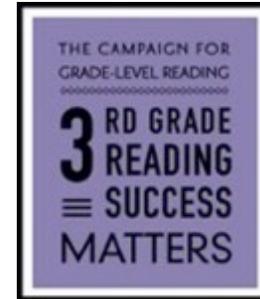


Using Data to Drive Early Literacy: An Interactive Workshop With MapLIT

Early Childhood Summit
August 22, 2016





Advancing Early Literacy Outcomes for Arizona's Children Birth Through Age 8

Ensuring a system that delivers the right program at the right time to every child



MISSION: Read On Arizona is a statewide public/private partnership of agencies, foundations and community stakeholders who are committed to a collaborative approach to improving language and literacy outcomes for Arizona’s children from birth to age eight.

Background:

Launched in 2012, Read On Arizona’s 10-year strategic plan identifies key challenges to early literacy and builds on state-level work as well as local communities of practice that establish baselines, set targets, track results, and promote shared accountability.

Connecting to the Arizona State Literacy Plan, a road map to improve language and literacy outcomes, Read On Arizona is the catalyst to the bold but achievable goal of reading success for all of Arizona’s children.

Founding Partners:



Data Integration Task Force and MapLIT Partners:

- **Arizona Department of Education**
- **Arizona Department of Health Services**
- **First Things First**
- **Head Start State Collaboration Office**
- **Maricopa Association of Governments**
- **Arizona Charter Schools Association**
- **Arizona State University- Mary Lou Fulton Teachers College**
- **Arizona Community Foundation**
- **Helios Education Foundation**
- **Virginia G. Piper Charitable Trust**
- **ATI Online**



Arizona Children Reading Achievement

National Assessment of Educational Progress (NAEP)
4th Grade Reading, 2015

Type of Student	% Below Basic/Basic	% Proficient/Advanced
Native American/ Alaska Native	92	8
Economically Disadvantaged	84	16
Hispanic	81	19
Black	78	22
White	49	51
Asian/Pacific Islander	53	47
Arizona Students	70	30

Source: U.S. Department of Education, Institute of Education Sciences

3rd Grade Reading in Arizona

- Arizona is one of many states that has a mandatory third-grade retention policy—Move On When Reading (ARS 15-701).
- In 2014, Arizona adopted a new statewide assessment, AzMERIT, that raises the bar for proficiency.¹

AzMERIT English Language Arts % of Students Spring 2015	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
Grade 3	43%	16%	30%	11%

¹Arizona Department of Education, AzMERIT: Reading Estimate Projections, 2015.



CHALLENGE:
Lack of information on critical factors prevents solutions

Read On solution: Improve data integration and system linkages; focus on shared data and accountability systems.



Data Integration Task Force

Possible Uses for Literacy Data:

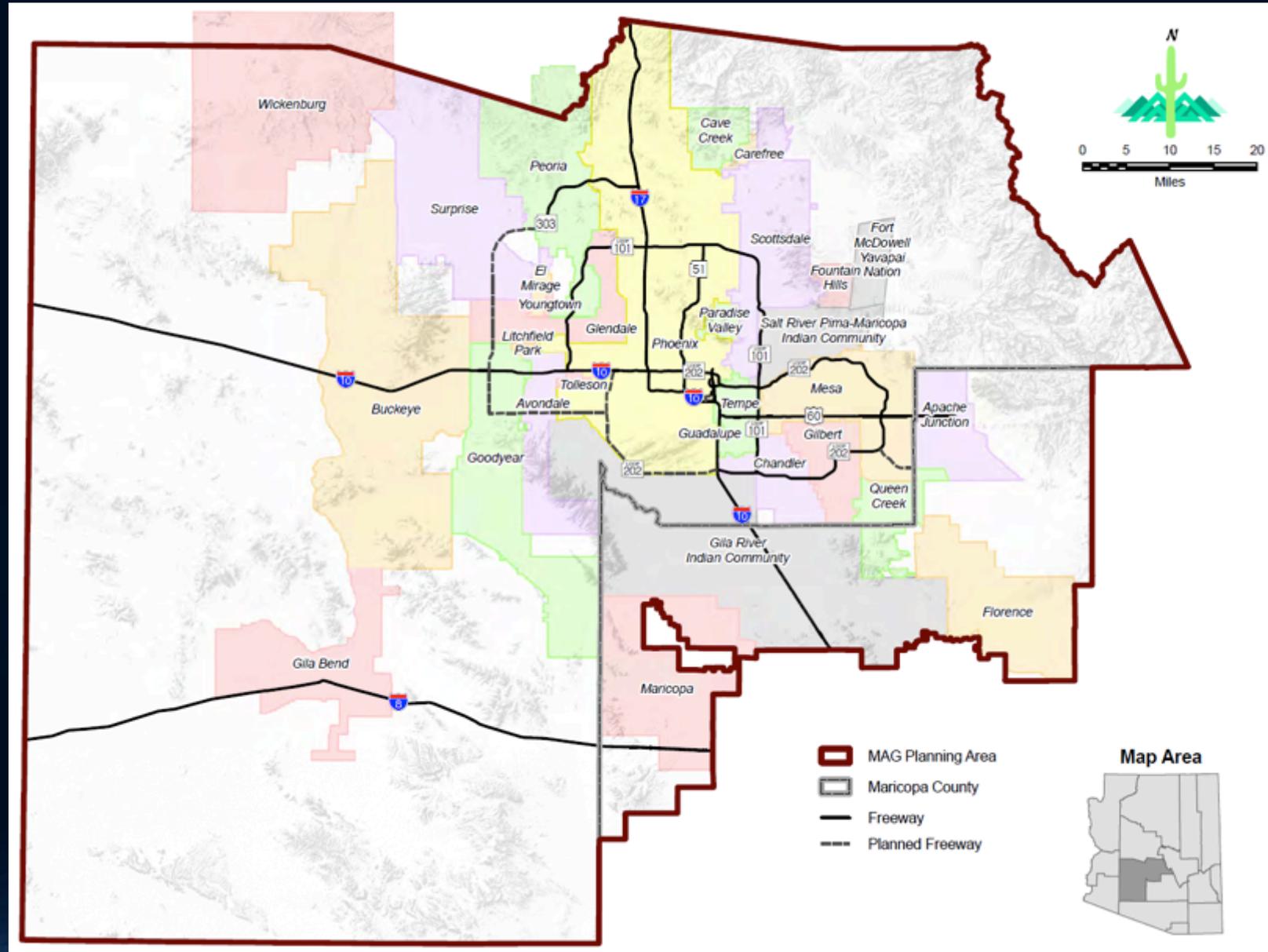
- Local School Districts - Help inform challenges to readiness factors
- FTF Regional Partnership Councils - Help guide program/services decisions
- Community Libraries - Help identify needs of target populations
- Local Read On Communities - Help identify gaps/needs in a community
- Local Childcare sites - Help inform what programs to offer
- Philanthropic Organizations - Help inform funding priorities/community needs

Devising strategies for improvement through data integration, data-driven decision making, research, and evidence-based solutions.



MAG

- 27 cities and towns, 3 Indian communities, 2 counties
- Area: 14,590 sq. mi.
- Population: 4.4 M
- **Regional data center for :**
 - Demographics
 - Economy
 - Land use / Assets
 - Transportation
 - Environmental Quality



Beyond Maps

<http://ims.azmag.gov>

- Design Principles:
 - Simple – like Google/Bing maps
 - User-friendly
 - Familiar navigation
- Interactive reporting
- Buffer tools
- Download/Export data and reports
- Custom Mapping:
 - Colors
 - Classification
- Mobile friendly
- Interactive selection and queries

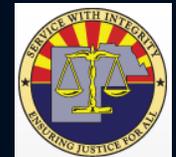
The screenshot displays the 'Demographic Viewer - Total Population' web application. The interface includes a main map of Phoenix, Arizona, with various demographic data layers. On the left, a 'Maps' panel allows users to choose a map, with 'Total Population' selected. Below this is a 'Color Schemes' panel with a color palette. On the right, a 'Reports' panel offers options like 'County Summary', 'City/Town Summary', and 'Advanced Query'. A 'Legend' panel shows the color scale for 'Total Population' with categories: 0 - 1,096 (lightest), 1,096 - 1,666, 1,666 - 2,378, 2,378 - 3,864, 3,864 - 7,293, and No Data (darkest). Below the map, there are two report panels. The 'Report Results for Phoenix' panel shows a pie chart for 'Population by Age' with the following data:

