



**State of Washington
Joint Legislative Audit and Review
Committee**

506 16th Ave. S.E., Olympia, WA 98501-2323
(Campus Mail: PO Box 40910), Phone: (360) 786-5171
Internet: <http://www.leg.wa.gov/www/lbc/>

K-12 Vocational Education

Report 96-7

December 16, 1996

TABLE OF CONTENTS

Chapter	Page
Summary	i
Summary of Recommendations	vii
Addendum	ix
1 Introduction	1
Historical Vocational Education Funding Compared to Expenditures	2
Vocational Education Methods of Instruction	3
Recent Legislative Actions	4
2 Study Findings	5
More Discrete Funding Elements	7
OSPI Policy Limiting Vocational Education Funding by Class Size	10
Appendices	
1 Scope and Objectives	13
2 Agency Response	15

K-12 VOCATIONAL EDUCATION

Summary

This study was mandated by the 1996 Legislature because of concerns that newer methods of vocational education instruction may be less costly than traditional vocational education classes. Vocational education is funded by the state at an enriched level in comparison to basic education. If newer methods of instruction are less costly than traditional vocational education classes, they may not warrant an enriched level of funding. The legislature directed this study to develop a vocational education funding formula that identifies more discrete funding elements (i.e., provides differential funding for different types of classes) than the current funding formula.

This study found that recent actions by the legislature and the Office of the Superintendent of Public Instruction (OSPI) should address the concerns about vocational education funding without the need for the development of a new funding formula. For example, in 1995, the legislature reduced the level of enrichment in the vocational education funding formula and limited the ability of school districts to charge indirect costs to vocational education programs. Also, OSPI recently adopted a policy which limits vocational education funding for large classes. The OSPI policy only provides the enriched level of funding for the first 26 students in a vocational education class. If there are more than 26 students, the (lower) basic education level of funding is provided for the remainder.

These recent changes should address the concerns that prompted this study without the need to change the vocational education funding formula. Also, a funding formula that provides differential funding for different types of vocational education classes would

Overview

Recent changes in funding

impose additional record-keeping requirements on school districts. Further it would create ambiguity for OSPI and the school districts in developing definitions for the different funding categories and classifying courses into those categories.

Legislative authority is needed

This report recommends the legislature provide authority for OSPI's policy to limit vocational education funding by class size.

Background

The 1996 Supplemental Appropriations Act included a proviso that mandated the Joint Legislative Audit and Review Committee (JLARC) to conduct a follow-up to a 1995 Legislative Evaluation and Accountability Program Committee (LEAP) study of Secondary Vocational Education Funding. Specifically, the proviso required JLARC to: 1) analyze changes of expenditure patterns since the LEAP study; and 2) develop a funding formula for vocational education that includes more discrete funding elements than the current apportionment formula (see Appendix 1, Scope and Objectives).

Vocational education is funded at an enriched level in comparison to basic education. The vocational education funding formula provides funding for fewer students per teacher than the basic education formula, and therefore, presumes smaller vocational education class sizes. It also provides a greater amount for nonemployee related costs (e.g., equipment) than the basic education formula. The presumption behind the enriched level of vocational education funding is that vocational education classes require more intensive supervision of students for safety in laboratory settings, more "training/learning stations" are needed for applied learning, and that equipment costs for these programs are higher.

This study and the 1995 LEAP study were mandated by the legislature because of several concerns:

- Enrollment in vocational education is growing much faster than overall K-12 enrollment growth.
- While vocational education is funded at an enriched level compared to basic education, average vocational education class sizes were considerably larger than the class size assumed by the funding formula.

