

## Research Report No. 06-4

Washington State Board for Community and  
Technical Colleges

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# THE SOCIOECONOMIC WELL-BEING OF WASHINGTON STATE: WHO ATTENDS COMMUNITY AND TECHNICAL COLLEGE

September 2006

## Introduction

The lack of information regarding the socioeconomic background of students attending community and technical colleges has created a void in understanding student access and success. With this in mind, the State Board for Community and Technical Colleges (SBCTC) enlisted help from the Columbia University Community College Research Center (CCRC) to construct an alternative Socioeconomic (SES) proxy for individual students. Using 1990 and 2000 census data for relatively homogeneous geographic areas known as “block groups”, we determined the average SES for each block group by statistically combining three specific variables representing median household income, educational attainment (percent of adults with Bachelor’s degree and beyond) and occupation (percent of population 16 or older employed in professional and managerial jobs). We then matched student addresses for academic years 1993-94 and 2001-02 with census block groups. We classified each student by the SES quintile of the block group to which she/he was mapped. The SES proxy was used to analyze and compare student participation rates to the state population levels.

In addition, we used block group median household income specifically to assign student income deciles in order to analyze state tuition and household income trends.

This research paper describes the socioeconomic quintiles for the Washington State population and community and technical college students. Specifically we answer the following questions:

1. What are the SES quintiles for Washington State households in 1990 and 2000? What are the characteristics of the state population in these quintiles in each census year?



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2. What are the participation rates for students by SES quintiles? How do participation rates vary or stay the same for various student groups that include:
  - younger and older students;
  - students of color;
  - students by their purpose of attending;
  - students by their family status; and
  - students in Running Start<sup>1</sup> and online students?
3. What are the SES quintiles for students by college?
4. What are the historical trends in growth rates in household income and college tuition? What percent of student household income is needed for tuition?
5. What conclusions can be drawn regarding access and participation in two-year colleges in Washington State?

### **Key Findings**

- In the census, each of the three SES variables measured increased from 1990 to 2000 for Washington State. While race is not one of the three variables used in defining SES for purposes of this study, it still matters. Latino Hispanics, Native Americans and African Americans all had lower incomes and less educational attainment than whites or Asians.
- Disaggregating of SES by age groups in the state population showed that adults ages 25 or older, who generally have more work experience and more years of education completed than have younger adults ages 18-24 years, were therefore somewhat more likely to be in the higher and highest and less likely to be in the lower and lowest SES quintiles.
- The fastest changing segment of the population under 18 years of age is young children (under 10 years of age) being born and raised in the two lowest SES quintiles.
- Community and technical colleges provide access and opportunity for every SES quintile. In fact, students supported with state funds as a whole resemble the state population in their SES distribution.
- Students of color, including Latino/Hispanics, Native Americans and African Americans, from every socioeconomic level, participate in college at or near par to the state's profile. For those in the lowest quintiles, participation rates are increasing.

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<sup>1</sup> Running Start is a program that allows eleventh and twelfth grade students to take college courses for free at Washington's 34 community and technical colleges and Washington State, Eastern Washington, and Central Washington universities.

- Community and technical college participation rates for younger students (18-24 years) in the middle to low SES quintiles are outpaced by rates for students in the higher and highest quintiles. The pattern is opposite for older students (25 plus years) where participation rates for students from lower socioeconomic backgrounds outpace rates for students from middle to higher SES backgrounds.
- Running Start grew quickly from 1990 to 2000, serving more students in every SES group. Growth was fastest in the higher SES quintile. Participation in online instruction also is higher for higher SES quintile students.
- Student SES varies greatly by college.
- Tuition rate increases have outpaced growth in median household income in 12 of the past 16 years and tuition as a share of median household income has grown.

### **Conclusions and Next Steps**

It is significant that community and technical colleges provide access and opportunity that spans all of the SES quintiles. This describes a broad consumer market for the colleges' education and training services. Generally, people know someone who has sought the colleges' education and training services or has had their own personal experience.

Ultimately, however, this is a report about the difference between when younger and older students go to college. The data suggest that younger students in low SES quintile households are increasingly delaying coming to college, but later show up as older adults with low skills. Younger students in high SES households are more directly attending college after high school. The fact that the population under 10 years of age in 2000 was significantly more likely to be in the low SES households than in 1990 makes this issue more compelling in its need for attention. It suggests a new rhetoric when we set goals for all programs. That rhetoric is: Will children today have a better chance to go directly from high school to further post secondary education and training than their parents?

Both Running Start and online instruction are bellwethers for the consumer market that demonstrate how consumers will seek out opportunities for postsecondary education. In both of these cases, academic courses predominate. Both are launching efforts to diversify their offerings. Running Start is launching an apprenticeship program that may broaden the SES levels of who participates. Online instruction is being developed for a variety of other purposes that include pre-college coursework, adult education/GED and workforce education. This diversification in both programs should open the door to virtual learning for students typically from lower SES quintiles.

We need to watch both of these bellwethers for who responds to the new initiatives and how they affect who participates. We will need to identify other strategies that may increase participation for low SES students.

Two other new policy initiatives may also influence who comes directly to college. Students from lower SES backgrounds typically have fared less well in the Washington Assessment of Student Learning (WASL) exam. To the extent that community and technical colleges may play roles in providing alternatives to the WASL exam, these efforts should set goals that go beyond being just an alternative to also being an educational pathway. Likewise the Transition Mathematics Project<sup>2</sup> must guard against being a message heard only by savvy education consumers.

While participation patterns for 1990 and 2000 are similar and therefore make it hard to draw a direct relationship between increasing tuition and enrollment, it is reasonable to presume that increasing tuition might have an effect and be a contributing factor to weaker participation rates for younger students. Participation rates improved, but remained the lowest for those in the lowest quintile. They were weaker for those in the lower quintile and relatively stagnant for those in the middle and higher quintiles, but increased markedly for those in the highest quintile.

The distributions of students' socioeconomic levels vary significantly from college to college. These differences between colleges, which can be large, have implications on strategies for which services as well as how and when to deliver them based on the SES makeup of student population. As this study shows, the students from lower SES are coming to college later. Among other things, this will mean they are less likely to be prepared for college and are more likely to have additional priorities to deal with while in college, including families and employment. Finally, the differences between colleges raise questions of how to best support colleges so varied in their student body and community make-ups with implications for funding and how resources are aligned.

