Necessity’s Sharp Pinch: Challenges and Innovations for Public Higher Education

A Report to the Mid-America Association for Institutional Research

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What is “Necessity’s Sharp Pinch”?

• For Lear: Familial conflict and personal torment

• For Higher Education: A high-stakes mismatch between resources, missions, and public needs
Our Resources are Inadequate to the Needs and Our Missions

• Student demand is increasing
• Global Competition is increasing
• Expectations for Economic Impact are increasing
• Demands for accountability and cost containment are increasing
• State support and alternative revenues for HE are declining
• U.S. position as worldwide HE leader is decreasing
• Ability to deliver a multi-faceted mission is threatened
• Access for well-prepared, low-income students is endangered

HG Wells: “History is a race between education and catastrophe”
Two Primary Roles for Institutional Research

• Demonstrate Higher Education’s External Impacts
  1. Private benefits
  2. Public benefits

• Inform Institutional decisions and operations
  1. Developing annual budgets and informing reallocations
  2. Evaluating business practices
  3. Instigating change
  4. Providing public accountability
  5. Testing Cherished Assumptions
  6. Illuminating the major paradoxes facing large universities
Higher Education is a Major Economic Stimulus Package

• National in scope

• A world-wide reputation as best in class

• Less additional revenue required than other stimulus approaches

• A comprehensive system of oversight, accountability, and regulation

• A proven track record of long-term success
What Outcomes Stimulate the Economy?

1. Increase in personal income and public revenue
2. Decreased unemployment
3. Reduced healthcare costs
4. Lowered rates of social dependency
5. Greater private investment and community involvement
6. New businesses to create more jobs
Higher education is the one intervention with demonstrated achievements in all six areas.
Median Earnings and Tax Payments of Full-Time Year-Round Workers Ages 25 and Older, by Education Level, 2005

Note: Taxes paid include federal income, Social Security, and Medicare taxes, and state and local income, sales, and property taxes. Sources: U.S. Census Bureau, 2006, PINC-03; Internal Revenue Service, 2006; McIntyre et al., 2003; calculations by the authors.

The bars in this graph show median earnings at each education level. The lighter segments represent the average federal, state, and local taxes paid at these income levels. The darker segments show after-tax income.
Expected Lifetime Earnings Relative to High School Graduates, by Education Level

Estimated Cumulative Earnings Net of Loan Repayment for Tuition and Fees, by Education Level

<table>
<thead>
<tr>
<th>Age</th>
<th>Cumulative Net Earnings</th>
</tr>
</thead>
<tbody>
<tr>
<td>18</td>
<td>$0</td>
</tr>
<tr>
<td>20</td>
<td>$200,000</td>
</tr>
<tr>
<td>22</td>
<td>$400,000</td>
</tr>
<tr>
<td>24</td>
<td>$600,000</td>
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<td>26</td>
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<tr>
<td>28</td>
<td>$1,000,000</td>
</tr>
<tr>
<td>30</td>
<td>$1,200,000</td>
</tr>
</tbody>
</table>

Sources: U.S. Census Bureau, 2006, PINC-03, PINC-04; The College Board, 2005; calculations by the authors.

The green line shows the cumulative earnings at each age for the typical high school graduate who enters the workforce full-time at age 18.

The blue line shows the cumulative earnings at each age for the typical college graduate who enters the workforce at age 22, after spending four years out of the labor force and having borrowed to pay the full tuition and fees at the average public four-year college or university. Loan payments on this debt are subtracted from earnings for the first 10 years after graduation, covering both the principal and 6.8 percent interest charges incurred both during and after college.

The purple line shows the same calculation for a student who borrows to cover average tuition and fees at a public two-year college and enters the workforce at age 20.

Percentage of Full-Time Year-Round Workers Ages 25 and Older Who Were Offered Employer-Provided Pension Plans, by Education Level, 2005

Percentage of Private-Sector Workers Ages 18-64 Working at Least Half-Time Covered by Employer-Provided Health Insurance, by Education Level, 1979-2005

The Impact of Increases in the Proportion of College Graduates in the Workforce on Wages of All Workers, by Education Level

Unemployment Rates of Individuals Ages 25 or Older, by Race/Ethnicity and Education Level, 2006

**Source:** Education Pays: The Benefits of Higher Education for Individuals and Society; 2007
Percentage of Individuals Ages 25 and Older Living in Households in Poverty, by Household Type and Education Level, 2005

Percentage of Individuals Ages 25 and Older Living in Households That Participated in Public Assistance Programs, by Education Level, 2005

Percentage of Individuals Ages 25 and Older Reporting Excellent or Very Good Health, by Age and Education Level, 2005

Smoking Rates of Individuals Ages 25 and Older, by Education Level, 1940-2005

Percentage of Individuals Ages 25 and Older Who Volunteered and the Median Number of Hours Volunteered, by Education Level, 2006

Percentage of U.S. Citizens Ages 25 and Older Who Voted, by Age and Education Level, 2004

How is the U.S. performing and where does Missouri stand?
The Attainment Challenge: Adults 25-64 with a Postsecondary Degree, 2005

SOURCE: OECD, Education at a Glance 2007
The Attainment Challenge: Adults with a College Degree, 2005