Age Group	Population
Under 5	118,911
5 to 17	208,430
18 to 34	374,796
35 to 49	307,823
50 to 64	232,626
65 to 84	107,437
85 and over	14,506

The 'Advanced Query' panel shows a query with two conditions: 'Seasonal Housing' Greater Than Or Equal To 100, and 'Pop Age 35 to 49' Less Than Or Equal To 600. The interface also includes navigation controls like 'Home', 'Zoom In', and 'Zoom Out'.

Partners

- U.S. Census Bureau
- MAG Member Agencies
- MAG Population Technical Advisory Committee
- MAG Economic Development Committee
- Arizona COG/MPO Directors
- Virginia G. Piper Charitable Trust
- Read On Arizona
- Arizona Department of Education
- Arizona Department of Health Services
- Maricopa County Attorney's Office Victim Services Division
- Maricopa County Department of Air Quality



Nine Live Applications

<http://ims.azmag.gov>

- Ongoing Data Updates
- User Driven Enhancements
- Hands-on training sessions
 - 400+ attendees since Feb 2014
 - 18 events scheduled in 2016
 - 3 regional locations & user sites



Demographic



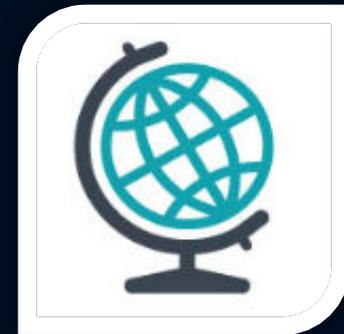
Statewide



Employment



MapLIT



Land Use



Bikeways



Building Landmark
Inventory



Projections



Victim Services

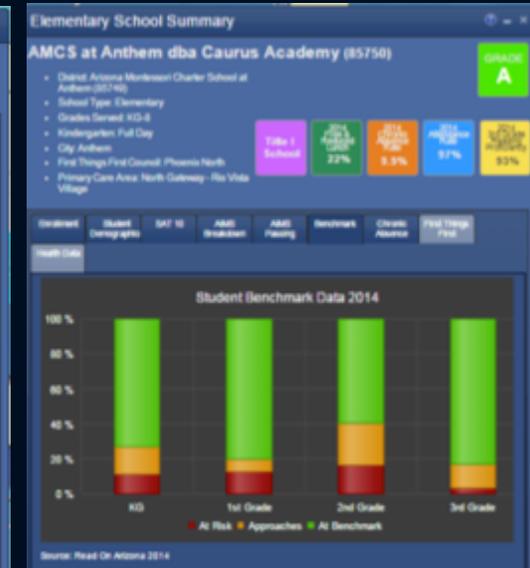
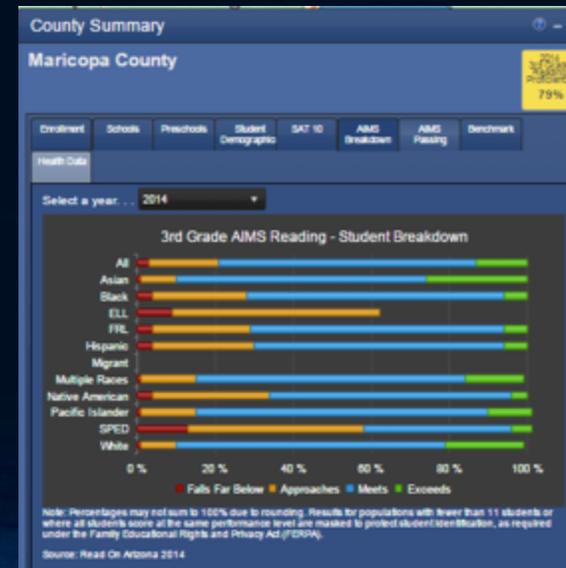
MapLIT Demonstration

