

The New Economy Workforce: Meeting Industry Demand with Higher Education Reforms in Washington State

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A 21st Century Workforce for Washington State

- How effective is the state system of higher education in preparing the state's 21st century workforce?
- Current reform strategies—potential pitfalls
- Educational equity and opportunity
- Recommendations for the future of Washington higher education

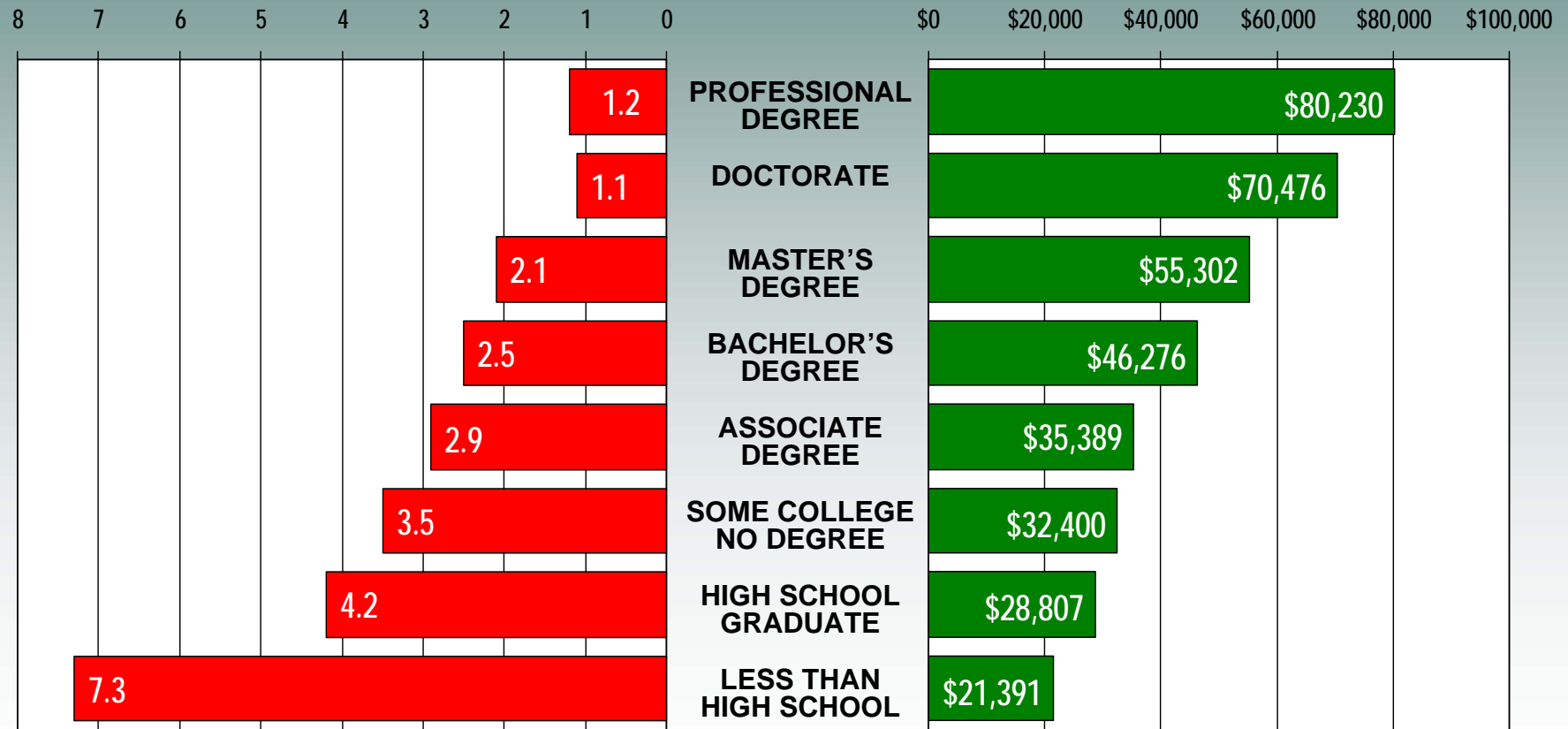


What are the Goals and Priorities of a 21st Century Higher Education System?