In conclusion, the SES alternative we have constructed would appear to let us examine issues with another lens. Next steps for using the SES proxy include sharing the database with colleges in order that they can study their own districts, populations and students. In addition, we will examine student retention and outcomes using the SES variable. SBCTC will do this through its own analysis and in a separate study in partnership with the Community College Research Center that will examine student pathways and milestone achievements.

### **What are the SES quintiles for Washington State households in 2000? What are the characteristics of the state population in these quintiles?**

All three measures for socioeconomic status, median household income, the percentages of adults 25 or older with at least a BA degree, and persons 16 or older employed in professional and managerial occupations, increased from 1990 to 2000. All three measures for Washington State are higher than the United States as a whole.

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<sup>2</sup> The Transition Mathematics Project is a private-public partnership in Washington State committed to developing and disseminating clear and consistent information about math expectations. The goal is to ensure students successfully transition from high school math to college-level math and beyond.

	Median Household Income	% 25 or Older with BA or Higher	% 16 or Older Employed Professional/Managerial
Washington State, 1990	\$40,340 (\$1999)	23%	28%
Washington State, 2000	\$45,776	28%	36%
United States, 2000	\$41,994	24%	34%

We rank our quintiles from highest (1) to lowest (5). The SES quintiles for Washington State in 1990 were:

SES Quintile	SES Description	Median Household Income (\$1999)	Adults 25 and Older with BA Degree or Higher	Persons 16 and Over Employed Professional Managerial	Total Block Groups	% Total State Population
1	Highest	\$61,615	45%	44%	915	20%
2	Higher	\$46,581	26%	31%	915	23%
3	Middle	\$39,865	18%	24%	915	22%
4	Lower	\$34,088	12%	18%	915	19%
5	Lowest	\$24,444	7%	12%	915	17%

The SES quintiles for Washington State in 2000 were:

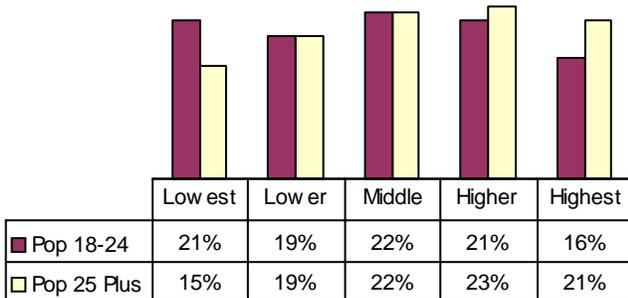
SES Quintile	SES Description	Median Household Income	Adults 25 and Older with BA Degree or Higher	Persons 16 and Over Employed Professional Managerial	Total Block Groups	% Total State Population
1	Highest	\$74,707	54%	55%	965	19%
2	Higher	\$55,625	34%	40%	965	20%
3	Middle	\$47,437	23%	33%	965	20%
4	Lower	\$39,925	16%	26%	965	21%
5	Lowest	\$29,515	10%	18%	965	20%

Select characteristics for Washington State population by SES quintiles census years 1990 and 2000 were:

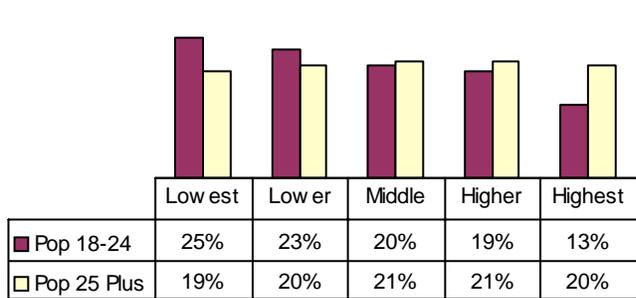
**State Population: Younger and Older Adults by SES Quintiles**

The graphs and tables below present the 1990 and 2000 percentages by SES quintiles for the state population by age, younger ages 18-24 years and older adults ages 25 years and over. SES is lower for young adults as they start out and increases as adults become older and gain work experience and further their education. A higher percentage of young adults were in the low SES quintiles starting out in 2000 than in 1990.

**State Population-Younger and Older Adults by SES Quintiles-1990**



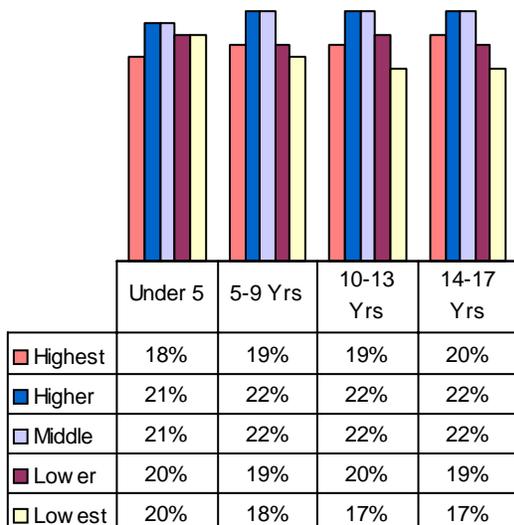
**State Population: Younger and Older Adults by SES Quintiles-2000**



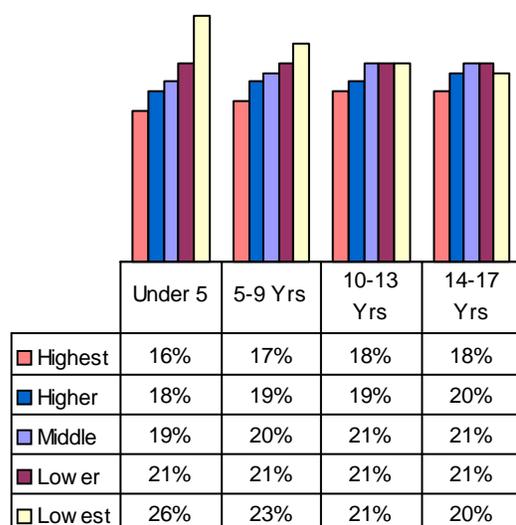
**State Population 17 Years and Younger by SES Quintiles**

Following adult patterns, SES was lower in (presumably younger) households with younger children, and increased in (presumably older) households with older children. More children are being born and raised in the lower and lowest SES households. In 1990 there were 40 children in the lower and lowest SES quintiles for every 39 in the higher and highest quintiles. In 2000 this changed to 47 in the low to 34 in the high SES quintiles.