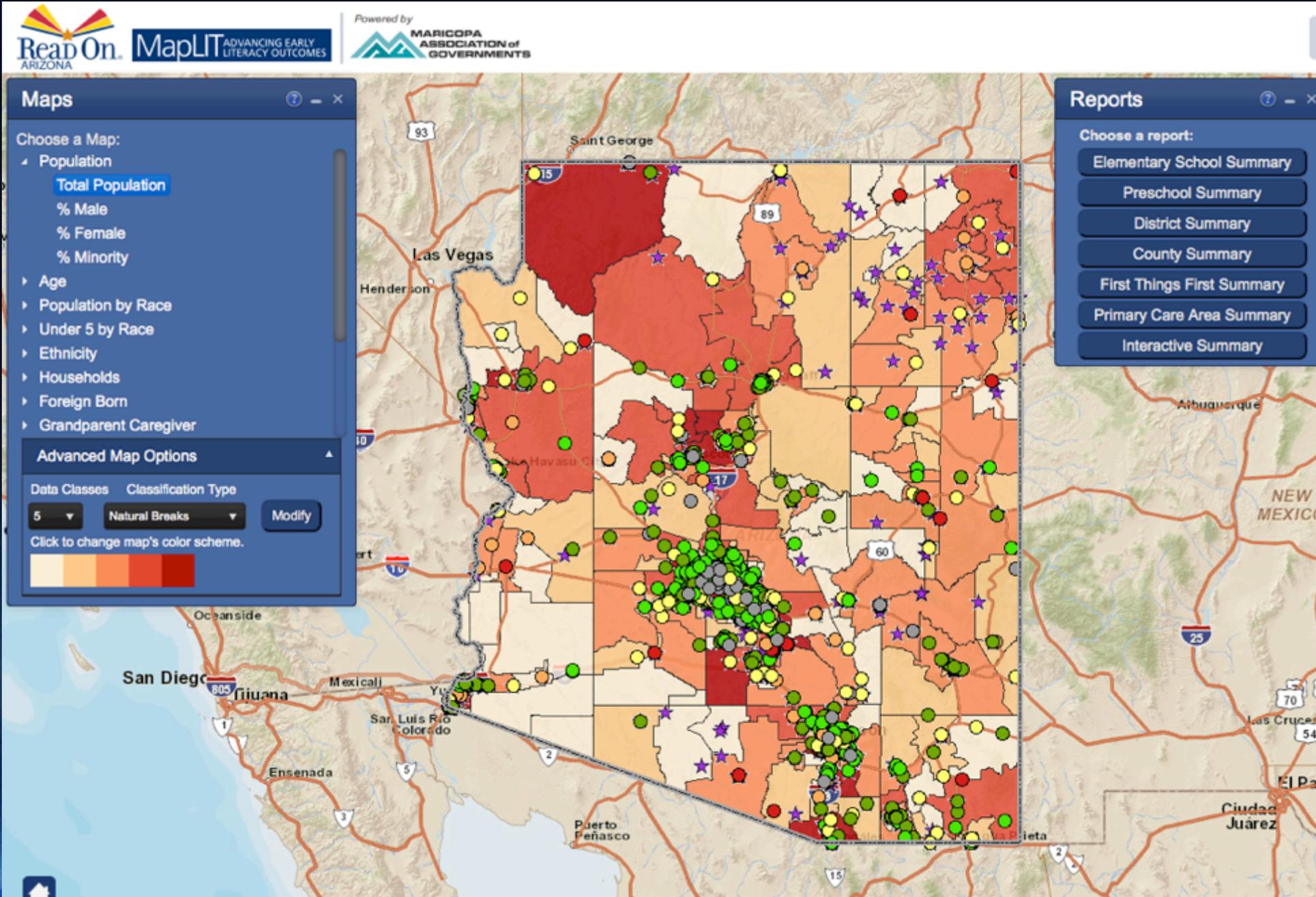
<http://readonarizona.org/data-center/>

The screenshot shows the Read On Arizona website home page. At the top, there is a navigation bar with links for Mapping, Home, Data Center, and Maps. Below this is a large banner for the "State Demographic Map Viewer" with a "View Map" button. The main content area features six grid items, each with an icon and a "View Map" button:

- MAG Region Demographic Map Viewer:** Shows data for the MAG Region.
- State Demographic Map Viewer:** Shows data for the entire State of Arizona.
- Employment Map Viewer:** Shows selected employer data.
- Read On Arizona MapLIT Viewer:** A "one stop" resource for key data sets.
- Land Use Map Viewer:** Shows land use data.
- Bikeways Map Viewer:** Shows locally-designated bicycle facilities.