Benchmark for International Competitiveness by 2025 (55%)

SOURCE: NCHEMS

Source: SHEEO SHEF
College Educational Attainment of the Population Age 25 and Over

Percent of County Population Age 25 and Over with a College Degree

Population Age 25 and Over with a College Degree (Percent of County Population Age 25 and Over)

- 12.0% or Less
- 12.1% to 18.0%
- 18.1% to 24.0%
- 24.1% to 30.0%
- 30.1% or More (74.7% is max value)

National average in 2000 was 24.4%

Source: U.S. Census Bureau (Summary File 3)

Created by UWEX Center for Community Economic Development
College Educational Attainment of the Population Age 25 and Over

Percent of County Population Age 25 and Over with a College Degree
The Income Map

SOURCE: U.S. CENSUS BUREAU; MAP BY RYAN MORRIS
Percent of Population Involved with Starting or Managing a New Business *(by Age Group)*

Source: Global Entrepreneurship Monitor (GEM)
Population Age 25 to 34 with a College Degree in 2000
As Percent of County Population Age 25 to 34

Population Age 25 to 34 with a College Degree (Percent of County Population Age 25 to 34)

- 10.0% or Less
- 10.1% to 20.0%
- 20.1% to 30.0%
- 30.1% to 40.0%
- 40.1% or More (74.7% is max value)

National average in 2000 was 27.5%

Created by UWEX Center for Community Economic Development
Source: U.S. Census Bureau (Summary File 4)
Population Age 25 to 34 with a College Degree in 2000
As Percent of County Population Age 25 to 34

Population Age 25 to 34 with a College Degree (Percent of County Population Age 25 to 34)
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2007 State New Economy Index

• Compiled and published by The Kauffman Foundation
• Measures and benchmarks economic transformation at the state level
• 26 indicators of New Economy progress in five categories
  1. Knowledge jobs (educational level of workforce)
  2. Globalization (export of manufacturing and services)
  3. Economic Dynamism (start-ups; patents)
  4. Digital Transformation (% of population online)
  5. Technological Innovation (scientists and engineers in workforce)
What does the future hold?
Projected Changes in the Number of High School Graduates, 2008-9 to 2018-19

The Attainment Challenge: Change in 18-44 Year Old Population, 2005-2025

SOURCE: U.S. Census Bureau
Estimated Baccalaureate Degree Attainment by Age 24 by Family Quartile 1970 to 2006

SOURCE: Postsecondary Education OPPORTUNITY
Institutional Research Can Illuminate University Paradoxes

• Remaining constantly entangled with the real world, while at the same time championing a devotion to the abstract and even the whimsical

• Balancing the large scale of the University required to leverage its desired impact, while at the same time ensuring the intimacy of the student-faculty relationship upon which its success also depends

• Indulging the private curiosities of students and faculty as the best vehicle for ultimately discovering and producing social benefits

• Increasing access while simultaneously promoting excellence

• Maintaining productive partnerships with local and regional interests while also extending its international embrace
Institutional Research Can Test the Cherished Assumptions

• Large classes are undesirable
• 16-week Semesters are ideal
• Organization by academic disciplines is best
Institutional Research Can Provide Public Accountability

- University Benchmarks
- Public Scorecard
University Benchmarks

• Ball State University (Muncie, Indiana)
• Grand Valley State University (Allendale, Michigan)
• Illinois State University (Normal, Illinois)
• James Madison University (Harrisonburg, Virginia)
• Louisiana Tech University (Ruston, Louisiana)
• Towson University (Towson, Maryland)
• University of Montana—Missoula (Missoula, Montana)
• University of North Carolina—Charlotte (Charlotte, North Carolina)
• University of Northern Iowa (Cedar Falls)
• University of Texas—Arlington (Arlington, Texas)
• Wichita State University (Wichita, Kansas)
A. Student Achievement

1. Quality indicators of entering first-time freshmen (ACT, class rank, and/or grade point average)
2. Retention rate of first-year and transfer students
3. Six-year graduation rates
4. Number and percentage of students involved in research projects and community service
5. Number and percentage of students winning state, national, and international awards
6. Number and percentage of students authoring refereed publications and conference papers/presentations
7. Pass rates on licensure exams
8. Student learning measures appropriate with those suggested by the Higher Learning Commission and nationally normed student satisfaction measures
B. Research and Creative Activity
   1. Total and federal grant and contract proposals, awards, and dollars
   2. Total books and refereed publications/scholarly products
   3. Total refereed national and international presentations and exhibits and articles in national/international newspapers and periodicals
   4. Number of faculty winning any of 24 categories of national awards (from the Lombardi report)

C. Access and Diversity
   1. Number and percentage of minority enrollment, and the number and percentage of minority faculty and staff
   2. Number and percentage of international student enrollment
   3. Graduate enrollment
   4. Extended campus enrollment
D. Community Impact
1. Licenses, commercial start-ups, and patents
2. Number of partnerships with educational institutions, governmental entities, Number of graduates meeting the workforce development and professional education needs of the community
3. Number of cultural and public affairs events and conferences

E. Institutional Support
1. Total endowment
2. Annual giving
3. Percentage of alumni giving
4. Faculty salaries and staff salaries
5. Number of endowed chairs and professorships