- Provide the educational foundation for 21st century workforce
 - Increase educational attainment, especially bachelor's degrees
 - Guarantee that degrees, the substantive content of those degrees, and the fields of study are appropriate for the needs of the state's economy
 - Bring low-income and growing immigrant population into the modern economy
 - Address regional disparities
 - Strengthen research base and graduate education
- Provide access and opportunity for underserved Washingtonians
- Do this in an environment in which resources are severely constrained



Higher Learning = Higher Earning

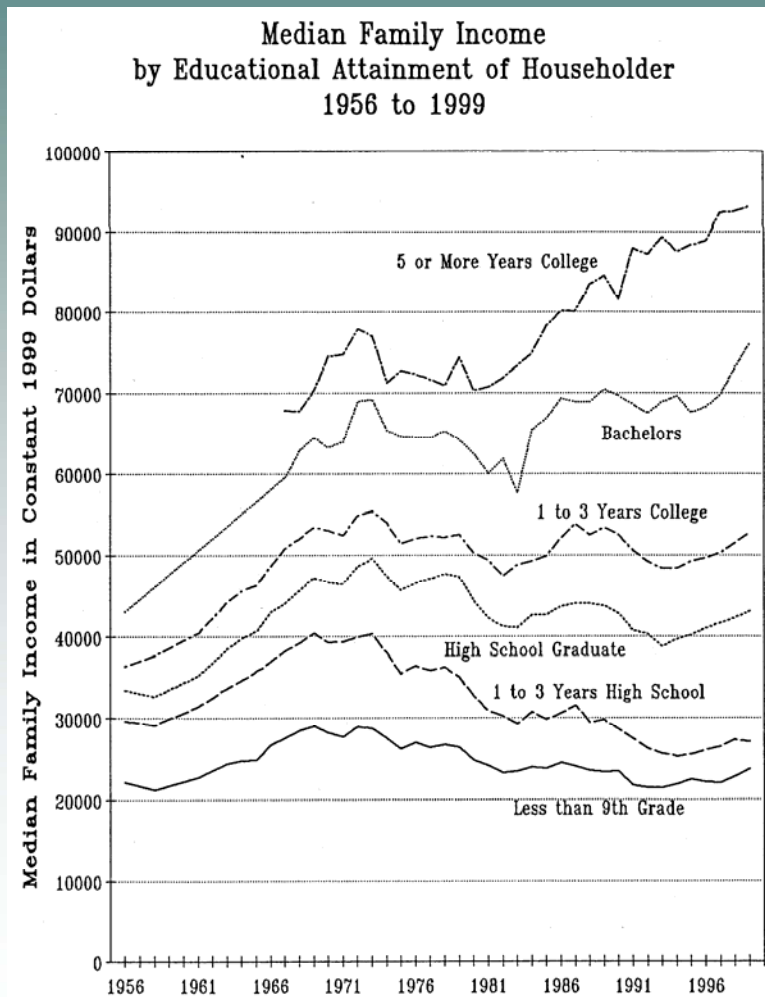


UNEMPLOYMENT RATE IN 2001

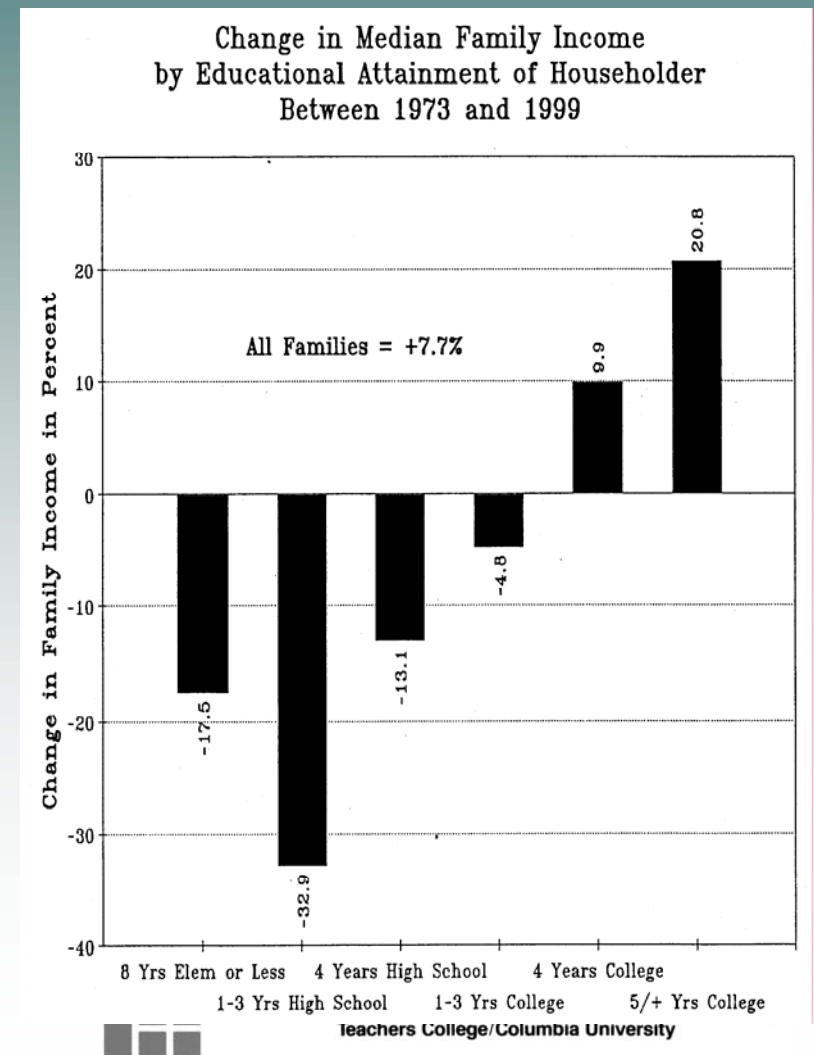
MEDIAN EARNINGS IN 2000
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Source: Postsecondary Education OPPORTUNITY

The income gap is growing



Source: Postsecondary Education OPPORTUNITY



Economic Value of Degrees in the US and Washington

- In the US, associate degree holders earn 15%-20% more than HS grads
- In the US, BA degree holders over 50% more than HS grads (Grubb, 2003)
- The economic values of these degrees relative to high school graduates in Washington are **above the national average** (National Center for Higher Education Management Systems, www.higheredinfo.org)



Percent of College Entrants who Complete Degrees in the US and Washington

- National data on traditional-aged students
 - BA entrants—68% complete any degree within eight years (National Education Longitudinal Survey (NELS))
 - CC entrants—34% complete any degree within eight years (NELS)
- Washington is above average, although national numbers are still very low (National Center for Higher Education Management Systems, 2004)
- Analysis of state longitudinal data offers the potential to understand where, when, and sometimes why students fail to complete