This screenshot shows a page titled "Introducing Read On Arizona's literacy map tool, MapLIT". It features a map of Arizona with numerous colored dots representing data points. A blue overlay box contains the text "Introducing Read On Arizona's literacy map tool, MapLIT" and a "LEARN MORE" button. The website header includes the Read On Arizona logo and navigation links for Read On Communities, Resources, Data Center, Calendar & Events, and About Us.





Data Integration and Systems Linkages

Read On ARIZONA MapLIT ADVANCING EARLY LITERACY OUTCOMES

Powered by **MARICOPA ASSOCIATION of GOVERNMENTS**

Maps Legend Reports Help

Maps

Choose a Map:

- Population by Race
- Under 5 by Race
- Ethnicity
- Households
- Foreign Born
- Grandparent Caregiver
- Income
- Linguistic Isolation
- Families in Poverty
- Under 6 in Poverty
- % Under 6 Below Poverty**
- % Under 6 White Below Poverty

Advanced Map Options

Data Classes: 5 Classification Type: Natural Breaks Modify

Click to change map's color scheme.

Elementary School Summary

Cesar E Chavez Community School (5363)

GRADE B

- District: Roosevelt Elementary District (4279)
- School Type: Elementary
- Grades Served: KG-8
- Kindergarten: Full Day
- City: Phoenix
- First Things First Council: Phoenix South
- Primary Care Area: South Mountain Village - Guadalupe

Title I School

2014 Free & Reduced Lunch	2014 Chronic Absence Rate	2014 Attendance Rate	2014 3rd Grade Reading Proficiency
97%	9.8%	96%	82%

Enrollment	Student Demographic	SAT 10	AIMS Breakdown	AIMS Passing	Benchmark	Chronic Absence	First Things First	Health Data
------------	---------------------	--------	----------------	--------------	-----------	-----------------	--------------------	-------------

3rd Grade AIMS Reading - % Passing

Year	% Passing	State Average
2011	48%	75%
2012	28%	74%
2013	38%	74%
2014	82%	78%

Note: Results for populations with fewer than 11 students or where all students score at the same performance level are masked to protect student identification, as required under the Family Educational Rights and Privacy Act (FERPA).

Source: Read On Arizona 2014

<http://ReadOnArizona.org/data-center/>



<http://ReadOnArizona.org/data-center/>

Maps

Choose a Map:

- Population
 - Total Population
 - % Male
 - % Female
 - % Minority
- Age
- Population by Race
- Under 5 by Race
- Ethnicity
- Households
- Foreign Born
- Grandparent Caregiver

Advanced Map Options

Preschool Summary

Bret Tarver Education Complex

- Address: 3101 W McDowell Rd
- City: Phoenix
- First Things First Council: Phoenix South
- Primary Care Area: Estrella Village - Tolleson

