Educational Opportunities in Washington's High Schools Under State Education Reform:

Background and Student Outcomes

VOLUME 1

TECHNICAL APPENDICES

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APPENDICES

APPENDIX A: NATIONAL TRENDS IN HIGH SCHOOL REFORM

What Are the Characteristics of American High Schools?

Parents, educators, prospective employers, colleges, and the general public all have expectations about the educational needs of high school students and the purpose of secondary school education. Over time, these expectations have helped shape the curriculum and organization of American high schools.[1]

A Curriculum With "Something for Everyone." High schools are expected to offer a wide range of courses tailored to the diverse abilities and interests of students. It has generally been assumed that not all students need or are capable of rigorous academic coursework.[2] Therefore, high schools have offered challenging academic subjects and honors courses for those who are college-bound, vocational training for those who are headed immediately to the workplace, and an array of other courses of varying levels of difficulty for those who have not yet made decisions about their post-high school plans. By 1993, 86 percent of high schools surveyed nationwide reported that they structured their curriculum around classes of varying levels of difficulty.[3] High school students tend to be separated into college preparatory, vocational, or general educational "tracks" based on the type and level of difficulty of courses they take.

Large, Multi-Purpose Institution. Due to the economies of scale needed to offer a curriculum catering to the abilities and interests of all students, many high schools have grown quite large. Nationally, high schools average 1,200 or more students.[4] In Washington, the average enrollment in a standard high school is 912 students.[5] High schools tend to be organized around traditional academic departments, with teachers specializing in a single subject. This means students might have a different teacher for each period of the day, and teachers may interact with upwards of 150 different students each quarter or semester.

Since they are the primary organization in the lives of teens, high schools serve multiple functions by providing social interaction through clubs, sports, and other extracurricular activities as well as access to social services and health care.[6] The high school is often a focal point in a community, serving as a community and social center.

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[1] David Angus and Jeffrey Mirel, *The Failed Promise of the American High School*, Teacher's College Press, New York, 1999, p. 2.
[2] David Marsh and Judy Codding, *The New American High School*, Corwin Press, Thousand Oaks, CA, 1999, p. xiii.
[3] National Center for Education Statistics, *Curricular Differentiation in Public High Schools* (NCES 95-360), U.S. Department of Education, Washington, D.C., December 1994, p. 5. Eighty-six percent of 10th graders in surveyed schools were in a tracked math class and 72 percent were in a tracked English class.
[4] Joseph Murphy, et al., *The Productive High School: Empirical Evidence,* SUNY Press, New York, forthcoming, p. 297 of draft manuscript.
[5] See additional information in Section III regarding enrollment in Washington public high schools.
[6] Ibid, p. 103.

Why Reform High School?

Many people continue to believe high schools should offer a comprehensive curriculum and serve as a multi-purpose institution. However, by the early 1980s the quality of its product—a high school education—was increasingly called into question.

Lack of Academic Rigor. In 1983, *A Nation at Risk*[7] concluded the curriculum available in high schools was so broad and diffuse that no central purpose could be found in the courses offered or taken by students. Others pointed out that an increasing proportion of the high school curriculum was made up of non-academic courses.[8] More students were enrolling in courses whose academic difficulty had been intentionally watered down.[9]

At the time (early 1980s), 35 states required only one year of math for a diploma. National math and science scores for 17-year-olds had fallen during the previous ten years, while reading scores were essentially flat.[10] Even college-bound students were inadequately prepared: enrollment in remedial math courses at four-year public colleges had increased 72 percent in five years.

Lack of Preparedness for Work. At the same time, other groups expressed concern about high school students who were not likely to complete a four-year college degree, then representing nearly 70 percent of students who graduated from high school.[11] Vocational courses came under fire for being focused too narrowly on single occupations and failing to incorporate sufficient academic content in reading and math.[12] Employers claimed that high school graduates were inadequately prepared not only in basic skills (reading, math, problem-solving, communication) but also workplace competencies (teamwork, technology, using information and resources).[13]

Economic trends made the lack of preparedness for either work or college particularly troubling. The availability of low-skill jobs was declining. The U.S. Department of Labor estimated that more than half of new jobs between 1984 and 2000 would require some education beyond high school.[14] After adjustments for inflation, wages for individuals with

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[7] *A Nation at Risk*, http://www.ed.gov/pubs/NatAtRisk/risk.html, 1983.
[8] Angus and Mirel, p. 158.
[9] Murphy, et al., pp. 96-96.
[10] National Center for Education Statistics, *The Condition of Education 1999* (NCES 1999-022), U.S. Department of Education, Washington, D.C., June 1999, p. 34. Based on the National Assessment for Educational Progress (NAEP) tests for math, science, and reading.
[11] William T. Grant Foundation Commission on Youth and America's Future, *The Forgotten Half: Non-College Youth in America* (EDRS 290-822), Washington, D.C., January 1988, p. 36.
[12] Mathematica Policy Research Inc., *Focus for the Future: The Final Report of the National Tech-Prep Evaluation*, U.S. Department of Education, Washington, D.C., 1998, p. 5.
[13] The Secretary's Commission on Achieving Necessary Skills (SCANS), *What Work Requires of Schools: A SCANS Report for America 2000*, U.S. Department of Labor, Washington, D.C., June 1991, p. 4.
[14] National Center for Education Statistics, *Vocational Education in the United States: Toward the Year 2000* (NCES 2000-029), U.S. Department of Education, Washington, D.C., February 2000, p. 24.

only a high school degree continued to decline,[15] and the wage gap between high school graduates and college graduates continued to grow.[16]

Low Quality of General Education. By 1982, 58 percent of high school graduates were enrolled in a “general” course of education, not specializing in either a college preparatory or vocational program while in high school.[17] Researchers found most students in the general track simply take an unconnected array of non-challenging courses with no particular objective.[18] Courses for medium- and low-achieving students tend to be dull, repetitive, and rely on workbooks, drills, and skill kits. Students are not presented with information and concepts in a way that will motivate them or build complex knowledge and skills.[19]

Minority and low income students are disproportionately enrolled in general or vocational classes. High schools with large proportions of low income and minority students tend to offer fewer academic classes and more remedial classes and vocational programs.[20] This raises concerns that the practice of tracking students perpetuates differences in opportunity and achievement for students based on their race and income.

Low Student Engagement in Learning. Surveys of students show a large proportion (perhaps 40 percent) are not actively interested in or committed to learning in high school.[21] They find their classes boring, are assigned little homework, and do not feel motivated toward high performance by the goal of getting a diploma.[22] Studies suggest that in order for students to be motivated, they need to believe that what they learn in school is relevant to the world outside the classroom and see a connection between learning, high achievement, and their own personal goals.[23]

A variety of causes for low student engagement have been suggested. As a reward for orderly behavior, high school teachers may place low demands on students.[24] Parents are less likely to be actively involved in high schools.[25] The instructional tasks students are asked to perform may be rote and repetitive, rather than focused on developing skills they

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[15] William T. Grant Foundation Commission on Youth and America’s Future, p. 29. Men aged 20 to 24 with only a high school degree earned 28 percent less in 1985 than they did in 1973.
[16] Ibid, p. 28. In 1985, college graduates aged 20 to 24 earned a median income 38 percent higher than high school graduates of the same age.
[17] National Center for Educational Statistics, *Vocational Education in the United States: Toward the Year 2000,* p. 51.
[18] Jeannie Oakes, *Educational Matchmaking: Academic and Vocational Tracking in Comprehensive High Schools*, National Center for Research in Vocational Education, Berkeley, CA, 1992, p. 42.
[19] Adam Gamoran, “The Stratification of High School Learning Opportunities,” *Sociology of Education*, Vol. 60, July 1987, p. 136; and, Bruce Wilson and Gretchen Rossman, *Mandating Academic Excellence: High School Responses to Curricular Reform*, Teachers College Press, New York, 1993, p. 48.
[20] Jeannie Oakes, “Can Tracking Research Inform Practice?,” *Educational Researcher*, Vol. 21, No. 4, May 1992, p. 13.
[21] Laurence Steinberg, *Beyond the Classroom: Why School Reform Has Failed and What Parents Need to Do,* Simon & Schuster, New York, 1996, p. 67.
[22] Ibid, pp. 68 and 75.
[23] Ibid, p. 72.
[24] Murphy, et al., p. 151.
[25] National Center for Education Statistics, *Condition of Education 2000* (NCES 2000-062), U.S. Department of Education, Washington, D.C., June 2000, p. 97.

will use in the future, such as problem-solving, analysis, and presentation.[26] Finally, some suggest that the large size of many high schools precludes close relationships between teachers and students and creates an impersonal atmosphere where students do not feel connected to either the people or the purpose of school.[27]

What Reforms of High School Have Been Tried in the Last Twenty Years?

Since the 1980s, school districts, states, and the federal government have engaged in a wide range of activities aimed at reforming high schools.

Increased Graduation Requirements. In the 1980s, 45 states either increased or initiated statewide graduation requirements. Forty-two states expanded the number of courses required in mathematics, science, or both. At least 18 added language arts requirements, and about half the states increased requirements in social studies.[28] The Washington legislature adopted its first high school graduation requirements in 1984.

Research Results:

(1) High schools responded to the new state requirements by offering more academic courses, and students have been enrolling in them.

- *More credits; more academic credits.* Between 1982 and 1998, the average number of total credits earned by high school graduates increased by 3 to a total of 25 (more than 13 percent). Furthermore, the increase was due to students taking more academic courses.[29]
- *Higher levels of math and science.* The proportion of students who take mid-level and advanced math and science courses has also increased steadily since 1982.[30]
- *More rigorous curriculum.* Between 1982 and 1994, the percentage of high school graduates taking the core academic curriculum recommended by *A Nation at Risk* rose from 14 percent to 51 percent.[31]
- *More rigorous curriculum means better college preparation.* A recent study by the U.S. Department of Education found that the most significant predictor of

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[26] Fred Newmann & Associates, *Authentic Achievement: Restructuring Schools for Intellectual Quality,* Jossey-Bass Publishers, San Francisco, 1996, p. 27.
[27] Murphy, et al., p. 298.
[28] Center for Policy Research in Education, “Graduating from High School: New Standards in the States,” *CPRE Policy Briefs* (RB-02-04/89), 1989, p. 1.
[29] National Center for Educational Statistics, *Condition of Education 2000*, p. 44.
[30] Ibid, p. 157.
[31] National Center for Educational Statistics, *Condition of Education 1999*, p. 9. *A Nation at Risk* recommended strengthening minimum high school graduation requirements to reflect the “New Basics”: four years of English; three years of math; three years of science; three years of social studies; and one-half year of computer science. They also recommended college-bound students take two years of foreign language.

college completion was the rigor of academic courses students took in high school.[32]

- *Increase in test scores.* Student scores on national math and science tests show a steady increase since 1982 (particularly in math), although reading scores have not changed.[33] During the 1980s, the gap in scores between white and minority students decreased somewhat, but that trend did not continue through the 1990s.[34]

(2) Low- and middle-achieving students might not have experienced the positive effects of increased graduation requirements to the same degree as high-achieving students.