Vocational education funding is enriched

- Average actual class sizes that are considerably larger than the formula raise the question that vocational education revenues may be more than what is needed to fund vocational education programs.
- New methods of instruction within vocational education programs may involve larger class sizes; and therefore, may not require an enriched funding level

Study Findings

Changes since the 1995 LEAP study

- One of the major findings of the 1995 LEAP study was that there was an increasingly large gap between the staff ratio assumed in the vocational education funding formula and actual staffing ratios. For example, in the 1992/93 school year, vocational education was funded at one certificated staff unit for each 16.67 students. The actual staffing ratio was one certificated staff unit for each 19.87 students. Following the issuance of the LEAP report, the legislature increased the formula staffing ratio to one certificated staff unit for each 18.3 students. This increase in the funded staff ratio narrowed the difference between the formula funded staff ratio and the actual staff ratio.
- In response to a recommendation of the LEAP study, a group of approximately 20 pilot school districts volunteered to categorize their vocational expenditures by method of instruction. The purpose of this effort was to provide information concerning whether the newer methods of instruction involved larger class sizes than more traditional vocational education classes. The results of this effort did not provide reliable information concerning the relative class sizes of different methods of instruction. This was primarily due to the definitions for the newer methods of instruction, which were developed by OSPI for the pilot project, being very narrow. This resulted in very few classes being categorized into the newer methods of instruction.

Increasing
gap
between
funded and
actual class
sizes . . .

. . . led to
questioning
whether new
methods of
instruction
are less
costly

Difficulties in defining methods of instruction

- Developing a funding formula for vocational education that includes differential funding for various methods of instruction is problematic, because of difficulties in defining the various methods of instruction.

New OSPI policy limits funding by class size

Limiting funding by class size

- The concerns that led to this study can be addressed without developing a new vocational education funding formula. OSPI initiated a policy that limits the enriched vocational education funding by class size. Under this policy, OSPI only provides the enriched level of funding for the first 26 students in a vocational education class. If there are more than 26 students (or 30 students if the class is taught by both a teacher and a teacher's aid), the basic education level of funding is provided for the number of students above the limit. This policy addresses the concern about providing the enhanced vocational education funding level (which presumes small class sizes) for large vocational education classes.
- Such a policy is a simpler, more straightforward way of addressing the concerns about providing enriched funding for large classes. This is because a policy limiting vocational education funding by class size does not require the additional record keeping by school districts that is required when categorizing expenditures by method of instruction. Nor does it create ambiguities for school districts in determining which method of instruction a particular class falls into.
- The OSPI policy limiting vocational education funding by class size has not been endorsed by the legislature. We suggest the legislature establish a policy through the appropriations process on which OSPI can base such limits in the future.

Recommendation

The legislature should provide authority through the appropriations process for the Office of the Superintendent of Public Instruction to limit vocational education funding by class size.

Agency Response

OSPI has responded to this report and concurs with its findings and recommendations. (See Appendix 2.)

Acknowledgments

The study team acknowledges the assistance provided by staffs of the school districts participating in the Washington Vocational Association Funding Study Workgroup, the Legislative Evaluation and Accountability Program, and the Office of the Superintendent of Public Instruction. This study was conducted by JLARC management auditors Liz DuBois, Valerie Whitener, and Larry Brubaker. Larry Brubaker served as the team leader and Ron Perry as the project supervisor.

Cheryle A. Broom
Legislative Auditor

On December 16, 1996, the Joint Legislative Audit and Review Committee approved a motion to accept and distribute this report.

The committee also adopted an Addendum to the report (see page ix, following the Summary of Recommendations).

Senator Al Bauer
Chair

RECOMMENDATIONS*

Summary

Recommendation 1

The legislature should provide authority through the appropriations process for the Office of the Superintendent of Public Instruction to limit vocational education funding by class size.

****NOTE: The Joint Legislative Audit and Review Committee approved an Addendum regarding the recommendations. Please see page ix.***

ADDENDUM

Statement of the Joint Legislative Audit and Review Committee

This states the position voted upon and adopted by the Joint Legislative Audit and Review Committee, upon approval of the final report on December 16, 1996.

The Joint Legislative Audit and Review Committee approves of the recommendation contained in this report.

In addition, the committee expresses its support for retaining the 10 percent lid on indirect costs in vocational education through the 1997-99 Biennium. Additionally, the Office of the Superintendent of Public Instruction should further study the implementation of this 10 percent lid, more clearly defining what are direct and indirect charges to vocational education.

These definitions should assist local school districts in identifying expenditures that are appropriate to vocational education, and should also allow flexibility in how districts operate vocational programs.

