LEADERSHIP SPEAKER SERIES

MONDAY, OCTOBER 25, 2010
Dr. William Elder,
Executive Director, Office of Social and Economic Data Analysis (OSEDA)
Education Week -- October 6th, 2010

...visionary leadership and strong administrative skills....

“...$230,000, plus and excellent comprehensive benefits package.....”
Mizzou beats Oklahoma, 36–27
Tigers remain undefeated, taking down the Sooners in Homecoming game

“..No one of us... is as good as all of us...”

Dave Steckel
“Christensen credits the Tigers’ success to Pinkel, who he said was so detail-oriented that if a pass route required receivers to make a cut at 12 ½ yards, they had better not do it at 12 or 13.” The New York Times, Oct24, 2010
What Leaders do.....

Make you think you can do things you didn’t think you could do....

..... and “demand” you do it.

More than skill development -- **engagement**

Building a good team .... (don’t go alone!)

... quality people and smart social capital

A **Vision** ..to care about .. A **Plan to work**
Who has made a difference in your life

... in your professional career....

What was their vision?

How did it engage you?
Data

Information

Knowledge

Wisdom

Indicators are conceptually connected data, answers to questions arising from the logic of the program model.

“The construction of knowledge involves more the orderly loss of information than it’s meaningless accumulation.”

-- Kenneth Boulding
Utilization Focused Information

“Answers” are “useful” when they reduce the risks of making the wrong decision.

To know you have asked the “right” questions and produced “useful” answers....

focus on decision makers   (Stakeholders)
and decision-making    (Choices)
Educational Decision-Making

• **Formative**
  - “Improve”
  - Periodic and timely
  - Focus on program activities and outputs
  - Leads to early recommendations for program improvement

• **Summative**
  - “Prove”
  - Were resources committed worthwhile?
  - Focus on outcomes and impact
  - Measures value of program based on impact
Navigation ...

Choosing and Getting to Port (Where we’re going)

“Summative” Result

Plotting a Course ➔ Estimating Position (Making a plan) (Where we might be)

Choosing and Getting to Port (Where we’re going)

Taking a “FIX” (where we really are)

“Set and Drift”

Adjusting Course

“Formative” Information

Learning is a journey, not a just a destination.
Other “Models”

- Logic Models NSF
- Comprehensive School Improvement Plans
- Operational Tasks Plans (matrices)
  - Objective, indicator, metric, target.
- Getting Focused...
  - Important Impacts...
Challenging Times....

The MSIP Educational Framework

Resources  <-> Processes

Performance

Demographic Context
The MSIP Standards and Indicators are created to guide school districts in this improvement effort. During the first, second, third, and fourth cycles of MSIP evaluations (1990 to present), this focus on school improvement has stimulated significant progress and change in school districts throughout the state. The revised standards and indicators represent a continued refinement of the previous standards and promote an emphasis on student achievement and other performance measures. Educational resources and instructional processes will also be revised and referenced in a state's best practice document and will continue to guide Missouri's continuing school-improvement efforts as we move through MSIP 5 and the second decade of the 21st century.

The revised performance standards will be taken to the State Board of Education during the October board meeting for discussion with the expectation that a request for authorization for publication of an order of rulemaking to adopt the revised performance standards will be made to the board at the November meeting. If this request is honored, these standards will be published in the Missouri Register and will open to public comment for a thirty-day period.
Academic Achievement
College and Career Readiness
Attendance
High School Graduation

and soon....Early Learning
PERFORMANCE STANDARDS FOR K-12 DISTRICTS

1. **Academic Achievement** - The district administers assessments required by the Missouri Assessment Program (MAP) to measure academic achievement and demonstrates improvement in the performance of its students over time.

2. **College and Career Readiness** - The district provides adequate post-secondary preparation for all students.

3. **Attendance Rate** - The district ensures all students regularly attend school.
   1. The percent of students who regularly attend school meets or exceeds the state standard or demonstrates required improvement.

4. **Graduation Rate** - The district ensures all students successfully complete high school.
   1. The percent of students who complete an educational program that meets the graduation requirements as established by the Missouri State Board of Education meets or exceeds the state standard or demonstrates required improvement.

FUTURE ADDITIONAL PERFORMANCE STANDARDS FOR K-12 DISTRICTS

The following standards and indicators are included to address upcoming changes in the Missouri Assessment Program.