- *Uncertain impact on dropouts.* In 1992, nationwide dropout rates between 10th and 12th grade were half what they had been in 1982.[35] However, a recent study found that increasing the number of course credits required for graduation may lead to higher dropout rates.[36]

- *Limited change in general education track.* By 1994, the percentage of students enrolled in the general education track had dropped to 42 percent (from 58 percent in 1982). However, only 30 percent of students enrolled in general education in 1994 were taking the academic curriculum advocated by *A Nation at Risk.*[37] Other studies found that increased graduation requirements had little impact on tracking of students.[38] There continue to be different learning expectations for students of different abilities.

(3) More students are entering college than ever before, but the proportion of those who complete a four-year degree has not risen at the same pace.

- *More than two-thirds of high school graduates start college.* In 1997, 44 percent of students entered a four-year college after graduation from high school, and 23 percent entered a two-year college. In the early 1980s only about half of high school students went to college right after graduation.[39]

- *By age 29, one-third of adults have a four-year degree.* Compared with 1982 when 25 percent of adults aged 25 to 29 had a four-year degree, the rate of college completion has grown, but not at the same pace as entrance into college. An additional 9 percent of 25- to 29-year-olds have obtained a two-year degree.[40]

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[32] Office of Educational Research and Improvement, *Answers in the Toolbox: Academic Intensity, Attendance Patterns, and Bachelor's Degree Attainment*, http://www.ed.gov/pubs/Toolbox, June 1999.
[33] National Center for Educational Statistics, *Condition of Education 1999*, pp. 3-4.
[34] Ibid, p. 5.
[35] National Center for Education Statistics, *A Comparison of High School Dropout Rates in 1982 and 1992* (NCES 96-893), U.S. Department of Education, Washington, D.C., October 1996.
[36] *Education Week*, March 29, 2000. Researchers from Cornell University and the University of Michigan analyzed data on high school dropouts compared to changes in Carnegie units required for graduation.
[37] National Center for Educational Statistics, *Vocational Education in the United States: Toward the Year 2000*, pp. 64-65.
[38] Wilson and Rossman, p. 99.
[39] Samuel Halperin (ed.), *The Forgotten Half Revisited*, American Youth Policy Forum, Washington, D.C., 1998, p. 94.
[40] National Center for Educational Statistics, *Condition of Education 2000*, p. 157.

Efforts to Link School and Career. Federal initiatives in the early 1990s attempted to improve the preparation of students for careers that require post-secondary training and create programs and strategies to help students transition successfully to work or further education after high school.[41]

- The *Tech-Prep Education Act (1990)* provides funds to develop training programs that would entail two years of high school coursework, followed in sequence by two years of post-secondary education. School, community college, and business partners would create rigorous programs of study leading to well-paying technical jobs.[42]
- The *School-to-Work Opportunities Act (1994)* provided grants to states to support local partnerships of school districts, businesses, and post-secondary institutions. Partners would develop courses and activities in school to help students explore and develop their career interests as well as provide students with opportunities to learn and apply workplace skills through internships, mentoring, and other work-based learning.[43]
- *Integration of academic and vocational education* is a goal of both School-to-Work and Tech Prep efforts, as well as a strategy to improve traditional vocational education programs.[44] One strategy is to include more practical and work-related activities in academic courses (i.e., "applied learning"). Another is to increase the level of reading, writing, math, and science taught through vocational courses.[45]

As originally conceived, these initiatives were intended to address students who might not complete a four-year college degree. However, in order to avoid being associated solely with vocational education (and thus have limited appeal to students and parents), they have been expanded to expose all students to early career and educational planning.

Research Results:

(1) Expanding Tech Prep and School-to-Work to appeal to all students has made it difficult to determine whether the strategies are effective.

- *Few students and few comprehensive Tech Prep programs.* Fewer than 10 percent of high school students were in Tech Prep programs in 1995.[46] However, grant recipients find it difficult to identify participating students. Only 10

[41] National Center for Research in Vocational Education, *Research on School-to-Work Transition Programs in the United States*, NCRVE, Berkeley, CA, March 1994, pp. 5-6.
[42] Mathematica Policy Research Inc., *The Final Report of the National Tech-Prep Evaluation*, p. 7.
[43] Mathematica Policy Research Inc., *Building Blocks for a Future School-to-Work System: Early National Implementation Results. Executive Summary,* U.S. Department of Education, Washington, D.C., July 1998, pp. 2-3.
[44] Mathematica Policy Research Inc., *The Final Report of the National Tech-Prep Evaluation*, p. 46. The 1990 amendments to the Carl Perkins Act that created Tech Prep also required any school district receiving federal vocational funding to integrate academic and vocational education.
[45] Mathematica Policy Research Inc., *Key High School Reform Strategies: An Overview of Research Findings,* Office of Vocational and Adult Education, Washington, D.C., March 1999, pp. 9-11.
[46] Mathematica Policy Research Inc., *The Final Report of the National Tech-Prep Evaluation*, p. 104.

percent of schools created a special career-oriented vocational and academic curriculum that would lead directly to a post-secondary program.[47]

- *School-to-Work focused on career exploration.* Most grant recipients expanded activities such as job fairs, career counseling, career interest inventories, and most of their graduating seniors in 1996 had participated in these activities.[48] Far fewer students took courses in high school organized around a career goal or took part in a workplace experience linked to school.[49]

(2) There is a trend toward increasing the academic rigor of vocational programs, but there is also some question whether vocational education will continue to be a viable alternative for certain students.

- *More rigorous curriculum and higher achievement.* The proportion of vocational students who also completed a core academic curriculum has increased dramatically: from 5 percent in 1982 to 45 percent by 1998.[50] Students in some high schools that have placed a priority on offering integrated vocational and academic curricula are showing improvement in their math and reading scores.[51] The same is true nationally for vocational students who also take a core academic curriculum.[52]

- *Changing curriculum takes time*. However, vocational students are still more likely to be lower-achieving students and take academic courses of lower difficulty than other students.[53] Less than half of public high schools report offering an integrated vocational-academic curriculum, and there is no indication of how extensive these efforts are.[54]

- *Declining overall enrollment.* By nearly every measure, student enrollment in vocational courses declined between 1982 and 1994. The sharpest decline was in the proportion of students who take a series of courses in the same career field.[55] Most attribute this to increased high school graduation requirements and

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[47] Mathematica Policy Research Inc., *The Final Report of the National Tech-Prep Evaluation,* p. 77. The rest focused on improving the coordination of vocational curriculum between high school and community college, expanding applied learning courses, and enhancing vocational courses.
[48] Mathematica Policy Research Inc., *Building Blocks for a Future School-to-Work System,* pp. 43 and 83.
[49] Ibid, p. 62. Twelve percent of students perceived their courses were organized around a career goal; 16 percent had work experience linked to school; only 2 percent participated in all three: career development, career-oriented courses, and work-based learning.
[50] "Mix of Academics, Technical Skills Heralds 'New Day' in Voc Ed," *Education Week*, September 27, 2000; and, National Center for Educational Statistics, *Vocational Education in the US: Toward the Year 2000*, p. 63.
[51] Southern Regional Education Board, *The 1996 High Schools That Work Assessment,* 1996, http://www.sreb.org/Programs/hstw/96assessment. High Schools That Work is a consortia of schools in different states that are attempting to improve the educational preparation of career-bound students.
[52] National Center for Educational Statistics, *Vocational Education in the US: Toward the Year 2000,* p. 79.
[53] Ibid, p. 73.
[54] Ibid, p. 82.
[55] Ibid, pp. 49-51. The average number of vocational credits accumulated dropped from 4.7 to 4.0; the average proportion of total credits from vocational courses dropped from 22 percent to 16 percent. The percent of graduates concentrating on vocational education dropped by 25 percent. The latter is of particular concern because the future earnings of vocational students improve if they enroll in a structured sequence of courses and then find jobs related to their training.

more academic course-taking: students have less time to take vocational courses.[56]

Redesigning High Schools. Reforms of high school have also occurred at the national, school district, individual building, and grassroots level. The Coalition of Essential Schools, New American High Schools, and High Schools That Work are some examples of national organizations encouraging, and sometimes funding, high school redesign efforts.[57] Many of these efforts, in addition to establishing rigorous curriculum and standards, attempt to change the overall environment of the school in order to increase student engagement in learning. Examples of redesigned schools include the following:

- *High Schools That Work*. High Schools That Work is a consortia of nearly 1,000 schools attempting to improve the educational preparation of career-bound students through integration of vocational and academic education and increasing the overall rigor of courses students take.
- *Smaller schools.* Research shows that students in smaller high schools may do better in school than students in larger schools, particularly if they are from disadvantaged backgrounds.[58] Some large high schools are trying to gain the benefits of small size by creating sub-units or "schools-within-schools."
- *Choice schools.* One approach to restructuring is to create a specialized curriculum through alternative school or magnet programs to attract interested students. Charter schools are also a form of school choice.
- *Career Academies.* Career academies combine several high school reforms. They offer students a choice of a school-within-a-school where academic and vocational courses are integrated around a career theme. Expanded opportunities for work-based learning are also provided.[59]
- *Block-scheduling.* Schools have tried to lengthen learning periods and reduce the number of transitions between subjects and classes through a number of different scheduling configurations.

[56] Ibid, p. 49.

[57] The Coalition of Essential Schools is a network of more than 1,000 schools and 24 regional centers committed to improve student achievement by redesigning the school according to a set of ten Common Principles. New American High Schools is a program sponsored by the U.S. Department of Education to highlight different models of restructuring taking place throughout the country.

[58] Kathleen Cotton, "School Size, School Climate, and Student Performance," *Close-Up #20*, Northwest Regional Educational Laboratory, Portland, OR, 1996. About half the research shows smaller school size linked to improved student achievement (the other half shows no effect). Most research shows a positive effect of small school size on student engagement, attitude, behavior, and participation in school activities. Both types of effects are even greater for disadvantaged students. "Smaller" generally means 300 to 800 students, although there is limited research to support a particular size.

[59] James Kemple and Jason Snipes, *Career Academies: Impacts on Students' Engagement and Performance in High School: Executive Summary*, Manpower Demonstration Research Corporation, Washington, D.C., February 2000, p. 3.

Research Results:

(1) Because high schools usually try more than one restructuring strategy at a time, it is difficult to determine which strategy is having a positive effect.