INTRODUCTION

Chapter One

The 1996 Supplemental Budget Act mandated JLARC to provide a follow-up report to the 1995 LEAP study on vocational education funding. The act required JLARC to: 1) analyze changes of expenditure patterns within vocational education since the 1995 study; and 2) develop a funding formula that identifies more discrete funding elements than the current apportionment formula. Appendix 1 provides the scope and objectives of this study.

Vocational education is funded at an enriched level in comparison to basic education. Funding for basic and vocational education is based on ratios of certificated instructional staff units to student enrollment. The basic education funding formula provides for a ratio of 21.7 students per certificated staff, while the vocational education formula provides for a ratio of 18.3 students per certificated staff.

The enriched funding for vocational education is intended to provide for more intensive supervision of students. This more intensive supervision is needed because of several factors including safety concerns, more individualized student-teacher contact, and more costly equipment and supplies. The legislature has changed the vocational education formula staffing ratio several times, most recently in the 1995-97 Biennial Appropriations Act. The latest change resulted from findings of the 1995 LEAP study.

Background

Vocational
education
funding
ratio is
enriched

HISTORICAL VOCATIONAL EDUCATION FUNDING COMPARED TO EXPENDITURES

A major finding of the 1995 LEAP study was that during a period of time when the legislature was enriching the vocational education funding formula to provide for a smaller ratio of students to certificated staff, actual staff ratios within vocational education programs were increasing.¹ Between the 1988/89 and 1991/92 school years, the legislature had further enriched vocational education funding by reducing the formula staffing ratio from 17.5 to 16.67 students per certificated staff. At the same time, the actual staffing ratio had increased from 18 to 19.87 students per certificated staff.

Vocational education class sizes larger than funded class size

While the gap between the formula and actual staff ratios was growing, there was also an increasing gap between vocational education formula revenues and direct vocational program expenditures. Direct vocational education program expenditures are those expenditures that are directly charged to the program. A difference between direct program expenditures and formula revenues is expected because some indirect expenditures (e.g., district-wide overhead costs) are charged to the vocational education programs. If the gap between the *formula staff ratio and the actual staff ratio* is growing, it is likely that the gap between *formula revenues and direct program expenses* will also grow.

The increasing gap has raised concerns that the level of vocational education funding is higher than what is needed for vocational education programs. While some amount of a gap is expected, a growing gap suggests that some school districts may not require the full amount of funds provided by the state for vocational education programs.

¹The formula staffing ratios that are used to fund basic and vocational education are not requirements that dictate a particular level of staffing. Rather, they are formulas that determine the amount of state funds that a school district may receive. School districts have discretion over how the state funds are spent (although state law does specify a minimum staffing ratio that school districts must maintain).

VOCATIONAL EDUCATION METHODS OF INSTRUCTION

Three methods of vocational education instruction were identified in the 1995 LEAP study.

A traditional/sequential program was defined as “a series or suite of related courses that provide a cumulative learning experience, building to a skill level that prepares the student for entry-level employment.” An example of a traditional sequential program is an agricultural science program consisting of *Agricultural Science I, II, III, and IV* (a sequential program that provides an increasing depth of skills).

Integrated programs were defined as “combining vocational and academic concepts into a single curriculum to increase the relevance of course work, strengthen and increase academic standards, and enable students to apply academic principles.” An example of an integrated program is combining Keyboarding and English classes into an integrated unit.

Applied academics programs were defined as “specific courses that involve ‘real-world’ exercises used to demonstrate academic principles.” An example of an applied academics course is *Principles of Technology* which offers students the opportunity to relate theory with practice through hands-on learning.

One of the concerns that lead to the 1995 LEAP study was that the newer vocational methods of instruction (integrated and applied academics) may involve larger class sizes than traditional/sequential programs; and therefore, may not require the enriched level of vocational education funding. Because school districts do not categorize their vocational education classes by method of instruction, the LEAP study did not provide information about whether integrated and applied academics courses have larger class sizes than traditional sequential programs.

Different
methods of
instruction . . .