1. **Early Learning** - The district implements the Missouri early childhood assessment system to measure performance of children one to two years prior to kindergarten entry through second grade and demonstrates improvement in the performance of its students over time.
Challenging Times....

The MSIP Educational Framework

Resources \(\leftrightarrow\) Processes

**Performance**

Demographic Context
Demographic Context

Demographic factors are not an “excuse”... they can be explanatory factors...
Quick Review of Demographics

Numeric Change in Population for States and Puerto Rico:
April 1, 2000 to July 1, 2009

- U.S. Increase 9%
- Missouri 7%
- Six States account for 55%

Total Population 2009
- World: 6.8 Billion
- U.S.: 307 Million
- Mo.: 5,987,580
In Missouri nearly 80% of us live on about 3% of our land.
Diverse Trends: Regions within Regions – and within urban areas
Challenging Times....
Challenging Times ... Regional Differences

Unemployment Rates - August 2010
Not Seasonally Adjusted

Unemployment Rate
- 11.2% - 12.4%
- 10.1% - 11.1%
- 9.6% - 10.0%
- 7.8% - 8.9%
- 6.2% - 7.7%
State Avg: 9.4%
Patterns of Growth

Percent Change in Total Population by County, 2000-2009

Missouri = 7.0%

Map Prepared By: University of Missouri Extension, Office of Social and Economic Data Analysis (OSEDA)
Map Generated On: 15 Jun 2010
Patterns of Growth

K-12 Relative Density of Student Enrollment by School District, 2010

Relative Density of Students
-1.5 - -0.8
-0.7 - -0.3
-0.2 - 0.0
0.1 - 3.2
3.3 - 6.2
6.3 - 10.7

Data Source: Department of Elementary and Secondary Education, 2010
Map Prepared By: University of Missouri Extension, Office of Social and Economic Data Analysis (OSEDA)
Map Generated On: 21 Sep 2010
Expanding Stakeholder Groups

African American Population, 2009

Legend
- 1 Dot = 10 People
Missouri = 713,001

Data Source: U.S. Census Bureau, Population Division, Population Estimates, 2010
Map Prepared By: University of Missouri Extension, Office of Social and Economic Data Analysis (OSEDA)
Map Generated On: 26 Sep 2010
Latino Growth

Hispanic or Latino Population, 2009

Legend
1 Dot = 10 People

Missouri = 203,907

Data Source: U.S. Census Bureau, Population Division, Population Estimates, 2010
Map Prepared By: University of Missouri Extension, Office of Social and Economic Data Analysis (OSEDA)
Map Generated On: 23 Sep 2010
Population Pyramids of Missouri

2000

2020
Percent of Population 65 and Over, 2008

Missouri = 13.6%

Missouri Senior Report 2009
Data Source: US Census Bureau, Census of Population and Housing, 2008
Map Prepared By: University of Missouri Extension, Office of Social and Economic Data Analysis (OSEDA)
Map Generated On: 01 Feb 2010
Quality of Life --- Children

Missouri Kids Count, 2009 Composite County Rankings

Composite Rankings

- 1 - 23
- 24 - 46
- 47 - 69
- 70 - 92
- 93 - 115

Data Source: Missouri Kids Count, 2009
Map Prepared By: University of Missouri Extension, Office of Social and Economic Data Analysis (OSEDA)
Map Generated On: 02 Feb 2010
Stuff happens...
Financial Benefits to the Individual

**Figure 1.2:** Expected Lifetime Earnings Relative to High School Graduates, by Education Level

Notes: Based on the sum of median 2005 earnings from ages 25 to 64 for each education level. Future earnings are discounted using a 3 percent
Figure 1.1: 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.
Educational Issues – building expectations

From the “Employer” Report: Returns to Associate Degrees

Average Wage (2008Q3) for College Graduates - Associates Degree Completers by Subject

- Health Professions: $8,203
- Industrial Arts: $7,627
- Computer Science: $6,704
- Engineering Technologies: $6,254
- Business Management: $4,454
- Communication, Technologies: $4,298
- Security Professions: $3,934
Educational Issues – building expectations

From the “Employer” Report:
Returns to Bachelor Degrees

Average Wages (2008Q3) for College Graduates-
Bachelors Degree Completers by Subject