- *High Schools That Work show largely positive results.* Integrating academic and vocational education classes for career-bound students has resulted in these students improving their math and English scores and taking more rigorous courses, but implementation of more rigorous courses has been uneven in many schools.[60]
- *Small size makes reforms easier*. Researchers suggest that simply having a smaller number of students might not create a better learning environment. However, other desirable attributes are easier to achieve with fewer students and fewer teachers: inter-disciplinary and team teaching, close teacher-student relationships, reduced tracking of students according to their ability, and individual attention to students having difficulty.[61] However, a small high school faces difficulty in offering a wide array of courses, particularly for either high- or low-achieving students.[62]
- *Effect of "schools-within-schools" mixed.* Intentionally creating smaller groups of students and teachers seems to have a positive effect on student attitudes, but the effect on student achievement is less clear.[63] The degree to which these efforts have been implemented varies widely. Researchers suggest that sub-units that are very distinct and independent from the larger school are more likely to achieve the benefits usually attributed to small schools.[64]
- *Choice schools*. It is still too early in the implementation of charter schools to assess student achievement over time. However, based on reported waiting lists, there appears to be a high demand for students to enroll in charter schools.[65]

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[60] Southern Regional Education Board, *The 1996 High Schools That Work Assessment,* p. 1.
[61] Valerie Lee and Julia Smith, "Effects of High School Restructuring and Size on Early Gains in Achievement and Engagement," *Sociology of Education,* Vol. 4, No. 68, October 1995, p. 16; and, Kathleen Cotton, "Affective and Social Benefits of Small-Scale Schooling," *ERIC Digest*, EDO-RC-96-5, December 1996, p. 3.
[62] Valerie Lee, et al., "Inside Large and Small High Schools: Curriculum and Social Relations," *Educational Evaluation and Policy Analysis*, Vol. 22, No. 2, Summer 2000, p. 154.
[63] Mary Anne Raywid, "Taking Stock: The Movement to Create Mini-Schools, Schools-Within-Schools, and Separate Small Schools," ERIC Clearinghouse on Urban Education, 1996, http://eric-web.tc.columbia.edu/monographs/uds108/outcome.html, pp. 1-2.
[64] Ibid, p. 6.
[65] RPP International, *The State of Charter Schools: National Study of Charter Schools. Fourth Year Report*, U.S. Department of Education, Washington, D.C., January 2000, p. 7.

- *Schedule changes difficult to assess.* In 1997, 39 percent of public high schools reported implementing some form of block-scheduling,[66] but it has proven nearly impossible to isolate the effect of this popular reform from other restructuring practices.[67] Some studies suggest changing the schedule can reduce discipline problems and increase attendance rates. The effect on student achievement is not clear.[68]

(2) Disadvantaged students benefit the most from restructuring efforts.

- *Career Academies work for at-risk students.* A recent evaluation found that Career Academies substantially reduced dropout rates, increased the number of credits earned, and provided better college preparation for at-risk students. Positive results for other students (those at less risk) were only found at some academies.[69]
- *Impact of other reforms also greater.* Even where research findings show mixed results on improving student achievement, for example from small schools or block-scheduling, the performance of minority and low-income students clearly improves.[70]

High Standards for All Students. In the 1990s, states began setting high standards for what students should know and be able to do as well as developing assessments to measure progress. By 1999, 44 states had adopted standards in English, math, social studies, and science.[71] For high schools, standards-based reformers have advocated a more common core curriculum, at least through 10th grade, capped by demonstration of competency in the standards before graduation.[72] Some also recommend that students complete a project or culminating activity that shows they can use their knowledge and skills outside the classroom.[73]

Research Results:

(1) Standards-based reform is only beginning to reach into high schools, so its effect is still largely unknown.

- *States moving to require mastery of standards for graduation.* As of 2000, eight states require their graduates to master 10th grade standards; 12 additional states report they will require this in the future.[74]

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66 National Center for Educational Statistics, *Vocational Education in the US: Toward the Year 2000*, p. 84.
67 Mathematica Policy Research Inc., *Key High School Reform Strategies: An Overview of Research Findings,* p. 67.
68 Ibid, p. 68.
69 Kemple and Snipes, pp. 2-3.
70 Kathleen Cotton, "School Size, School Climate and Student Performance," p. 5; and, Mathematica Policy Research Inc., *Key High School Reform Strategies: An Overview of Research Findings,* p. 68.
71 *Education Week*, "Quality Counts 2000," Volume XIX, No. 18, January 13, 2000, p. 64.
72 Marsh and Codding, p. 20.
73 Marsh and Codding, p. 53.
74 *Quality Counts 2000,* p. 73.

- *Uncertain impact from projects and portfolios.* Although high schools are experimenting with a wide range of performance assessments, such as senior projects, portfolios, and culminating activities, it is largely unknown whether they are reliable measures of what students know and can do, or how well they predict future performance outside the school.[75]
- *Major implications but unknown impact.* Standards-based reform represents a shift away from previous assumptions that not all students should be expected to take classes of similar academic difficulty. Schools with large proportions of low-achieving students will be particularly challenged to find strategies to engage these students and provide opportunities for them to meet the standards. Increased emphasis on academic standards could cause high schools to focus their curriculum more narrowly and move away from offering a wide variety of courses or courses with different levels of difficulty.

Synopsis: Conclusions Difficult to Draw From Multiple Reform Efforts. When trying to determine the effectiveness of a particular reform, researchers are hampered by the fact that high schools usually try more than one restructuring strategy at the same time. Some reform efforts seek to accomplish multiple objectives. For example, creating career pathways within high schools is an effort to link school and career by having students explore different career and education options. When pathways are organized around subject areas or themes (such as “business” or “social services”), they are also an attempt to increase student engagement in learning and reduce tracking of students. Students are encouraged to explore pathways based on their interests and students with different post-high school plans (e.g., four-year college, technical college, work) may be grouped into the same pathway. At the same time, the aims of some reforms appear contradictory, such as increasing academic rigor while addressing the learning needs of students not likely to complete college. The challenge for high schools and policymakers is determining which reforms matter, which will work in their communities, and which will address the educational needs, not just of some students, but of all students.

Summary

The traditional American high school has come under criticism for lacking a clear focus, not demanding high achievement from all students, and not providing a personalized learning environment that engages students. A variety of reforms of high school are being tried across the country. Some focus on creating a demanding and standards-based curriculum, others on developing programs to encourage students to link what they learn in school with their future educational and career plans, and still others on changing the school environment. The challenge for high schools and policymakers is determining which reforms matter, which will work in their communities, and which will address the educational need, not just of some students, but all students.

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[75] Mathematica Policy Research Inc., *Key High School Reform Strategies: An Overview of Research Findings,* p. 77.

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APPENDIX B: NATIONAL NETWORKS OF SCHOOL REFORM

The Coalition of Essential Schools, New American High Schools, and High Schools That Work are three major school reform networks in the United States. Each network promotes a model for school reform, and recognizes the importance of local community support and coalition building in advancing legislation that promotes their reform agendas.

The Coalition of Essential Schools

The Coalition of Essential Schools (CES) is a network of 24 regional centers and nearly 1,000 public and private schools in the U.S. that promotes school reform, particularly in high schools, based on eleven major principles.[76] These principles suggest schools should narrow their curricula to allow for more reflective learning and scale down the size of classes and schools to encourage relationship building.

CES curricula should focus on essential knowledge and skills, encouraging students to examine subjects deeply. With the support of suitable curricula and schedules, teachers should get to know students and adjust the curricula for individual student needs. CES promotes alignment of school reforms with the goals of the local community. A distinctive component of the CES reform model is that students should publicly demonstrate their knowledge prior to graduation. CES stresses schools should be small enough to allow for personalization. The following are key principles:

(1) Schools should address students' social and emotional development, as well as their academic progress.

(2) The school's academic goal should be simple: each student masters a limited number of essential skills and areas of knowledge.

(3) The school's goals should apply to all students, while the means to these goals will vary as those students themselves vary.

(4) Teaching and learning should be personalized to the maximum feasible extent.

(5) Coaching and guiding will be used to enable students to understand how they learn and how to work as a community of learners.

(6) Teaching and learning should be documented and assessed with multiple forms of evidence.

(7) The final diploma should be awarded upon a successful final demonstration of mastery for graduation—an “Exhibition.”

(8) Families should be vital members of the school community.

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[76] Five CES schools are located in other countries: Canada, England, Israel (two schools), and South Africa.

(9) The principal and teachers should perceive themselves as generalists first and specialists second.

(10) Substantial time for collective planning by teachers and competitive salaries for staff are needed, but an ultimate per pupil cost should exceed that at traditional schools by no more than 10 percent.

(11) The school should honor diversity and build on the strengths of its communities, challenging all forms of inequity.

Ten high schools in Washington belong to CES: Eastlake (Redmond), Evergreen Senior (Vancouver), Finn Hill (Kirkland), Gig Harbor High School, Henry M. Jackson, (Mill Creek), Ilahee Junior (Federal Way), Inglewood Junior (Redmond), Nathan Hale (Seattle), Puyallup High School, and Thomas Jefferson (Auburn).

New American High Schools

New American High Schools (NAHS) are recognized by the U.S. Department of Education as leading-edge, model high schools that have implemented whole school reform based on four main criteria: (1) rigorous academic standards and high expectations for all students; (2) small, personalized, and safe learning environments; (3) emphasis on preparing students for higher education or the workplace; and (4) reforms suited to community needs.

The aim of the NAHS initiative is to encourage reforms that make high schools more effective institutions. NAHS supports reforms that aim to develop students' skills, decrease dropout rates, increase graduation rates, and prepare students for college and/or rewarding careers.

While no specific model is followed, NAHS schools have 12 strategies in common:

(1) Student learning and achievement guide the development of all core activities.

(2) Schools expect students to master the same rigorous academic material, eliminating the general track.

(3) Staff development and planning emphasize student learning and achievement.

(4) The curricula are challenging and relevant and cover material in depth.

(5) Schools use new forms of assessment such as portfolios and projects.

(6) Students get extra support from adults.

(7) Students learn about careers and college opportunities through real-life experiences.

(8) Schools create small, highly personalized, and safe learning environments.

(9) Schools integrate technology into the classroom to provide high-quality instruction, and students have opportunities to gain computer and other technical skills.

(10) Periods of instruction are longer and more flexible.

(11) Schools forge strong partnerships with middle schools and colleges.

(12) Schools form active alliances with parents, employers, community members, and policymakers to promote student learning and ensure accountability for results.

Schools compete nationally for the title; since the program began in 1996, 42 schools have been named NAHS. No high schools have been named NAHS in Washington during this period.[77]

High Schools That Work

High Schools That Work (HSTW) was established in 1987 to raise the academic achievement of vocational high school students and is one of seven initiatives of the Southern Regional Educational Board's (SREB) Vocational Education Consortium. The HSTW reform model is based on the principle that most students can master complex academic and technical concepts in an environment that encourages students to succeed. A prominent feature of the HSTW initiative is the use of data from student assessments to assist schools to improve learning practices, as well as academic and technical performance.