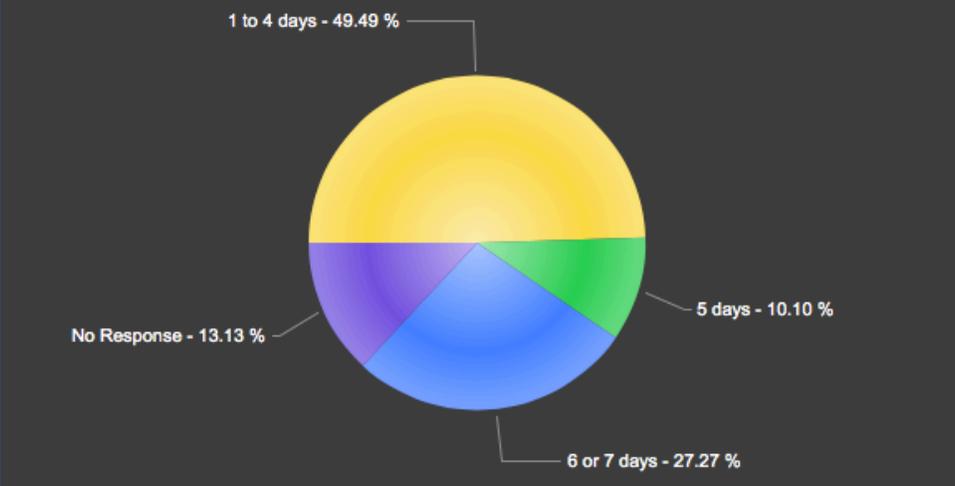
Enrollment 220 **Early Head Start** **Quality First** **PUBLIC**

First Things First | Health Data

First Things First Survey Results for Phoenix South Regional Partnership Council

Select a Question... **Question 1**

During the past week, how many days did you or other family members read stories to your child/children?



Response	Percentage
1 to 4 days	49.49 %
5 days	10.10 %
6 or 7 days	27.27 %
No Response	13.13 %

Note: The sample size of these survey results are not known.
Source: Read On Arizona & First Things First 2014



Factors Related to Third Grade Literacy: An Exploratory Analysis

ROBERT VAGI

ARIZONA STATE UNIVERSITY

Data

- ▶ School-level, District-level, Primary Care Area, and First Things First Region

Two Analyses

- ▶ Schools, Districts, and Primary Care Areas
- ▶ Schools, Districts, and First Things First Regions

Analysis 1

Research Question

- ▶ What school-level, district-level, and primary care area-level variables are related to 3rd grade literacy?

Criteria for Inclusion

- ▶ Conceptually relevant
- ▶ Correlation with outcome
- ▶ Correlation with other predictors
- ▶ Completeness of the data

School-Level Variables

- ▶ Percent Passing 3rd Grade AIMS Reading in 2014
- ▶ Charter or District
- ▶ Schoolwide Enrollment
- ▶ Percent Free and Reduced Lunch
- ▶ 3rd Grade Attendance Rate in 2014
- ▶ 2nd Grade Retention Rate in 2012
- ▶ Schoolwide Chronic Absence Rate in 2014 (missed 18 or more days)
- ▶ Kindergarten Type
- ▶ Number of Preschools in Zip Code