- Engineering: $11,197
- Health Professions: $8,949
- Computer Science: $8,902
- Engineering Technologies: $8,250
- Business Management: $6,459
- Liberal Arts: $6,144
- Math and Statistics: $5,797
- Communication, Technologies: $5,658
- Architecture: $5,555
- Agriculture: $5,433
- Natural Resources: $5,040
On the Brink of New Data

- New *American Community Survey*
- New (5 year) ACS in December
- New 2010 counts in December
- *Be careful with small areas*
  - *Plus and Minus of Estimates is large*
Educational Resources
### Maximum Calendar Days and Hours, 2005-2009

<table>
<thead>
<tr>
<th>Year</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
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</thead>
<tbody>
<tr>
<td>Total Calendar Days</td>
<td>175</td>
<td>174.9</td>
<td>173.8</td>
<td>174.3</td>
<td>174.6</td>
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<tr>
<td>Total Calendar Hours</td>
<td>1,095</td>
<td>1,100</td>
<td>1,099</td>
<td>1,092</td>
<td>1,095</td>
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<tr>
<td>Length of the Day (Hours)</td>
<td>6.2</td>
<td>6.2</td>
<td>6.2</td>
<td>6.3</td>
<td>6.3</td>
</tr>
</tbody>
</table>

Challenging Times....

**Resources**
Putting a Price on Professors

A battle in Texas over whether academic value can be measured in dollars and cents.

By STEPHANIE SIMON And STEPHANIE BANCHERO

Controversial Numbers: Cash Flow at Texas A&M

<table>
<thead>
<tr>
<th></th>
<th>Chemistry</th>
<th>History</th>
<th>English</th>
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<tbody>
<tr>
<td>Funds generated</td>
<td>$17,451,040</td>
<td>$8,681,072</td>
<td>$9,258,566</td>
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<tr>
<td>Faculty salaries and benefits</td>
<td>-$12,262,038</td>
<td>-$4,042,470</td>
<td>-$7,580,395</td>
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<tr>
<td>Gains</td>
<td>$5,189,002</td>
<td>$4,638,602</td>
<td>$1,678,171</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oceanography</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Funds generated</td>
<td>$3,431,130</td>
<td>$10,039,564</td>
<td>$4,208,388</td>
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<tr>
<td>Faculty salaries and benefits</td>
<td>-$4,260,442</td>
<td>-$11,299,763</td>
<td>-$5,608,774</td>
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<tr>
<td>Losses</td>
<td>-$829,312</td>
<td>-$1,260,199</td>
<td>-$1,400,386</td>
</tr>
</tbody>
</table>
synopsis

When disaster strikes in America, heroes rush in. We’ve seen it time and again: when all seems lost, real-life supermen (and women) step up to save the day. But what if, right now, there is a hidden catastrophe spreading quietly, insidiously through our nation’s cities, towns and communities – and yet we have the power to stop it? What if our children and their futures – were in peril? Who will become a hero now?

From Davis Guggenheim, the Academy Award®-winning director of AN INCONVENIENT TRUTH, comes another stirring, must-see clarion call of our times: WAITING FOR “SUPERMAN”: a deeply personal exploration of the current state of public education in the U.S. and how it is affecting our children. Fueled by his conscience and electrified by the possibilities for change, Guggenheim sets off on a probing journey into the lives of five unforgettable kids whose dreams, hopes and untapped potential reveal all that it is at stake at this critical moment.

They include Daisy, an L.A. fifth-grader who, no matter what, never gives up on big plans for her future; Francisco, a Bronx first-grader whose mom will do anything to give him a shot at a better life; Anthony, a Washington D.C. fifth-grader in search of a different life from that of the dad he lost to drug addiction; Emily, an eighth-grader in Silicon Valley who fears being permanently stamped as unfit for college; and Bianca, a Harlem kindergartner already aiming, with her single mother’s valiant help, to make it against the odds.
Why students need to learn more about civics

Schools should be focusing more on teaching civics to students to prepare them for participating in American democracy, writes Anne O'Brien, acting director of the Learning First Alliance. National data show low proficiency in civics and little priority being placed on teaching students how government works, she writes. However, some teachers are educating students on their civic duties, and she cites the work of an award-winning Montana teacher who incorporates real-life projects on public policy into the classroom. Edutopia.org/Anne O'Brien's blog (10/22)

