. The Measure states:

*The Legislative Assembly shall appropriate in each biennium a sum of money sufficient to ensure that the state's system of public education meets quality goals established by law, and publish a report that either demonstrates the appropriation is sufficient, or identifies the reasons for the insufficiency, its extent, and its impact on the ability of the state's system of public education to meet those goals. [Section 8(1), Article VIII, Oregon Constitution]*

In its most recent Ballot Measure 1 Report (March 2006), the legislature acknowledged that the Legislature did not devote sufficient resources to K-12 education. The legislature attributed the shortfall in funding to the following factors:

- Declines in local resources available for schools due to cuts in property taxes required by Ballot Measures 5 (1990) and 50 (1997).
- State revenue declines resulting from the economic recession starting in the 2001-03 biennium.
- New federal mandates not accompanied by sufficient federal funding.
- Large increases in required contribution rates to the Public Employees Retirement system.
- Rapid growth in health insurance premiums paid by school districts.
- Higher transportation costs faced by school districts due to recent increases in fuel prices.

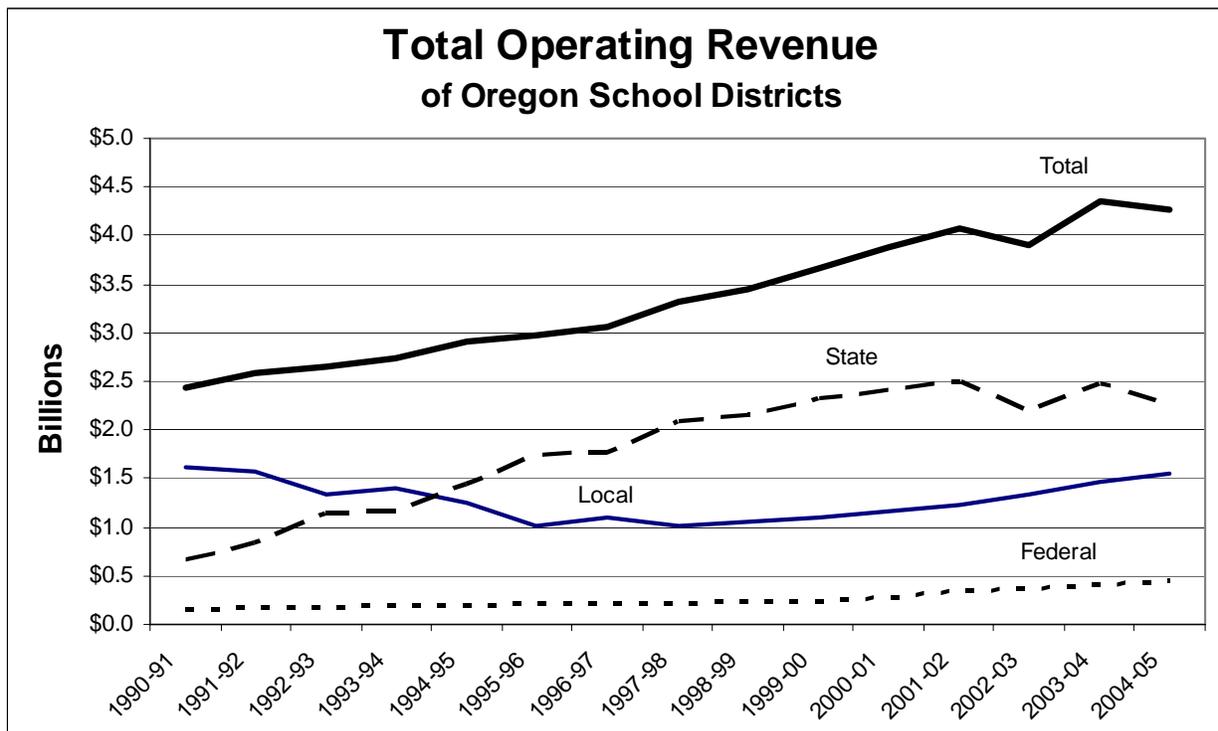
In all three of its constitutionally-mandated reports since Measure 1 passed, the Legislature has concluded that the level of resources they devoted to K-12 education funding was insufficient to meet the educational quality goals established in Oregon Law. In all three reports, the legislature attributed the shortfall in funding to insufficient revenue growth and rapid cost increases in delivering educational services.

## TRENDS IN SCHOOL FUNDING

It is impossible to understand the state of school funding in Oregon today without going back to the passage of Measure 5 in 1990. Measure 5 cut school property taxes dramatically by capping the school property tax rate at \$5 per \$1,000 of market value. Rapidly growing real estate market values in the early and mid-1990s caused property tax bills to continue to grow, and in response Oregon voters passed Measure 50 in 1997, further cutting property taxes and limiting their

growth. As a result, the amount of funding for schools has been decreasing in inflation-adjusted dollars. Prior to the passage of Measures 5 and 50, school property tax rates in Oregon averaged \$16.53 per \$1,000 of market value. For the 2005-06 tax year, they averaged \$4.33 per \$1,000 of market value, a tax rate cut of 74 percent since 1990-91. With this dramatic cut in local property tax funding available for schools, the state, using general fund dollars coming primarily from the state income tax, became the primary funding source for Oregon schools. Exhibit 2 shows the trend in funding by source.

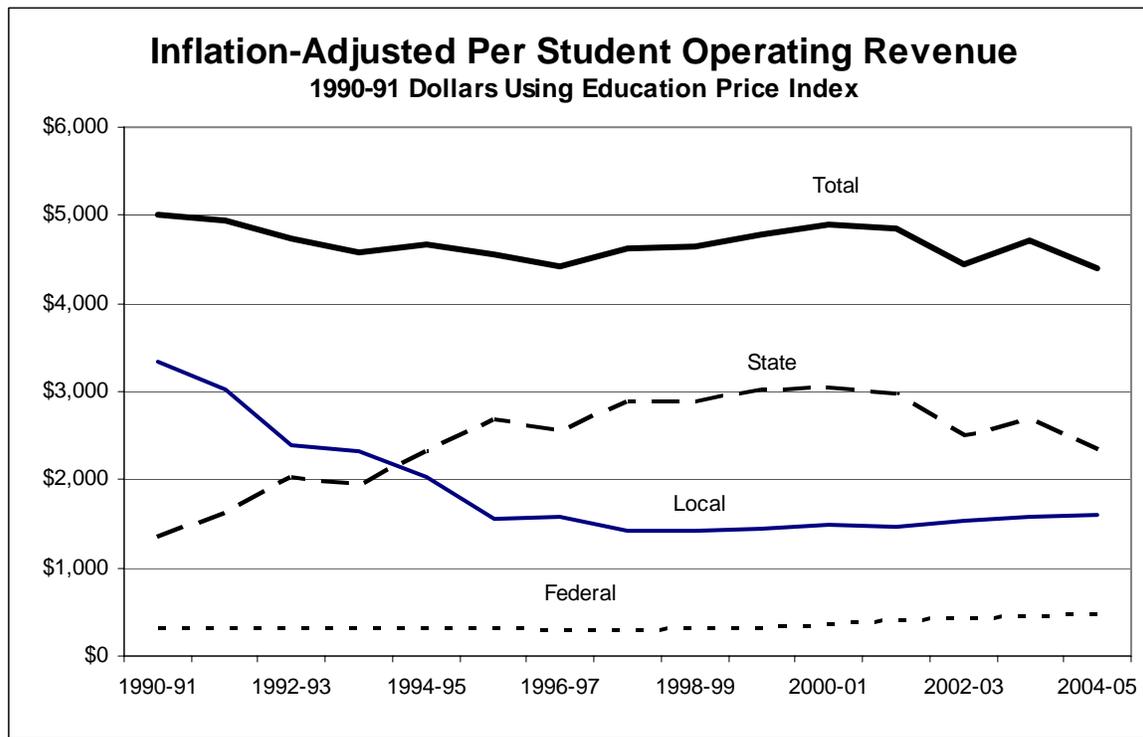
**Exhibit 2**



The shift in school funding from local property taxes to the state general fund caused by Measures 5 and 50 occurred relatively smoothly because robust growth in the economy during the 1990s meant that income tax revenues in Oregon grew rapidly, providing the funds needed to replace the lost property taxes to schools. But with the sluggish economy starting in 2001, state income tax revenue—the source of over 60% of school funding dollars—declined abruptly and has been slow to recover. With little or no ability to raise more local property tax revenues because of constitutional limitations, school districts have been forced to cut staffing levels and even shorten the school year in order to balance their budgets. These cuts in funding, along with steep increases in health insurance and retirement system costs (fixed costs whose increases are not controlled by local boards), have led to diminished real resources reaching the classroom.

Exhibit 3 shows how per-student funding, when adjusted for inflation, has declined over time. The measure of inflation used in Exhibit 3, labeled the Education Price Index, is a weighted average of teacher salary increases and health insurance premiums increases. This index better reflects actual price increases in the education sector than does the Consumer Price Index (CPI). As the graph shows, real resources per student available to Oregon school districts have fallen over time, from \$5,000 per student in 1990-91 to \$4,400 in 2004-05.

**Exhibit 3**



As part of its charge under Executive Order 99-15, the Revenue Forecast Committee estimates the “Essential Budget Level” (formerly referred to as the Current Service Level) prior to each legislative session. The Essential Budget Level is an estimate of the level of resources required in the coming biennium to provide the same level of services being provided in the current biennium. In making this estimate, the Revenue Forecast Committee takes into account growth in the student population (including students with special needs) as well as changes in the costs of resources used in the education process: salaries of teachers, administrators, and other school personnel; health insurance premiums; retirement system contributions; supplies and materials; etc.

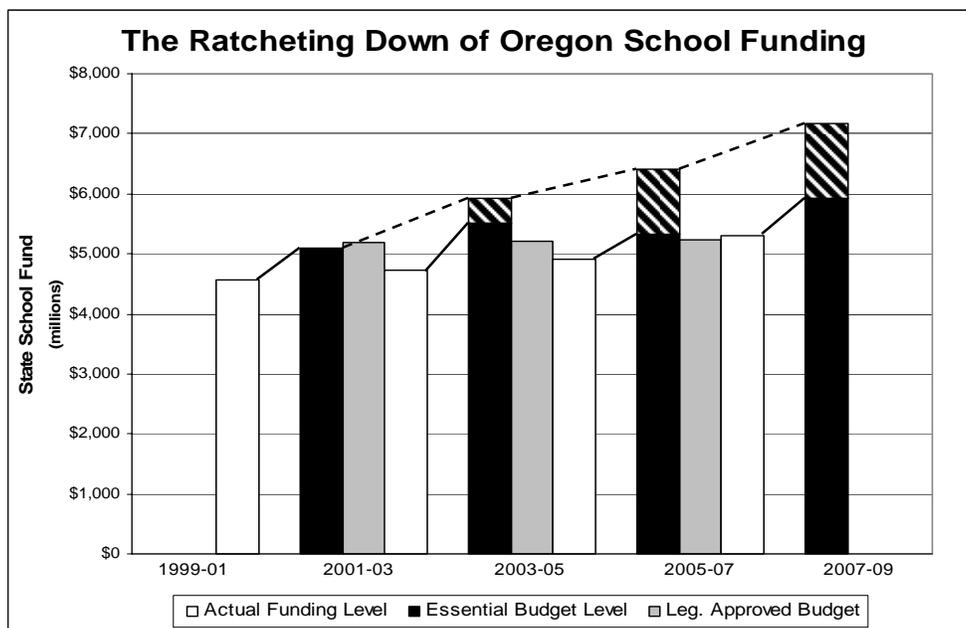
Exhibit 4 shows trends in the Essential Budget Level in recent biennia and also demonstrates

how the Essential Budget Level tends to “ratchet down” when actual funding in a given biennium falls short of the estimated Essential Budget Level. Because the Essential Budget Level uses the actual funding level in the current biennium as the starting point, funding shortfalls in the current biennium are passed forward into the Essential Budget Level for the next biennium.

