Improving the Productivity of Higher Education: The Whys & Some Hows

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What Do We Mean By *Productivity*?

Simply put

\[
\text{Productivity} = \frac{\text{Outputs Produced}}{\text{Costs} \ (\text{Resources Utilized})}
\]
Productivity Means

• Increasing outputs
• Reducing costs

Without reducing access or quality
Productivity Does Not Mean

- Finding new revenue sources or shifting costs to students
- Becoming more selective and reducing access in the process

The objective is more graduates, not a higher graduation rate.
What’s the Issue? Why has Productivity Improvement in Higher Education Become Viewed as a National Imperative?
Percent of Adults with an Associate Degree or Higher by Age Group – Hawaii, U.S. & Leading OECD Countries

Source: OECD, Education at a Glance 2009
State Contributions to Closing the U.S. Gap of 8.2 Million Undergraduate Credentials by 2020

Average Annual Increase In Credential Production Needed (%)
Meeting Hawaii’s Share of the National Goal – A 4.1% Increase Each Year

Current Production Level

30,430

5,100
If Hawaii Were To

- Continue business as usual
- Hold tuition constant
- State funding would have to increase 34.3% over the period from now until 2020
State Tax Capacity & Effort
 Indexed to U.S. Average

State Tax Capacity (Total Taxable Resources Per Capita)

State Tax Effort (Effective Tax Rate)

Source: State Higher Education Executive Officers (SHEEO)
Alternatively, if Hawaii Were To:

- Continue business as usual
- Hold state appropriations constant
- Tuition revenues would have to increase by
  - 52% at Manoa
  - 74% at Hilo and West Oahu
  - 83% at community colleges
• States can’t afford to lag in their stock of educational (human) capital
• States can’t afford to create human capital in the amounts needed under the cost structure of business as usual

The thing that has to change is business as usual.

Productivity has to improve.
Postponing Action is Not a Solution

- The need for more graduates is not going to wait for the state economy to turn around
- Increased state funding for higher education is unlikely to be forthcoming in the foreseeable future
A Reality Facing Higher Education

- Employment recovery lags fiscal recovery
- State tax collections lag employment recovery
- Funding for higher education lags state tax revenues recovery
Recoveries from Financial Recessions

**GDP**

*Cycle Peak = 100*

- **Other Recessions**
  - Peaks at around 95% of the cycle peak.
  - Recovery takes about 4 quarters to reach the cycle peak.

- **Financial Recessions**
  - Peaks at around 96% of the cycle peak.
  - Recovery takes about 3 quarters to reach the cycle peak.

**Unemployment**

*Cumulative Percent Change from Cycle Peak*

- **Financial Recessions**
  - Show a higher increase in unemployment early on after the peak.
  - Recovery is slower compared to Other Recessions.

- **Other Recessions**
  - Show a lower increase in unemployment early on after the peak.
  - Recovery is faster compared to Financial Recessions.
Projected State and Local Budget Surplus (Gap) as a Percent of Revenues, 2016

Source: NCHEMS; Don Boyd (Rockefeller Institute of Government), 2009
Is There Room for Productivity Improvement in Hawaii?

The evidence suggests that the answer is yes.
Productivity: Total Funding per Degree/Certificate
(Weighted*, 2006-2007)

Sources: SHEEO State Higher Education Finance Survey 2008; NCES, IPEDS Completions Survey; U.S. Census Bureau, American Community Survey (Public Use Microdata Samples)

*Adjusted for value of degrees in the state employment market (median earnings by degree type and level)
Degrees & Certificates awarded per FTE vs. Total Funding per FTE (2006-2007)

Approaches to Achieving Greater Productivity
Approaches to Improving Productivity

Productivity $\uparrow$ if Outputs $\uparrow$ Costs $\downarrow$

or

Productivity $\uparrow$ if Outputs $\uparrow$ Costs $\rightarrow$
Approaches to Achieving Greater Productivity

• Build cost-effective systems
• Change the academic production function
• Reduce demand each student places on the system
• Reduce leaks in the pipeline
Building Cost-Effective Systems

• Align institutional capacity with stated priorities

• Ensure collaboration among institutions

• Make more efficient use of existing resources – do business as usual at less cost
  
  – Pay attention to benefit costs

  – Reengineer administrative and support functions

  – Purchasing and contracting
Changing the Academic Production Function

• Create programs of cost-effective size (elimination in some cases, collaboration in others)

• Reengineer curricula

• Reengineer course delivery

• Emulate business models of new types of providers
  - Technology-based
  - Competency-based
Reducing Demands Each Student Places on the System

- Students come to college fully prepared (no remediation)
- Accelerated learning
  - Reduced course options – in both general and majors
  - Cohort-based block programs
- Minimize “rework”
- Improve rates of course completion
- Reduce credit hours to degree
- Encourage use of prior learning assessment/”test out” options
- Learning in the workplace/credit for experience
Reducing Leaks in the Pipeline