**Population: Children 17 Yrs and Younger by SES Quintiles-1990**



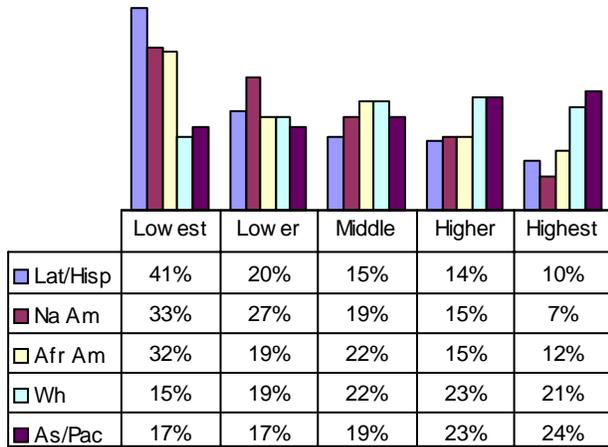
**Population: Children 17 Yrs and Younger by SES Quintiles-2000**



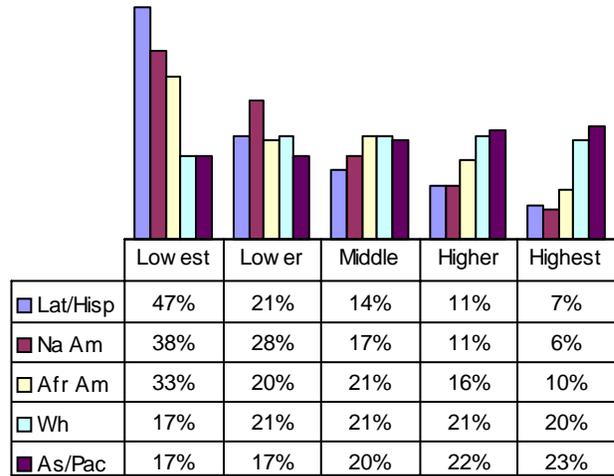
**State Population: Race and Ethnicity by SES Quintiles**

While we analyzed SES without regard to race and ethnicity in our variables, race cannot be ignored in the findings. Latino/Hispanics, Native Americans and African Americans were more apt to be in the lowest SES quintile and less apt to be in the higher and highest SES quintiles than Asian Pacific Islanders or whites.

**State Population: Race and Ethnicity by SES Quintiles-1990**



**State Population: Race and Ethnicity by SES Quintiles-2000**

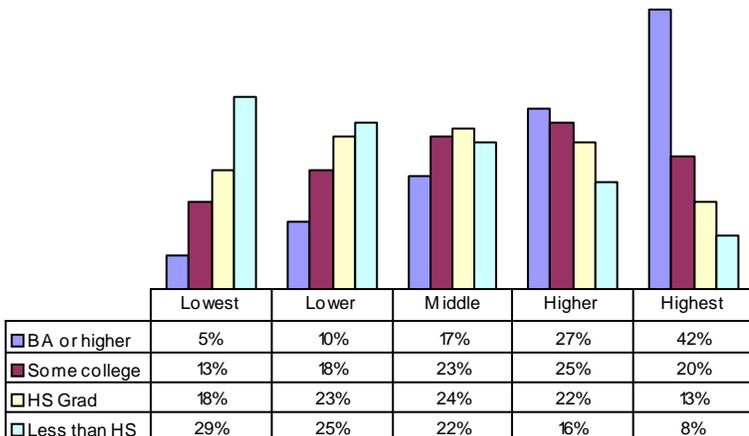


**State Population: Education and English Language by SES Quintiles**

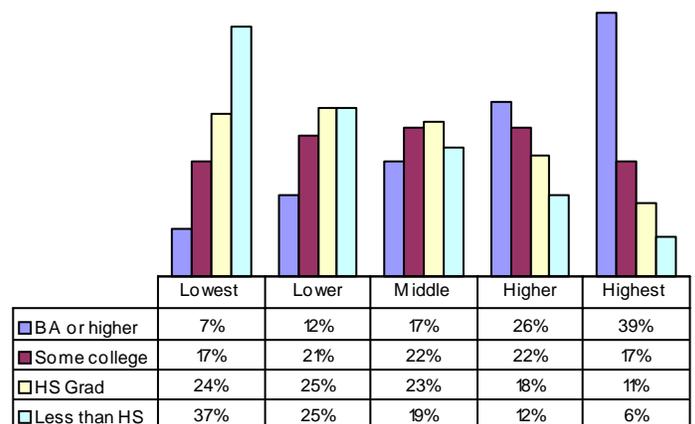
**Educational Attainment: Adults 25 and Older**

A BA or higher was clearly associated with higher SES. Conversely, not having a high school diploma was strongly associated with low SES quintiles. Some college was associated with the lower, middle, and higher quintiles. A high school education was associated with the lowest, lower, and middle quintiles.