The graph demonstrates this very clearly. The bars show the Essential Budget Level, the Legislatively Approved Budget, and the actual funding level for the State School Fund for recent biennia. The solid line linking the actual funding level in the current biennium to the Essential Budget Level of the subsequent biennium represents the growth in funding required to keep up with inflation and enrollment growth. When actual funding in a biennium is lower than the Essential Budget Level for that biennium, the starting point for the next biennium’s calculation “ratchets down” to the actual funding level.

In sharp contrast, the dashed line shows the growth in funding needed to maintain the Essential Budget Level from one biennium to the next. In other words, it reflects the funding required to keep up with inflation and enrollment growth. The portion of the Essential Budget Level bar shown with diagonal lines represents the amount the Essential Budget Level has been diminished by the ratcheting down effect—the amount that funding has lagged behind inflation and enrollment growth since the 1999-01 biennium. In 2007-09, that amount is over \$1.2 billion.

**Exhibit 4**



## **THE FUNDING GAP**

The result of the Legislature's inability to appropriate sufficient resources to Oregon's public education system is a continuing gap between the resources available and the level needed to fulfill the educational goals the legislature established in law. In the 2001-03 biennium, the funding gap was \$1.64 billion, growing from \$602 million in the first year of the biennium to over \$1.0 billion in the second year. The large increase in the gap in the second year (2002-03) resulted from a dramatic fall in income tax revenue, which resulted in a reduced legislative appropriation to K-12 schools, as Oregon's economy fell into recession.

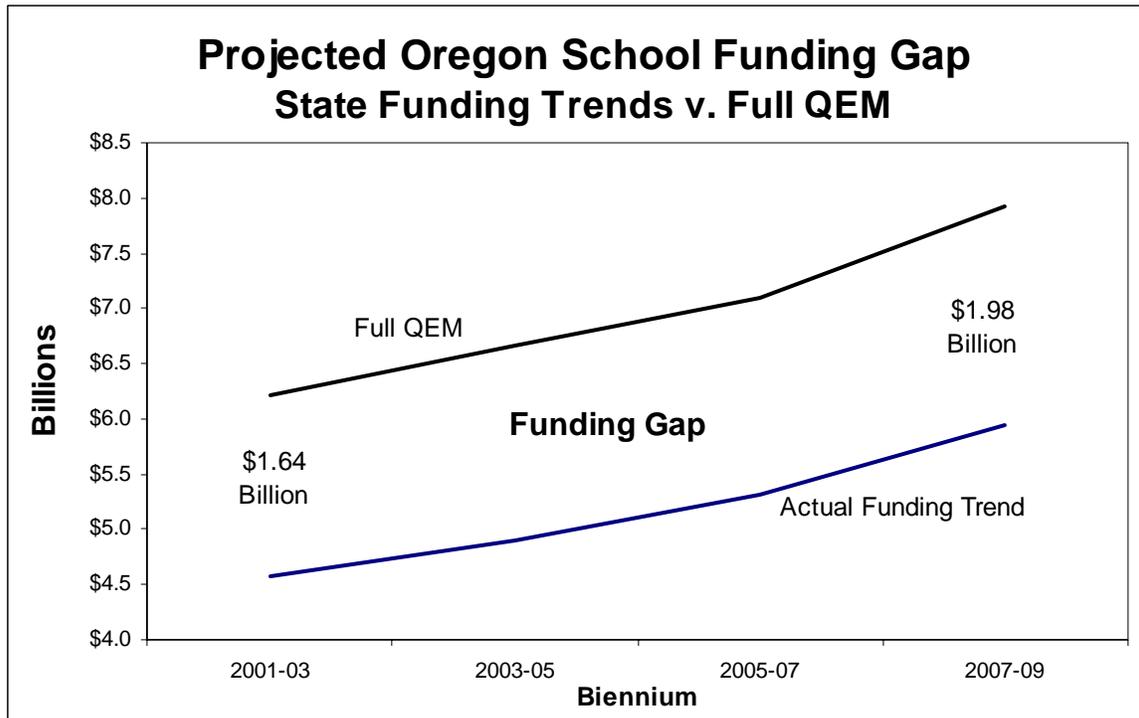
By the 2005-07 biennium, the gap between actual funding trends and the Quality Education Commission's recommended funding level had grown to around \$1.75 billion. Similar to the 2001-03 biennium, the gap grew dramatically from the first year of the biennium to the second, this time because the legislature appropriated far more money for 2003-04 than they did for 2004-05, hoping that a temporary income tax increase (Measure 30) would fill in the gap in the second year. Voters rejected Measure 30, and with state revenue continuing to grow slowly, the funding gap again rose from about \$670 million in 2003-04 to \$1.1 billion in 2004-05.

For the 2007-09 biennium, the Quality Education Model estimates that State funding of \$7.92 billion for K-12 is required to get 90% of Oregon students to meet the State's academic standards. With an Essential Budget Level estimate of \$5.94 billion (the amount required to fund the same level of services that was provided in the prior biennium), a funding gap of \$1.98 billion will remain if the legislature adopts the Essential Budget Level for the 2007-09 biennium.

### **Exhibit 5**

<b>State Portion of K-12 Education Funding</b>	
	<b>2007-09 Biennium</b>
<b>Essential Budget Level</b>	<b>\$5.94 billion</b>
<b>Fully-Funded Quality Education Model</b>	<b>\$7.92 billion</b>
<b>Funding Gap Relative to Essential Budget Level</b>	<b>\$1.98 billion</b>

## Exhibit 6



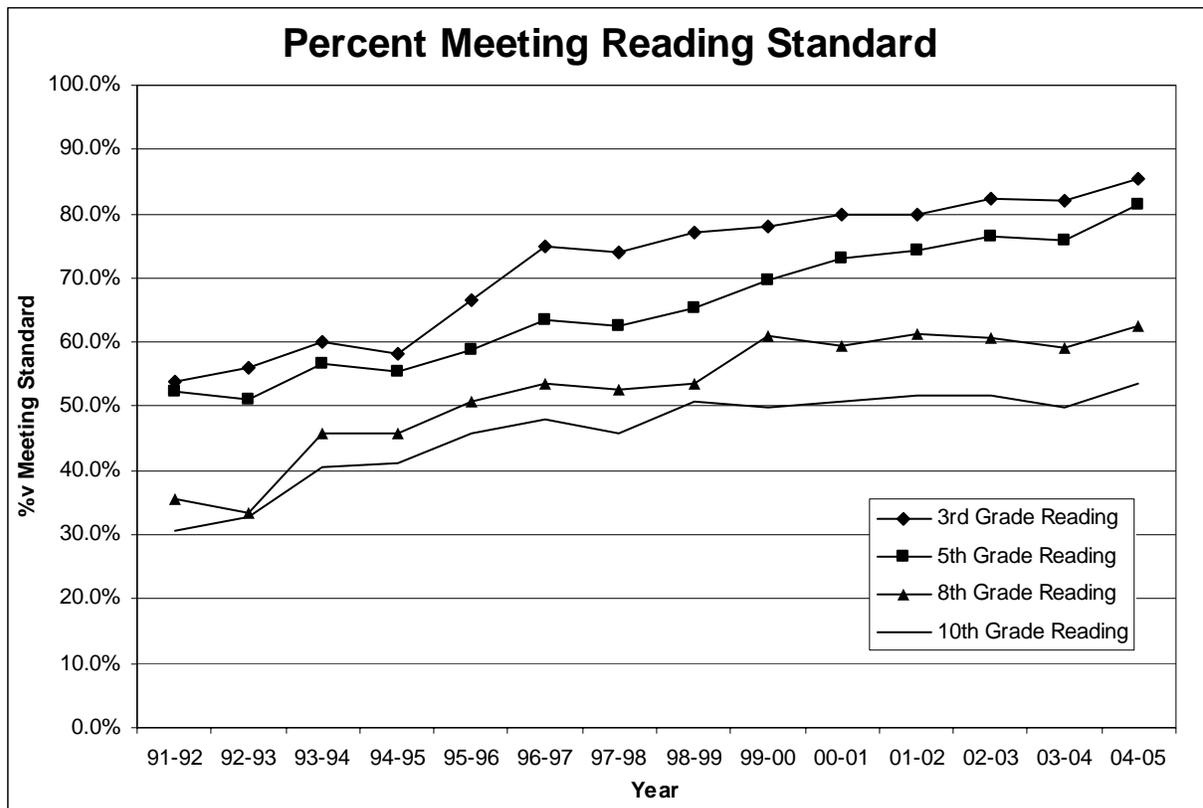
The strategy to eliminate the funding gap must include two components: increasing the level of funding available to schools; and increasing the efficiency in the delivery of education. Over the past decade, education funding per student has not kept pace with educational cost increases, which have consistently risen faster than commonly used measures of inflation such as the Consumer Price Index (CPI). At the same time, Oregon has experienced substantial increases in the number of students with special needs. While the number of students meeting State academic standards has increased over this period, that achievement growth is slowing. Unless the state and districts can increase funding and efficiencies, the progress Oregon's schools have made over the past decade is unlikely to continue.

# THE STATE OF STUDENT PERFORMANCE IN OREGON

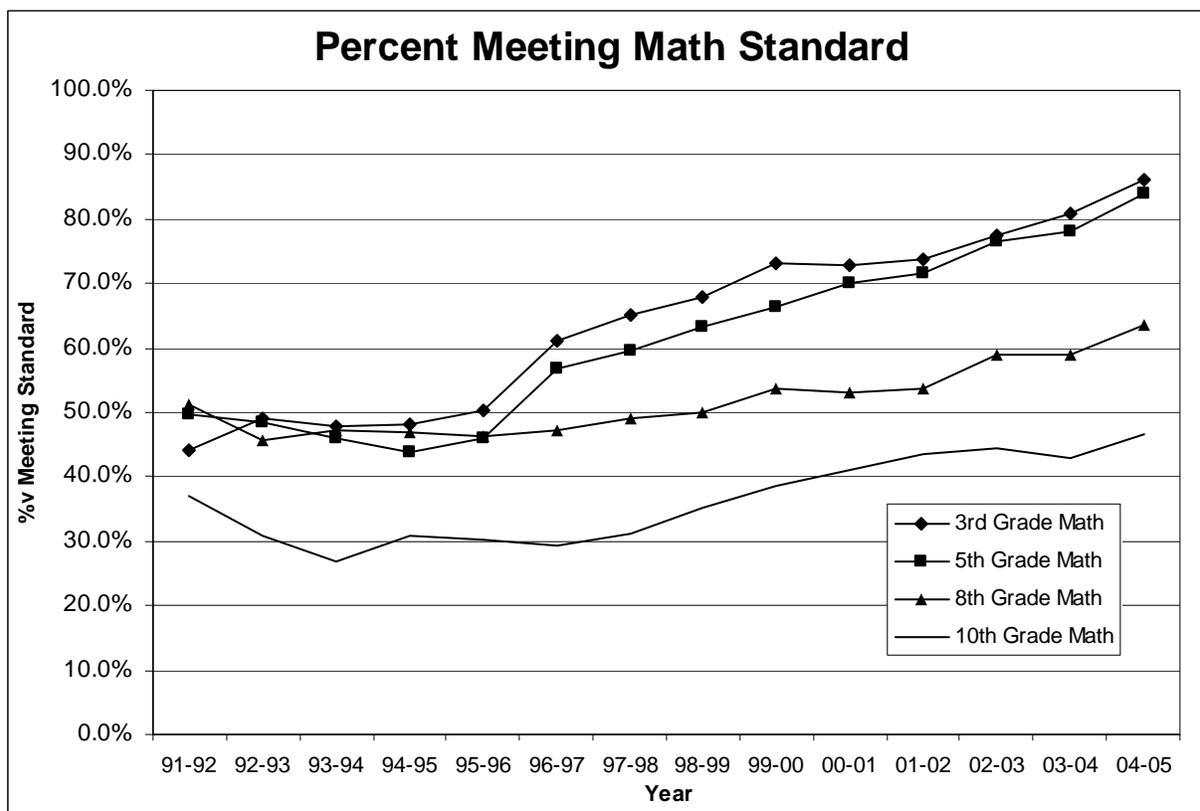
Oregon's Quality Education Goals set high expectations for students to gain a wide array of knowledge and skills that will prepare them for the challenges of the 21<sup>st</sup> century. The Commission recognizes that the most commonly accepted measures—results on state standardized Assessments—are narrow measures that do not reflect the many dimensions necessary for students to meet their full potential. Assessment scores do, however, represent the most consistent measures we have to show the trends in student achievement over time. The Commission continues to use assessment scores as measures of student performance but also recommends the development of broader measures in the future, including school-based and community measures detailed in the Model's quality indicators (see pages 27 and 28).