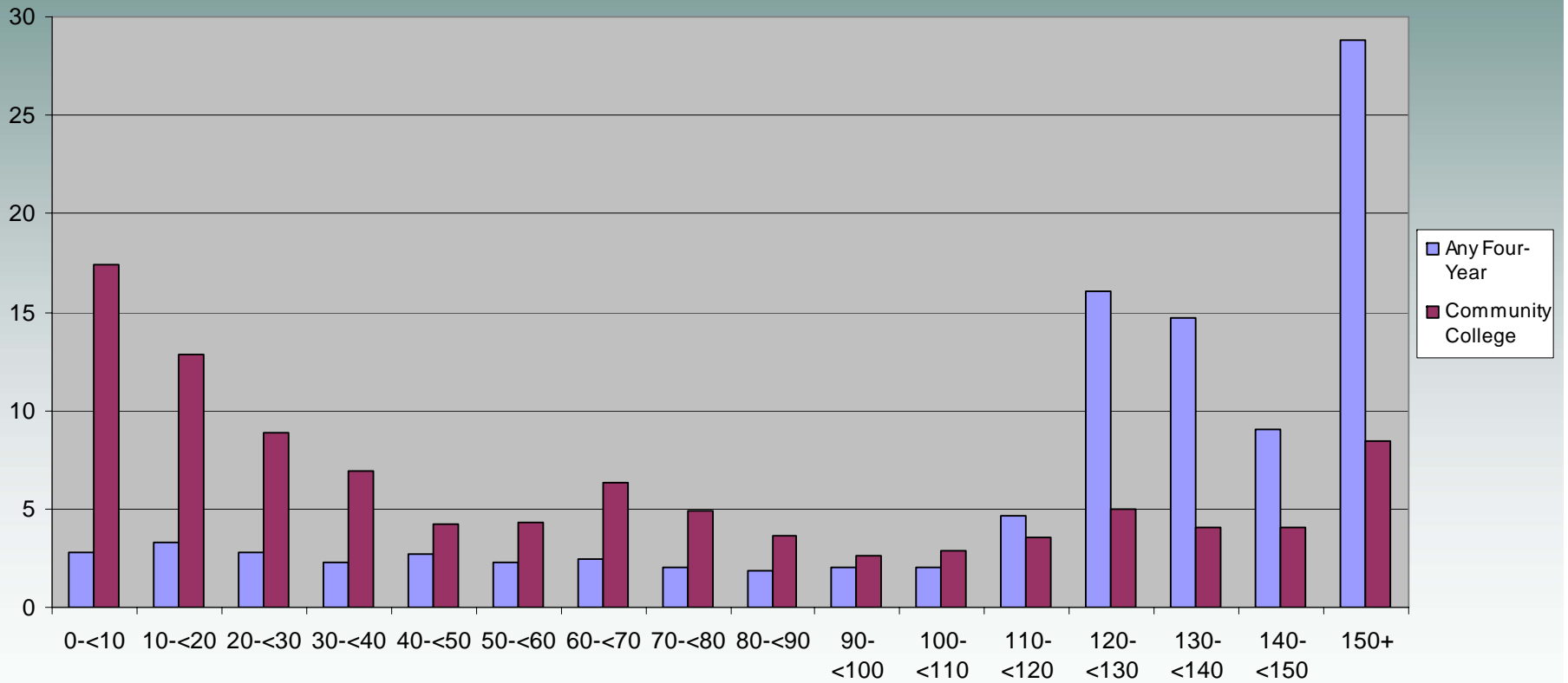
BA Production in Washington is Low

- Although Washington ranks 11th among states in the population share with BAs
- State ranks 43rd in the number of BAs awarded as a percent of undergraduates
- Ranked 33rd in number of BAs earned per 1,000 population between 20 and 29
- In contrast, it ranks 3rd for the number of associate degrees awarded per 100 HS graduates three years earlier

Source: National Center for Higher Education Management Systems, www.higheredinfo.org



Percent Distribution by Total Credits Earned in All Higher Education within Eight Years in the United States by Initial Institution Type



Source: NELS; author's calculations (n=7,303)



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Percent of Washington Employers Reporting Difficulty Hiring Workers at Various Education Levels

Neither a high school diploma nor GED	19%
High school diploma or GED	24%
Some college course work	35%
Vocational certificate	53%
Vocational associate degree	67%
Academic associate degree	60%
Baccalaureate degree	68%
Masters, doctoral, or professional degree	68%

Source: Washington Workforce Training and Education Coordinating Board, 2004



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Higher Education Enrollments Have Exceeded Funded Levels

- Four-year colleges—2003 enrollments were 5 percent above budgeted levels (Washington Office of Financial Management [OFM], 2004)
- Two-year colleges—2003 enrollments were 9 percent above budgeted levels (OFM, 2004)
- In 2003-2004, almost 15,000 “over enrollments” (Washington Higher Education Coordinating Board, 2004 Strategic Master Plan)



Recruitment from Outside the State will no Longer be Adequate

- 1990-2000 WA produced 218K BAs but BA population among adults grew by 293K
- Raises questions about services for state residents
- What has happened to the Colorado Paradox?
 - Recession made it more difficult to recruit outsiders
 - What are the implications of improved K-12 with continued low capacity in higher education
 - Arrival of many immigrants, many with limited English ability
 - Employers began to rebel against shrinking investment in higher education



