STATE BOARD OF EDUCATION

HEARING TYPE: __X__ INFORMATION/NO ACTION

DATE: JANUARY 25, 2007

SUBJECT: **DATA SYSTEMS FOR EDUCATION ACCOUNTABILITY**

SERVICE UNIT: State Board of Education
Edie Harding, Executive Director

PRESENTERS: Evelyn Hawkins, Research Associate, SBE
Nina Oman & John Bowden, Research Analysts, JLARC
Joe Egan, Chief Information Officer,
Information Technology Services, OSPI
Marge Plecki, Associate Professor, Educational Leadership and
Policy Studies, College of Education, University of Washington
Dr. Lin Douglas, Interim Executive Director, Professional Educator
Standards Board (PESB)

BACKGROUND:

These presentations are to inform the Board about the types of student and teacher data available in Washington for performance indicators that may be part of an accountability system.

Evelyn Hawkins will be presenting a brief description of the Data Quality Campaign, a national effort aimed at the development of statewide longitudinal data systems. A memo to the Board is included here.

Nina Oman and John Bowden from the Joint Legislative Audit and Review Committee (JLARC) recently completed a study of K–12 data. The purpose of the study was to identify data necessary to understand the relationship between expenditures and outcomes. Their presentation covers four categories of data: expenditures, teacher/staff, students, and community/school. They will speak about data that currently exists in our systems and recommendations for additional data. The summary of their report and a chart regarding student-level data are included.

Joe Egan from OSPI will be presenting an overview of current data systems at OSPI and the availability of data for accountability purposes. He will also present plans for next steps with regard to these data systems.

Marge Plecki from the University of Washington has conducted various studies of teachers in Washington. She will present these studies with a particular focus on the availability of data on Washington's teachers.

Dr. Lin Douglas will provide the PESB perspective on an educator work force database.

M E M O R A N D U M

DATE: January 11, 2007

TO: State Board of Education Members

FROM: Evelyn Hawkins

RE: Data Systems for Education Accountability

The purpose of this memorandum is to provide an overview of longitudinal data systems for student performance indicators for accountability with specific reference to the efforts of the National Center for Educational Accountability's Data Quality Campaign (DQC).[1]

I. Background

Although the call for accountability is not new, current state and national efforts have promoted the desire for greater accountability. In 2005 Governor Gregoire signed Executive Order 05-02 directing state agencies to adopt a comprehensive government management, accountability, and performance (GMAP) system. GMAP asks agencies to identify performance indicators to be used to assess ongoing performance and inform the Governor of continuous improvement. The intent is that the performance indicators in GMAP will allow leaders to identify agency problems and make decisions with greater clarity and accuracy, give managers new tools to solve problems and improve services, and give the public a way to judge the effectiveness of government programs.

A national accountability effort is the Baldridge Education Criteria for Performance Excellence created to provide the basis for assessment and feedback to organizations and, as with GMAP, support continuous improvement. The criteria focuses on the following areas of organizational performance: student learning outcomes; student- and stakeholder-focused outcomes; budgetary, financial, and market outcomes, workforce-focused outcomes; process effectiveness outcomes; and leadership outcomes. The intent of the Baldridge Education Criteria is to help educators improve the quality of student learning and the effectiveness of their classrooms, schools, and districts.

More directly relevant to the State Board of Education is its mandate to "… implement a standards-based accountability system to improve academic achievement …" (RCW 28A.305.130). Access to data on students and teachers will be necessary as the accountability system is implemented. The data will be expected to assess and track student performance overtime as well as answer policy questions posed by policymakers and educators. So, what would such a data system look like?

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[1] Information on the Data Quality Campaign and on elements of a longitudinal data system are from DQC's website: http://www.dataqualitycampaign.org.

II. Data Quality Campaign

A national effort committed to the development of longitudinal data systems to inform and support improving student academic achievement is the Data Quality Campaign (DQC). The DQC was establish in 2005 with support from The Bill and Melinda Gates Foundation and is managed by the National Center for Educational Accountability. The impetus behind its creation was to promote coordination and eliminate duplication by bringing together separate, but similar, efforts regarding educational data systems.