**State Population: Education for Adults by SES Quintiles-1990**

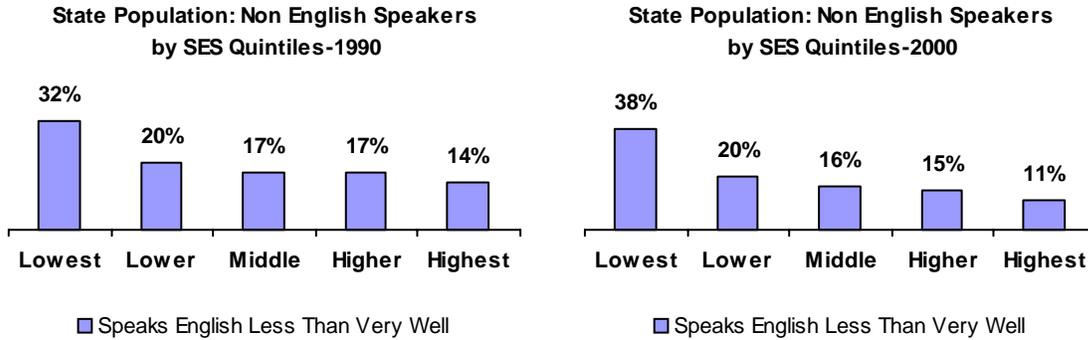


**State Population: Education for Adults by SES Quintiles-2000**



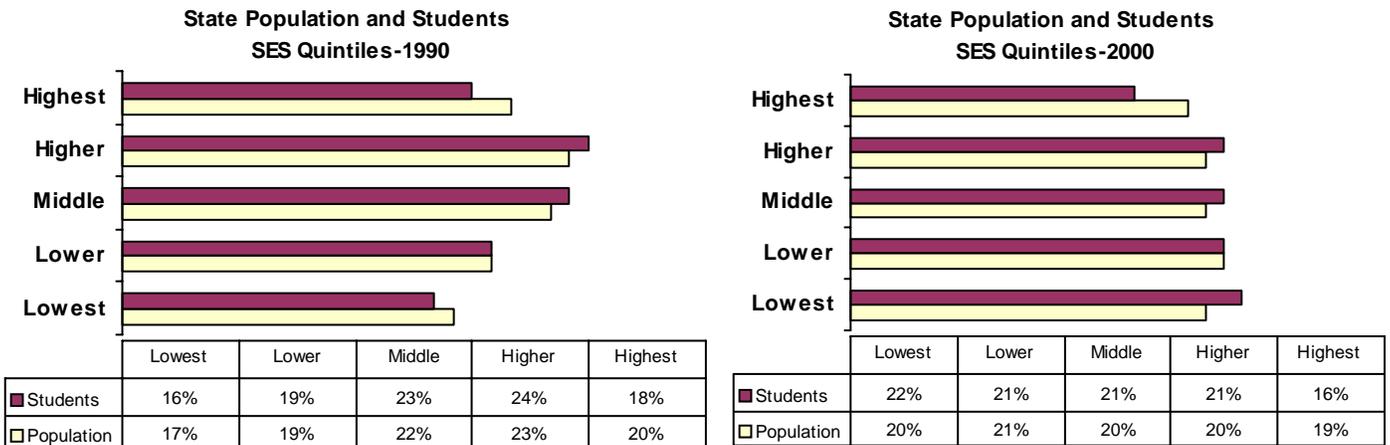
## Non-English Speakers

Non-English speakers are increasingly likely to be in the lowest SES quintile.



## State Support Students: Participation in College by SES Quintiles

We matched 205,000 students from academic year 1993-94 and 232,000 students from academic year 2001-02 to census year block groups for 1990 and 2000 respectively.<sup>3</sup> We then assigned students the average SES for their block group. The patterns were similar and there was a strong resemblance between students and state population as a whole in both years.



To measure how close the resemblance between students and state population is, we calculate participation rates. The participation rate is the percentage of students divided by the percentage of the state population. Student participation rates are on par (at parity) with state population when the ratio is 1. Students are participating at a higher rate than the state population when the ratio is above 1 and at a lower rate when it is below 1.

<sup>3</sup> The 205,000 and 232,000 students' addresses matched represented 75 percent of all state support students with a Washington State residence enrolled in 1993-94 and 2001-02. Throughout this report, we refer to these students by the census year to which they were matched, 1990 and 2000.

The table below provides the student participation rates by SES quintile for each year. Participation increased most for students from the lowest SES quintile. They decreased most for students from the highest SES quintile. Other rates stayed about the same +/- by a small fraction.

**Participation Rates by SES Quintile for State Support Students, 1990 and 2000**

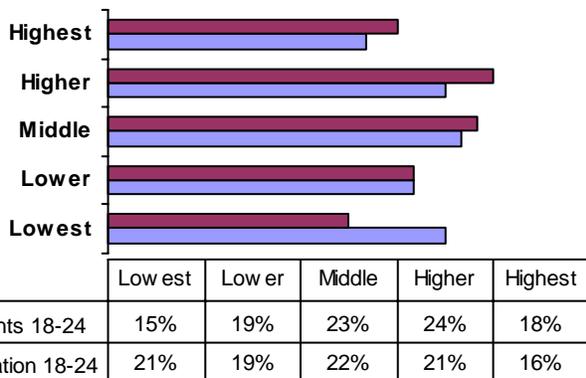
	Lowest	Lower	Middle	Higher	Highest
1990	0.92	1.01	1.02	1.02	0.92
2000	1.09	0.98	1.04	1.04	0.84

**Participation by Age: Younger and Older Students by SES Quintiles**

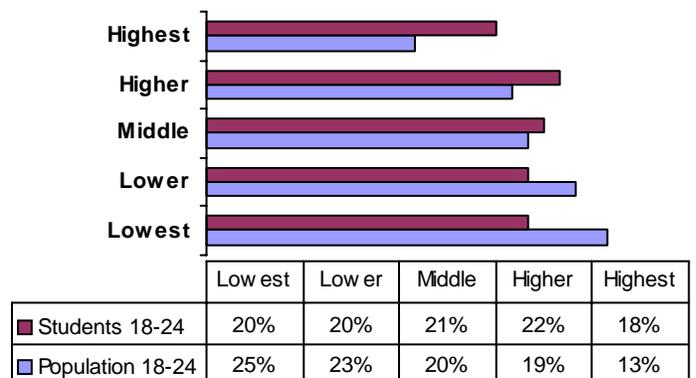
We previously saw that in the state population SES is higher as adults get older. In our student population we see that younger students are somewhat more likely to participate from the middle, higher, and highest SES quintiles than from the lower and lowest SES quintiles.

The opposite pattern appears for older adults as low SES older adults participate in higher proportions to their incidence in the population as a whole. This suggests that younger low SES students are delaying college participation and coming to us as older adults. Comparing 1990 to 2000 suggests that this pattern may be broadening for lower and middle SES older adults.