HSTW representatives visit participating high schools to provide technical assistance in developing a school improvement plan. The improvement plan is based on their visit to the school and data collected from assessments, as well as student, parent, and teacher opinions on instruction and curricula.

The HSTW initiative aims to enable at least 85 percent of high school students to reach or exceed the HSTW performance goals in reading, math, and science. The HSTW reform model is based on ten key practices:

(1) Setting higher expectations and getting more students to meet them.

(2) Increasing access to intellectually challenging vocational and technical studies, with a major emphasis on using high-level math, science, language arts, and problem-solving skills.

(3) Increasing access to academic studies that teach the essential concepts from the college pre-curriculum by encouraging students to use academic content and skills to address real world projects and problems.

(4) Requiring students to complete a program of study with an upgraded academic core and a career major.

(5) Integrating school-based and work–based learning.

[77] The Bethel School District in Spanaway, WA, received an NAHS Honorable Mention in 1997.

(6) Ensuring organization and schedules give academic and vocational teachers time to plan and deliver integrated instruction with high-level academic and technical content.

(7) Involving students in rigorous and challenging learning.

(8) Involving students and parents in guidance and advising that ensures the completion of an accelerated program of study with an in-depth academic or vocational-technical major.

(9) Providing structure to enable students who may lack adequate preparation to complete an accelerated program.

(10) Using student assessment and program evaluation data to improve continuously the school climate, organization, management, curricula, and instruction to advance student learning.

In 2000, more than 1,000 schools in 23 states had joined their state's HSTW network or had become an HSTW site. High schools can either join the HSTW network, if their state is a member of the HSTW Consortium, or contract to become an HSTW site if their state does not participate. Washington is not a member of the HSTW Consortium, although Sumner High School contracted in 1998 to become an HSTW site.

Summary

The common themes underlying the principles of the network reform models are: (1) high expectations and challenging academic standards for students; (2) strong relationships within schools; (3) strong relationships between schools and communities; and (4) relating knowledge to real work experiences. Each of the networks emphasizes different aspects:

- Coalition of Essential Schools emphasizes the personalization of education through reducing school size and building relationships between teachers and students.
- New American High Schools emphasizes high expectations for all students and reforms suited to the community needs.
- High Schools That Work emphasizes vocational learning through academically challenging programs and connections to real-life experiences.

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APPENDIX C: SMALL SCHOOLS RESEARCH AND GRANT PROGRAMS

The encouragement of small schools is a popular strategy to address student engagement and motivation in high schools. This appendix examines four questions:

(1) Why create small schools?

(2) What is a small school?

(3) What are the benefits and possible pitfalls of small schools?

(4) Who funds small schools as a reform strategy?

Why Create Small Schools?

In recent years, there has been an increasing interest in encouraging or creating smaller learning environments for students. The federal and state governments, national school networks, and private foundations have all supported efforts to create small schools or reduce school size. The most prominent reason for establishing small schools is the creation of personalized education where strong relationships are formed.[78]

Small school advocates claim that large schools are not conducive to forming strong relationships between teachers and students. Students in large schools may not feel connected to the people or purpose of the school and may demonstrate these feelings through apathy, absenteeism, poor behavior, and low achievement. According to small school advocates, building strong relationships between teachers and students is an essential component of enhancing student learning, and a small school is the best way to accomplish this objective.

What Is a Small School?

Size of School

Studies on small schools recommend different enrollment sizes as ideal for a high school. Some studies suggest between 400 to 800 students for a secondary school.[79] Another study claimed a high school of 800 to 900 students is the perfect size for a secondary school, since it provides for diverse staffing and academic programming.[80] The Chicago School Reform Board (supporting over 100 small schools since 1995) suggests 500 students is the right size for a high school.[81]

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[78] Melinda Nixon Nickle, et al., "Does It Make a Difference if You Change the Structure?" *Phi Delta Kappan*, October 1990, p. 150.
[79] Kathleen Cotton, "School Size, School Climate, and Student Performance," *Close-Up #20*, (Portland, OR: Northwest Regional Educational Laboratory, 1996), p. 3.
[80] *Education Week*, "Urban Network Touts Virtues of Small High Schools", November 8, 2000, p. 8.
[81] Patricia A. Wasley, et al., *Small Schools: Great Strides,* The Chicago Small Schools Research Team, (New York: Bank Street College of Education, 2000), p. 9.

Types of Small Schools

There are two main types of small schools:

(1) Freestanding—A school with its own building, budget, and principal.

(2) Schools-Within-Schools (SWS)—One or more small schools co-exist within a conventional school, known as the host school. Alternatively, a group of small schools compose one large school and are housed within the same building or as part of the same campus. As Table 1 shows, SWS vary widely in structure and level of separateness and autonomy from the host school.

Table C-1
Structure of Schools-Within-Schools[82]

Type of SWS	Characteristics
Vertical House Plans	Students in grades 9–12 or 10–12 are assigned to groups of a few hundred each within a large high school. Each "house" has its own discipline plan, student activity program, student government, and social activities.
Ninth Grade House Plan	Ninth graders have their own "house" within a large high school and have smaller classes and counseling for students to ease the transition into high school.
Special Curriculum Schools	Students are organized into houses based on special interests or needs (e.g., English-as-a-Second-Language, Career Academies).
Multiplex/Multi-schools	Schools could either share a building principal or have separate school principals, but each has a separate identity and operates independently from other "schools" in the building. The degree of budgetary autonomy and official recognition as a separate school varies.[83]

Research suggests SWS can produce results similar to those of freestanding small schools provided they have a sufficient level of autonomy and separateness from the host school. Some key features are autonomy over curriculum, scheduling, organization, staffing, and budget.[84] A number of studies also suggest that the SWS should be implemented fully because partial or piecemeal implementation reduces their chance of success.[85] While an SWS should also possess a distinct identity, different from that of the host school, it should not intentionally screen out particular students or inadvertently attract only certain groups of students.[86]

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[82] Cotton, School Size, p. 9.
[83] Wasley, et al., pp. 10-12. Some researchers describe multiplexes as a "type" of small school rather than a school-within-a-school, because some multiplexes merely share facilities and little else.
[84] *Education Week*, p. 8.
[85] Mary Ann Raywid, "Taking Stock: Mini-Schools, Schools-Within-Schools, and Separate Small Schools," Center for Restructuring Education, http://eric-web.tc.columbia.edu/monographs/uds108/downsizing.html, April 1996.
[86] Diana Oxley, "Organizing Schools Into Small Units: Alternative to Homogeneous Grouping. *Phi Delta Kappan* (March 1994), p. 526.

Small School Reform

Some small school reforms involve not only changing the size of the school, but also adopting a focus for the school and redesigning teaching practices. Approaches such as mixing students according to skill rather than age, individualizing learning activities, grouping students to work cooperatively, and bringing together teachers' skills through collaborative planning and team teaching is all more feasible with fewer numbers of students. However, it can be difficult to determine which reform is having an impact when these changes are implemented simultaneously with the reduction of the number of students.

What Are the Benefits and Possible Pitfalls of Small Schools?

Academic Performance

The relationship between a school's size and its students' levels of achievement is not clear due to varying measures of performance. Half the 49 primary source studies examined by one researcher found no difference in overall student achievement between small and large schools; the other half found greater student achievement in small schools compared with large schools. No studies found achievement at large schools to be greater than that at small schools.[87] In relation to other student outcomes, studies show decreased dropout rates and better attendance rates at small schools.[88]

However, studies have found more obvious differences in achievement for ethnic minority students and students of lower socio-economic status. Disadvantaged students in small schools significantly outperformed those in large schools on standardized basic skills tests.[89]

Student Attitudes and Behavior

Studies find benefits of small schools in relation to improved student attitudes towards learning, their teachers, and the school. In addition, students at small schools were more likely to have sense of belonging and less likely to feel alienated within the learning environment. Students in small schools demonstrate fewer problem behaviors such as substance abuse or class disruption. Both parents and students report overall greater satisfaction with small schools.[90]

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[87] Cotton, School Size, p. 3.
[88] Ibid, pp. 6-7.
[89] Wasley, p. 9.
[90] Raywid; and Oxley, pp. 149, 153, 521-526.

Relationships in the School

In addition to stronger relationships forged between students and teachers in small schools, teachers generally report a stronger professional community, a greater sense of efficacy, and more collaboration with other teachers. However, staff turnover and teacher burnout can burden small schools more than large schools.

Relationships in schools-within-schools can be somewhat problematic. The main criticism stems from conflicts between SWS and the host school. Problems have arisen over scheduling and competition for resources, which hampers the SWS' ability to adjust its organization and practices in line with its separate mission. SWS practices may undermine those of the host school, and teachers may appear to receive favored treatment. An unclear relationship between the small school and the host school principal could also be a source of tension.[91]

Another problem impeding the creation of small schools or downsizing larger ones is school board policies and procedures designed with large schools in mind. There can be tension between SWS attempts to develop or retain a distinct identity, and federal and local trends to standardize curriculum and practices.

Educational Opportunities

The main argument against small schools is that they cannot provide the wide range of curriculum, in terms of the number or range of courses aimed at students with different learning abilities, that is available in large schools. However, research shows no reliable relationship between quality of curriculum and school size. One study estimates that only 5 to 12 percent of students take the extra courses offered in large schools; another claims a 100 percent increase in enrollment results in only a 17 percent increase in variety of offerings.[92]

Additional opportunities to participate in extra-curricular activities do not necessarily grow proportionally with growth in school size. In small schools, a larger proportion of students, including minority and low socio-economic status students, participate in extra-curricular activities because they are needed to populate the teams or clubs.[93]

Cost-Effectiveness

Another major argument against small schools is that they are not cost-effective since they cannot take advantage of economies of scale and cannot provide the range of equipment and facilities that large schools can offer. Studies have attempted to refute this claim. One study found as large schools grow, the cost per student initially falls, but after an optimum level of growth the cost per student begins to rise.[94] Downsizing large schools to form SWS could prove less expensive than implementing reforms in the host school because the SWS shares a principal and other resources with the host school.

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[91] Raywid.
[92] Cotton, School Size, p. 4.
[93] Kathleen Cotton, "Affective and Social Benefits of Small-Scale Schooling," *ERIC Digest*, ERIC Clearinghouse on Rural Education and Small School, EDO-RC-96-5, December, 1996, p. 2.
[94] Cotton, School Size, p. 4.

Tables 2 and 3 summarize research results on the benefits and possible pitfalls of small schools.