The following graphs show the trends in student achievement in Oregon as measured by the percent of students meeting or exceeding the state's academic achievement standards in math and reading at grades 3, 5, 8, and 10.

Exhibit 7



## Exhibit 8



The Commission examined current academic performance as measured by state assessments in reading and math; analyzed performance over time on these assessments at all benchmark levels; and looked closely at the score distributions over time, and at each benchmark level. It sought to determine the “cohort effects” realized as a group of students who benefited from full implementation of the Model at the K-3 level moved to the fifth grade benchmark level and so on up through the tenth grade benchmark.

### **The Commission reached the following general conclusions:**

- The Quality Education Commission supports, in principle, the goals of the Federal NCLB legislation in promoting high academic achievement and closing the achievement gap. It is clear, however, that those goals cannot be met in Oregon without improved educational practices based on sound research, adequate and stable funding at the local, state, and federal levels, and governance and accountability structures that promote efficient use of resources.
- The proportion of students reaching benchmark levels has generally increased over the past decade, with much greater and more consistent gains at the elementary level and less consistent and considerably smaller gains as students moved through middle and high school levels.

- It is likely that the improvement rate at third and fifth grades will slow further without additional targeted resources and practices of the sort identified in the QEM, given the demographic shifts in the state. This will require statewide policy in early childhood development in order to reach the goals of NCLB by 2014 as well as increased resources and attention to reading initiatives for grades K-3.
- Middle schools may achieve some sustained improvement as successive cohorts reach middle school with higher proportions of students meeting benchmark standards. These gains subsequently will influence middle school and high school trends so that significant improvement may occur at the secondary level.
- High school restructuring efforts are important to accelerate gains for high school students, with a major focus also placed on reducing dropout rates through enhanced rigor, relevance and relationship building.
- Estimates that assume full implementation of the Prototype Schools suggest sustained improvement can occur at third and fifth grades until 90 percent or more of students meet benchmark standards.
- The assumptions are based on both dimensions of the Prototype Schools being implemented: increased resources targeted to student learning, combined with consistent improvements in the Quality Indicators that identify effective educational practices and policies. With the current system and funding, and without the QEM focus, it is likely that improvement rates will slow in future years as it becomes increasingly challenging to reach students who are still not meeting the standard. If the funding gap continues to grow, gains in student growth will begin to stagnate and even decline.

## **OREGON IN A NATIONAL CONTEXT**

- 1) In general, Oregon compares favorably to other states in comparisons of test scores such as the National Assessment of Educational Progress (NAEP) and the Scholastic Achievement Test (SAT), although when adjusted for demographic characteristics, Oregon's above-average ranking is diminished.
- 2) Oregon's dropout rate has declined dramatically in the past decade, falling from a high of 7.4 percent in 1994-95 to less than 4 percent in 2004-05. Nationally, however, Oregon has a relatively high rate, ranking 19<sup>th</sup> highest in 2001-02, the latest year for which national comparisons are available.
- 3) For spending per student, Oregon historically ranked well above average, but fell below average in 2001-02 school year because of reductions in funding levels. In 2002-03 Oregon lost further ground relative to other states, falling to 93% of the

national average, and in 2003-04 Oregon dropped even further, falling to 92% of the national average.

- 4) Historically Oregon ranked as a moderately high tax state, having comparatively high property and income taxes, but no sales tax. With the dramatic cut in property taxes from Measures 5 and 50, Oregon is now a low-tax state, ranking 48<sup>th</sup> in state and local taxes as share of personal income in 2001-02.

# THE QUALITY EDUCATION MODEL AND THE PROTOTYPE SCHOOLS

The Quality Education Model, like all models, is a representation of reality intended to provide insights to guide decision-making. The purpose of the QEM is to depict Oregon’s school system with sufficient detail and accuracy that policymakers can better understand how Oregon’s schools allocate their resources, how various policy proposals affect funding needs, and how the level of resources provided to schools is expected to affect student achievement. While the Quality Education Model does not perfectly capture every aspect of Oregon’s K-12 education system—no model can do that—it does describe the system in sufficient detail to be a powerful tool to guide policymakers.

This section of the report provides a brief description of the prototype schools approach used by the QEM. It also describes the current state of school funding and student achievement in Oregon, and then it provides a comparison between the current education practices and funding levels in Oregon schools with those needed to achieve the state’s education goals, as well as the performance expectations associated with each situation. Realizing that schools will require time to build the capacity to efficiently use the level of resources recommended in the fully funded Quality Education Model, the Commission has identified priorities for implementing the Model over time.

## THE PROTOTYPE SCHOOLS APPROACH

The Quality Education Model (QEM) creates prototype schools which serve as tools with which to evaluate the resources needed to operate highly effective schools. Each prototype reflects best practices research on high performing schools. The prototypes provide a mechanism to evaluate the costs of implementing different education practices and can also provide guidance for school district leaders to make local decisions on how to achieve high performance standards.

### *Key Quality Indicators*

Prior QEM reports listed 12 Quality Indicators that serve as a framework for schools. They are grouped into school-level, teacher-related, classroom-focused, and student-centered factors as follows:

#### **Schools**

- Leadership that facilitates student learning
- Parental/Community Involvement

- Organizational adaptability
- Safe and orderly learning environment
- District Policies to support learning

### **Teachers**

- Teacher/teaching quality
- Professional development program
- Teacher efficacy

### **Classrooms**

- Effective instructional programs and methods
- School database collection and analysis to improve instructional programs

### **Students**

- Readiness to learn
- Connectedness to school and engagement in academics and extra curricular programs

### ***Best Practices***

Best Practices are those strategies and programs that have been demonstrated in research and experience to be successful in effecting high student achievement. They are the specific programs that accompany the components of a Quality Education Model. The prototype schools are examples of how schools could be organized to implement Best Practices programs. Best Practices occur when:

- Each student has a personalized education program.
- Instructional programs and opportunities are focused on individual student achievement of high-quality standards.
- Curriculum and instructional activities are relevant to the lives of students.
- Each student has access to a rich and varied elective co-curricular and extra-curricular program.
- The school creates small learning environments that foster student connection.
- The school provides and encourages connections with significant adults, including parents, mentors and other advisors to ensure that each student develops a connection to the greater community, along with a strong sense of self.
- The school makes data-informed decisions about the capability of programs to foster individual student achievement.
- The school at upper grade levels uses community-based and worksite learning as integral

components of its instructional program.

- The school has a comprehensive staff induction program that guides recruitment and employment and provides ongoing professional development programs.
- Cost-effective management of resources allows school districts to better meet the needs of the greatest number of students.

Oregon elementary schools have made the most progress in curriculum, instruction, and assessment adaptations to meet the needs of their students, and that progress is demonstrated in high and consistently increasing standardized test scores in grades 3 and 5. Middle schools have made only moderate progress and must become part of a larger connection to high schools and post-secondary schools for full effectiveness. High schools continue to experience relatively low percentages of students meeting statewide academic standards and have shown only limited success in increasing those percentages.

In addition to focusing on high school reform, if Oregon is serious about helping all students be successful, there must be more emphasis on the learning that occurs in the early years of a child's life. Some estimates show that about 60 percent of children under 5 spend about 30 hours a week in the care of people other than their parents. There is a need for accessible, high quality pre-school as well as for full-day kindergarten. These needs aren't fully addressed in the QEM but we can't ignore what brain research has shown, especially in regards to literacy. During ages 4-6, children build the neural systems that are responsible for fluent reading. Oregon needs to find a way to address the early years and extend the kindergarten day to maximize learning during this critical period. Oregon's pre-school system currently reaches only 55% of the eligible students among our most needy children in this age group. That means 45% of students are coming to school under-prepared to learn. Even for the 55% of eligible students who are in pre-school, without further research and standards, there is no guarantee of educational quality for this at-risk population. We will not be successful in closing the achievement gap if this disparity continues.

### ***Prototype Resource Assumptions***

The QEM uses three prototype schools, constructed to be examples of schools in Oregon that have been structured to provide resources consistent with best, research-based practices. The Commission has made assumptions about the demographics of the prototype schools so that it is possible to understand the effects of various resource levels and to estimate specific costs. Those basic assumptions include:

- The size of each is within a range the research literature recognizes is efficient.
- The assumed level of teacher experience is about average for schools in Oregon.

- Each school has Internet access.
- Teachers are using technology in the design and delivery of instruction.
- The schools are located in close proximity to an urbanized area.
- The schools are slightly below the state median in socioeconomic status (40% percentile)
- The schools have approximately 13 percent of their students identified for special education.
- 11 percent of the students are identified as speaking English as a second language
- The principal is knowledgeable about reform requirements and is supportive of the reform goals.
- The principal is supportive of reform implementation and the training necessary for school staff.
- The principal is somewhat skilled as a leader and skilled as a manager.
- Teachers are open to reform goals and the training necessary to support the reform requirements.
- Teachers possess content knowledge necessary to teach to applicable state standards

### ***Individual Prototype Schools***

The model assumes the three prototype schools incorporate what research and practice declare are most important in helping students improve achievement and provide a level of resources that sustains that goal. The prototypes are not richly staffed but they do staff at levels research and practice suggests will bring improvement to student learning and will provide a comprehensive, balanced general education.

### ***Each prototype school has:***

- Adequate staffing
- Added instructional time and activities for students having trouble meeting standards
- Curriculum development and technology support
- On-site instructional improvement
- Professional development for teachers and administrators
- Adequate classroom supplies
- Adequate funds for building maintenance

### **Elementary School – 340 Students**

- All-day kindergarten
- Class size average of 20 in primary grades
- Class size of 24 in grades 4-5
- 4.5 FTE for specialists in areas such as art, music, P.E., reading, math, TAG, library, ESL, Child Development/Counselor

### **Middle School – 500 Students**

- Class size average of 25

- 1.5 additional teachers for math, English, science
- Alternative programs for special needs and at-risk students
- Volunteer coordinator and community outreach worker
- One counselor for every 250 students
- Adequate campus security

### **High School – 1,000 Students**

- Class size average of 24
- 3.0 additional teachers for math, English, science
- Alternative programs for special needs and at-risk students
- Volunteer coordinator & community outreach worker
- One counselor for every 250 students
- Adequate campus security
- School-to-work coordinator