District-Level Variables

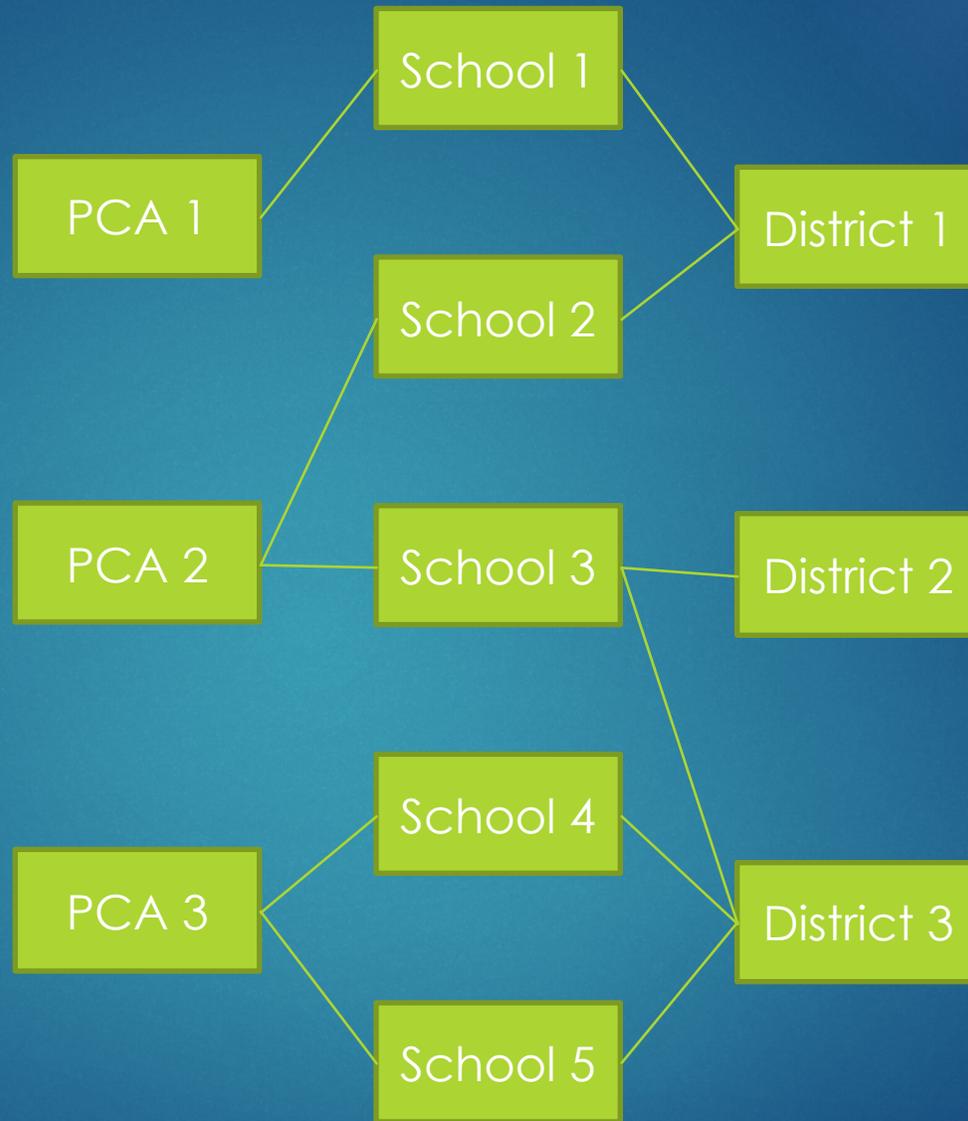
- ▶ District Enrollment
- ▶ District Percent Free and Reduced Lunch
- ▶ District 3rd Grade Attendance Rate in 2014
- ▶ District 2nd Grade Retention Rate in 2012
- ▶ District Chronic Absence Rate in 2014 (missed 18 or more days)

Primary Care Area-Level Variables

- ▶ Percentage of low birth weight births in 2008
- ▶ Percentage of preterm births in 2008
- ▶ Percentage of teen births per 1,000 women in 2008
- ▶ Rate of ER visits for 6 to 8 year olds with Asthma as the principal diagnosis per 10,000 ER visits in 2012

Analysis

- Cross-classified multilevel models with school-level percent passing 3rd grade AIMS reading as the outcome
- 1254 schools
- 450 districts
- 120 primary care areas



Descriptive Statistics

Variable	All Elementary Schools		Elementary Schools in Final Sample	
	Mean	Standard Deviation	Mean	Standard Deviation
Percent Passing AIMS Reading	76.82	14.05	76.32	12.48
Charter	.24		.10*	
Full Day Kindergarten	.77		.83*	
Half Day Kindergarten	.08		.04*	
Mixed Kindergarten	.13		.13	
School Enrollment	570.63	272.46	631.27*	232.16
School Percent FRL	63.73	26.28	63.86	26.59
School 3 rd Grade Attendance Rate	95.36	1.46	95.41	1.26
School 2 nd Grade Retention	2.42	1.75	2.31	1.55
School Chronic Absence Rate	10.00	5.78	9.48	4.47
Number of Preschools in Zip Code	7.15	6.39	7.68	6.49
District Enrollment	17,329.35	19,093.18	20,507.13*	19,350.34
District Percent Free and Reduced Lunch	62.74	20.82	61.57	21.30
District 3 rd Grade Attendance Rate	95.32	1.19	95.37	.91
District 2 nd Grade Retention Rate	2.29	1.58	2.13	1.23
District Chronic Absence Rate	11.75	5.99	11.54	4.76
Low Birth Weight	7.14	.97	7.13	.82
Preterm Births	10.24	1.16	10.26	1.07
Teen Births	56.02	7.07	55.74	6.13
Asthma	466.30	167.94	492.89*	152.53
	N = 1,254		n = 758	