**Participation: Students 18-24 by SES Quintiles-1990**



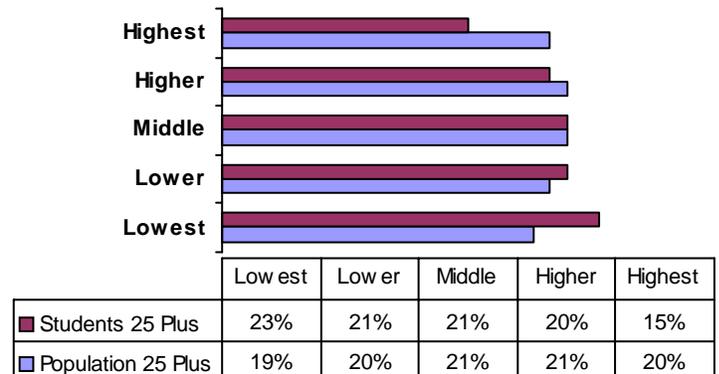
**Participation: Students 18-24 by SES Quintiles-2000**



**Participation: Students 25 Years and Older by SES Quintiles-1990**



**Participation: Students 25 Years and Older by SES Quintiles-2000**



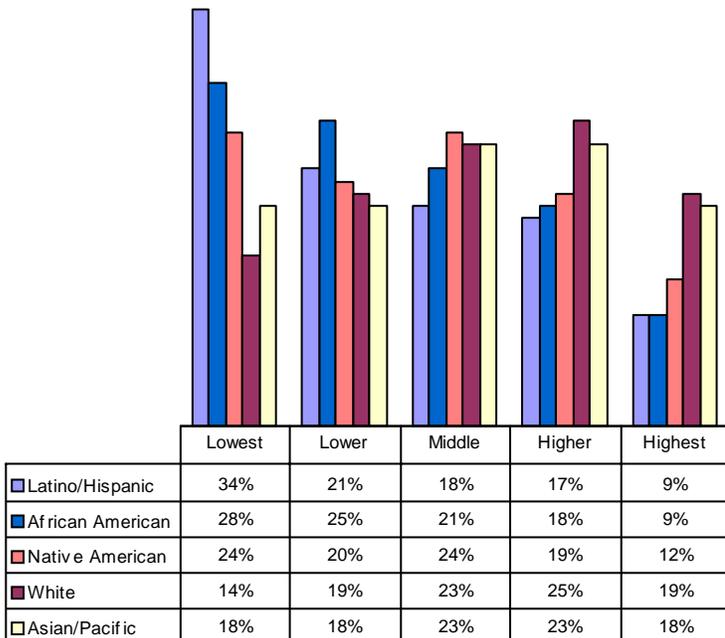
## Participation Rates for Younger and Older Students 1990 and 2000

	Lowest	Lower	Middle	Higher	Highest
Students 18-24 (1990)	0.72	1.03	1.06	1.15	1.12
Students 25+ (1990)	1.05	1.00	1.02	1.04	0.89
Students 18-24 (2000)	0.80	0.86	1.05	1.14	1.35
Students 25+ (2000)	1.21	1.05	0.99	0.96	0.75

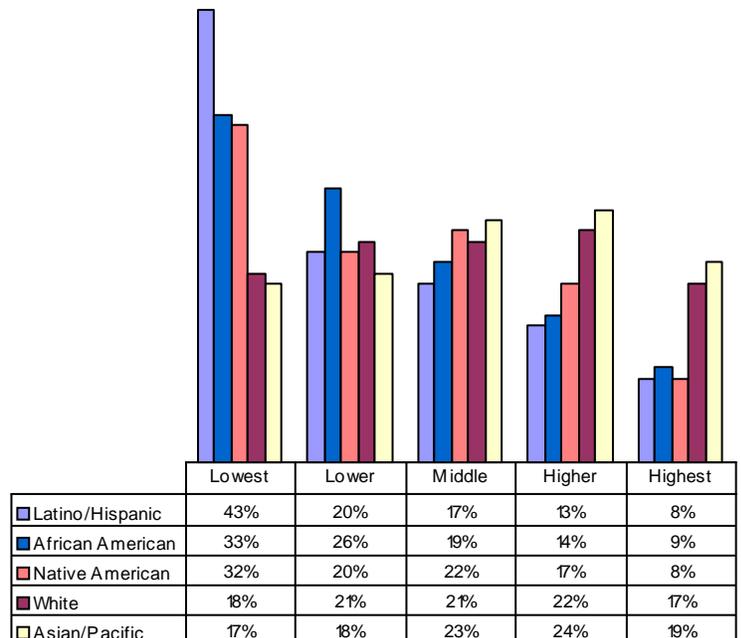
### Participation: Student Race and Ethnicity by SES Quintiles

Latino Hispanics, African Americans, Native Americans, and Asian Americans all grew significantly as shares of state students from 1990 to 2000. Students of color, with the exception of Asian students, were more apt to be in lowest and lower SES quintiles than whites and Asians, resembling the state population.

**Student Race and Ethnicity  
by SES Quintiles-1990**



**Student Race and Ethnicity  
by SES Quintiles-2000**



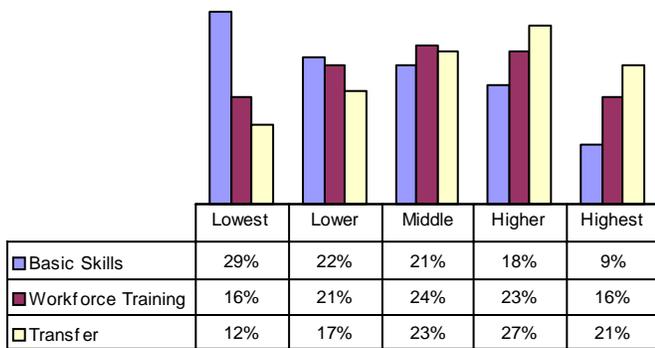
### Participation Rates by Race and Ethnicity, 1990 and 2000

	Lowest	Lower	Middle	Higher	Highest
Latino/Hispanic-1990	0.84	1.07	1.23	1.19	0.92
Native American-1990	0.84	0.93	1.10	1.17	1.24
African American-1990	0.76	1.04	1.10	1.29	1.04
White-1990	0.93	1.01	1.05	1.08	0.91
Asian/Pacific Is-1990	1.03	1.09	1.21	1.01	0.74
	Lowest	Lower	Middle	Higher	Highest
Latino/Hispanic-2000	0.91	0.95	1.18	1.21	1.07
Native American-2000	0.86	0.92	1.09	1.28	1.52
African American-2000	0.98	0.99	1.06	1.08	0.85
White-2000	1.08	1.00	1.01	1.04	0.87
Asian/Pacific Is-2000	0.97	1.06	1.13	1.09	0.82