# DETAILED DESCRIPTION OF THE MODEL'S COMPONENTS

## Exhibit 9

<b>Prototype Elementary School – 340 Students Baseline Compared to Fully Funded QEM</b>			
	Baseline Prototype*	Fully Funded QEM	Difference
Kindergarten	Half-day	Full-day	Doubles learning time
Average class size	25	20 to 1 for grades K-3. 24 to 1 for grades 4-5	Cuts class size by 5 for grades K-3
K-5 classroom teachers	12.8 FTE	16.0 FTE	Adds 3.2 FTE
Specialists for areas such as art, music, PE, reading, math, TAG, library/media, second language, or child development	2.0 FTE	4.5 FTE	Adds 2.5 FTE
Special Education licensed staff	2.0 FTE	3.0 FTE	Adds 1.0 FTE
English as a second language licensed staff	0.5 FTE	1.0 FTE	Adds 0.5 FTE
Licensed substitute teachers	\$88 per student	\$88 per student	
On-site instructional improvement staff	None	0.5 FTE	Adds 0.5 FTE
Instructional support staff	5.0 FTE	6.0 FTE	Adds 1.0 FTE
Additional instruction time for students not meeting standards: 20% of students	Limited	Summer school, after-school programs, Saturday school, tutoring, etc.	Additional programs for 20% of students
Professional development time for teachers	3 days	Equivalent of 7 days to be used for extended contracts, substitute time, etc.	Equivalent of 4 additional days
Leadership training for administrators	Limited	Based on 4 days of training	4 additional days
Students per computer	6	6	
Textbooks	\$47 per student	\$94 per student	\$47 per student
Classroom supplies and materials	\$78 per student	\$134 per student	\$56 per student
Other supplies	\$72 per student	\$98 per student	\$26 per student
Operations and maintenance	\$636 per student	\$647 per student	\$11 per student
Student transportation	\$347 per student	\$347 per student	
Centralized special education	\$93 per student	\$135 per student	\$42 per student
Technology Services	\$127 per student	\$127 per student	
Other centralized support	\$151 per student	\$151 per student	
District administrative support	\$260 per student	\$260 per student	
<b>Total Cost per Student</b>	<b>\$7,115</b>	<b>\$9,180</b>	<b>\$2,065 per student</b>
Percent of students meeting standards in 2004-05			
Reading	3rd grade=86% / 5th grade = 82%	n/a	
Math	3rd grade=86% / 5th grade = 84%	n/a	
Percent of students expected to meet standards by year 2014			
Reading	3rd grade=96% / 5th grade = 94%	97%	
Math	3rd grade=96% / 5th grade = 96%	97%	

\* The Baseline Prototype shows the Quality Education Model's estimated costs using the level of inputs that currently exist in Oregon schools.

## Exhibit 10

<b>Prototype Middle School – 500 Students Baseline Compared to Fully Funded QEM</b>			
	<b>Baseline Prototype*</b>	<b>Fully Funded QEM</b>	<b>Difference</b>
Class size in core subjects of math, English, science, social studies, second language	23	<b>22, with maximum class size of 29 in core academic subjects</b>	<b>Cuts average class size by 1 in core subjects</b>
Staffing in core subjects	20.8 FTE	<b>21.0 FTE</b>	<b>Adds 0.2 FTE</b>
Extra teachers in math, English, and science	0.5 FTE	<b>1.5 FTE</b>	<b>Adds 1.0 FTE</b>
English as a second language licensed staff	0.5 FTE	<b>0.75 FTE</b>	<b>Adds 0.25 FTE</b>
Special Education licensed staff	4.0 FTE	<b>4.5 FTE</b>	<b>Adds 0.5 FTE</b>
Media/Librarian	1.0 FTE	1.0 FTE	
Counselors	One for every 333 students	<b>One for every 250 students</b>	<b>Adds 0.5 FTE</b>
Licensed substitute teachers	\$87 per student	\$87 per student	
On-site instructional improvement staff	None	<b>1.0 FTE</b>	<b>Adds 1.0 FTE</b>
Instructional support staff	11.0 FTE	<b>10.0 FTE</b>	<b>Eliminates 1.0 FTE</b>
Additional instruction time for students not meeting standards: 20% of students	Limited	<b>Summer school, after-school programs, Saturday school, tutoring, etc.</b>	<b>Additional programs for 20% of students</b>
Professional development time for teachers	3 days	<b>Equivalent of 7 days to be used for extended contracts, substitute time, etc.</b>	<b>Equivalent of 4 additional days</b>
Leadership training for administrators	Limited	<b>Based on 4 days of training</b>	<b>4 additional days</b>
Students per computer	6	6	
Textbooks	\$43 per student	<b>\$71 per student</b>	<b>\$28 per student</b>
Classroom supplies and materials	\$79 per student	<b>\$113 per student</b>	<b>\$34 per student</b>
Other supplies	\$73 per student	<b>\$104 per student</b>	<b>\$31 per student</b>
Operations and maintenance	\$656 per student	<b>\$667 per student</b>	<b>\$11 per student</b>
Student transportation	\$347 per student	\$347 per student	
Centralized special education	\$93 per student	<b>\$135 per student</b>	<b>\$42 per student</b>
Technology Services	\$129 per student	\$129 per student	
Other centralized support	\$143 per student	\$143 per student	
District administrative support	\$260 per student	\$260 per student	
<b>Total Cost per Student</b>	<b>\$7,913</b>	<b>\$8,772</b>	<b>\$859 per student</b>
Percent of students meeting standards in 2004-05			
Reading	63%	n/a	
Math	64%	n/a	
Percent of students expected to meet standards by year 2014			
Reading	74%	<b>91%</b>	
Math	74%	<b>92%</b>	

\* The Baseline Prototype shows the Quality Education Model's estimated costs using the level of inputs that currently exist in Oregon schools.

## Exhibit 11

### Prototype High School – 1,000 Students Baseline Compared to Fully Funded QEM

	Baseline Prototype*	Fully Funded QEM	Difference
Class size in core subjects of math, English, science, social studies, second language	24	21, with maximum class size of 29 in core academic subjects	Cuts average class size by 3 in core subjects
Staffing in core subjects	42.0 FTE	44.0 FTE	Adds 2.0 FTE
Extra teachers in math, English, and science	None	3.0 FTE	Adds 3.0 FTE
English as a second language licensed staff	0.5 FTE	0.5 FTE	
Special Education licensed staff	5.0 FTE	5.25 FTE	Adds 0.25 FTE
Media/Librarian	1.0 FTE	1.0 FTE	
Counselors	One for every 333 students	One for every 250 students	Adds 1.0 FTE
Licensed substitute teachers	\$88 per student	\$88 per student	
On-site instructional improvement staff	None	1.0 FTE	Adds 1.0 FTE
Instructional support staff	20.0 FTE	20.0 FTE	
Additional instruction time for students not meeting standards: 20% of students	Limited	Summer school, after-school programs, Saturday school, tutoring, etc.	Additional programs for 20% of students
Professional development time for teachers	3 days	Equivalent of 7 days to be used for extended contracts, substitute time, etc.	Equivalent of 4 additional days
Leadership training for administrators	Limited	Based on 4 days of training	4 additional days
Students per computer	6	6	
Textbooks	\$51 per student	\$89 per student	\$38 per student
Classroom supplies and materials	\$109 per student	\$177 per student	\$68 per student
Other supplies	\$80 per student	\$151 per student	\$71 per student
Operations and maintenance	\$713 per student	\$742 per student	\$11 per student
Student transportation	\$362 per student	\$362 per student	
Centralized special education	\$93 per student	\$135 per student	\$42 per student
Technology Services	\$128 per student	\$128 per student	
Other centralized support	\$154 per student	\$154 per student	
District administrative support	\$260 per student	\$260 per student	
<b>Total Cost per Student</b>	<b>\$7,940</b>	<b>\$9,061</b>	<b>\$1,121 per student</b>
Percent of students meeting standards in 2004-05			
Reading	54%	n/a	
Math	47%	n/a	
Percent of students expected to meet standards by year 2014			
Reading	67%	82%	
Math	57%	75%	

\* The Baseline Prototype shows the Quality Education Model's estimated costs using the level of inputs that currently exist in Oregon schools.

## **QUALITY EDUCATION MODEL ESTIMATES FOR THE 2007-09 BIENNIUM**

Prior to the start of each legislative session, the Quality Education Commission updates the Quality Education Model to include the most recent data available. The Commission also reviews the assumptions in the model to make sure they are consistent with current research. Once the updates to the model are complete, the Commission uses the model to estimate the level of funding required to meet Oregon's educational goals as established in law.

In this round of the Commission's work, the update of the Quality Education Model involved the following four primary tasks:

- Updating all of the data in the Model to reflect the most recent data available. For most of the data used by the Model, the most recent data are for the 2004-05 school year. These data include expenditures by category, wages and salaries of school personnel, retirement system and health care costs, student enrollment, and class size.
- Adding expenditures of federal funds to the individual prototype schools in the Model. In prior versions of the Model, revenue that school districts received from federal sources was included in the Model as a lump sum. By including those expenditures in the prototype schools, the Model provides more detail about those expenditures, which should result in more accurate estimates.
- Reviewing all Model assumptions regarding growth rates of critical parameters such as the PERS contribution rate, student enrollment growth, wage and salary growth, and growth rates for other components of the Model such as services and supplies.
- Calibrating the Model's "Baseline" scenario, which reflects current spending levels in Oregon schools, to the School Revenue Forecast Committee's Essential Budget Level estimates. The Baseline scenario represents the starting point for evaluating policy proposals with the Model.

Based on the updated Model, the following table shows preliminary estimates of the resources needed to fully fund the Quality Education Model in the 2007-09 biennium. For comparison purposes, it also shows the estimated level of funding required in 2007-09 to allow school districts to provide the same level of education services they provided in 2005-07—the Baseline scenario.

## Exhibit 12

### Quality Education Model Impact Analysis for the 2007-09 Biennium Baseline Funding Compared to Full Funding of the QEM

	Baseline Funding	Full Funding of the QEM	Difference	Percent Difference
Estimated District Operating Exp. for 2007-08*	\$4,467,042,735	\$5,415,215,198	\$948,172,463	21.2%
Estimated District Operating Exp. for 2008-09*	\$4,614,916,713	\$5,595,660,535	\$980,743,822	21.3%
<b>2007-09 Biennium Total*</b>	<b>\$9,081,959,448</b>	<b>\$11,010,875,733</b>	<b>\$1,928,916,285</b>	<b>21.2%</b>
Plus: 2007-09 ESD Expenditures	\$808,949,157	\$808,949,157	\$0	0.0%
Plus: High-Cost Disabilities Fund	\$24,000,000	\$80,000,000	\$56,000,000	233.3%
<b>Equals: Total 2007-09 Funding Requirement</b>	<b>\$9,914,908,605</b>	<b>\$11,899,824,890</b>	<b>\$1,984,916,285</b>	<b>20.0%</b>
Less: Local Revenue not in Formula	\$280,083,137	\$280,083,137	\$0	0.0%
Less: Federal Revenue To School Districts and ESDs	\$901,445,216	\$901,445,216	\$0	0.0%
<b>Equals: Total Formula Funding Requirement</b>	<b>\$8,733,380,252</b>	<b>\$10,718,296,537</b>	<b>\$1,984,916,285</b>	<b>22.7%</b>
Less: Property Taxes and other Local Resources	\$2,797,265,762	\$2,797,265,762	\$0	0.0%
<b>Equals: 2007-09 State School Fund Requirement</b>	<b>\$5,936,114,490</b>	<b>\$7,921,030,775</b>	<b>\$1,984,916,285</b>	<b>33.4%</b>

\*Includes expenditures of federal funds. In prior versions of the model, federal funds were accounted for as a lump sum outside of the prototype schools.

The table shows that to fully fund the Quality Education Model in 2007-09 would require \$1.98 billion more than it would cost to continue the level of funding from the prior biennium (adjusted for inflation and enrollment growth).

The following graphs show estimates of student outcomes, measured as the percentage of students meeting the state's academic standards, for both the Baseline level of funding and the fully-funded QEM. As the graphs show, student performance is expected to continue to improve, but at a diminishing rate, even if education funding is not increased relative to current levels. These increases are due primarily to better alignment of curriculum to state standards. If funding were to increase to the fully-funded QEM level, the percentage of students meeting state standards would be expected to increase at a faster rate.