. . . may be
related to
class sizes

RECENT LEGISLATIVE ACTIONS

Legislature reduced funding enrichment

The LEAP study was published in February 1995. During the 1995 session, the legislature modified the level of enrichment in vocational education funding by increasing the formula staffing ratio from 16.7 to 18.3 students per certificated staff. Also, the legislature included a provision in the budget that limits the amount of indirect expenses that can be charged to vocational education programs to 10 percent of direct expenditures. The limitation on indirect expenditures is a way of limiting the ability of school districts to charge non-vocational education expenditures to vocational education programs.

The legislature also included a proviso in the 1996 Supplemental Budget requiring this study.

STUDY FINDINGS

Chapter Two

The 1996 Legislature directed that this study analyze changes of vocational education expenditure patterns since the LEAP study. Exhibits 1 and 2 illustrate the comparisons of the funded versus the actual vocational education *staffing ratio*, and funded revenues versus actual *expenditures* for school years 1988/89 through 1994/95. It also includes preliminary staffing ratio information for school year 1995/96. These exhibits update the information in the LEAP study by two school fiscal years (the preliminary 1995/96 staffing ratio information updates the information in the LEAP study by three fiscal years).¹

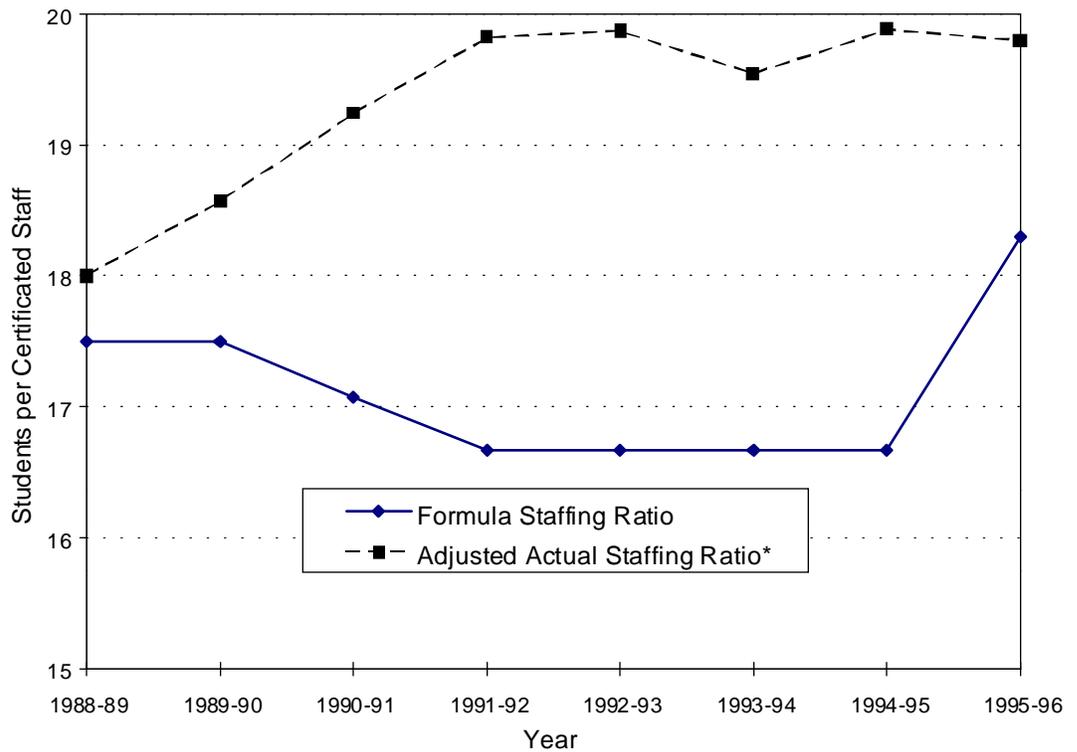
Exhibit 1 illustrates that the gap between the funded and actual vocational education staffing ratio stopped growing in school years 1993/94 and 1994/95. In school year 1995/96, following the legislature's action to increase the formula staffing ratio from 16.7 to 18.3 students per certificated staff, the gap between the funded and actual staffing ratio declined. For example, in school year 1994/95, the formula staffing ratio was 16.7 students per certificated staff while the actual staffing ratio was 19.9 students per staff. In school year 1996, the formula staffing ratio was 18.3 students per certificated staff and the actual staffing ratio was 19.8 students per staff. The reduction in the gap was due to the increase in the formula staffing ratio rather than a decline in the actual staffing ratio (which would indicate smaller actual class sizes).