Need for Basic Skills Education is Greater than Capacity

- One quarter of the 18-24-year-old population (2000) had no high school diploma (National Center for Higher Education Management Systems, 2004)
- Difference between need and capacity in adult basic skills education
- Financing provides weak incentives for colleges to expand basic skills capacity
- Continued projected growth of Hispanic immigration will result in continuing need for English as a Second Language preparation
- We know that basic skills education pays off with 30 credits and a degree or certificate (Prince & Jenkins, 2005)



Content of Education

- Nationally and in Washington State, no comprehensive measures of learning achievement in higher education
- Ongoing pilot of methods for measuring learning in states based on performance of students on a variety of national exams and certifications - suggests the possibility of systematic measurement of substantive progress (National Center for Public Policy and Higher Education, *Measuring Up*, 2004)
- But what we do know about emerging skill requirements suggests that whatever the current situation, achieving appropriate levels will be even harder in the future



Engineering Education

- Quantity of knowledge necessary to be an effective engineer is expanding
- Emphasize problem solving and lifelong learning
- Greater focus on interdisciplinary learning
- Greater coordination and articulation with community colleges—40% of engineering BAs start in community colleges
- Strengthen public understanding of engineering and the importance of technology literacy
- Participate in efforts to improve math, science, and engineering education at the K-12 level

Source: National Academy of Engineering, 2005, *Educating the Engineer of 2020*



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Are Washington Colleges and Universities Teaching the Right Knowledge and Skills?

- Departments at the university level often have too little concrete knowledge about specific skills and career progressions currently needed in the workplace
- In Washington, employers report the most difficulty in hiring workers with specific occupational skills
- Also report dissatisfaction with general skills, such as problem solving, quantitative reasoning
- Flat “Full-Time-Equivalent” reimbursements create disincentives to expand high-cost programs
- Need analysis of wage changes, specifics of employer demand, and occupational progression
- Example: Analysis of Washington longitudinal data show that, for displaced workers, community college programs with high technical, math, and science content have greater economic payoffs than other programs (Jacobson, et. al. 2005)



HE Appropriations per \$1,000 of Personal Income

	US	Washington
FY 2005 (WA rank)	\$6.91	\$7.00 (27)
FY 1976 (peak year for US)	\$10.58	\$14.81
Decline from FY 1976 (WA rank)	-34%	-53% (46)

Source: Postsecondary Education OPPORTUNITY



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State Support per Funded Higher Education Student in Washington has Declined, Particularly for Four Year Institutions

- Public four-year institutions declined from \$9555 to \$8022 between 1991 and 2005
- Public two-year institutions from \$4322 to \$4158

Source: 2004 Strategic Master Plan for Higher Education



How effective is the state system of higher education in preparing the state's 21st century workforce?

- Economic value of higher education is rising
- Employers report difficulty hiring educated workers
- State higher education capacity is low and under-funded—especially for BA production
- The types of skills required for modern occupations are more complex and probably more costly to teach
- Need better alignment between occupational requirements and occupational preparation
- Many of the state's adults do not even have a high school degree and they need to be brought into the modern economy through training and education--the higher education system does not have the capacity to do this
- State per student funding for public higher education has declined



Strategies for Expanding BA Attainment and Capacity

- Comprehensive four-year institutions
- Community college/university transfer
- University centers and applied BAs
- High School/College Dual Enrollment (i.e. Running Start)



Four Year Public Sector Enrollments in Washington are Weighted Towards Research Universities

	Research Universities	Other Four-Year Institutions	Community and Technical Colleges
Washington	21%	17%	62%
California	12%	23%	65%
US	23%	32%	45%

Source: Integrated Postsecondary Education Data System



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Role of Community College Transfer in Increasing BA Capacity

- State reimbursement levels for lower-division education (freshman and sophomore years) are lower for community colleges
- Nationally, community colleges open higher education to a wider range of students
 - Transfer students are more likely to be minority, low-income, or “non-traditional” than “direct enrolls”
 - In Washington, of BA graduates in with 40 CTC credits, 56% took some remedial education
- National research tentatively suggests that transfer students do as well as “native” students once they transfer
- But transfer rates need to be improved



Improving Transfer Rates: Lessons from Other States

- Statewide common course numbering systems and state-wide articulation agreements are crucial
- Transfer in centralized state systems is more effective
- Careful longitudinal analysis of the characteristics of and barriers to transfer improves transfer
- States that make transfer a priority have more effective systems