Exhibit 13

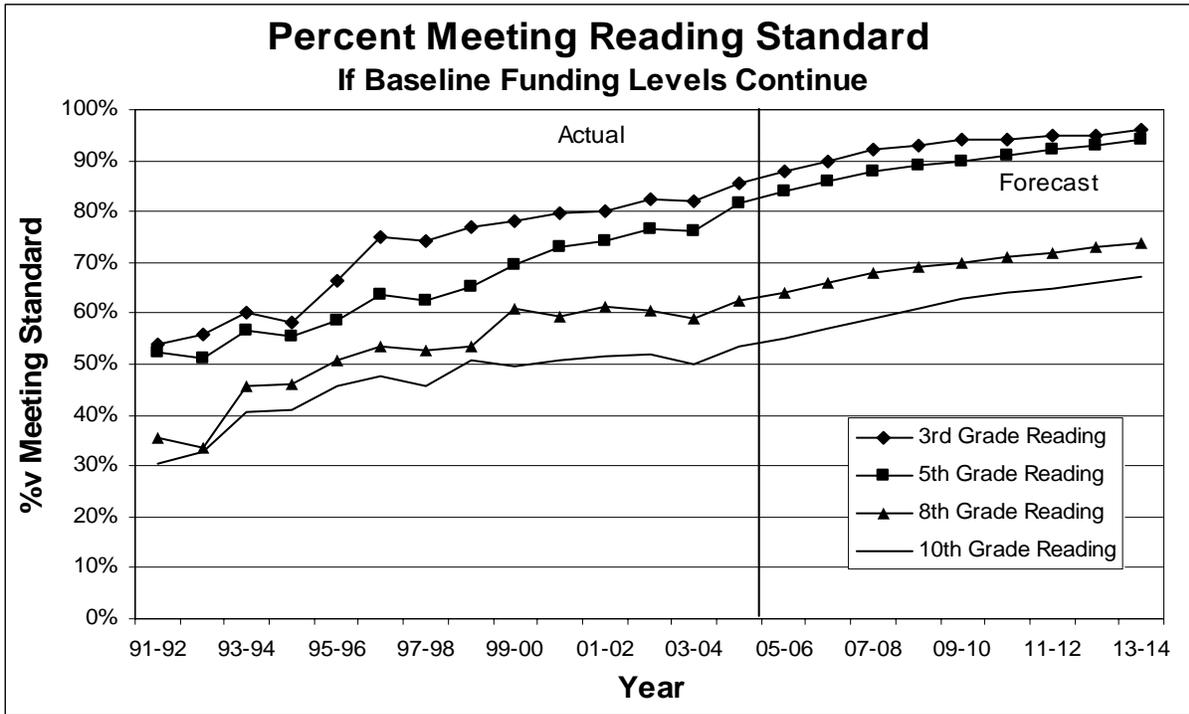


Exhibit 14

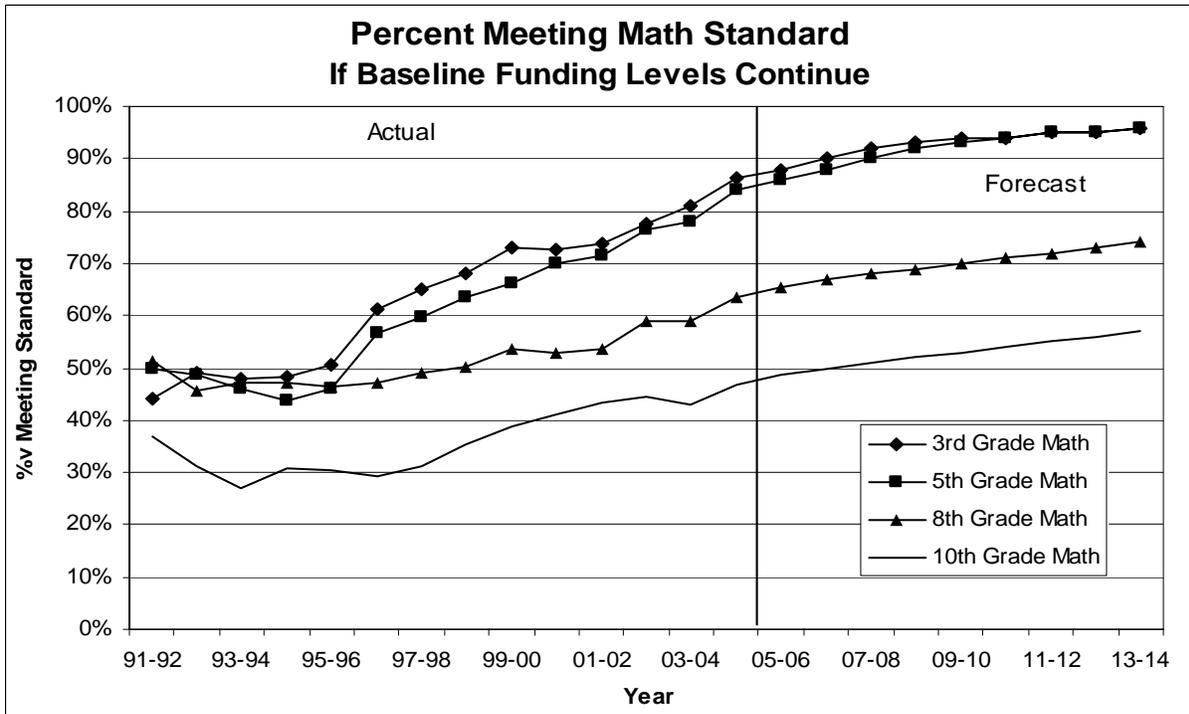


Exhibit 15

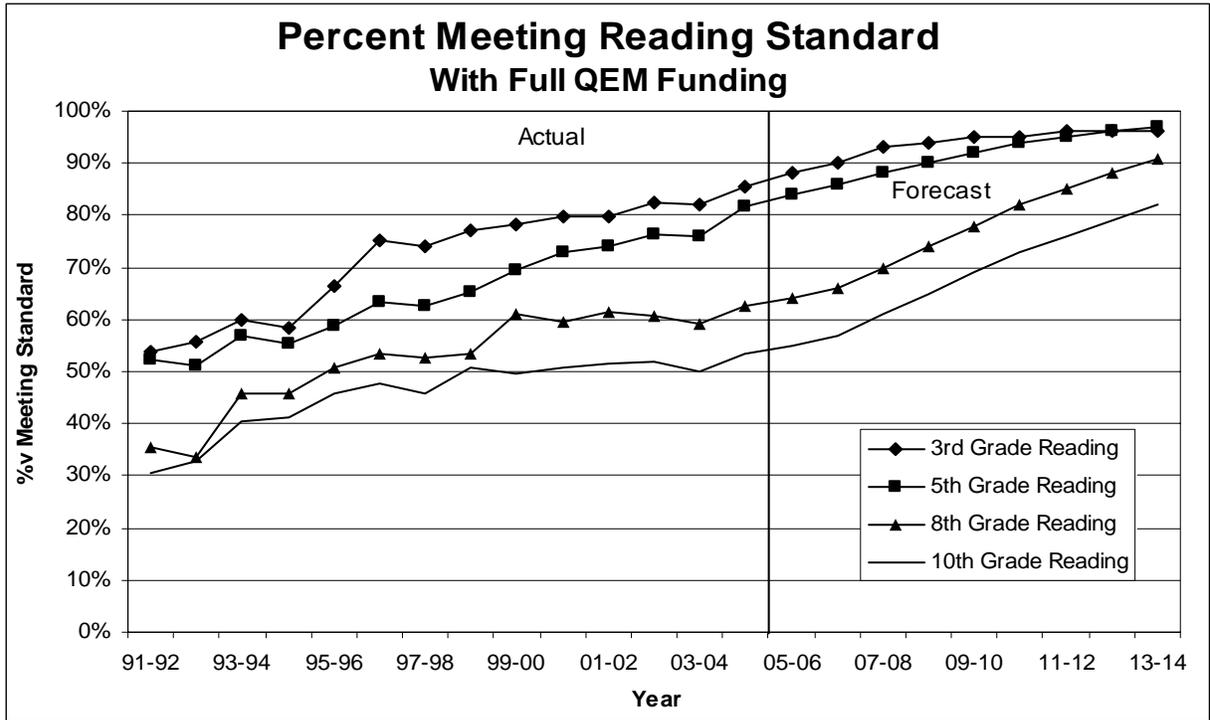
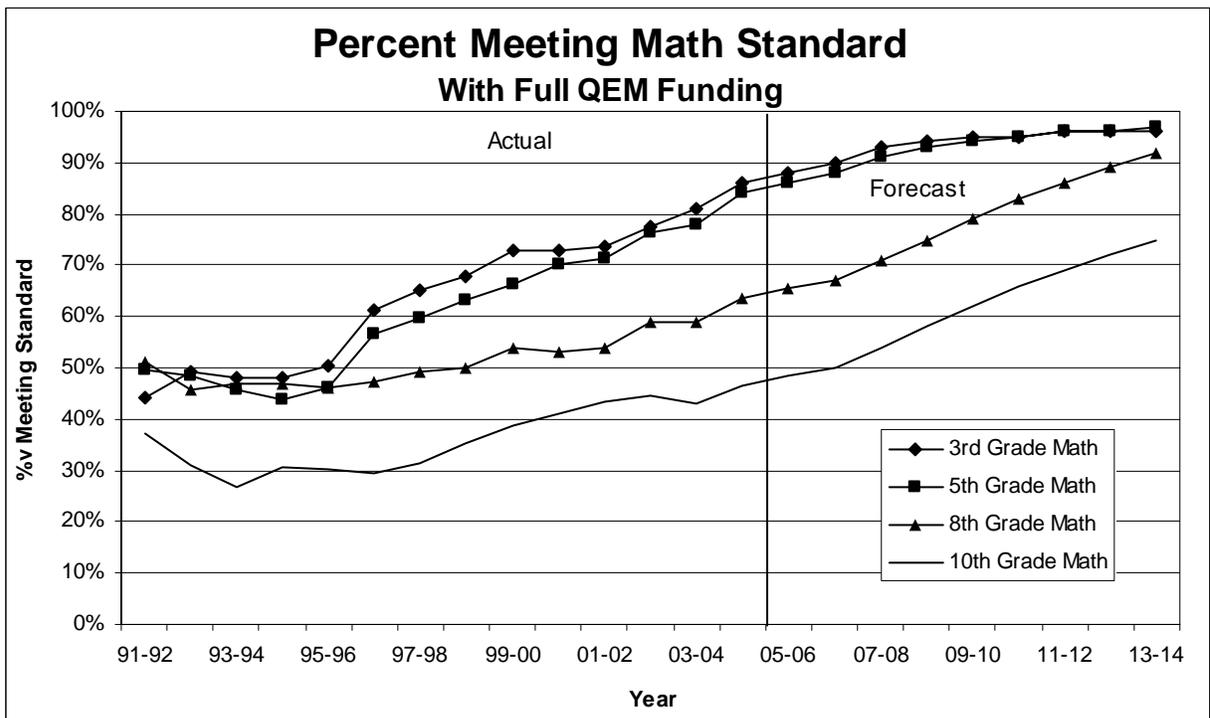


Exhibit 16



# **DOES MONEY MATTER?**

## **UNDERSTANDING THE RELATIONSHIP BETWEEN FUNDING AND STUDENT ACHIEVEMENT**

The prototype schools approach is based on current research on best practices and on high-quality data and provides valuable insights into the resources required to run highly effective schools. It also represents a valuable tool to evaluate the level of resources required to implement education policy proposals.

The prototype schools approach is not, however, able to provide direct estimates of the expected impact on student achievement of additional funding devoted to education. The Quality Education Model, along with other education models in the general category of “professional judgment” models, must rely on the judgments of education experts to predict the impact on student achievement of different levels of education resources.

School finance experts have developed an alternative approach that combines data on student achievement, funding levels, student and school characteristics, and other factors to estimate the relationship between funding and student achievement. These types of models, known as educational production functions, allow researchers to isolate the impact of additional resources on student achievement while controlling for other factors, such as student socioeconomic background, English proficiency, school size, and others. Early models of this type achieved mixed results, some finding a relationship between funding, but some others finding no relationship. More recent research, based on more accurate data and improved modeling techniques, has more consistently found a statistically significant relationship.