Coefficient and Variance Estimates

Grand-Mean Centered Analysis

$$\sigma^2 = 57.77$$

$$T^2_{\text{dist}} = 28.40$$

$$T^2_{\text{pca}} = 0.00$$

Group-Mean Centered Analysis

$$\sigma^2 = 57.31$$

$$T^2_{\text{dist}} = 33.53$$

$$T^2_{\text{pca}} = 0.00$$

	Grand-Mean Centered Analysis	Group-Mean Centered Analysis
Variable		
Charter	6.34*** (0.33)	6.81*** (1.51)
Half Day Kindergarten	-0.69 (2.02)	0.65 (3.20)
Mixed Kindergarten	0.89 (1.43)	-0.54 (1.98)
School Enrollment	-0.00 (0.00)	-0.00 (0.00)
School Percent FRL	-0.30*** (0.02)	-0.31*** (0.02)
School 3rd Grade Attendance Rate	1.49*** (0.33)	1.36*** (0.34)
School 2nd Grade Retention	0.23 (0.31)	0.21 (0.31)
School Chronic Absence Rate	-0.27* (0.12)	-0.31* (0.14)
Number of Preschools in Zip Code	-0.00 (0.07)	0.08 (0.08)
District Enrollment	0.00 (0.00)	0.00 (0.00)
District Percent Free and Reduced Lunch	-0.04 (0.04)	-0.35*** (0.03)
District 3rd Grade Attendance Rate	-0.04 (0.72)	1.35* (0.68)
District 2nd Grade Retention Rate	-0.75 (0.45)	-0.48 (0.33)
District Chronic Absence Rate	0.29 (0.17)	0.07 (0.15)
Low Birth Weight	-0.34 (0.59)	-.40 (0.60)
Preterm Births	-13.67 (47.32)	-15.83 (47.86)
Teen Births	-4.91 (9.62)	-6.13 (9.98)
Asthma	0.00 (0.00)	0.00 (0.00)
	n = 758	n = 758

Note: * indicates $p < .05$, ** indicates $p < .01$, and *** indicates $p < .001$

Analysis 2

- ▶ Same analyses performed with each first things first response as a predictor

Results

- ▶ Nearly identical to primary care area analysis with significant relationships between reading achievement, poverty, charter schools, and attendance rates

Conclusions

- Observational study – We don't have evidence of causal relationships
- FRL
- Charters
 - Consistently low-performing schools are closed
 - Lots of missing FRL data
- Attendance and Chronic Absenteeism
 - Significant independent of FRL
- Non-significant results
 - Correlated with other variables that are better predictors of achievement
 - Underpowered (i.e. too few First Things First regions)

Questions?

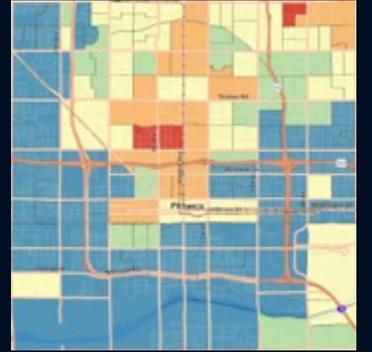
Terri Clark

Arizona Literacy Director

tclark@readonarizona.org



www.readonarizona.org



Vern Wolfley

GIS Analyst

vwolfley@azmag.gov



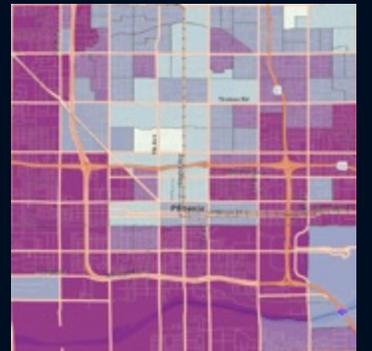
www.azmag.gov



Anubhav Bagley

Information Services Manager

abagley@azmag.gov



Complete the Breakout Session Evaluation on the Mobile App