The goals of the DQC are threefold:

- To have longitudinal education data systems in 50 states by 2009.
- To increase understanding by policymakers and educators of how to use longitudinal and financial data in their efforts to improvement student achievement.
- To promote data standards and efficient data transfer and exchange.

Why longitudinal data systems? Policymakers and educators need a longitudinal data system capable of providing timely, valid, and relevant data in order to answer key policy questions. With such a system, teachers would have information they need to tailor instruction to help each student improve; administrators would have information to effectively and efficiently manage; and policymakers would have information to evaluate which policy initiatives show the best evidence of increasing student achievement.

The DQC determined that a robust longitudinal data system that can be used for informing the improvement of student achievement should have the following ten essential elements:[2]

1. A unique statewide student identifier that connects student data across key databases across years.
2. Student-level enrollment, demographic, and program participation information.
3. The ability to match individual students' test records from year to year to measure academic growth.
4. Information on untested students and the reasons they were not tested.
5. A teacher identifier system with the ability to match teacher to students.
6. Student-level transcript information, including information on courses completed and grades earned.
7. Student-level college readiness test scores.
8. Student-level graduation and dropout data.
9. The ability to match student records between the P–12 and higher education systems.
10. A state data audit system assessing data quality, validity, and reliability.

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[2] These ten essential elements are necessary but not sufficient for a robust longitudinal data system. In constructing a longitudinal data system, states also need to attend to privacy protection, data architecture, data warehousing, interoperability, portability, professional development around data processes and uses, and researcher access.

In August 2006 the DQC conducted a survey of states to determine which of the ten essential elements of a longitudinal student data system would be in place in a state as of the 2006–07 school year.

Findings of Survey of Data Systems: National and Washington

Based on states' responses, the survey found that states ranged from having one to having nine of the essential elements; Washington has eight.

Number of States by Number of Essential Elements of a Longitudinal Data System: 2006-07 School Year
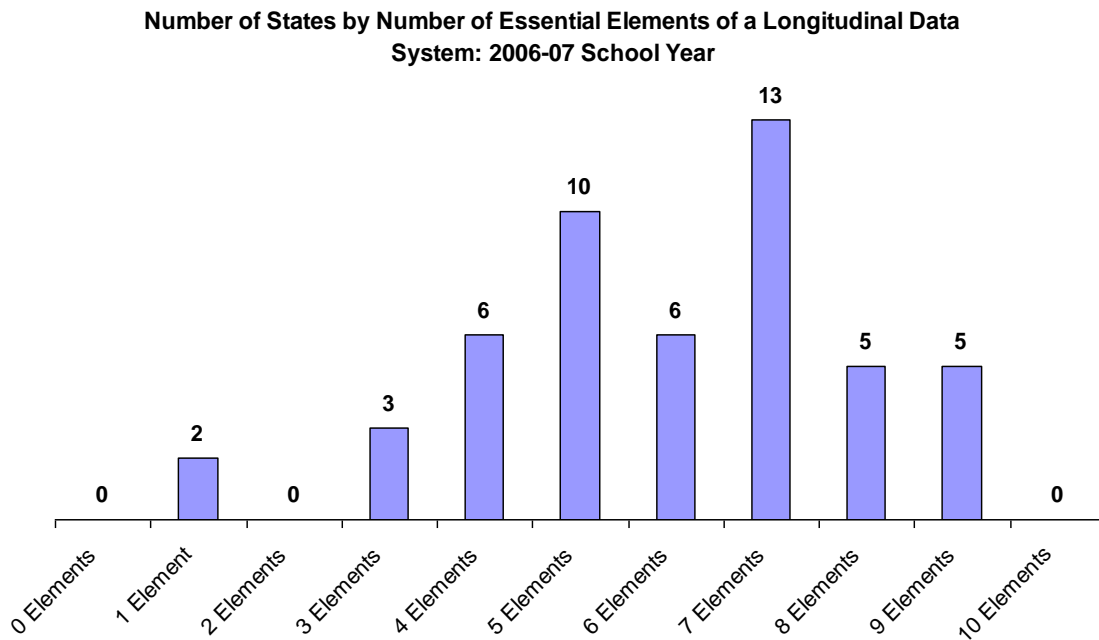
The elements that Washington does not have are #5-a teacher identifier system with the ability to match teachers to students and #7-student-level college readiness test scores. As shown in the chart below, these two elements, in addition to #6, are the three that the fewest states have.