Using Oregon data on student achievement, per-student spending, and student and school characteristics, staff to the Quality Education Commission, with assistance from William Duncombe of Syracuse University, developed a production function model designed to estimate the relationship between the academic achievement of Oregon students and the instructional spending in Oregon schools. To estimate that relationship, we use a statistical technique known as multivariate regression to estimate the parameters of a model of the following general form:

The percentage of students meeting Oregon’s academic standards as a function of:

- Instructional expenditures per student
- Percentage of students served by ESL programs

- Percentage of students qualifying for free or reduced-price lunch (as a measure of student economic status)
- Percentage of students served by special education programs
- The share of the district's revenue from non-local sources (as a proxy for district efficiency)
- A comparative wage index to adjust for regional differences in resource prices

The goal of this analysis is to isolate the impact of instructional spending on the percentage of students meeting the state's academic standards while at the same time taking into account other factors that prior research has shown to have an independent influence on student achievement.

We estimated eight separate equations, one each for grades 3, 5, 8, and 10 for each of two subject areas: reading and math. The data used to estimate the equations are for the 2004-05 school year and were all obtained from the Oregon Department of Education's data files with the exception of the comparative wage index, which was obtained from the National Center for Education Statistics (NCES).

In five of the eight equations, the instructional spending variable has a statistically significant positive relationship with student achievement at the 5% level of significance, and in a sixth equation it is significant at the 10% level. In two equations, the 8<sup>th</sup> grade reading and the 10<sup>th</sup> grade math equations, the instructional spending variable is not significantly related to student achievement. The estimated relationships are shown in the graphs below.

Exhibit 17

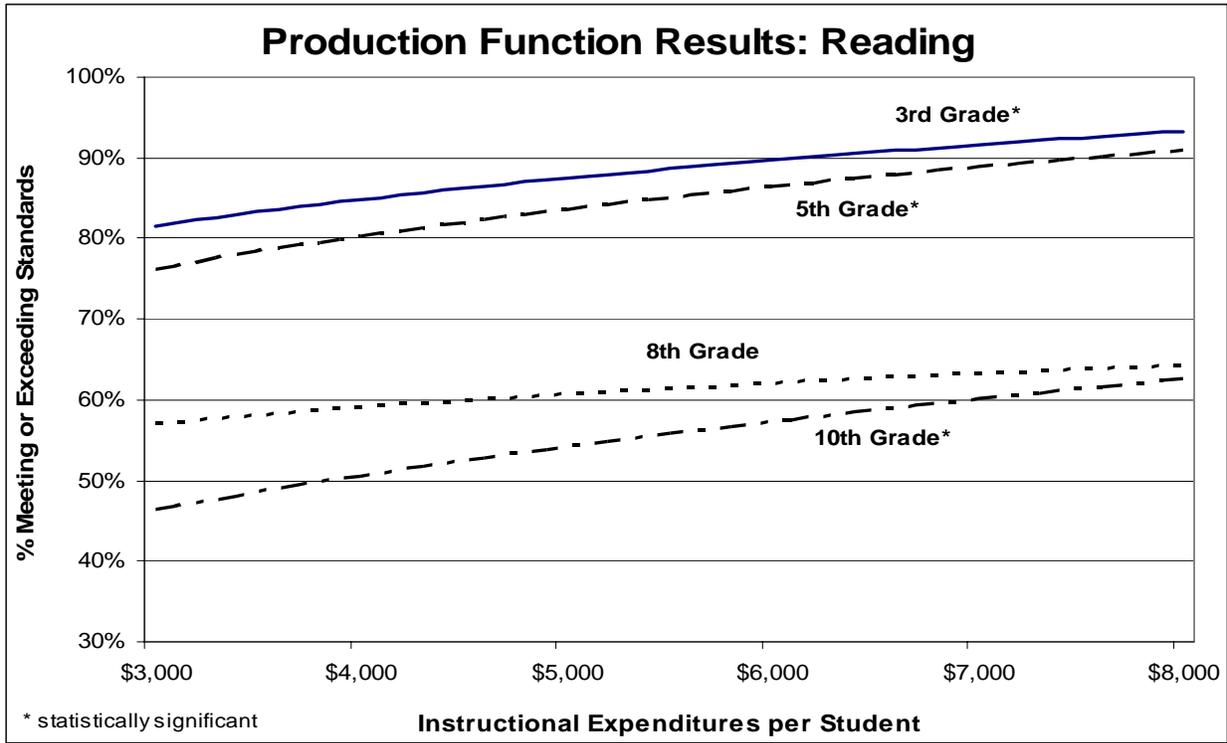
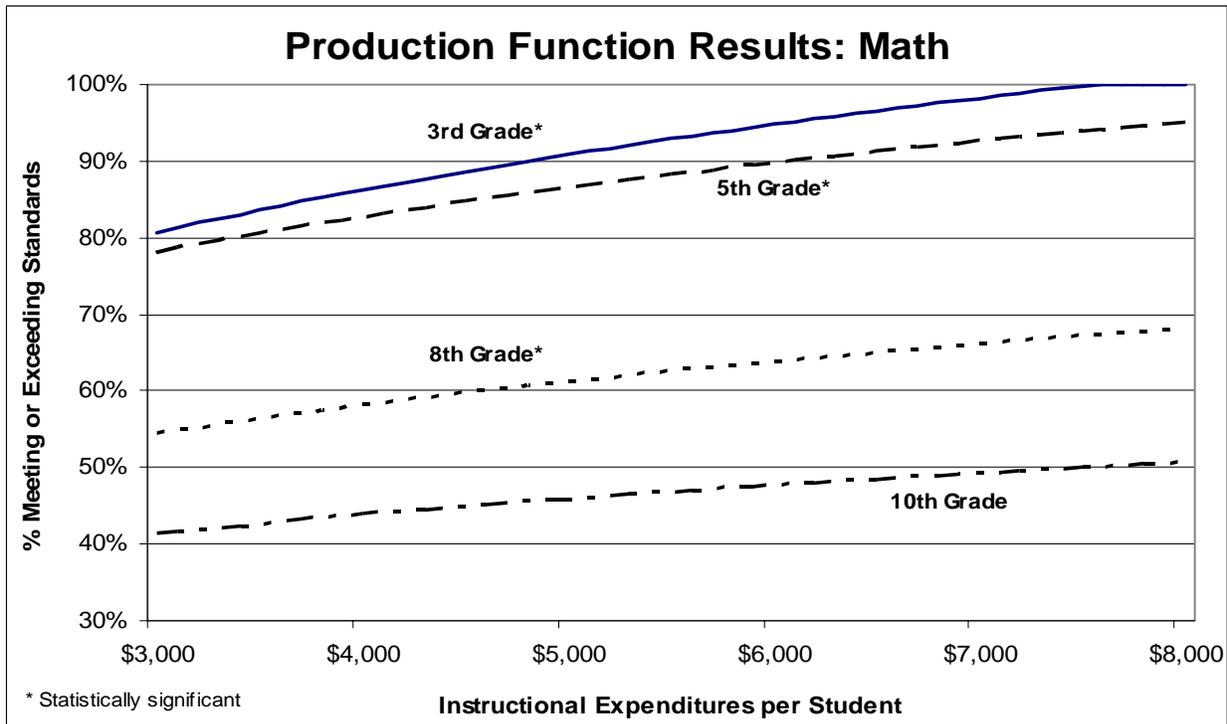


Exhibit 18



While these results are preliminary, they do provide evidence that increasing instructional expenditures in Oregon schools will lead to improved student achievement. The results also suggest, however, that more funding alone will not be sufficient to reach Oregon's academic goals. Oregon schools currently spend, on average, just under \$5,000 per student in instruction. Particularly in grades 8 and 10, even dramatically more resources devoted to instruction is unlikely to get Oregon to the federal No Child Left Behind (NCLB) goal of 99 percent of students meeting standard unless the added resources are accompanied by more effective educational strategies.

## **FUNDING TRENDS—WHAT CAN THEY TELL US ABOUT EFFECTIVE RESOURCE USE?**

Recently in Oregon and a number of other states there has been increasing interest in policies that would help direct proportionally more resources to direct instructional activities as a way to improve student achievement. In this section we look at historical spending patterns to see how resource allocation in Oregon schools has changed over time. That information may give us clues about how resources might be re-allocated in a way that research suggests may improve student achievement.

### **TRENDS IN SPENDING PER STUDENT**

A variety of methods exist to calculate spending per student, and many can be appropriate if the method is transparent and described thoroughly. For the purposes of the following analyses, we will focus primarily on a single measure, *current expenditures per student in fall enrollment*, which is commonly used by the National Center for Education Statistics and National Education Association for state spending rankings. *Current expenditures* consist of spending for the day-to-day operation of local public schools but *exclude* capital outlay and interest payments on debt. These expenditures include such items as salaries for school personnel, fixed charges, student transportation, textbooks and materials, and energy costs. *Students in fall enrollment* is the count of students enrolled in the fall of the school year, usually October (October 1 in Oregon).

Exhibit 19 reports Oregon's current expenditures for Public K-12 Schools increased from \$2.5 billion in 1990-91 to \$4.2 billion in 2001-02. Over that period, per student spending grew at an annual average rate of 3.8 percent. Subsequent to the 2001-02 school year, the effects of the economic downturn and corresponding state fiscal crisis are apparent with per student spending increasing from \$7,639 to only \$7,842 during the period 2001-02 through 2004-05. The state projects per student spending to increase to \$8,631 by 2006-07.

**Exhibit 19: Current Expenditures per Fall Enrollee,  
Oregon, 1991-2007 Actual and Projected (Not Inflation Adjusted)**

School Year	Fall Enrollment	Current Expenditures per Fall Enrollee	Current Expenditures for Public K-12 Schools (000s)
90-91	484,652	5,063	2,453,934
91-92	498,614	5,268	2,626,803
92-93	510,122	5,585	2,849,009
93-94	516,611	5,522	2,852,723
94-95	521,945	5,649	2,948,539
95-96	527,914	5,790	3,056,801
96-97	537,854	5,920	3,184,100
97-98	540,379	6,430	3,474,714
98-99	542,867	6,827	3,706,044
99-00	545,085	7,148	3,896,287
00-01	545,680	7,536	4,112,069
01-02	551,679	7,639	4,214,512
02-03	554,071	7,491	4,150,747
03-04	551,407	7,654	4,220,662
04-05 est.	552,320	7,842	4,331,293
05-06 est.	557,048	8,341	4,646,339
06-07 est.	559,669	8,631	4,830,256
Annual Growth Rates			
90-91 to 01-02	1.2%	3.8%	5.0%
01-02 to 06-07	0.3%	2.5%	2.8%