Source: Wellman, Jane, 2002, *State Policy and Community College Baccalaureate Transfer*



University Centers and Applied BAs

- Community college students earn BA degrees on community college campuses
- Potentially increases chances for BA completion for community college students
- Particularly important for place-bound students
- Many models nationally and they are expanding rapidly
- Nationally effectiveness has not been studied
- Currently, such programs exist at 23 CCs in Washington
- Prediction: community colleges with university centers will tend to evolve into four-year institutions



Simultaneous Enrollment in HS and College--*Running Start*

- Saves taxpayers money by reducing total years of education
- Fundamentally based on doubts about the nature and content of high school education
- It could be more enroll an even broader range of students with appropriate support services and “pre-college” preparation in high school



Challenges to Quality and Equity

- These strategies have the potential to expand capacity at lower cost than current cost levels
- But they potentially threaten to reduce educational quality
- In a period of cost cutting, colleges have the incentive to avoid students with the greatest need

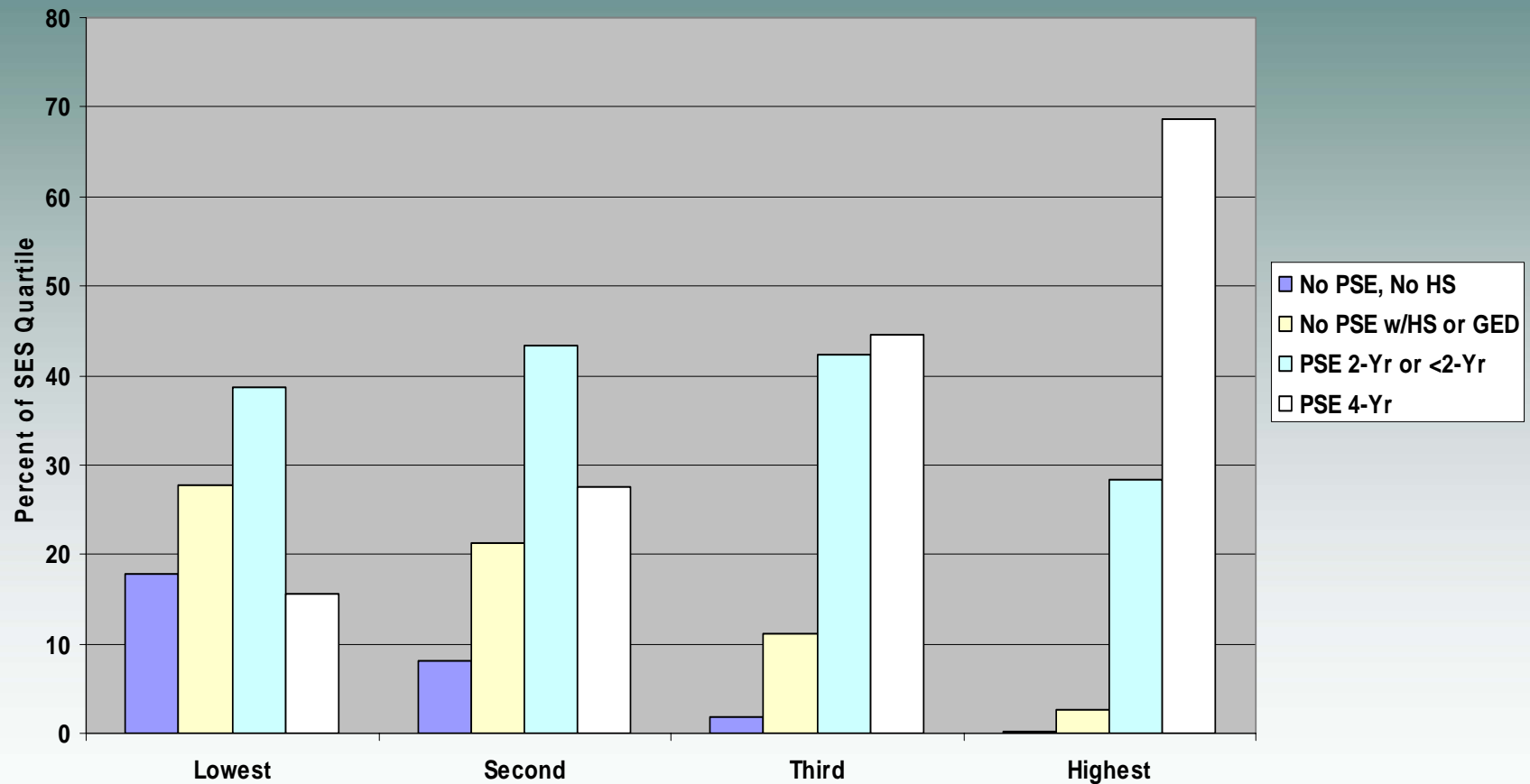


Family Income Continues to be a Primary Determinant of College Enrollment and Attainment in the US

- Low income students are much less likely to attend college at all and if they do, they are less likely to complete a degree
- The worst prepared high income students are more likely to attend college than the best prepared low income students



High School Completion and Initial Postsecondary Education by SES Quartile in the US



Source: National Education Longitudinal Study of 1988; author's calculations



In the US, Social Class Trumps High School Grades in Determining College Attendance

	Highest Quintile Socio-Economic Status	Lowest Quintile Socio-Economic Status
Highest Quartile High School Test Scores	94% go to college	68% go to college
Lowest Quartile High School Test Scores	70% go to college	25% go to college

Source: Carnevale, 2005 based on NELS-Traditional Aged
HS Graduates



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Affordability

(Tuition net of Financial Aid)

- Net college cost for low- and middle-income students
 - 40% of annual income for CCs (*Measuring Up*, 2004)
 - 50% for four-year institutions (*Measuring Up*, 2004)
 - State aid per capita is 16-17th nationally (NASSGAP, 2005)
- In Washington, need based grant aid has grown 170% in 10 years compared to 107% nationally (NASSGAP, 2005)
- Still, it doesn't reach many-in 2002-2003 only one third of students in CTCs eligible for need based financial aid received it
- “Over the last decade, Washington has made no notable progress in providing affordable higher education opportunities. Washington receives an F in affordability.” (*Measuring Up*, 2004)