Number of States Having Essential Element of A Longitudinal Data System: 2006-07 School Year
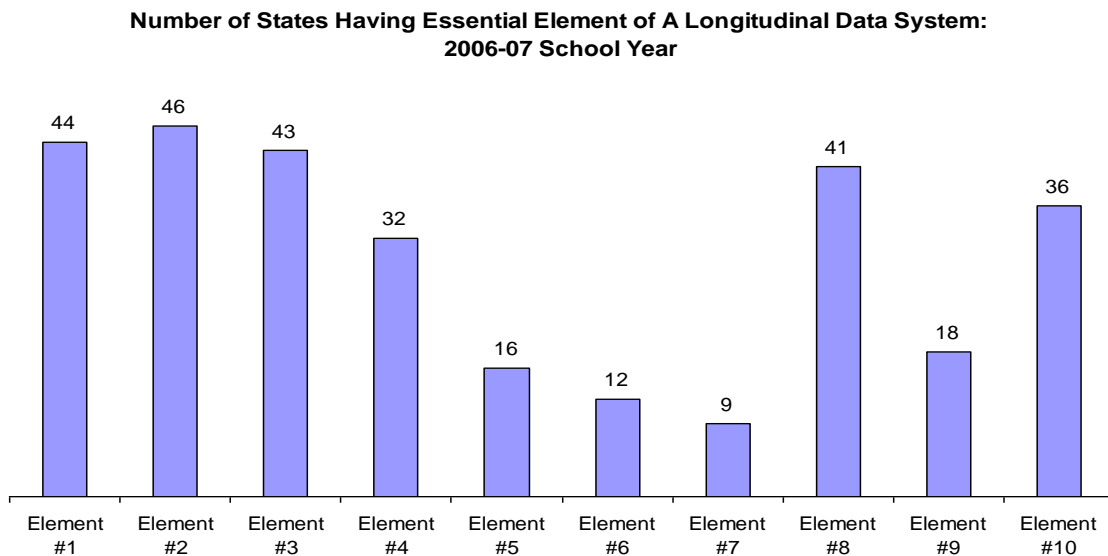
III. Uses of Data Systems: State Indicators

A well-designed and robust longitudinal data system as described by the DQC would provide data for performance indicators that are part of a state's accountability system and have the ability to answer key policy questions.

A study by the Education Commission of the States (ECS) found that states measure student achievement and school performance through a variety of indicators.[3] These indicators fall into four major categories related to:

1. Students, including assessment scores, demographics, dropout rate, and truancy.
2. Professional staff, including attendance, experience and salary levels.
3. Program information, such as curriculum, climate and parent involvement.
4. Expenditures and the use of resources.

The first category of indicators relate directly to student achievement. Indicators in the other three categories are perceived to have a relationship to student achievement. ECS found that states have used these indicators in two primary ways: 1) to inform the public about its schools and students; and 2) to determine whether a district or school qualifies for rewards or sanctions.

In addition to providing data for the performance indicators, the longitudinal data system should be able to answer key policy questions asked by policymakers and educators. Such questions include the following:

- Which schools, school programs, or school structures produce the strongest academic growth for their students?
- Which teacher preparation programs produce the graduates whose students the strongest academic growth?
- What achievement levels in middle school indicate that a student is on track to success in rigorous courses in high school?
- Are secondary students taking the rigorous courses needed to prepare them for college?
- What high school performance indicators (e.g., enrollment in rigorous courses or performance on state tests) are the best predictors of a students' success in college or the workplace?
- What is the relationship between high school course-taking patterns, remediation and success in college?
- What are the differences in college-going rates among certain groups of high school graduates (e.g., race, gender, income, etc.)?