Changes in
expenditure
patterns
occurred

¹ The actual staffing ratio information for 1995/96 is preliminary. Also, adjustments were made to actual staffing ratios to account for staffing provided through contractual services (rather than by school district employees).

Exhibit 1

Vocational Education Formula Staffing Ratio Compared to Actual Staffing Ratio



* Note: Enrollment from SPI Apportionment; Staffing from S275 adjusted to factor in contractual services; FTE equivalents from F196 instructional contractual services expenditures divided by CIS average compensation. Adjustment data for 1995-96 not yet available.

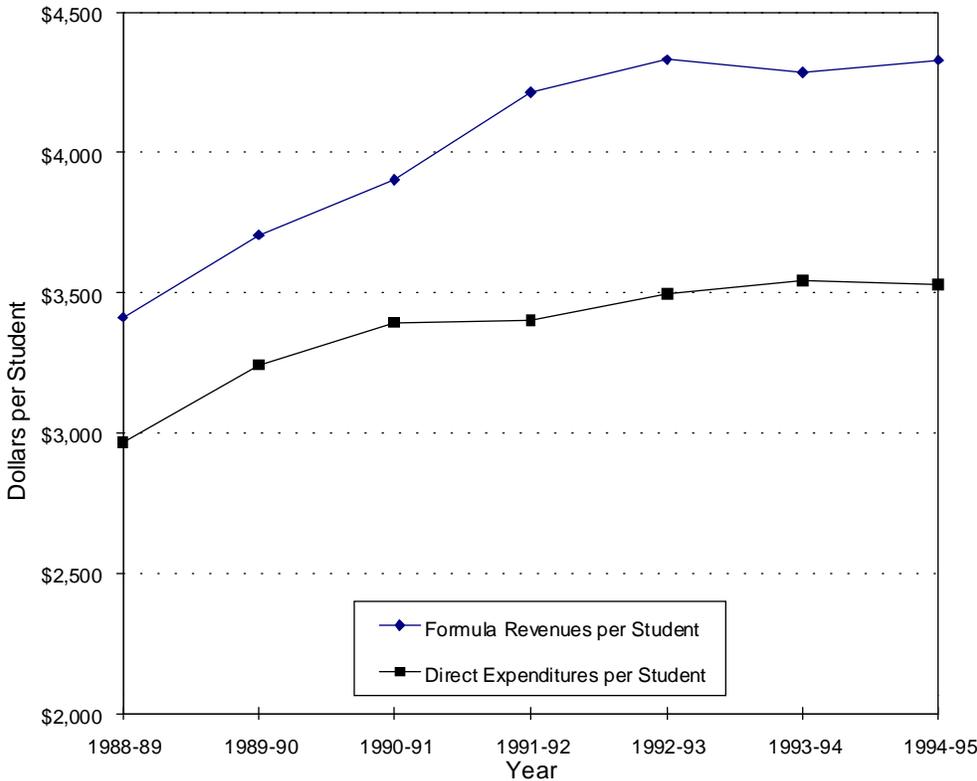
Gap between revenues and expenditures has recently declined

Exhibit 2 indicates that the gap between vocational education revenues and direct vocational education expenditures also stopped growing in the 1993/94 and 1994/95 school years. For example, in school year 1992/93, the gap between revenue and direct expenditures was \$834 per student while in school year 1994/95, the gap was slightly less--at \$801 per student. Information on vocational education expenditures for the 1995/96 school year is not yet available.

The gaps between the funded and actual *staffing ratios*, and between vocational education *revenues and direct expenditures* stabilized during the 1993/94 and 1994/95 school years. The gap between

formula and actual staffing ratios decreased during the 1995/96 school year after the legislature reduced the level of enrichment in the funding formula.²

Exhibit 2
Comparison of Statewide Average Vocational Education Revenues with Direct Vocational Education Expenditures



MORE DISCRETE FUNDING ELEMENTS

The legislative action to increase the formula staffing ratio and limit indirect charges to vocational education programs resulted in a closer alignment between the formula staffing ratio and the actual staffing ratio; and presumably, a closer alignment between vocational education revenues and direct program expenditures.