### Participation: Students Purposes for Attending by SES Quintiles

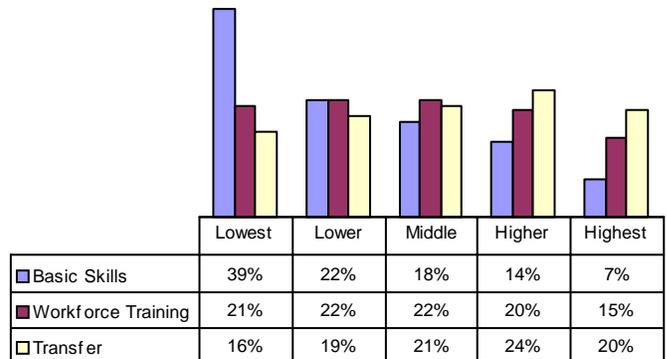
Older students, who we already said are somewhat more likely to be low SES than the older state population, are typically more likely to attend for work-related purposes, often beginning in basic education or learning English. Younger students, typically more likely to be high SES than the corresponding state population age group, are more likely to attend for transfer goals. This shows up in SES quintiles that vary by students' purposes for attending. Basic skills, followed by workforce, had higher percentages of students in the lowest and lower SES quintiles and lower percentages in the higher and highest SES quintiles than did students that attended for transfer. This increased from 1990 to 2000.

**Student Purposes for Attending  
by SES Quintiles-1990**



■ Basic Skills ■ Workforce Training □ Transfer

**Student Purposes for Attending  
by SES Quintiles-2000**

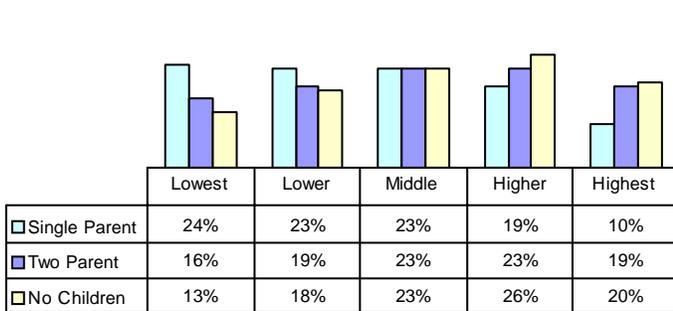


■ Basic Skills ■ Workforce Training □ Transfer

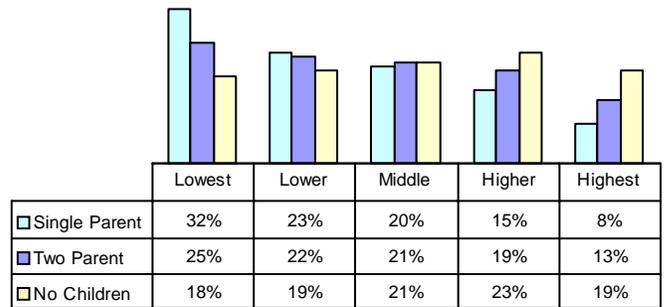
## Student Family Status by SES

Students with family responsibilities were more apt to be in lower SES than students without children. Over half of all single parents were in the lowest and lower SES quintiles. This compared to just over one-third of all students who identified themselves as having no family responsibilities. The percentages of low SES parents participating in education increased from 1990 to 2000, probably as a result of welfare reform.

**SES Quintiles by Student's Family Status-1990**



**SES Quintiles by Student's Family Status-2000**

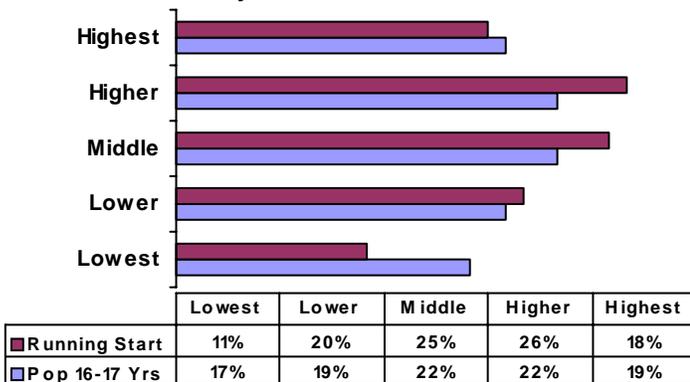


## Participation: Students by SES Quintiles for Select Programs

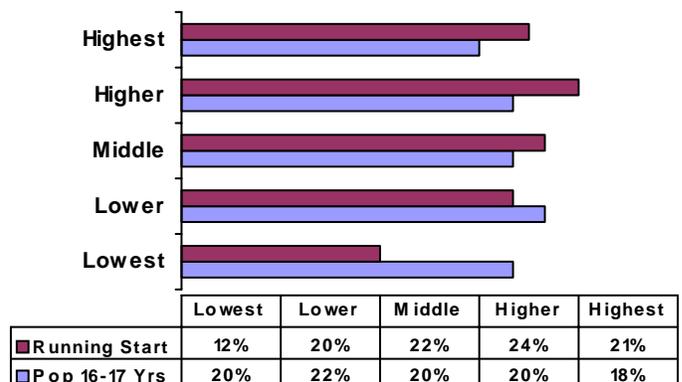
### **Running Start**

Running Start serves students in the middle to highest quintiles above parity. It was near parity for students in the lower quintile in 2000. However, it is below parity for students in the lowest quintile. Comparisons between 1990 and 2000 suggest that these patterns are becoming stronger.