As the State Board of Education proceeds with the development of an education accountability system, it is important to keep in mind the capacity of the statewide longitudinal data system.

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[3] Education Commission of the States, *State Performance Indicators*, January 2002. http://www.ecs.org/clearinghouse/32/12/3212.htm.

State of Washington
Joint Legislative Audit and Review Committee (JLARC)

K-12 Data Study

Preliminary Report

January 4, 2007

*Upon request, this document is available
in alternative formats for persons with disabilities.*

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The Joint Legislative Audit and Review Committee (JLARC) carries out oversight, review, and evaluation of state-funded programs and activities on behalf of the Legislature and the citizens of Washington State. This joint, bipartisan committee consists of eight senators and eight representatives, equally divided between the two major political parties. Its statutory authority is established in RCW 44.28. This statutory direction requires the Legislative Auditor to ensure that performance audits are conducted in accordance with Government Auditing Standards as applicable to the scope of the audit.

JLARC staff, under the direction of the Committee and the Legislative Auditor, conduct performance audits, program evaluations, sunset reviews, and other policy and fiscal studies. These studies assess the efficiency and effectiveness of agency operations, impacts and outcomes of state programs, and levels of compliance with legislative direction and intent. The Committee makes recommendations to improve state government performance and to correct problems it identifies. The Committee also follows up on these recommendations to determine how they have been implemented. JLARC has, in recent years, received national recognition for a number of its major studies.

Study Background

The Joint Legislative Audit and Review Committee (JLARC) conducted this study to enhance both the Legislature's and school districts' ability to **make informed resource commitments**. A JLARC review of school spending and performance in November 2005 found that while schools are increasingly held accountable for the performance of their students, **school-level expenditures are _not_ reported to the state**.

Study Objectives

To explore the connection between school expenditures and student and school outcomes, this study focuses on the following four objectives:

1. Describe existing (and planned) data systems and accounting practices;

2. Identify data elements that may prove helpful for evaluating the relationship between resource commitments and performance;

3. Propose potential models for collecting and reporting resource and performance information; and

4. Describe associated changes to information systems and accounting practices under various data models.

Types of Data that Are Necessary

The relationship between expenditures and outcomes is complex. To help explain why a dollar expended a certain way either produced or did not produce the desired outcome, four types of data are necessary:

1. School-Level Expenditure Data;

2. Descriptive Data about Teachers and Other Staff;

3. Descriptive Data about Students and Student Outcome Data; and

4. Descriptive Data about Schools and Communities.

Conclusions

JLARC staff reviewed the literature, surveyed other states, and consulted with researchers, school staff and administrators, and state agency staff and concluded that:

Fairly reliable data already exist that account for most staff salaries and benefits expended by school. These data could be improved by:

- Requiring that the same set of school codes be used to report both salary and benefit expenditures and school outcomes; and

- Requiring that end of year, total expenditures be reported by school and by staff member for all salaries and benefits.

Actual expenditures for activities related to teaching and its support should be reported by school. **All other expenditures should be allocated to schools using a standardized statewide methodology.**

Better data about teachers and staff are needed, including:

- Teacher schedules, including grade(s) and subject area(s) for courses being taught;

- Types of certifications and endorsements;

- Academic degrees, majors, and routes to certification;

- Professional growth plans and progress toward meeting goals; and

- Reasons for additional pay for certificated staff.

OSPI collects most of the student descriptive and outcome data identified in research literature as essential, but these data could be improved by adding:

- Routine data audits to assess the comparability of student data collected from the districts;

- College readiness test scores; and

- Better information about courses, including course minutes and core coursework completed, and standard conventions for naming courses.

Further consideration and analysis are needed to determine the costs and benefits of reporting additional school and community information. Some of these data are now collected via surveys and not always collected by individual schools. Because of the complexities involved with collecting and reporting some of these data, we identify these data elements as "useful" rather than "necessary."

Summary of Recommendations:

- OSPI, in consultation with others, should develop state standards and methodologies for reporting and allocating school-level expenditures.

- OSPI should collect improved information about teachers and staff, including teacher schedules, qualifications, professional growth, and reasons for additional pay.