However, this action did not necessarily address the concern that

² While information on vocational revenues compared to direct expenditures is not yet available, it would be expected that the reduction in the gap between the formula and actual staffing ratio resulting from the legislative change to the funding formula would also result in a reduction in the gap between vocational education revenues and direct program expenditures.

Several school districts participated in a pilot project . . .

some vocational education classes, particularly within newer vocational education methods of instruction, involve larger class sizes; and therefore, may not require the enriched level of vocational education funding. Some school districts may have a disproportionate number of vocational education classes that have large class sizes which may not require the same enriched level of funding. This concern prompted the requirement for JLARC to develop a vocational education funding formula with more discrete funding elements than the current formula.

A group of approximately 20 school districts volunteered to participate in follow-up activities to the 1995 LEAP study. One of the activities involved these pilot districts working to categorize their vocational education expenditures by method of instruction.³ The categories used were those identified in the LEAP study as described in Chapter 1 of this report. The definitions for the three methods of instruction were developed by OSPI. Following the 1996 legislative mandate for this JLARC study, the pilot school districts agreed to accelerate their efforts to categorize their vocational education expenditures by method of instruction in order to provide information for this study.

Results of the Pilot Project

. . . but results of project were inconclusive

Although the pilot school districts put a great deal of effort into accelerating their attempts to categorize their expenditures by method of instruction, the resulting data is not very reliable for two major reasons:

1. Because of the timing of this study, school districts were trying to categorize their 1995/96 vocational expenditures by method of instruction prior to the close of the school fiscal year. Estimates had to be made of expenditure levels.
2. The definitions of the integrated and applied academics methods of instruction that were developed by OSPI were very narrow, while the definition for the traditional/sequential method of instruction was very broad. As a result, very few of the pilot school districts vocational education *classes* were categorized as

³The LEAP study recommended that school districts categorize their vocational education expenditures by method of instruction.

integrated or applied academics methods of instruction. Therefore, only a small amount of the total *expenditures and staffing* were categorized as integrated or applied academics. Because of the small sample of integrated and applied academics expenditures, the resulting average expenditures per student, and average staffing ratio for integrated and applied academics classes are unreliable.

Problems with the definitions used had a greater impact on the reliability of the data. The narrow definitions developed by OSPI of integrated and applied academics resulted in very few of the pilot school district's vocational education classes being classified into these methods of instruction; and therefore, reduced the reliability of the data generated.⁴ The OSPI course definitions may have also resulted in the integrated or applied academics courses being categorized incorrectly as traditional/sequential courses.

However, the narrow OSPI definitions illustrate the difficulty involved with attempting to develop a vocational education funding formula that provides discrete amounts of funding for different types of vocational education classes. OSPI explained that the definitions for the integrated and applied academics methods of instruction were narrow because these definitions were unambiguous to the pilot school districts. The definition of the traditional/sequential method of instruction was very broad to capture those expenditures not categorized as integrated or applied academics. Had the definitions of the integrated and applied academics methods of instruction been broader, they would have been more ambiguous, making it more difficult for school districts to identify which category a particular class falls into.

A vocational education funding formula that provides a discrete funding amount for different methods of instruction would involve tradeoffs in developing definitions of each method of instruction. Definitions that are narrow and less ambiguous may not capture all of the classes that fall into a particular category. Definitions that

Difficulties in
defining
methods of
instruction . . .

. . . led to
narrow
definitions

⁴ The effort by the pilot school districts to categorize their vocational education expenditures by method of instruction began prior to the mandate for this study. Therefore, the OSPI definitions of the methods of instruction were created prior to the initiation of this study. The pilot school districts accelerated their efforts to categorize their vocational education expenditures after the mandate for this study.

are less narrow may be more ambiguous and could result in errors of classification and a less reliable formula.