Table C-2

Research on Benefits of Small Schools Compared With Large Schools

Academic Performance	Attitudes and Behavior	Relationships in the School
Disadvantaged students improve performance on standardized tests Mixed results on student achievement (some positive, some no difference) Lower dropout rates Higher attendance rates Higher graduation rates	Students take on more responsibility Students feel a sense of ownership of their school Students feel a greater sense of personal effectiveness Students are less likely to engage in problem or risky behavior Students are less likely to be truant	Students and teachers come to know and care about each other More students participate in clubs, teams, and student government Students are less likely to feel isolated or overlooked Students are more likely to view teachers positively Close-knit community of educational staff, students, and parents

Table C-3

Research on Possible Pitfalls of Small Schools Compared With Large Schools

Relationships in the School	Educational Opportunities	Cost-Effectiveness[95]
Tensions within the faculty may be magnified SWS may compete with host school for resources Host school may resent favoritism of SWS and staff SWS faculty are distanced from host school faculty Students find it hard to shake negative reputations of earlier years or older siblings	Curriculums are not as diverse as at large schools Limited capacity to tailor courses according to student ability[96] Limited capacity to offer a wide range of extra-curricular activities	Cannot take advantage of economies of scale Cannot provide range of equipment offered by large schools Cannot provide range of facilities offered by large schools

[95] The cost-effectiveness arguments might not apply as much to schools-within-schools depending on the extent they are able to take advantage of the host school facilities or share resources.

[96] Valerie Lee, et al., "Inside Large and Small High School: Curriculum and Social Relation," *Educational Evaluation and Policy Analysis* 22(2), Summer 2000, p. 148. Conversely, studies also suggest the practice of separating students according to ability can have negative results, such as providing low-performing students with little opportunity or challenge, placing them according to incorrect stereotypes (race, income), and offering them a less stimulating curriculum taught by less qualified teachers.

Who Funds Small Schools as a Reform Strategy?

U.S. Department of Education

The Smaller Learning Communities Program is a U.S. Department of Education initiative granting $42.3 million to help large high schools create smaller, more personalized learning communities. Nationally, 354 schools have received one-year planning funding or three-year implementation funding. Recipients may employ such strategies as creating SWS or career academies. In Washington, the Edmonds School District received a one-year planning grant of $50,000.

Bill and Melinda Gates Foundation

During 2000, the Bill and Melinda Gates Foundation (Foundation) granted $350 million nationally to institutions, school networks, and school districts to support education reforms that improve teaching and learning, increase access to technology, and build stronger relationships between schools, homes, and communities. Of these funds, $37 million is dedicated to encourage the development of small, innovative schools.[97] The Foundation believes that smaller schools are more effective, and the size of a school plays an intrinsic role in its ability to advance student achievement.[98]

Within Washington State, the University of Washington received $750,000 from the Foundation to establish the Small Schools Program at the Center on Reinventing Public Education. In addition, ten Washington school districts received more than $70 million to accelerate reforms and create high achievement model districts.[99] One component of the grants to the school districts involves considering restructuring high schools into multiplex schools where one school might be divided into two or more smaller schools, each with its own principal and classrooms but sharing other facilities (see Table 4).

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[97] Ruth Schubert, "Small, Innovative Schools Get Big Gift From the Gateses," *Seattle Post Intelligencer*, September 6, 2000.

[98] Tom Vander Ark, Executive Director of Education Division of the Bill and Melinda Gates Foundation. The Bill and Melinda Gates Foundation web site: http://www.gatesfoundation.org/pressroom/, "Port Angeles School District Recognized as High-Achievement Model by the Bill and Melinda Gates Foundation," (August 28, 2000).

[99] The grant amounts were based on districts' student population and whether they were high-need districts.

Table C-4
Gates Foundation Grants to Washington School Districts

School District	Grant Amount (in millions)
Seattle	$ 25.9
Spokane	$ 16.5
Evergreen	$ 9.3
Kennewick	$ 7.3
Bellingham	$ 4.5
Port Angeles	$ 2.7
Enumclaw	$ 2.3
Nooksack Valley	$ 1.0
Hockinson	$ .9
Mabton	$ .5

Annenberg Foundation

The goals of the Annenberg Foundation are similar to those of the Coalition of Essential Schools (see Appendix B: National Networks of School Reform). The goals focus on improving school climate as a means of improving student achievement. According to the CES model, reducing school size is an essential strategy in creating a learning environment conducive to building strong relationships between teachers, teachers and students, and the school and community.

The Annenberg Foundation promised a $500 million matching grant called "Challenge to the Nation," to encourage reforms for schools serving America's most disadvantaged children. Since 1993, the foundation has made grants to 2,450 public schools in 35 states, as well as the Annenberg Institute for School Reform,[100] New American High Schools, and the Education Commission of the States. As of April 2000, public and private sources had contributed over $604 million in matching funds. No grants have been made to high schools in Washington State.

Summary

There is increasing support for small schools from a variety of organizations and government entities. The available research suggests small schools can produce some gains for all students, but more significant gains for disadvantaged students. The benefits from reforms to create schools-within-schools appear to vary depending on how fully this reform is implemented and the degree of separateness and autonomy from the host school.

[100] The Annenberg Institute is the research branch of the Annenberg Foundation. It focuses on schools in urban communities and schools serving disadvantaged children. The Annenberg Institute for School Reform website: http://www.airs.brown.edu/

The arguments against small schools are reduced cost-efficiency and the inability to offer as diverse a curriculum as large schools. Some research refutes these arguments. To the extent that schools attempt multiple reforms simultaneously (including reducing size), it becomes difficult to determine which reform is having an impact.

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APPENDIX D: HISTORY OF STATE LEGISLATIVE POLICY CHANGES FOR HIGH SCHOOL

This appendix provides a more detailed description of state legislative policy changes for high schools over the last 30 years.

1970s

Standardized Tests

State policymakers wanted to know how well Washington students were doing academically in comparison to their peers in other states. As a result, the legislature requested that the Office of the Superintendent of Public Instruction (OSPI) conduct the first statewide-standardized tests on a sample of 8th and 11th graders.[101]

Student Learning Objectives

The legislature passed a law to ensure school districts developed student-learning objectives for language arts, reading, and math.[102] Student attainment of these objectives was to be measured through local assessments.

Skills Centers

In the mid 1970s, OSPI wanted to encourage the establishment of secondary vocational area schools similar to one operating in South King County (started with inter-district cooperative authority granted from the legislature). The legislature provided funding for a feasibility study[103] that resulted in legislative funding for 90 percent of the capital costs to build skills centers across the state.[104] The purpose of these centers was to provide inter-district programs not affordable to individual districts due to the investment needed in equipment. Funding for skills centers has continued into the 1990s. Currently, there are nine skills centers.

1980s

Statewide High School Graduation Requirements

The legislature created specific high school graduation requirements for English, math, social studies, science, occupational education, physical education, and general

[101] C 98 L75-76 specified a sample of 2,000 students in 8th grade and 2,000 students in 11th grade.
[102] C 305 L77 required school districts to create student learning objective requirements for grades 9–12. C 90 L75-76 required school districts to create these objectives for grades K–8.
[103] The 1972-1973 operating budget.
[104] State capital budgets from the mid-1970s to mid-1980s.

electives,[105] as well as an elective in fine, visual, or performing arts.[106] The State Board of Education (SBE) was responsible for overseeing these requirements and making any needed changes. School districts were also given the express authority to grant high school diplomas.[107]

Standardized High School Transcripts

In an effort to increase standardization, several measures were enacted. The legislature required the SBE to develop a standardized high school transcript to enable a comparison between different schools' credit systems (e.g., quarter, semester, and trimester).[108] In addition, the legislature required public four-year baccalaureate institutions to establish uniform minimum entrance requirements.[109]

Schools for the Twenty-First Century Program

The legislature created the "Schools for the Twenty-First Century Program" to foster change in the state common school system and improve student performance. Projects were funded from 1987 until 1994 at roughly $10 million per biennium.[110] Some of these projects were in high schools.

1990s

Graduation and Dropout Statistics

In an effort to keep track of what happens to students' educational progress in high school, the legislature required school districts to report annually to OSPI on the number of high school students who are enrolled, graduate, transfer, have an unknown status, or drop out.[111]

Running Start

Running Start was created by the legislature as part of an overall move to increase student and parental choice in educational programs for some students who were ready for a college-level learning experience off the high school campus.[112] Several four-year colleges[113] and community colleges in Oregon and Idaho[114] were added over the years as Running Start options for students.

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[105] C 278 L84 specified that there should be 3 years of English, 2 years of math, 2.5 years of social studies (U.S., Contemporary, and Washington), 2 years of science, 1 year of occupational education, as well as 5.5 years of electives. These were outlined as credits, but total credits can be translated into years. In 1992, the Legislature removed the list of credits and delegated full authority to the SBE (see RCW 28A.390).
[106] C 384 L85 added an additional elective and specified that it must be in the area of fine, visual or performing arts.
[107] C 178 L85
[108] C 178 L85
[109] C 278 L84
[110] C 525 L87
[111] C 235 L91
[112] C 9 L90 provided a number of student enrollment options, including-inter district transfer.
[113] C 204 L94
[114] C 63 L98

High School and Beyond Assessment

The legislature set up a high school and beyond assessment for all 8th and 11th grade students to obtain academic achievement measures and career interests for all students in those particular grades.[115] Students, parents, and teachers could use the information from these assessments for future planning, in terms of high school and initial years beyond high school.

Academic/Vocational Integration (School to Work) Pilots

In an effort to increase post-high school options and eliminate rigid tracking, the legislature created pilot projects to integrate vocational and academic curricula.[116] These projects, and further encouragement to explore educational pathways at high school, became folded into the school to work transitions program.

Approximately $2.5 million in funding was provided for selected school districts in the 1993-95 biennium.