Conclusions--“A Public Agenda for Higher Education in Washington”

The National Collaborative for Postsecondary Education

- Washington does not have a well-developed and focused mechanism for creating and managing a public agenda for higher education.
- The policy mechanisms for helping to ensure that the component parts of the higher education enterprise are working together as a system are not functioning effectively.
- Finance policy is not well aligned with the public agenda as articulated above. Level full-time equivalent funding system is inadequate.
- Accountability is not systematically used to help focus institutional attention on a limited number of state priorities.



Improve Coordination and Utilization of State Longitudinal Data Systems

- Among community colleges systems in the US, the Washington CTC longitudinal data system is considered a model—it includes transcript data and links to the labor market
- The state needs to integrate the K-12/CTC/4YR/labor market data
- Many of the controversies and issues that we have discussed to day could be addressed and possibly resolved using these data
- Measure the effectiveness of different types of institutions
- Diagnosis of barriers and critical filter points in transfer and educational achievement
- Better understanding of the labor market demand for different types of skills and education in different fields



Recommendations

- Continue to strengthen coordination of the higher education system
- Expand higher education capacity, especially BA capacity, using a variety of strategies
- Make sure that finance system is consistent with state higher education priorities—consider differential reimbursement systems for high cost/high demand fields
- Work towards a system in which ALL of the state's population can benefit from higher education and can contribute to a modern, up-to-date economy
- Strengthen the quality, coordination and utilization of the state's longitudinal data system
- Guarantee public engagement with and understanding of state higher education priorities



Finance and Finance System

- Consider differential state funding for high cost programs
- Remove institutional disincentives for serving low-income students and those who face other types of barriers
- Discuss state investment in higher education based on better measurement of the costs and benefits



Need for Public Engagement

- Evidence of effectiveness and need can be the basis for public engagement and understanding
- The public needs to know that higher education resources are being used efficiently
- The public needs to have a better sense of the types of skills needed and occupations needed in the modern economy
- The public needs a better understanding of the role of higher education in economic growth and prosperity and the potential payoffs to their investments in higher education