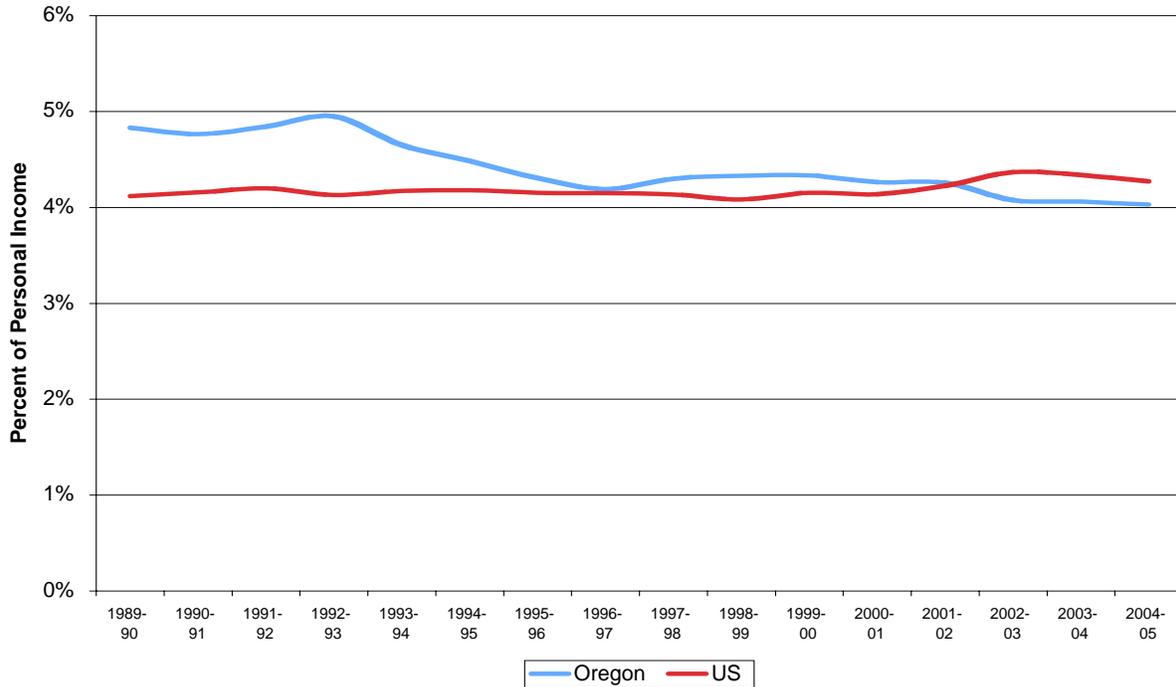
Source: The Chalkboard Finance Workgroup based on data from the Oregon Department of Education, National Center for Education Statistics, and the National Education Association

A comparison of current expenditures to total personal income in the state is a common and useful measure of trends in K-12 spending. Total personal income in the state is one measure of the state's capacity to spend on K-12 and other public services. Oregon's total personal income increased at an average annual rate of 6 percent during 1989 to 2002 (from \$47.6 billion to \$101.4 billion). From 2002 to 2005, Oregon's total personal income continued to increase, reaching \$116.9 billion in 2005.

Exhibit 20 shows that from 1989 to 2002 the share of Oregon's total personal income spent on K-12 current expenditures fell from 4.8 percent to 4.0 percent—indicating that K-12 spending did not keep pace with Oregon's expanding economy during the 1990s. Oregon's percentage of personal income spent peaked in 1992 at almost 5 percent. Over the period, Oregon's spending per total personal income trended toward the national average, which remained in the 4.1 to 4.2 percent range. The decade could be characterized as one in which Oregon transitioned from an above average spender on K-12 to an average spender. Immediately following this time period, from 2002 to 2005, the share of Oregon's total personal income spent on K-12 current expenditures fell below the national average of 4.4 percent, to roughly 4.1 percent in 2002-03. The downward trend continues in subsequent years, decreasing to 4.0 percent in 2004-05.

Limitations on property taxes and, in recent years, voters’ rejection of temporary tax increases underlie Oregon’s downward trend.

**Exhibit 20: Current Expenditures as a Share of Total Personal Income, US and Oregon, 1989-90 through 2004-05**



Source: ECONorthwest based on NCES, NEA, and Bureau of Economic Analysis data

**DETAILED ANALYSIS OF 2002-03 EXPENDITURES**

Data from the National Center for Education Statistics (NCES) data permit a detailed interstate review of two broad accounting categories known as “objects” and “functions”. Spending *objects* disaggregate spending by salaries, benefits, purchased services, and supplies. Spending *functions* include expenditures on instruction, school administration, operations and maintenance, and student transportation. In this section, we conduct a detailed review of expenditures for the 2002-03 school year—the most recent year data for interstate comparisons are available.

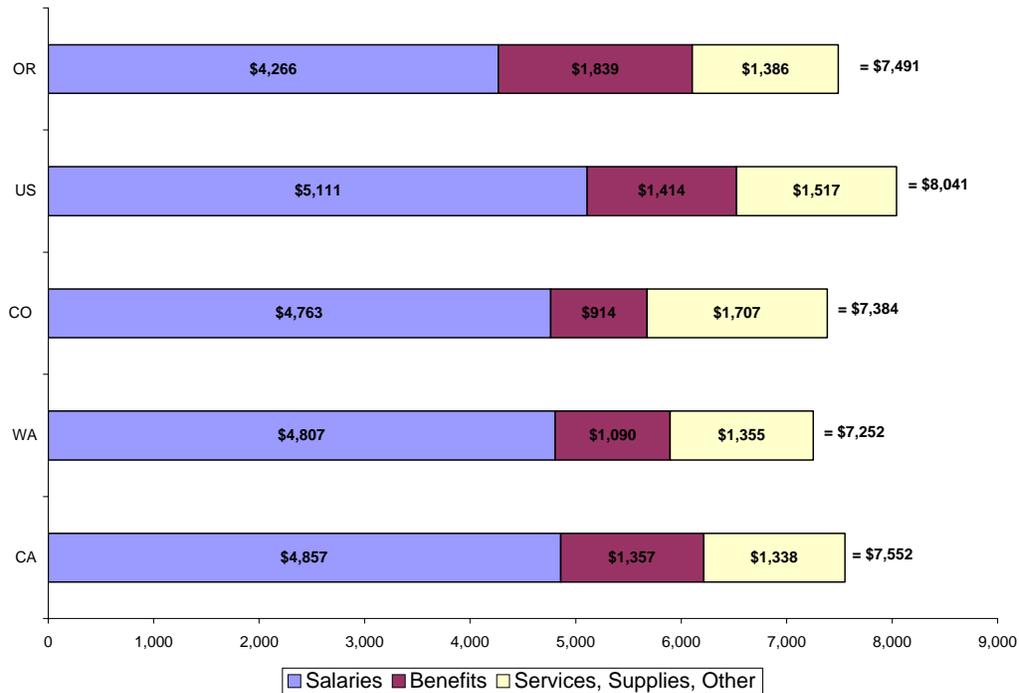
**SPENDING BY OBJECT**

Exhibit 21 compares Oregon’s spending per student (fall 2002 enrollees) in 2002-03 by accounting objects to comparable measures for the United States and two neighboring states: California and Washington. The NCES accounting framework includes the following categories:

- **Salaries.** Gross salaries of staff involved in instruction and administration of school activities including those of teachers, instructional aides, principals, librarians, counselors, support staff, and district administrators.
- **Benefits.** Staff benefits include amounts paid on behalf of employees for items including group insurance, social security contributions, retirement contributions, tuition reimbursement, unemployment compensation, and workers' compensation.
- **Services, Supplies, Other.** Such services include computer-assisted instructional expenditures, travel for instructional staff, per diem expenses, as well as the services of medical doctors, social workers, psychologists, psychiatrists, audiologists, and other consultants. Supplies includes classroom teaching supplies, audiovisual supplies, books, periodicals, medical supplies, films, tapes, and paper supplies. Also in this category is tuition spending, consisting of payments from public schools to private schools and public schools outside of the state. The "other" portion captures membership dues paid by schools or districts on behalf of staff and other goods and services that not captured in the categories mentioned above.

Overall, Oregon spent \$7,491 per student of which 57 percent (or \$4,266 per student) was associated with salaries and 25 percent (or, \$1,839 per student) with benefits. The figure shows Oregon spends \$845 less per student on salaries than the U.S. average. However, the lower spending per student on salaries is offset by the higher spending per student on benefits (+\$425). Oregon's spending per student is below the national average for supplies, tuition and other spending ( -\$131). Oregon's total spending per student is below the national average (-\$550). Oregon's salaries per student are below both Washington's and California's. However, as with the national comparison, Oregon's benefit expenditures per student are considerably higher: \$749 above Washington's and \$482 above California's. Oregon's spending per student is comparable to both Washington's and California's for supplies, tuition, and other spending.

## Exhibit 21: Current Expenditures per Student in Fall Enrollment by Object, 2002-2003



Source: ECONorthwest calculated from National Center for Education Statistics data

## SALARIES AND BENEFITS PER STAFF MEMBER

Using the same underlying salary and benefit data used to calculate *per student* averages in Exhibit 21, we can also calculate average values *per staff member*. In 2002-03, Exhibit 22 shows Oregon ranked 16<sup>th</sup> nationally and paid an average salary of \$42,942 per full time equivalent staff member (measured across all staff employed by public schools). Oregon ranked 2<sup>nd</sup> (behind Michigan) in benefit expenditures, spending an average of \$18,512 per staff member. Combining the salary and benefit figures, Oregon ranks 9<sup>th</sup> nationally in the average cost of the total compensation package per K-12 staff member (\$61,454).

**Exhibit 22: Average Salary, Benefits, and Total Compensation Cost per Full Time Equivalent Staff Member, Selected States 2002-03**

Average Salary Per Full Time Equivalent Staff Member			Average Benefit Cost Per Full Time Equivalent Staff Member			Average Total Compensation Cost Per Full Time Equivalent Staff Member		
Rank	State	Average	Rank	State	Average	Rank	State	Average
1	RI	56,296	1	MI	19,124	1	RI	74,543
2	CA	53,043	2	OR	18,512	2	MI	69,332
3	NJ	52,088	3	RI	18,247	3	CA	67,863
4	NY	51,701	4	WI	17,831	4	NJ	67,451
5	MI	50,208	5	WV	16,592	5	NY	66,853
16	OR	42,942				9	OR	61,454
	US	41,371		US	11,443		US	52,813

Source: ECONorthwest calculated with National Center for Education Statistics data

**SPENDING PER STUDENT (BY FUNCTION)**

NCES data also allow a similar analysis of per student spending by accounting function. Under this analysis, we consider the same level of spending (\$7,491 per student in Oregon) but separate the total by functional uses. NCES defines the following functional categories:

- **Instruction.** Spending associated with regular and part-time teachers, teacher aides, homebound teachers, hospital-based teachers, substitute teachers, and teachers on sabbatical leave.
- **Student and Staff Support.** *Student support services* consists of spending associated with attendance and social work services, guidance, health, speech pathology, and audiology. *Instructional staff support* consists of spending for supervisors of instruction, curriculum coordinators, and inservice training staff, school library staff, audiovisual staff, educational television staff, and staff involved in the development of computer-assisted instruction.

For the purposes of this analysis, we have also included “*other support*” services in this category, which includes expenses for the business support staff including the chief business officer, the staff for supervisor of fiscal services, budgeting, payroll, financial accounting, internal auditing, purchasing, warehousing, printing, and duplicating staff. The category also captures central support staff involved in planning, research, development, evaluation, and data processing.

- **General and School Administration.** Spending associated with board of education staff, board secretary, and negotiation staff, the superintendent’s staff, the superintendent, the office of the principal, department chairpersons, and the principal.
- **Operation and Maintenance.** Spending associated with the operations and maintenance

supervisor, operation staff (heating, lighting, ventilation, repairing, and replacing facilities and equipment), care and upkeep of grounds, and equipment staff.

- **Student Transportation.** Spending associated with the student transportation supervision staff, staff for vehicle operation, monitoring of students, and vehicle maintenance.
- **Food and Enterprise Operations.** This category captures gross spending associated with food services and enterprise operations financed by user charges.

Exhibit 23 shows Oregon's per student spending on instruction is \$494 below the U.S. average and falls between levels reported for Washington (Oregon is \$121 above) and California's (Oregon is \$153 below).

Overall, Oregon spends more than the U.S. average in the staff and student support category (+\$187). A major source of difference in per-student expenditures is in the so-called "other" support service area, which includes budgeting, payroll, purchasing, and warehouse activities. Oregon's Secretary of State recently concluded Oregon could close the gap in spending on these services by taking advantage of economies of scale through bulk purchasing, obtaining donations and in-kind contributions from foundations and local businesses, and sharing the cost of specialized staff across schools and districts<sup>1</sup>.