- OSPI should conduct regular audits of the student data it collects.

- OSPI should collect better information about courses, including course minutes, and core coursework completed by students in preparation for college. OSPI should also develop statewide conventions that districts adhere to when naming courses.

- OSPI should conduct an analysis to determine the college readiness test that best fits the state's needs.

The diagram shown on the following page provides a summary of the current status of K-12 data collected by the state, with the grey-shaded areas indicating a need to collect additional data. The diagram also shows how data could be linked together. By linking the different types of data together, researchers and policymakers can learn how teacher, staff, and student characteristics affect the relationship between expenditures and outcomes.

School Expenditure Data

School ID
Employee ID
Expenditures for teacher/staff salaries and benefits (94%)

School ID
Object Code
Activity Code
Expenditures for teacher/staff salaries and benefits (6%)
Non-salary expenditures directly related to teaching and its support at a single school
Allocated expenditures for all other costs

Gray shaded = Missing data not available for every school

Staff/Teacher Descriptive Data

School ID (Location Code)
Employee ID/Certification No.
Birth date, gender, race/ethnicity
Program assignment
Job duty code
Years of experience
Highest degree obtained
Institutions attended
Years degrees granted
Academic credits beyond highest degree
In-service credits
Grade span taught
Types of certification and years earned
Certifications and endorsements
Teacher subject knowledge test scores
Teacher schedules including courses or grades and subject areas taught
Academic majors, degrees, and routes to certification
Professional growth plan and record of professional development training completed
Additional pay for certificated staff

Student Descriptive and Outcome

School ID
Teacher/Employee ID
Student ID
School Year
Grade level

Demographic information (e.g., race/ethnicity, gender, disability status)

Program participation (e.g., Title I, free/reduced lunch)

Transcripts: courses completed and grades (planned)

Graduation/dropout data:
Expected graduation year
Actual graduation year

Test scores
WASL scores (grades 3-8 and 10)
Kindergarten readiness (planned)
K-3 outcomes (planned)
College readiness

Ability to match to baccalaureate records

Course minutes

Core courses completed

School/Community Descriptive

School ID
School Size
Percentage of students by program
Student health and risk factors
Income/education (Census data)
Nine characteristics of effective schools
Percentage of students bused
Volunteer hours
Student access to computers and Internet
Condition and use of school facilities

Source: JLARC.

Figure 5 – Summary of Student Descriptive and Outcome Data and Collection Status

Necessary Data Elements	Data Currently Collected by Districts and Reported to the State	Data Currently Collected by Districts, but NOT Reported to the State	Data NOT Currently Collected by Districts
A unique statewide student identifier that allows matching of student records from grade to grade and across campuses and/or districts	☑		
Student-level enrollment, demographic and program participation information	☑		
Information on untested students	☑		
Student-level transcript information, including information on courses completed and grades earned	☑ (planned)		
Student-level graduation and dropout data	☑		
A state data audit system assessing data quality, validity and reliability	☑ (technical standards only – no system in place to audit comparability of data)		
The ability to match individual students' test records from year to year to measure academic growth	☑ WASL results for grades 3-8 and grade 10.		
The ability to match student records between the K-12 and higher education systems	☑		
Student-level college readiness test scores		☑ Some districts and schools may administer these tests for their own use	☑ Some districts and schools do not administer these tests
Family income (estimated using free/reduced lunch)	☑		
Course minutes		☑ Some districts collect this information on student schedules.	☑ Some districts do not collect this information.
Core courses completed			OSPI is planning to collect transcript information from districts but there are no current conventions for naming courses.

Source: JLARC.