Certificate of Mastery and Educational Pathways

Education reform became a major focus for all state policymakers throughout the decade. To increase flexibility for the SBE, the legislature removed high school credit requirements from the statutes.[117] The education reform act passed,[118] which created a significant change in the state's role by prescribing the expected academic learning requirements and standards that students should meet in benchmark grades. Perhaps the most significant impact for high school was the requirement that students must pass the Washington Assessment of Student Learning for 10th grade in order to receive a high school diploma. Students in 11th and 12th grade are expected to pursue educational pathways.[119] Parents must be notified of their child's selected educational pathway.[120]

Postsecondary College Reports on Remediation

Public universities and community and technical colleges must report annually on their Washington high school graduates who are enrolled in remedial classes.[121]

High School Credit Equivalencies for College Classes

The legislature adopted the recommendations of its task force to continue to allow the current granting of 1 high school credit for every 5 quarters or 3 semesters of college credit. The SBE had tried to reduce the amount of college credit earned as high school credit.[122]

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[115] C 101 L90
[116] C 137 L92
[117] C 141 L93
[118] C 336 L93
[119] Ibid
[120] C 226 L98
[121] C 310 L95
[122] C 222 L97

Alternative Education School Startup Grants

In an effort to address the concerns of truant students and dropouts, the legislature created a grant program for the startup costs of alternative education schools. $2 million was provided in the 1995-97 biennium. Funding has continued in the ensuing biennia (1997-99 and 1999-01). An extended-day skills center program was also funded to provide skill training for dropouts or students at risk of dropping out.[123]

Internet-Based Curriculum for High Schools

In an effort to enable rural students to increase their access to higher-level curricula, $500,000 was available in the 1999-01 biennium for high schools to offer their students advanced courses over the Internet. Approximately 100 schools have received one-time only grants. The primary focus is for students in remote areas of the state.[124]

[123] C 165 L96
[124] C 309 L99

APPENDIX E: DATA AVAILABLE ON WASHINGTON STATE HIGH SCHOOL AND COLLEGE STUDENTS

	OSPI P210 [125]	OSPI WASL AND ITED [126]	SBCTC	OFM [127]	HECB FINANCIAL AID	INDIVIDUAL FOUR-YEAR COLLEGES	EMPLOY-MENT SECURITY	COMMENTS
STUDENT NAME	✓	✓		✓	✓	✓		Unable to link OSPI and SBCTC data bases because OSPI uses name and SBCTC uses Social Security number.
STUDENT BIRTHDAY (MMDDYY)	✓	✓	✓		✓	✓		
IDENTIFICATION (ID) NUMBER	✓	✓	✓	✓	✓	✓	✓	Social Security number is requested in all cases checked except the P210, which asks for a student ID (could be their Social Security number).
GRADUATION YEAR	✓							
ENTRY TO DISTRICT	✓							
EXIT FROM DISTRICT	✓							
ETHNICITY	✓	✓	✓	✓	✓	✓		
GENDER	✓	✓	✓	✓	✓	✓		
SOCIOECONOMIC STATUS	✓				✓			Incomplete information at the high school level.

[125] P210 Public High School Enrollment Status. Data quality is best from 1997-98 forward. OSPI is creating a common student identification number that will be available for all Washington State students in 2001-02. Currently, some school districts provide an identification number, others do not.
[126] OSPI conducts the Washington Assessment of Student Learning (WASL) in 10th grade and the Iowa Test of Educational Development (ITED) in 9th grade (formerly in 11th grade). Information is not available on individual students.
[127] OFM Data is only on higher education students.

	OSPI P210 [125]	OSPI WASL and ITED [126]	SBCTC	OFM[127]	HECB Financial Aid	Individual Four-Year Colleges	Employment Security	Comments
Disability	✓		✓		✓			
Enrollment Status	✓		✓	✓	✓	✓		OSPI *Completer* (Graduated, GED, IEP Adult Diploma) and *Leaver* (Transfer, Work, Lack of Academic Progress, etc.).
Grade/Class	✓	✓	✓			✓		
GPA	✓		✓			✓		
Vocational Program Area Completer	✓							Added in 1997-98 school year. A vocational program completer is defined as any student who has 360 hours in a single vocational program area.
Enrollment in Specific Vocational Course	✓							Added in 1997-98 school year. Expanded in 1999-00 to include all students, not just vocational completers.
Advanced Placement	✓	✓						
Running Start			✓					
Employment					✓		✓	HECB data related to work study; ESD for all other employment. Unable to link OSPI and ESD data bases because OSPI uses name and ESD uses Social Security number.
GED	✓		✓					SBCTC data are the most complete.
Remedial Courses			✓			✓		
Test Scores		✓						OSPI has test scores for students on SATs, WASLs, ITED, and CFAS.

APPENDIX F: COLLEGE DATA ON STUDENT PERFORMANCE

Data is provided on students who graduated from Washington public high schools and who then enrolled for the first time in a two- or four-year public higher education institution during 1995-99 (when possible) directly from high school. The four-year public universities and colleges and the State Board for Community and Technical Colleges (for all community and technical colleges) provided the information. It includes the following:

- Enrollment of first year students with Running Start and no Running Start credit.
- Running Start credit students by gender, ethnicity, and race.
- High school student GPA for Running Start credit and no Running Start credit students.
- First-year college cumulative GPA for Running Start credit and no Running Start credit students.
- First-year dropout rates for Running Start credit and no Running Start credit students.
- Need-based aid for Running Start credit and no Running Start credit students.
- Graduation Efficiency Index for Running Start credit and no Running Start credit students (student progress for Community and Technical Colleges).
- Average college-level credit accepted by type of credit.
- First-year students' math experiences.

Each higher education institution's data is presented separately, with the exception of the two-year institutions. A special thanks to the staff at the universities and colleges and the State Board of Community and Technical Colleges who submitted the data requested for this aspect of the study.

Central Washington University: Undergraduate Students From Washington Public High Schools

Number of Students

	Fall 1995	Fall 1996	Fall 1997	Fall 1998	Fall 1999
No Running Start	784	866	755	686	819
Running Start	58	101	97	95	90
Total	842	967	852	781	909
Percent Running Start	7%	10%	11%	12%	10%

Students Who Took Running Start, by Gender

	Fall 1995	Fall 1996	Fall 1997	Fall 1998	Fall 1999
Male	18	29	35	33	33
Female	40	72	62	62	57

Non Asian-Pacific Minorities

	Fall 1995	Fall 1996	Fall 1997	Fall 1998	Fall 1999
No Running Start	67	76	51	64	81
Running Start	6	9	6	9	*

* Less than 5

Running Start by Ethnic Racial Category (excluding unknowns)

	Fall 1995	Fall 1996	Fall 1997	Fall 1998	Fall 1999
Non Asian-Pacific	6	9	6	9	*
Asian-Pacific	*	*	*	*	*
Caucasian**	47	87	85	75	78
Total	53	96	91	84	78

* Less than 5

** Includes Middle-Eastern

When ethnic racial status was not indicated, those students were not included.

Running Start by Ethnic Racial Category (excluding unknowns)

	Fall 1995	Fall 1996	Fall 1997	Fall 1998	Fall 1999
Non Asian-Pacific	11%	9%	7%	11%	NA
Asian-Pacific	NA	NA	NA	NA	NA
Caucasian	89%	91%	93%	89%	100%

When ethnic racial status was not indicated, those students were not included.

High School GPA

	Fall 1995	Fall 1996	Fall 1997	Fall 1998	Fall 1999
No Running Start	3.19	3.22	3.22	3.16	3.17
Running Start	3.37	3.31	3.36	3.26	3.28

No Other Data Available

Eastern Washington University: Undergraduate Students From Washington Public High Schools

Number of Students

	Fall 1995	Fall 1996	Fall 1997	Fall 1998	Fall 1999
No Running Start	697	673	650	851	1061
Running Start	18	24	31	67	85
Total	715	697	681	918	1146
Percent Running Start	3%	3%	5%	7%	7%

Students Who Took Running Start, by Gender

	Fall 1995	Fall 1996	Fall 1997	Fall 1998	Fall 1999
Male	9	7	14	22	37
Female	9	17	17	45	48

Non Asian-Pacific Minorities

	Fall 1995	Fall 1996	Fall 1997	Fall 1998	Fall 1999
No Running Start	77	70	69	96	106
Running Start	*	*	*	9	*

* Less than 5

Running Start by Ethnic Racial Category (excluding unknowns)

	Fall 1995	Fall 1996	Fall 1997	Fall 1998	Fall 1999
Non Asian-Pacific	*	*	*	9	*
Asian-Pacific	*	*	*	*	*
Caucasian	13	16	24	54	13
Total	13	16	24	63	13

* Less than 5

When ethnic racial status was not indicated, those students were not included.

Running Start by Ethnic Racial Category (excluding unknowns)

	Fall 1995	Fall 1996	Fall 1997	Fall 1998	Fall 1999
Non Asian-Pacific	NA	NA	NA	14%	NA
Asian-Pacific	NA	NA	NA	NA	NA
Caucasian	100%	100%	100%	86%	100%

When ethnic racial status was not indicated, those students were not included.

High School GPA

	Fall 1995	Fall 1996	Fall 1997	Fall 1998	Fall 1999
No Running Start	3.31	3.29	3.21	3.21	3.29
Running Start	3.61	3.42	3.41	3.4	3.51

Number of College Level Credits Accepted

	Fall 1995	Fall 1996	Fall 1997	Fall 1998	Fall 1999
Running Start Credit	NA	NA	26	28	26
Other Credit	NA	NA	NA	NA	NA

First-Year Dropouts

	Fall 1995	Fall 1996	Fall 1997	Fall 1998	Fall 1999
No Running Start	237	196	170	228	237
Running Start	11	13	17	40	46

First-Year Dropouts

	Fall 1995	Fall 1996	Fall 1997	Fall 1998	Fall 1999
No Running Start	34%	29%	26%	27%	22%
Running Start	61%	54%	55%	60%	54%

Math Experiences of First Year After High School College Students Entering in the Fall

	Fall 1995	Fall 1996	Fall 1997	Fall 1998	Fall 1999
Took Remedial Math in College	266	222	287	386	533
Took Intermediate Algebra or Greater in High School	NA	NA	NA	NA	NA
Brought Math College Credit from High School	200	161	85	80	73

Percent of First Year After High School College Students Math Experiences

	Fall 1995	Fall 1996	Fall 1997	Fall 1998	Fall 1999
Took Remedial Math in College	37%	32%	42%	42%	47%
Took Intermediate Algebra or Greater in High School	NA	NA	NA	NA	NA
Brought Math College Credit from High School	28%	23%	12%	9%	6%

No Other Data Available

The Evergreen State College: Undergraduate Students From Washington Public High Schools

Number of Students

	Fall 1995	Fall 1996	Fall 1997	Fall 1998	Fall 1999
No Running Start	211	208	148	149	126
Running Start	NA	NA	41	32	49
Total	211	208	189	181	175
Percent Running Start	NA	NA	22%	18%	28%

(Running Start data not collected until 1997)

Students Who Took Running Start, by Gender

	Fall 1995	Fall 1996	Fall 1997	Fall 1998	Fall 1999
Male	NA	NA	20	10	NA
Female	NA	NA	21	22	NA

Non Asian-Pacific Minorities

	Fall 1995	Fall 1996	Fall 1997	Fall 1998	Fall 1999
No Running Start	NA	12	36	NA	NA
Running Start	NA	NA	10	5	NA

Running Start by Ethnic Racial Category (excluding unknowns)

	Fall 1995	Fall 1996	Fall 1997	Fall 1998	Fall 1999
Non Asian-Pacific	NA	NA	13	5	NA
Asian-Pacific	NA	NA	*	*	NA
Caucasian	NA	NA	28	25	NA
Total	NA	NA	NA	NA	NA

* Less than 5

When ethnic racial status was not indicated, those students were not included.