Cutting Through the Hype: The Essential Guide to School Reform

is a revised, expanded, and updated version of the classic book by Jane David and Larry Cuban. It offers balanced analyses of 23 currently popular reform strategies, from teacher performance pay and putting mayors in charge to turnaround schools and data-driven instruction. Learn more.
Educational Processes
Professional Practice
**STUDENTS**: Efficacy & expectations explains 17.2% of the variance in communication arts achievement.
MSIP “AQ”
Efficacy/Expectations Scale
(Students)

1. If I do well in school, it will help me when I grow up.
2. Being successful in school today will help me in my future.
3. I can do well in school.
4. I learn a lot in this school.
Efficacy/Expectations Scale
(Students)

5. My teachers think I can learn.
6. My family believes that I can do well in school.
7. My teachers expect very good work from me.
**STUDENTS**: Efficacy & expectations explains 17.2% of the variance in communication arts achievement.
CLASSROOM OBSERVATION

- Prevailing instructional practice
- Instructional assessment and improvement
- Opportunity for *Instructional leadership*
Educational Performance

Student Growth Models

Student Growth Percentiles
PERFORMANCE DATA

• Annual Performance Report (APR)
• APR and AYP disaggregated by gender, race, free and reduced lunch, etc.
• MAP/EOC Results
• Benchmark or Common Assessments
• Student Growth Data
Growth Models Explored to Date

- Missouri AYP “Increment” Model
- Student Growth Percentiles using R (SGP)
- Hierarchical Linear Models (HLM)
- Ordinary Square Regression (OLS)
- Mixed Models

All of these have advantages depending on the question and the audience
All Models are Highly Correlated

Spearman’s Rho Correlations of Growth Percentiles among Growth Models

Data: MAP 2006-2008 Communication Arts, Cohort Grade 5 in 2008 (N=56,231)

<table>
<thead>
<tr>
<th>Growth Models</th>
<th>SGP</th>
<th>HLM</th>
<th>OLS</th>
<th>Mixed Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>SGP_Betebenner</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HLM</td>
<td>.990</td>
<td>1.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>OLS</td>
<td>.986</td>
<td>.989</td>
<td>1.000</td>
<td></td>
</tr>
<tr>
<td>Mixed Model</td>
<td>.986</td>
<td>.989</td>
<td>.999</td>
<td>1.000</td>
</tr>
</tbody>
</table>

Note. SGP = Student Growth Percentile; HLM = Hierarchical Linear Modeling; OLS = Ordinary Least Squares.
What is a Student Growth Percentile (SGP)?

- A student’s progress compared to other students with similar MAP score history
- A student’s growth percentile indicates the percentage of students, starting at the same place, that the student’s growth exceeded
- Typical growth is equal to 50th percentile
- Similar to pediatric growth charts
Questions Answered by Growth Model

• How much growth did a child make in one year? (What is?)

• How much growth is enough to reach proficient or advanced? (What should be?)

• How much growth is the best in Missouri (What could be?)
Relationship of Status to Growth

- High Status: High Growth
- High Status: Low Growth
- Low Status: Low Growth
- Low Status: High Growth

Achievement Level (Status)

Low: Low
High: High
Example Student 24 (1234567824)

**Math**

<table>
<thead>
<tr>
<th>Achievement Level</th>
<th>Grade 6 2006</th>
<th>Grade 7 2007</th>
<th>Grade 8 2008</th>
<th>Grade 9 2009</th>
<th>Next Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scale Score</td>
<td>588 Proficient</td>
<td>582 Proficient</td>
<td>616 Proficient</td>
<td>598 Part Proficient</td>
<td></td>
</tr>
<tr>
<td>Growth Percentile</td>
<td>26 Low</td>
<td>76 High</td>
<td>9 Low</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Achievement Growth**

- High: 66th - 99th
- Typical: 35th - 65th
- Low: 1st - 34th
A “personal” growth plan for every student

Including benchmark and authentic assessment
What is Next Regarding Performance

• Explore Various Types of Growth Models

• Growth measures on APRs

• Explore Student Growth to Inform Instructional Decision-making

• Explore Practical Data Visualization Options for Student Growth Percentiles
  – Missouri Pilot Project 2010-2011
  – Include Benchmark and Local Assessments
Leadership

What are our leadership Challenges?

Communicating vision clearly

Preparing the environment for what is coming next.....