Joint Legislative Audit & Review Committee

K-12 Data Study
Preliminary Report

Presentation to State Board of Education
January 25, 2007

Nina Oman
John Bowden

Presentation Overview

- Study Background

- Study Scope

- Methodology

- Conclusions & Recommendations

Study Background

- 2005 JLARC study (#05-19) found that expenditure information is reported at the district level

- Outcomes are reported at the school level

- JLARC members recognized there would be costs and challenges to collect uniform and reliable school spending information

- Committee addendum to 2005 study directed staff to propose ways to overcome challenges and improve data

Study Scope

- Work with Washington Learns staff and local school districts and boards to identify critical school performance data that would enhance informed resource commitments

- Address related changes to information systems and accounting practices

Methodology

- Interviews with over 140 people
  - School board members, superintendents, business officers, and principals
  - Legislature and Washington Learns
  - State and national researchers
  - Education associations and organizations
  - OSPI, State Board of Education, Professional Educator Standards Board, and OFM
- Review of educational research literature
- Survey of district business officers
- Survey of other states' accounting methods

Data Categories

The relationship between expenditures and outcomes is complex

Four types of data are needed:

1. School-level expenditures
2. Teacher & staff descriptive data
3. Student descriptive data and outcomes
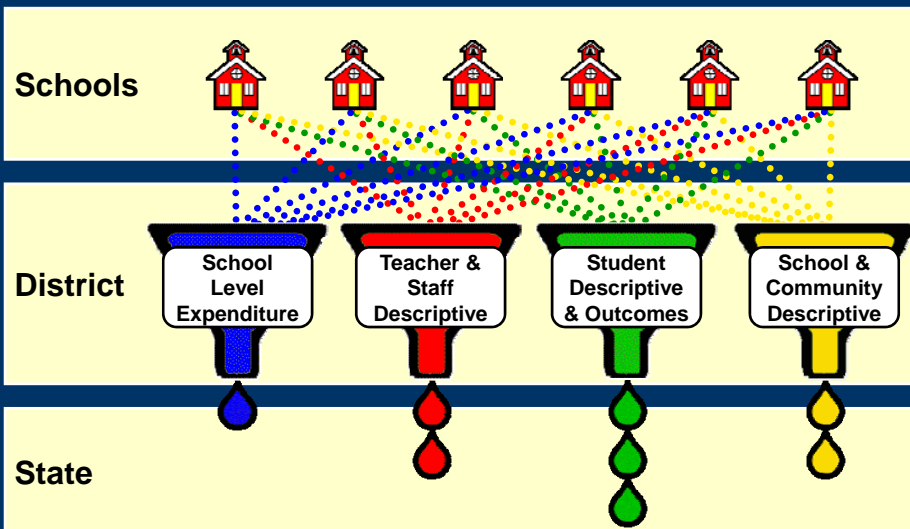4. School & community descriptive data

Districts Collect Substantial School Level Data but Not All Data are Reported to the State

Schools

District

| School Level Expenditure | Teacher & Staff Descriptive | Student Descriptive & Outcomes | School & Community Descriptive |

State

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1. School Level Expenditures

- Per-pupil expenditures are required by RCW 28A.655.110
- For comparing schools, all expenditures should be consistently reported
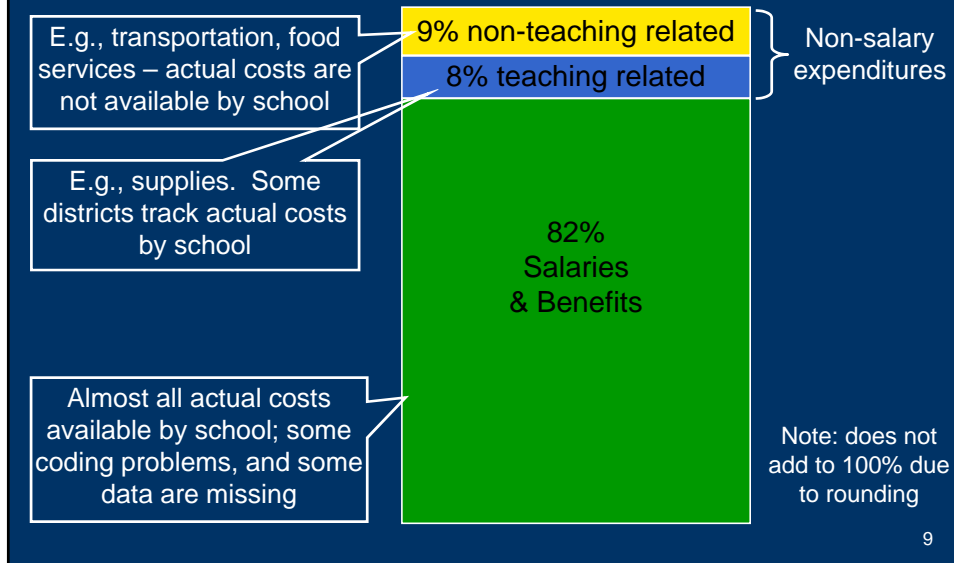- School codes used for reporting expenditures and outcomes should match