High School GPA

	Fall 1995	Fall 1996	Fall 1997	Fall 1998	Fall 1999
No Running Start	3.26	3.13	3.15	3.14	3.26
Running Start	NA	NA	3.35	3.31	3.35

First-Year Dropouts

	Fall 1995	Fall 1996	Fall 1997	Fall 1998	Fall 1999
No Running Start	61	NA	32	46	33
Running Start	NA	NA	5	14	7

First-Year Dropouts

	Fall 1995	Fall 1996	Fall 1997	Fall 1998	Fall 1999
No Running Start	29%	NA	22%	31%	26%
Running Start	NA	NA	12%	44%	14%

First-Year Need-Based Aid

	Fall 1995	Fall 1996	Fall 1997	Fall 1998	Fall 1999
No Running Start	102	88	68	78	69
Running Start	NA	NA	20	20	32

First-Year Need-Based Aid

	Fall 1995	Fall 1996	Fall 1997	Fall 1998	Fall 1999
No Running Start	48%	42%	46%	52%	55%
Running Start	NA	NA	49%	63%	65%

Graduation Efficiency Index for Freshmen Who
Started in Fall Indicated Below (transfers not included)

	Fall 1995	Fall 1996	Fall 1997	Fall 1998	Fall 1999
No Running Start	91	92	NA	NA	NA
Running Start	NA	NA	NA	NA	NA

Average Number of College Level Credits Accepted

	Fall 1995	Fall 1996	Fall 1997	Fall 1998	Fall 1999
Running Start Credit	NA	NA	21	14	28
Other Credit	24	16	8	21	21

No Other Data Available

University of Washington: Undergraduate Students From Washington Public High Schools

Number of Students

	Fall 1995	Fall 1996	Fall 1997	Fall 1998	Fall 1999
No Running Start	2030	2249	2584	2680	2596
Running Start	201	409	420	496	709
Total	2231	2658	3004	3176	3305
Percent Running Start	10%	18%	16%	19%	27%

Students Who Took Running Start, by Gender

	Fall 1995	Fall 1996	Fall 1997	Fall 1998	Fall 1999
Male	90	188	184	244	342
Female	111	221	236	252	367

Non Asian-Pacific Minorities

	Fall 1995	Fall 1996	Fall 1997	Fall 1998	Fall 1999
No Running Start	163	186	227	228	160
Running Start	11	27	26	32	37

Running Start by Ethnic Racial Category (excluding unknowns)

	Fall 1995	Fall 1996	Fall 1997	Fall 1998	Fall 1999
Non Asian-Pacific	11	27	26	32	37
Asian-Pacific	51	96	107	136	201
Caucasian	127	261	237	280	382
Total	189	384	370	448	620

When ethnic racial status was not indicated, those students were not included.

Running Start by Ethnic Racial Category (excluding unknowns)

	Fall 1995	Fall 1996	Fall 1997	Fall 1998	Fall 1999
Non Asian-Pacific	6%	7%	7%	7%	6%
Asian-Pacific	27%	25%	29%	30%	32%
Caucasian	67%	68%	64%	63%	62%

When ethnic racial status was not indicated, those students were not included.

High School GPA

	Fall 1995	Fall 1996	Fall 1997	Fall 1998	Fall 1999
No Running Start	3.63	3.64	3.64	3.67	3.65
Running Start	3.63	3.64	3.63	3.67	3.67

Cumulative Average GPA in College for First-Year Students

	95-96	96-97	97-98	98-99	99-00
No Running Start	2.97	2.98	3	3.01	3
Running Start	3.03	3.04	2.98	3.03	3.01

First-Year Dropouts

	Fall 1995	Fall 1996	Fall 1997	Fall 1998	Fall 1999
No Running Start	165	226	220	277	231
Running Start	28	36	66	61	97

First-Year Dropouts

	Fall 1995	Fall 1996	Fall 1997	Fall 1998	Fall 1999
No Running Start	8%	10%	9%	10%	9%
Running Start	14%	9%	16%	12%	14%

First-Year Need-Based Aid

	Fall 1995	Fall 1996	Fall 1997	Fall 1998	Fall 1999
No Running Start	850	959	1070	983	889
Running Start	106	187	195	208	255

First-Year Need-Based Aid

	Fall 1995	Fall 1996	Fall 1997	Fall 1998	Fall 1999
No Running Start	42%	43%	41%	37%	34%
Running Start	53%	46%	46%	42%	36%

Graduation Efficiency Index for Freshmen Who Started in Fall Indicated Below (transfers not included) and Have Graduated

	Fall 1995	Fall 1996	Fall 1997	Fall 1998	Fall 1999
No Running Start	96	97	NA	NA	NA
Running Start	90	92	NA	NA	NA

Number of College Level Credits Accepted

	Fall 1995	Fall 1996	Fall 1997	Fall 1998	Fall 1999
Running Start Credit	NA	NA	28	30	31
Other Credit	NA	NA	10	10	10

Math Experiences of First Year After High School College Students Entering in the Fall

	Fall 1995	Fall 1996	Fall 1997	Fall 1998	Fall 1999
Took Remedial Math in College	170	246	195	236	203
Took Intermediate Algebra or Greater in High School	194	245	282	369	400
Brought Math College Credit From High School	346	485	579	703	785

Percent of First Year After High School College Students Math Experiences

	Fall 1995	Fall 1996	Fall 1997	Fall 1998	Fall 1999
Took Remedial Math in College	8%	9%	6%	7%	6%
Took Intermediate Algebra or Greater in High School	9%	9%	9%	12%	12%
Brought Math College Credit From High School	16%	18%	19%	22%	24%

Washington State University: Undergraduate Students From Washington Public High Schools

Number of Students

	Fall 1995	Fall 1996	Fall 1997	Fall 1998	Fall 1999
No Running Start	1959	1779	1711	2327	1896
Running Start	85	121	168	211	220
Total	2044	1900	1879	2538	2116
Percent Running Start	4%	6%	9%	8%	10%

Students Who Took Running Start, by Gender

	Fall 1995	Fall 1996	Fall 1997	Fall 1998	Fall 1999
Male	38	35	52	67	77
Female	50	77	85	108	102

Non Asian-Pacific Minorities

	Fall 1995	Fall 1996	Fall 1997	Fall 1998	Fall 1999
No Running Start	161	136	132	191	134
Running Start	*	12	14	14	9

* Less than 5

Running Start by Ethnic Racial Category (excluding unknowns)

	Fall 1995	Fall 1996	Fall 1997	Fall 1998	Fall 1999
Non Asian-Pacific	*	12	14	14	9
Asian-Pacific	6	*	5	12	21
Caucasian	72	102	135	170	183
Total	78	114	154	196	213

* Less than 5

When ethnic racial status was not indicated, those students were not included.

Running Start by Ethnic Racial Category (excluding unknowns)

	Fall 1995	Fall 1996	Fall 1997	Fall 1998	Fall 1999
Non Asian-Pacific	NA	11%	9%	7%	4%
Asian-Pacific	8%	NA	3%	6%	10%
Caucasian	92%	89%	88%	87%	86%

When ethnic racial status was not indicated, those students were not included.

Cumulative Average GPA in College for First-Year Students

	95-96	96-97	97-98	98-99	99-00
No Running Start	2.84	2.83	2.77	2.79	2.82
Running Start	2.94	3.06	2.96	2.93	2.91

First-Year Dropouts

	Fall 1995	Fall 1996	Fall 1997	Fall 1998	Fall 1999
No Running Start	160	116	145	184	155
Running Start	*	*	15	20	18

* Less than 5

First-Year Dropouts

	Fall 1995	Fall 1996	Fall 1997	Fall 1998	Fall 1999
No Running Start	8%	7%	8%	8%	8%
Running Start			9%	9%	8%

First-Year Need-Based Aid

	Fall 1995	Fall 1996	Fall 1997	Fall 1998	Fall 1999
No Running Start	797	878	1530	1764	1432
Running Start	42	97	159	179	176

First-Year Need-Based Aid

	Fall 1995	Fall 1996	Fall 1997	Fall 1998	Fall 1999
No Running Start	41%	49%	89%	76%	76%
Running Start	49%	80%	95%	85%	80%

Graduation Efficiency Index for Freshmen Who Started in Fall Indicated Below (transfers not included) and Have Graduated

	Fall 1995	Fall 1996	Fall 1997	Fall 1998	Fall 1999
No Running Start	91	94	NA	NA	NA
Running Start	83	86	NA	NA	NA

Number of College Level Credits Accepted

	Fall 1995	Fall 1996	Fall 1997	Fall 1998	Fall 1999
Running Start Credit	40	48	56	48	51
Other Credit	18	16	18	46	20

Math Experiences of First Year After High School College Students Entering in the Fall

	Fall 1995	Fall 1996	Fall 1997	Fall 1998	Fall 1999
Took Remedial Math in College	432	406	454	643	462
Took Intermediate Algebra or Greater in High School	310	165	159	209	165
Brought Math College Credit from High School	34	58	118	173	125

Percent of First Year After High School College Students Math Experiences

	Fall 1995	Fall 1996	Fall 1997	Fall 1998	Fall 1999
Took Remedial Math in College	21%	21%	24%	25%	22%
Took Intermediate Algebra or Greater in High School	15%	9%	8%	8%	8%
Brought Math College Credit from High School	2%	3%	6%	7%	6%

Western Washington University: Undergraduate Students From Washington Public High Schools

Number of Students

	Fall 1995	Fall 1996	Fall 1997	Fall 1998	Fall 1999
No Running Start	1663	1868	1882	1982	1883
Running Start	119	214	260	217	306
Total	1782	2082	2142	2199	2189
Percent Running Start	7%	10%	12%	10%	14%

Students Who Took Running Start, by Gender

	Fall 1995	Fall 1996	Fall 1997	Fall 1998	Fall 1999
Male	29	76	86	76	NA
Female	90	138	174	141	NA

Non Asian-Pacific Minorities

	Fall 1995	Fall 1996	Fall 1997	Fall 1998	Fall 1999
No Running Start	122	125	120	131	NA
Running Start	10	10	19	12	NA

Running Start by Ethnic Racial Category (excluding unknowns)

	Fall 1995	Fall 1996	Fall 1997	Fall 1998	Fall 1999
Non Asian-Pacific	10	10	19	12	NA
Asian-Pacific	8	17	16	14	NA
Caucasian	91	214	203	174	NA
Total	109	241	238	200	NA

When ethnic racial status was not indicated, those students were not included.

Running Start by Ethnic Racial Category (excluding unknowns)

	Fall 1995	Fall 1996	Fall 1997	Fall 1998	Fall 1999
Non Asian-Pacific	9%	4%	8%	6%	NA
Asian-Pacific	7%	7%	7%	7%	NA
Caucasian	83%	89%	85%	87%	NA

When ethnic racial status was not indicated, those students were not included.