**Running Start Compared to State Population by SES Quintiles-1990**



**Running Start Compared to State Population by SES Quintiles-2000**



**Participation Rates for Running Start Students-1990 and 2000**

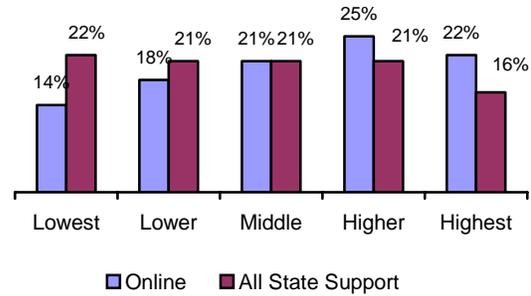
	<b>Lowest</b>	<b>Lower</b>	<b>Middle</b>	<b>Higher</b>	<b>Highest</b>
1990	0.64	1.05	1.12	1.18	0.93
2000	0.60	0.94	1.09	1.22	1.18

**Online Students-2000 Only**

Online students were 10 percent more apt to be in the highest SES quintiles and 11 percent less apt to be in the lowest SES quintiles than all state students as a whole.

The participation rates for online students compared to all state support increased as SES rose. Participation rates were .64, .86, 1.0, 1.19 and 1.38 in lowest to highest SES quintiles respectively.

**Online and All Student by SES Quintiles 2000**



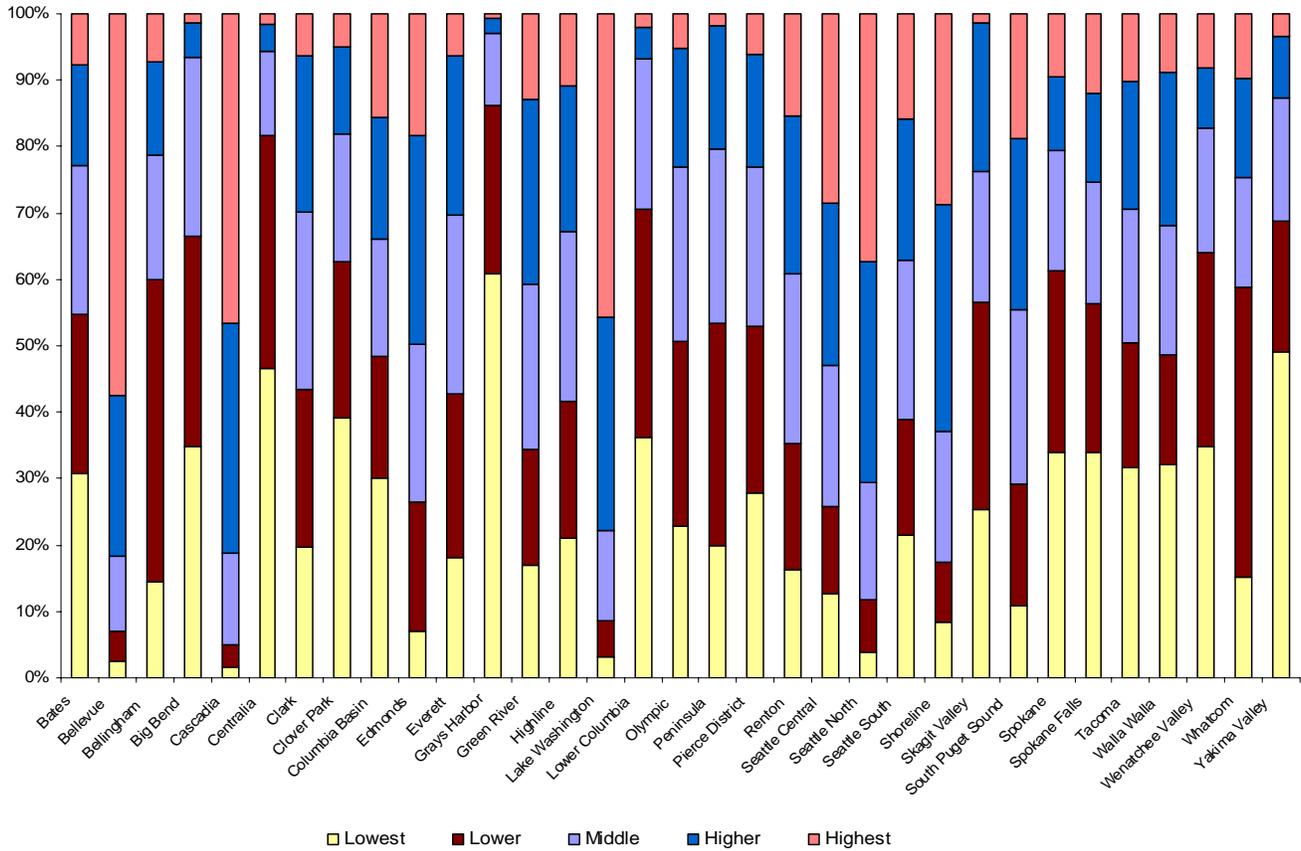
**Participation Rates for Online Instruction Students-2000**

	<b>Lowest</b>	<b>Lower</b>	<b>Middle</b>	<b>Higher</b>	<b>Highest</b>
2000	0.64	.86	1.0	1.19	1.38

# College District SES Profile

SES profiles varied greatly for college districts.

SES Profile by College District  
State Support Students-2000



**College Districts by SES Quintiles  
State Students-2000**

	<b>Lowest</b>	<b>Lower</b>	<b>Middle</b>	<b>Higher</b>	<b>Highest</b>
Bates	31%	24%	22%	15%	8%
Bellevue	3%	5%	11%	24%	57%
Bellingham	14%	45%	19%	14%	7%
Big Bend	35%	32%	27%	5%	1%
Cascadia	2%	3%	14%	35%	47%
Centralia	48%	34%	13%	4%	2%
Clark	21%	23%	27%	23%	6%
Clover Park	38%	24%	19%	13%	6%
Columbia Basin	30%	19%	17%	18%	16%
Edmonds	7%	20%	24%	31%	18%
Everett	18%	25%	27%	24%	6%
Grays Harbor	61%	25%	11%	2%	1%
Green River	17%	18%	25%	27%	13%
Highline	21%	21%	26%	21%	11%
Lake Washington	3%	5%	13%	32%	46%
Lower Columbia	36%	34%	22%	5%	2%
Olympic	23%	28%	26%	18%	5%
Peninsula	20%	33%	26%	19%	2%
Pierce	27%	23%	23%	18%	9%
Renton	16%	19%	26%	24%	15%
Seattle	14%	13%	21%	25%	27%
Shoreline	5%	9%	20%	35%	30%
Skagit Valley	25%	31%	20%	22%	1%
South Puget Sound	11%	18%	26%	26%	19%
Spokane	34%	24%	18%	12%	11%
Tacoma	31%	19%	20%	19%	10%
Walla Walla	32%	17%	20%	23%	9%
Wenatchee Valley	35%	29%	19%	9%	8%
Whatcom	15%	44%	17%	15%	10%
Yakima Valley	49%	20%	19%	9%	3%
<b>System</b>	<b>22%</b>	<b>21%</b>	<b>21%</b>	<b>21%</b>	<b>16%</b>