Expenditure Categories and Availability

E.g., transportation, food services – actual costs are not available by school

9% non-teaching related

8% teaching related

Non-salary expenditures

E.g., supplies. Some districts track actual costs by school

82% Salaries & Benefits

Almost all actual costs available by school; some coding problems, and some data are missing

Note: does not add to 100% due to rounding

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Recommendations: Expenditure Data

OSPI should:

1) Collect missing salary/benefit data, and use school codes that can be linked to outcomes

2) Collect teaching related non-salary expenditures by school using standard codes and definitions (and report back to JLARC by July 2007)

3) Develop a statewide standardized methodology for allocating all other expenditures to schools (and report back to JLARC by July 2007)

2. Teacher/Staff Descriptive Data

- Teachers/staff are major share of expenditures
- Teacher effectiveness is most important factor in student outcomes within a district's control
- Descriptive data currently available include:

  – Work location (school or administrative building)
  – Compensation (salary and benefits)
  – Age, gender, and ethnicity
  – Job duties (e.g., teacher, aide, janitor)
  – Education and experience (for teachers)
  – Grade span taught

What Teacher/Staff Data are Missing?

- Teacher/staff descriptive data needed:
  – Specific grade(s) and subject area(s) taught
  – Teacher schedules, including courses taught and a teacher identifier that links to student schedules
  – Academic majors, degrees, and routes to certification
  – Professional growth plan and record of training completed
  – Reasons for additional pay
- Data spread across several data systems and hard to tie together

Recommendations: Teacher/Staff Data

4) OSPI should develop a plan for creating a unified staff data system that includes all descriptive data currently collected, plus the missing data identified by JLARC.

(Report plan, including timeline and costs, to JLARC by September 2007.)

3. Student Descriptive & Outcome Data

OSPI is collecting most student data identified as essential via the Core Student Record System (CSRS), including:

– Participation in state or federally funded programs (e.g., bilingual instruction)

– Demographic characteristics (e.g., race/ethnicity, gender)

– WASL scores, graduation rates

– Transcripts (planned)

What Student Data are Missing?

- Better information about courses is important in understanding student outcomes
  - Course minutes
  - Core courses, with standard naming conventions for courses
- A college readiness test
- Routine data audits

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Recommendations: Student Data

OSPI should:

5) Conduct regular audits of student data
6) Identify an appropriate college readiness test
7) Collect better information about courses, including:
   - Course minutes
   - Core coursework completed by students
   - A common course catalogue with standardized naming conventions for courses

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4. School & Community Descriptive Data

- School & community descriptive data are useful in explaining the teaching and learning environment

- Some data are already collected and JLARC supports use of existing data

- No consensus on importance of additional data

- Not recommending additional data collection at this time

Priorities for Data Collection

1. Focus first on collecting school-level expenditures (Recommendations 1-3)

2. Next, collect additional descriptive data about teachers and staff (Recommendation 4)

3. Then turn to collecting additional student data (Recommendations 5-7)

4. Lastly, address collection of additional school & community descriptive data (No Recommendation)

After data are improved, then what?

Connect the four categories of data to answer detailed questions about the relationship between expenditures and outcomes.

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Kindergarten readiness (planned)
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College readiness
Ability to match to baccalaureate records
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School/Community Descriptive

School ID
School Size
Percentage of students by program
Student health and risk factors
Income/education (Census data)
Nine characteristics of effective schools
Percentage of students bused
Volunteer hours
Student access to computers and Internet
Condition and use of school facilities

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Study Timeline/Contact Information

Proposed Final Report in February 2007

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