Cumulative Average GPA in College for First-Year Students

	95-96	96-97	97-98	98-99	99-00
No Running Start	NA	NA	NA	NA	NA
Running Start	2.94	2.9	2.74	2.85	NA

No Other Data Available

Community and Technical Colleges: Undergraduate Students From Washington Public High Schools

Number of Students

	Summer 95	Summer 96	Summer 97	Summer 98	Summer 99
No Running Start	14464	14865	15722	16174	17023
Running Start	1642	1852	2273	2626	2696
Total	16106	16717	17995	18800	19719
Percent Running Start	10%	11%	13%	14%	14%

Students Who Took Running Start, by Gender

	Summer 95	Summer 96	Summer 97	Summer 98	Summer 99
Male	537	659	821	931	1015
Female	1104	11	1446	1692	1669

Non Asian-Pacific Minorities

	Summer 95	Summer 96	Summer 97	Summer 98	Summer 99
No Running Start	1458	1580	1808	1886	1958
Running Start	97	125	147	167	190

Running Start by Ethnic Racial Category (excluding unknowns)

	Summer 95	Summer 96	Summer 97	Summer 98	Summer 99
Non Asian-Pacific	97	125	99	167	190
Asian-Pacific	84	114	79	149	222
Caucasian	1430	1567	1911	2203	2152
Total	1611	1806	2089	2519	2564

When ethnic racial status was not indicated, those students were not included.

Running Start by Ethnic Racial Category (excluding unknowns)

	Summer 95	Summer 96	Summer 97	Summer 98	Summer 99
Non Asian-Pacific	6%	7%	5%	7%	7%
Asian-Pacific	5%	6%	4%	6%	9%
Caucasian	89%	87%	91%	87%	84%

When ethnic racial status was not indicated, those students were not included.

Cumulative Average GPA in College for First-Year Students

	95-96	96-97	97-98	98-99	99-00
No Running Start	2.48	2.47	2.46	2.45	2.44
Running Start	2.71	2.75	2.7	2.72	2.74

Student Progress for Students With No Running Start Credit

	Summer 95	Summer 96	Summer 97	Summer 98	Summer 99
Early Leaver	342	402	399	398	NA
Some Progress	961	1019	1219	1124	NA
Substantial Progress	2256	2483	2625	2532	NA

Progress for Students With Running Start Credit

	Summer 95	Summer 96	Summer 97	Summer 98	Summer 99
Early Leaver	NA	NA	NA	NA	NA
Some Progress	85	99	128	134	NA
Substantial Progress	333	396	495	530	NA

First-Year Need-Based Aid

	Summer 95	Summer 96	Summer 97	Summer 98	Summer 99
No Running Start	2063	2182	2425	2608	2681
Running Start	260	260	338	405	391

First-Year Need-Based Aid

	Summer 95	Summer 96	Summer 97	Summer 98	Summer 99
No Running Start	14%	15%	15%	16%	16%
Running Start	16%	14%	15%	15%	15%

Graduation Efficiency Index for Freshmen Who Started in Summer Indicated Below (transfers not included)

	Summer 95	Summer 96	Summer 97	Summer 98	Summer 99
No Running Start	NA	NA	85	84	85
Running Start	NA	NA	83	83	84

Number of College Level Credits Accepted

	Summer 95	Summer 96	Summer 97	Summer 98	Summer 99
Running Start Credit	NA	NA	NA	34	35
Other Credit	NA	NA	NA	26	28

Math Experiences of First Year After High School College Students Entering in the Fall

	Summer 95	Summer 96	Summer 97	Summer 98	Summer 99
Took Remedial/ Developmental Math in College	2017	4859	5333	5351	5833
Took College Level Math in College	3365	3457	3671	3962	4045
Total Math Takers	5382	8316	9004	9313	9878

Percent of First Year After High School College Students Math Experiences

	Summer 95	Summer 96	Summer 97	Summer 98	Summer 99
Took Remedial/ Developmental Math in College	13%	29%	30%	28%	30%
Took College Level Math in College	21%	21%	20%	21%	21%
Total Math Takers	33%	50%	50%	50%	50%

APPENDIX G: ADDITIONAL STUDENT PERFORMANCE MEASURES

Over the last eight years, OSPI has asked students for information on their family background and high school experiences (e.g., classes taken, number of absences). Students completed this information when they took the Curriculum Framework Assessment System (CFAS) and ITED in 11th grade. The major finding from these data is that the number of students taking advanced coursework is increasing.

Table G-1

Student Self-Reported Information From CFAS and ITED on Washington 11th Graders From 1995-1998

	SEPT 95 CFAS	SEPT 96 CFAS	SEPT 97 CFAS	SEPT 98 ITED
REPEATED GRADE	12%	12%	11%	10%
TAKING ADVANCED PLACEMENT COURSES	13%	14%	16%	17%
ENROLLED IN ALTERNATIVE HIGH SCHOOL	2%	2%	2%	*
TAKING OR HAVE TAKEN CALCULUS	4%	5%	5%	*
TAKING OR HAVE TAKEN PHYSICS	12%	12%	13%	*
TAKING OR HAVE TAKEN CHEMISTRY	44%	44%	43%	*
TAKING OR HAVE TAKEN THIRD-YEAR FOREIGN LANGUAGE	18%	20%	20%	*
HAVE TAKEN 8TH GRADE FIRST-YEAR ALGEBRA	33%	34%	36%	*

Source: Office of the Superintendent of Public Instruction. Non-responses are not reflected in the percentages reported.
* Information not requested or not comparable.

When race-ethnicity groups were separated, the patterns were quite different from the aggregate average. For example, Asians were less likely than other students to report that they had repeated a grade and more likely to report they had taken advanced or academically challenging courses. Students from non-Caucasian and non-Asian backgrounds were less likely to report that they had algebra in 8th grade or chemistry as of 11th grade.

Table G-2
Student Self-Reported Ethnic Information From 1997 CFAS

	Native American	Asian	African American	Hispanic	Caucasian
Repeated Grade	20%	9%	15%	19%	12%
Taking Advanced Placement Courses	8%	19%	12%	10%	13%
Enrolled in Alternative High School	3%	1%	3%	3%	1%
Taking or Have Taken Calculus	3%	8%	4%	4%	4%
Taking or Have Taken Physics	10%	20%	12%	13%	11%
Taking or Have Taken Chemistry	31%	60%	36%	29%	45%
Taking or Have Taken Third-Year Foreign Language	12%	29%	19%	23%	17%
Have Taken 8th Grade First-Year Algebra	23%	44%	23%	20%	34%

Source: Office of the Superintendent of Public Instruction. Non-responses are not reflected in the percentages reported.

The self-reported data questions on the ITED ended in 1999. This snapshot of students in 11th grade and the variables that correlated with student success in high school and college will be lost. The best time to ask for this information is in either the student's junior or senior year.[128] It may be possible to use the 11th grade science WASL to continue to ask these questions.

Survey for Workforce Training and Education Coordinating Board on High School Students. The Workforce Training and Education Coordinating Board studied 2,100 students in 62 Washington high schools who were 12th graders in 1995-96, and surveyed them in 1998 about their opinions of high school with a focus on school-to-work activities. Most students were positive about their high school experience.[129]

Students ranked the following skills as most helpful:

- developing basic reading skills
- developing basic math skills
- developing basic writing skills
- working with others as a team

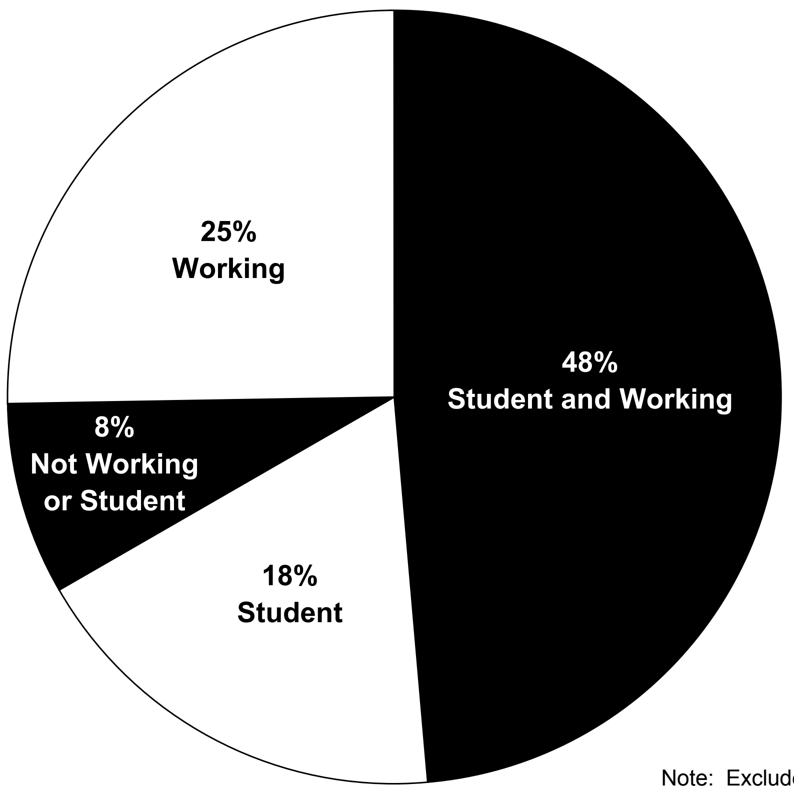
[128] Because the ITED is being moved to the 9th grade, it is no longer the best vehicle for obtaining this information.
[129] Andrew Wiegard and R. D'Amico, *Report on the Student Survey: For An Outcomes Evaluation of School-to-Work Transition Initiatives in Washington State,* Social Policy Research, Merlo Park, CA, 1999, pp. iii-7.

The following skills were ranked as least helpful:[130]

- seeing link between school and the "real" world
- setting goals for the future
- solving problems independently
- understanding what is required for success

Students who graduated in 1995-96 were also asked about their current status. Over 90 percent were either working or a student or both.[131]

Figure G-1
1995-96 High School Graduates' Education and Employment Status in 1998



WSIPP 2000
Source: Wiegard and D'Amico. 1999. *Report on the Student Survey: For An Outcomes Evaluation of School-to-Work Transition Initiatives in Washington State.*

Note: Excludes 1 percent who answered "I don't know."

The Workforce Training and Education Coordinating Board's evaluation of high school school-to-work programs will continue to provide information in terms of student outcomes for post-secondary education, employment, and attitudinal information about preparedness.

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[130] Ibid, pp. iii-5.
[131] Ibid, pp. iii-21.

However, the Board’s sample is limited to 62 high schools, which reduces the ability to generalize across the state.