- Curricular Alignment
  - K-12 to Higher Ed
  - Community Colleges to 4-year
- Pay attention to student support – “case managers”
- Financial Aid incentives
- Early-warning systems
- Improved consumer information
- Re-engage adults – particularly those who have tried college and didn’t complete a program
Closing the Educational Attainment Gap in Hawaii for 25 to 34 Year Olds: The Impact of Improved Performance by 2020

**Input Rates**
- High School Graduation Rate: 67.7%
- College-Going Rate Directly Out of High School: 59.8%
- Participation Rate of 20 to 39 Year Olds: 0.67%

**Throughput Rates**
- Degrees Awarded per 100 FTE Undergraduates:
  - Public Two-Year: 17.3
  - Public Research: 22.6
  - Public Bachelors and Masters: 20.3
  - Private Four-Year: 24.0

**Future Enrollment Distribution of First-Time Students**
- Directly Out of High School:
  - Public Two-Year: 62%
  - Public Research: 22%
  - Public Bachelors and Masters: 8%
  - Private Four-Year: 8%
- 20 to 39 Year Olds:
  - Public Two-Year: 93%
  - Public Research: 1%
  - Public Bachelors and Masters: 1%
  - Private Four-Year: 4%

**Closing the Attainment Gaps by 2020**
- Additional Associate and Bachelors Degrees Produced: (4,397)
- Additional Needed to Meet Contribution to U.S. Attainment Goal (60%): 30,430

Note: Assumes Linear Progress Towards Goals.
Closing the Educational Attainment Gap in Hawaii for 25 to 34 Year Olds: The Impact of Improved Performance by 2020

**Input Rates**
- High School Graduation Rate: 86.0%
- College-Going Rate Directly Out of High School: 74.0%
- Participation Rate of 20 to 39 Year Olds: 1.25%

**Throughput Rates**
- Degrees Awarded per 100 FTE Undergraduates:
  - Public Two-Year: 37.1
  - Public Research: 25.8
  - Public Bachelors and Masters: 24.5
  - Private Four-Year: 26.9

**Future Enrollment Distribution of First-Time Students**
- Directly Out of High School: 100%
- 20 to 39 Year Olds: 100%

- Public Two-Year: 62%
- Public Research: 22%
- Public Bachelors and Masters: 8%
- Private Four-Year: 8%

**Additional Credentials Awarded Annually by 2020**
- Certificates
- Associates
- Bachelors

**Closing the Attainment Gaps by 2020**
- Additional Associate and Bachelors Degrees Produced: 45,850
- Additional Needed to Meet Contribution to U.S. Attainment Goal (60%): 30,430

Note: Assumes Linear Progress Towards Goals.
Closing the Educational Attainment Gap in Hawaii for 25 to 64 Year Olds: The Impact of Improved Performance by 2025

Input Rates

- High School Graduation Rate: 67.7%
- College-Going Rate Directly Out of High School: 59.8%
- Participation Rate of 20 to 39 Year Olds: 0.67%

Throughput Rates

Degrees Awarded per 100 FTE Undergraduates

- Public Two-Year: 17.3%
- Public Research: 22.6%
- Public Bachelors and Masters: 20.3%
- Private Four-Year: 24.0%

Future Enrollment Distribution of First-Time Students

Directly Out of High School

- Public Two-Year: 62%
- Public Research: 22%
- Public Bachelors and Masters: 8%
- Private Four-Year: 8%

20 to 39 Year Olds

- Public Two-Year: 93%
- Public Research: 1%
- Public Bachelors and Masters: 1%
- Private Four-Year: 4%

Note: Assumes Linear Progress Towards Goals. Best State performance (Avg. of Top 3)
Closing the Educational Attainment Gap in Hawaii for 25 to 64 Year Olds:
The Impact of Improved Performance by 2025

**Input Rates**
- High School Graduation Rate: 86.0%
- College-Going Rate Directly Out of High School: 74.0%
- Participation Rate of 20 to 39 Year Olds: 1.25%

**Throughput Rates**
- Degrees Awarded per 100 FTE Undergraduates:
  - Public Two-Year: 37.2
  - Public Research: 25.6
  - Public Bachelors and Masters: 24.5
  - Private Four-Year: 27.0

**Future Enrollment Distribution of First-Time Students**
- Directly Out of High School
  - Public Two-Year: 62%
  - Public Research: 22%
  - Public Bachelors and Masters: 8%
  - Private Four-Year: 8%
- 20 to 39 Year Olds
  - Public Two-Year: 93%
  - Public Research: 1%
  - Public Bachelors and Masters: 1%
  - Private Four-Year: 4%

Note: Assumes Linear Progress Towards Goals.

**Closing the Attainment Gaps by 2025**
- Additional Associate and Bachelors Degrees Produced: 66,355
- Additional Needed to Meet 55% Attainment Goal: 54,632

**Chart**
- Additional Credentials Awarded Annually by 2025
  - Certificates
  - Associates
  - Bachelors
The Good News:

Collectively, we know how to do this

- The issue is one of will, not an absence of knowledge

- Can be done by working smarter, not harder