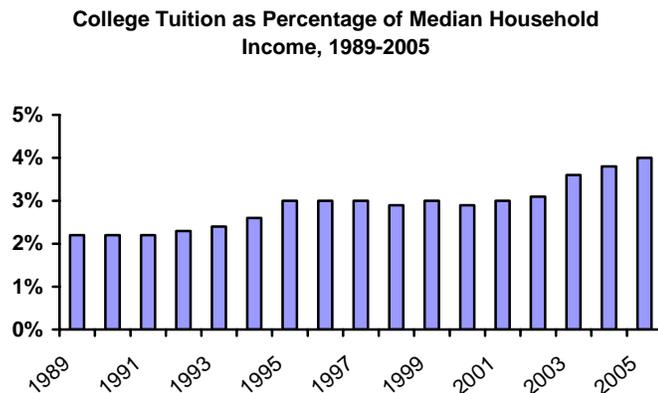
## **Tuition and Median Household Income**

The chart below presents Washington State median household income and community and technical college tuition (operating and building fees) 1989 to 2007.

	<b>Year</b>	<b>Median Household Income (\$Real)</b>	<b>Tuition</b>
Census	1989	\$31,183	\$686
OFM Estimate	1990	\$33,426	\$722
	1991	\$34,398	\$761
	1992	\$35,911	\$830
	1993	\$36,719	\$878
	1994	\$37,947	\$998
	1995	\$39,061	\$1,166
	1996	\$40,581	\$1,212
	1997	\$42,402	\$1,260
	1998	\$44,485	\$1,311
Census	1999	\$45,776	\$1,362
OFM Estimate	2000	\$48,397	\$1,425
	2001	\$49,314	\$1,476
	2002	\$49,922	\$1,568
	2003	\$49,938	\$1,784
OFM Prelim. Estimate	2004	\$50,804	\$1,927
OFM Projection	2005	\$51,794	\$2,081
	2006	NA	\$2,199
	2007	NA	\$2,327

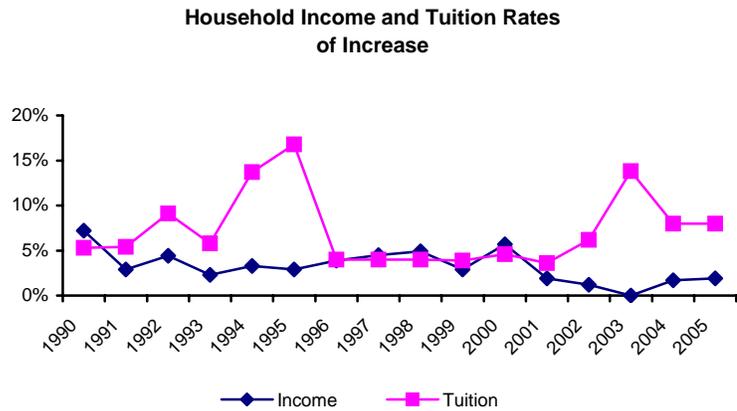
## **Tuition as a percent of Household Income**

From 1989 to 1993, tuition was roughly 2 percent of median household income. From 1994 through 2002 it inched up to 3 percent. Since 2003 tuition has risen to 4 percent of median household income.



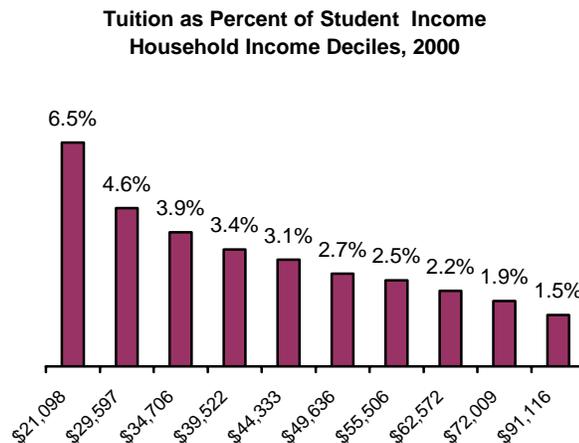
## Tuition Increases Compared to Growth in Household Income

Tuition growth has outpaced growth in household income. Household income grew annually at an average rate of 3.2 percent from 1989 to 2005. This compared to average annual tuition increases of 7.3 percent. Tuition increased at a faster rate than median household income in 12 of the 16 years measured. The rate of increase was 5 or more percent faster in 4 of the last 5 years measured. Tuition increase rates for 2006 and 2007 are slowed from previous recent years to 5.7 percent. Median household income for those years is not yet available.



## How does tuition compare to students at various income levels?

We assigned students the median household income for the block group to which they were mapped. These income levels were put into deciles. Tuition was \$1,362 or 6.5 percent of the student's income for a student in the \$21,098 (1<sup>st</sup>) decile.



**Appendix**  
**State Students Matched to 1990 and 2000 Census Years**

	<b>1993-94</b>	<b>2001-02</b>
Total State Support with SES	205,638	231,858
18-24 years	66,680	97,144
25 years or older	119,961	123,935
African American	7,670	11,317
Asian/Pacific Islander	15,510	20,940
Latino/Hispanic	9,160	24,442
Native American	3,515	3,925
White	149,491	149,008
Student Single Parent	20,387	22,474
Student Two Parent Household	44,377	41,834
Student- No Children	75,462	97,724
Workforce Goal	95,896	102,318
Transfer Goal	54,014	72,366
Basic Skills Goal	21,494	34,318
Running Start (Contract)	3,814	10,759
On-line Student (All Funds)	Not applicable	23,230

**Acknowledgements**

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