The Relationship Between Poverty and Achievement in Maine Public Schools – and a Path Forward

Peer Learning Session
MELMAC Education Foundation

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Some National Evidence of Poverty and Achievement Connections

- Reading below grade level and future drop outs.
- Students in poverty behind more affluent peers.
- Students in rural poverty have working memory deficits compared to more urban or affluent peers.
- Student in low-performing schools more likely to drop out.
- One-half of students in poverty graduate from high school.
- One third of students in poverty enroll in college.
What is the relationship between poverty and achievement in Maine?

Does poverty cause poor performance?
- Answer requires experimental studies; not ethical.

Is poverty related to poor performance?
- Answer may be found in correlation studies.

Relationships may be measured by Correlation Coefficients

- Correlation coefficients quantify the strength of relationships.
- Correlation coefficients may range from -1.00 to +1.00
- Correlations nearer to 1.00 indicate higher degree of relationship.
- The + sign signals the direction of the relationships.
- Line of best fit also called the Prediction Line.
- $R^2$ (correlation$^2$ X 100%) = magnitude of relationship “variance accounted for or explained”
Example of Perfect Positive Correlation

![Perfect Positive Correlation Graph]

$r = +1.00$

What's freaking us out here is that we've found a correlation between owning cats and being struck by lightning.
Relationship between Maine SAT Mathematics Scores and Family Income

Example of Perfect Negative Correlation

\[ r = -1.00 \]
Relationship between Age and Internet Use

Relationship between All Maine Schools Poverty Levels and Achievement
Relationship between Maine High Schools Poverty Levels and Achievement
Maine High Schools Poverty Levels and MDOE Letter Grades of A

Maine High School Poverty Levels and MDOE School Grades of B
Maine High School Poverty Levels and MDOE School Grades of C

Maine High School Poverty Levels and MDOE School Grades of D
Maine High School Poverty Levels and MDOE School Grades of F

Maine High School Poverty Levels and All MDOE School Grades A-F
Impacts of School Level Poverty on Non-Poverty Students

![Bar chart showing mathematics proficiency](chart.png)

- **Lower Poverty:** 67%
- **Higher Poverty:** 44%

*High Schools*

So... Is there a Path Forward?
Or

Does school poverty seal the fate of students?
Relationship between Maine High School Poverty Levels and Achievement

Black Box Problem

"I think you should be more explicit here in step two."
Characteristics of Higher Poverty Defying the Odds Schools

- Slightly smaller schools
- Similar student-teacher ratios
- Higher percent special needs students
- Slightly less experienced teachers
- Higher per pupil expenditures
- Higher percent of masters level teachers
- Similar percent of expenditures on classroom instruction

Total additional impact of these characteristics = 6 ½ %
Characteristics still not accounted for = 30%

Digging Deeper into “Defying the Odds” Schools:
Examination of Higher Performing, More Efficient, and Improving Maine Schools

- 39 Schools
- 13 High schools
- Teams of experienced Maine educators
- 2-3 day site visits
- Over 550 interviews
- Over 2200 observations

Defying the Odds High Schools

Some Distinguishing Characteristics:

1. High expectations for performance of students and staff.
3. Contractual time for focused, sustained professional development.
4. Efficient use of learning time.
5. Collective sense of accountability.
6. Focused, collaborative and guiding leadership.
7. Focus on intellectual work as well as academic learning.
**Intellectual Work**

[Authentic intellectual work] involves original application of knowledge and skills, rather than just routine use of facts and procedures. It also entails disciplined inquiry into the details of a particular problem and results in a product or presentation that has meaning or value beyond school. (Newmann, et al;1996)

[Deep learning...[that goes] beyond acquiring information through memorization, and presents opportunities to analyze and think critically, write and speak effectively, and solve complex problems...It gives students opportunities to engage in complex, meaningful projects that require sustained engagement, time for reflection, research and collaboration, and to develop performances or products. (Nellie Mae Education Foundation; 2011)

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**Summary Observations**

- Poverty is related to achievement in Maine.
- Some schools defying their poverty odds.
- The differences are what happens inside the schools.
- Most of the distinguishing characteristics are within the power of schools.
- Most are not cost prohibitive.

- So...you can get there from here!
To download copies of reports on Relationships between school poverty and student achievement in Maine, More efficient public schools in Maine, and Maine’s Improving Schools, please visit our website at: www.usm.maine.edu/cepare

Questions?
Next Steps

- Examine “Persistence” High Schools
- Explore “Defying the Odds” poverty children
- Provide legislative assistance
- Continue presentations/discussions

For Questions or Further Information

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