OSPI POLICY LIMITING VOCATIONAL EDUCATION FUNDING BY CLASS SIZE

During the course of this study, we learned that OSPI has a policy that limits vocational education funding by class size. This policy, which is part of OSPI's Standards for Vocational-Technical Education Programs, states:

For funding purposes, the maximum enrollment hours allowed, per full-time instructor, shall not exceed 26 full-time equivalent students (FTE). This total load may be increased up to 30 student FTEs, if educational staff assistants are provided for classes which exceed 24 students.

OSPI policy limits funding for large classes

This policy limits the enriched level of vocational education funding to the first 26 students in a class (or the first 30 students in a class that includes both a teacher and teacher's assistant). Classes that exceed this number of students receive the (lower) basic education funding amount for the students in excess of the cutoff.

The OSPI limitation of 26 students compares with the legislature's formula staffing ratio of 18.3 students. Some difference between the formula staffing ratio and the class size limitation is needed to: 1) recognize that there should be some amount of a gap between the formula and actual staffing ratios in order to allow for indirect costs to be charged to vocational education programs; and 2) allow school districts flexibility to offset higher cost (small class size) courses with lower cost (high class size) courses.

This policy has been in place since the 1993/94 school year. It addresses the concern that some school districts may have a disproportionate number of vocational education courses with large class sizes.

Since the relatively new OSPI policy and the 1995 legislative actions, the following changes have been made to vocational education funding:

- The overall vocational education formula staffing ratio has been

increased from 16.6 to 18.3 students per certificated staff.

- The amount of indirect costs that can be charged to vocational education has been limited to 10 percent of direct costs.
- Vocational education classes with a large number of students will only receive the enriched level of vocational education funding for the first 26 students (or 30 students if the class has a teacher's assistant).

The combination of these three changes should address most of the concerns which lead to the 1995 LEAP study and this study. The gap between the funded and actual staff ratios has decreased. The OSPI policy limiting vocational education funding by class size would preclude school districts with a disproportionate number of low-cost, high class size vocational education programs from receiving a windfall from the enriched vocational education funding.

The legislature has not endorsed the OSPI policy limiting vocational education funding by class size. Because this limitation helps to address concerns about vocational education funding in relation to expenditures, this report recommends that the legislature provide authority through the appropriations process for OSPI to limit funding by class size.

Recommendation 1

The legislature should provide authority through the appropriations process for the Office of the Superintendent of Public Instruction to limit vocational education funding by class size.

No
legislative
authority for
OSPI policy

SCOPE AND OBJECTIVES

Appendix 1

SCOPE

Pursuant to statutory directive, this study shall provide a follow-up to the 1995 Legislative Evaluation and Accountability Program (LEAP) study on vocational education funding. The study will analyze changes in expenditure patterns among school districts since the 1995 study and develop a funding formula that identifies more discreet funding elements than the current apportionment formula.

OBJECTIVES

1. Identify vocational education expenditures among school districts and compare expenditures to vocational education funding.
2. Identify vocational education class size among school districts and compare to vocational education funding.
3. Identify alternatives for more discrete funding elements for the vocational education apportionment formula.
4. Develop a funding formula that identifies more discrete funding elements than the current vocational education apportionment formula.

AGENCY RESPONSE

Appendix 2

- **Office of the Superintendent of Public Instruction**



SUPERINTENDENT OF PUBLIC INSTRUCTION

JUDITH A. BILLINGS

OLD CAPITOL BUILDING • PO BOX 47200 • OLYMPIA WA 98504-7200

November 27, 1996

Cheryle A. Broom, Legislative Auditor
Joint Legislative Audit and Review Cmte.
PO Box 40910
Olympia, WA 98504-0910

Dear Ms. Broom:

Cheryle

This is in response to the preliminary report of the K-12 Vocational Education study as presented to the Joint Legislative Audit and Review Committee. Our agency concurs with the recommendation made in the preliminary report and I look forward to the completion of the final study.

Once again, I am appreciative of the professional manner in which your staff conducted this study. If you have any questions, please contact Michael Roberts at (360) 586-9056.

Sincerely,

Judith

Judith A. Billings
State Superintendent
of Public Instruction

JAB:jh