Oregon's \$329 per student expenditure on transportation is close to the U.S. average (+\$4) but exceeds Washington's and California's level by \$49 and \$181, respectively. Oregon's higher expenditures can be explained by two factors: (1) Oregon transports a higher proportion of its students at public expense than some other Western states<sup>2</sup> and (2) Oregon's expenditures per student transported are relatively high<sup>3</sup>. As such, any initiatives to reduce student transportation expenditures in Oregon would have to incorporate some combination of transporting fewer students and reducing the per-unit costs of transporting students.

In other non-instructional areas, Oregon's per student spending falls below the national average. Per student spending of \$618 on operations and maintenance is \$146 less than the national average and is roughly \$100 less than Washington and California's spending per student. While

---

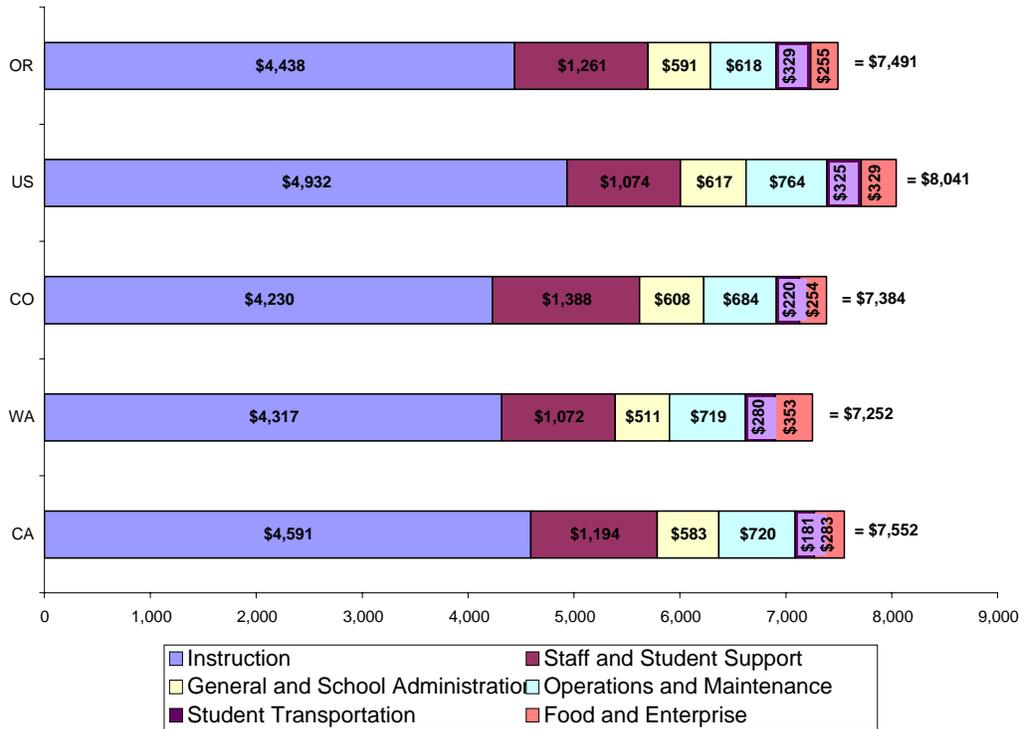
<sup>1</sup> See Oregon Secretary of State. May 19, 2004. *Oregon Department of Education: Analysis of Spending for K-12 Student Support Services*. Salem, Oregon.

<sup>2</sup> Based on data from School Transportation News, in 2000-01, Oregon transported 49 percent of K-12 students at public expense compared to California (16 percent), Washington (48 percent), Idaho (44 percent), and Utah (34 percent).

<sup>3</sup> Based on data from School Transportation News and NCES, in 2000-01, Oregon's spent \$753 per student transported, which exceeded the U.S. average (\$645) and levels in a number of nearby states: Washington (\$606), Idaho (\$660), and Utah (\$469). California spent \$1,121 per student transported in 2000-01.

lower per student spending may facilitate higher short-term spending in other areas, it may also result in deferred maintenance that could cause increased maintenance or capital expenditures in the long-term.

**Exhibit 23: Current Expenditures per Student in Fall Enrollment by Function 2002-03**



Source: ECONorthwest calculations based on National Center for Education Statistics data.

## DETAILED ANALYSIS OF 1997-2003 SPENDING

Data from the National Center for Education Statistics (NCES) also permit an in-depth analysis of Oregon’s K-12 spending over time. In Exhibit 24, the accounting functions and objects appear in the same table. So, for example, we can isolate salaries paid to people who were engaged in instructional activities. Oregon spent \$2,412 per student on instruction-related salaries in 1996-97 and \$2,830 in 2002-03. Meanwhile, total current expenditures increased from \$5,920 to \$7,491, or 4 percent annually.

While overall spending increased 4 percent annually, growth rates vary considerably by function/object pair. For example, spending on salaries for operations and maintenance declined 0.8 percent annually while benefits in the staff and student support area increased by 10.7 percent per year. Areas of high per student growth include benefits (across almost all functional

categories), as well as the staff and student support and transportation functions. Spending per student on instruction increased at a slower rate than the overall spending total.

### Exhibit 24: Oregon Spending per Student Average Annual Growth Rate 1996-1997 to 2002-2003

OREGON SPENDING PER STUDENT 1996-97							
	Instruction	Staff and Student Support	General and School Administration	Operations and Maintenance	Student Transportation	Food and Enterprise	TOTAL
Salaries	2,412	449	345	227	80	60	3,574
Benefits	793	174	117	89	33	27	1,232
Services, Supplies, Other	380	158	63	256	130	126	1,113
TOTAL	3,584	782	525	573	243	213	5,920
OREGON SPENDING PER STUDENT 2002-03							
	Instruction	Staff and Student Support	General and School Administration	Operations and Maintenance	Student Transportation	Food and Enterprise	TOTAL
Salaries	2,830	666	377	217	107	70	4,266
Benefits	1,165	320	153	106	56	38	1,839
Services, Supplies, Other	443	275	61	295	166	147	1,386
TOTAL	4,438	1,261	591	618	329	255	7,491
OREGON SPENDING PER STUDENT AVERAGE ANNUAL GROWTH RATE 1996-1997 TO 2002-2003							
	Instruction	Staff and Student Support	General and School Administration	Operations and Maintenance	Student Transportation	Food and Enterprise	TOTAL
Salaries	2.7%	6.8%	1.5%	-0.8%	4.9%	2.6%	3.0%
Benefits	6.6%	10.7%	4.7%	3.0%	9.1%	6.0%	6.9%
Services, Supplies, Other	2.6%	9.6%	-0.6%	2.4%	4.2%	2.6%	3.7%
TOTAL	3.6%	8.3%	2.0%	1.3%	5.2%	3.1%	4.0%

Source: ECONorthwest analysis of National Center for Education Statistics data

This review of spending by category over time suggests a number of preliminary conclusions that warrant further investigation.

- The increase in spending on benefits across all function categories is consistent with the dramatic increase in employer PERS contribution rates and the rapid increases in health insurance premiums faced by Oregon school districts. To the extent that those costs can be reduced over time, either through more favorable market conditions or through explicit public policies, then the cost savings can be directed to programs/uses that contribute to improved student outcomes.
- The slower growth in spending on administration than on instruction and other categories suggests that districts have made at least some progress in reducing administrative overhead costs relative to other categories of spending. To the extent that those reductions do not impair districts' ability to effectively run their schools and programs, they then free up resources to be used elsewhere.
- The generally larger increases in spending for staff and student support than for instruction suggest the need for more in-depth study. Those activities, to the extent that they provide services that increase the effectiveness of classroom instruction, may be critical to the success of students. On the other hand, to the extent that above-average spending growth in these categories represents inefficiencies, opportunities exist to redirect resources to more productive uses.

- The more rapid growth in transportation expenditures certainly reflects recent increases in fuel prices, but it also may reflect inefficiencies resulting from Oregon's approach to funding student transportation. By reimbursing districts for 70% or more of their transportation expenditures, the state is providing little or no incentive for districts to seek transportation cost savings. More study is needed to determine if there are different ways to fund transportation that provide such incentives.

The results of the production function model presented earlier, when combined with this historical review of spending patterns, has some interesting implications. The production function analysis provides empirical evidence that additional resources devoted to instructional activities leads to improved student achievement. The analysis of historical spending patterns suggests that there may be room for improving the efficiency in certain non-instructional activities, which could free up more resources for instruction.

## COMMUNICATION INITIATIVE

One aspect of the charge to the Commission is the issuing of a report to the Governor and the legislature about current conditions in the education system. In this cycle, it occurred to us that perhaps that audience was too limited. We as Commissioners agree that we all deal with a mind-numbing array of sources of information about our Oregon public schools, and we see most information delivered to create a certain bias of one kind or another.

The Quality Education Commission sees itself positioned uniquely to be an independent voice for the system. The data we receive and share comes directly from the Department of Education, which receives it directly from the public schools. The data relates to student achievement and to costs and resources. The goal of our Commission is simply to state the facts. We are a very credible group, working independently, with a lot of information to share.

However, we have not been as effective as we might have been in sharing it. The public wants to know about school spending, but they also want to know about the culture of the current system. Are the rumors being reported about our education system really true? Has school changed a lot since each of us attended? If so, how and why? Can we take pride in the way that we as citizens of Oregon are supporting our schools, or do we need to make some significant changes?

If the public were to receive good information about schools in Oregon in a clear, understandable manner, they would find it much easier to analyze conflicting messages that come their way. When people understand strengths and weaknesses in the current system, they are much more likely to want to participate in shaping that system.

It is our intention to grapple with strategies over the next few months that can enhance the public's understanding of the education system in Oregon: its strengths and its needs; its joys and its sorrows. When there is a clear understanding about our current situation, we can blaze a better path into the future so that all students can learn and grow.

## NEXT STEPS

The commission has looked objectively at funding and best practices and how they relate to a quality education for Oregon students. Despite levels of funding that have not kept up with cost increases in recent years, improved instruction has allowed Oregon students to experience an improvement in the quality of their education. The money the people of Oregon have spent on education has not been wasted. The Commission believes, however, that additional resources, when combined with improved educational practices, are required if student achievement is to continue to improve. In that light, the Commission has made the following findings and recommendations:

### Findings:

- Student progress in reaching the benchmark standards has slowed in most grades.
- Per-student funding in Oregon has dropped below the national average.
- Special student populations, particularly special education students and students with limited English proficiency, are increasing faster than the general student population. These special populations require greater resources to meet the state's academic standards.
- Class sizes continue to rise.
- Course offerings outside of the subject-areas tested on the state's standardized tests have diminished, resulting in a narrowing curriculum in many schools.
- Oregon's Pre-kindergarten, K-12, and post secondary sectors are not well aligned in either their curricula or their resource use.

### Recommendations:

- Provide adequate and stable funding for Oregon's schools.
- Continue achievement gains by targeting additional resources to the areas where added resources have the greatest impact. Areas such as early childhood development policies, early reading initiatives, and high school restructuring appear to show the most promise.
- Conduct more research into best practices and effective resource use.
- Continue efforts to improve the governance and accountability structures that promote more effective use of resources across all three sectors of Oregon's educational system: Pre-kindergarten, K-12, and post secondary.
- Continue efforts to build integrated data systems to foster alignment and coordination

among all three education sectors as well as with social service agencies, business, and the public.

- Develop capacity to evaluate education's role in improving Oregon's economy and lowering social services costs.

We would remind all readers that during the fall of 2006 the Governor will be developing his recommended budget. As he does so, the Quality Education Commission and Staff are prepared, at his request, to review various investment proposals and cost them out. In addition, we would welcome the opportunity to engage in dialogue with the Governor as he develops his budget recommendations.

The Commission also applauds the work of and thanks the Chalkboard Project for incorporating the Quality Education Model into its work, and for broadcasting the work of the database through the Open Books project. They have made a great effort to reach out to the public and have used the Quality Education Commission's work.

The Quality Education Commission and staff stand ready to support others who wish to engage the public in dialogue about education quality and funding.

Our final report to the Legislature will be produced in December and will offer further analysis and more detailed recommendations on funding priorities.