



From: Adam Larsen, Assistant Superintendent

To: Board of Education

Cc: Thomas Mahoney, Superintendent

Re: December 2021 Board Report

Student Achievement – Finding Comparable Schools

In November, we began exploring our student achievement levels based on the Illinois Assessment of Readiness and SAT. While student achievement usually falls near state averages, we often ask whether this is the expected level based on demographic characteristics. Our leadership team has also been interested in knowing if there are schools with similar demographics that perform the same or better than our schools.

Conducting this work requires a large dataset and some robust analysis, but finding comparable schools is possible and likely a useful exercise. The Illinois Report Card Data Library (<https://www.isbe.net/Pages/Illinois-State-Report-Card-Data.aspx>) offers the school-level data for every building in the state, including all of the characteristics of interest. The following is a summary of some internal analysis of the data. Each section will look at how the three OCUSD buildings compare to other buildings of similar composition and grade bands.

The following predictors were isolated and used to correlate with and predict English/Language Arts (ELA) and Math achievement outcomes:

- Student Enrollment
- Low Income Enrollment
- White Student Enrollment
- Children with Disabilities Enrollment
- English Learner Student Enrollment
- Homeless Student Enrollment
- Attendance Rate
- Instructional Expenditure per Pupil

Correlations

Anecdotally, the rate of low income student enrollment seems most predictive of student achievement. There are many reasons, including resources and time available at home, pre-school preparation, and resources and teacher quality within buildings. This plays out when studying the empirical data as well. The strongest correlations between any predictor and the two achievement outcome variables were for the percentage of free/reduced lunch students in a building. The correlations were strongly negative (higher free/reduced numbers correlates to lower achievement). This is particularly relevant in our district, where this number underwent a rapid increase during and following the Great Recession.



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High Schools:

	% ELA Proficiency	% Math Proficiency
# Student Enrollment	0.412478	0.441141
% Student Enrollment - Low Income	-0.714123	-0.681943
% Student Enrollment - White	0.080113	0.038444
% Student Enrollment - Children with Disabilities	-0.243426	-0.185472
% Student Enrollment - EL	-0.609504	-0.561648
% Student Enrollment - Homeless	-0.416838	-0.418511
Student Attendance Rate	0.469981	0.418484
\$ Instructional Expenditure per Pupil	0.114382	0.185015
% ELA Proficiency	1.000000	0.931025
% Math Proficiency	0.931025	1.000000

Junior High Schools:

	% ELA Proficiency	% Math Proficiency
# Student Enrollment	0.045522	0.174456
% Student Enrollment - Low Income	-0.716625	-0.767648
% Student Enrollment - White	0.286602	0.172951
% Student Enrollment - Children with Disabilities	-0.091563	-0.037429
% Student Enrollment - EL	-0.468358	-0.436017
% Student Enrollment - Homeless	-0.156475	-0.265780
Student Attendance Rate	0.396819	0.382702
\$ Instructional Expenditure per Pupil	0.150870	0.286428
% ELA Proficiency	1.000000	0.871286
% Math Proficiency	0.871286	1.000000



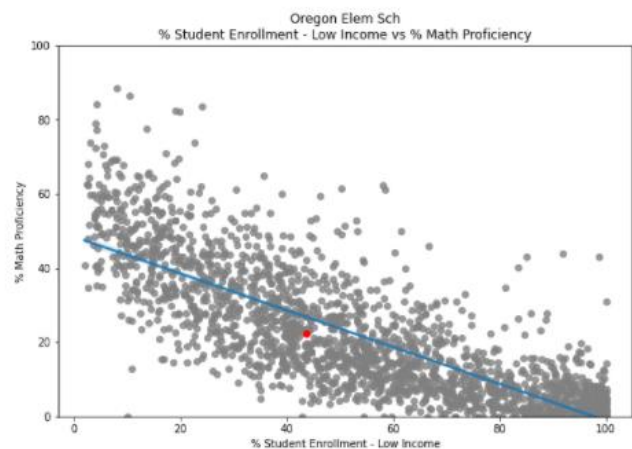
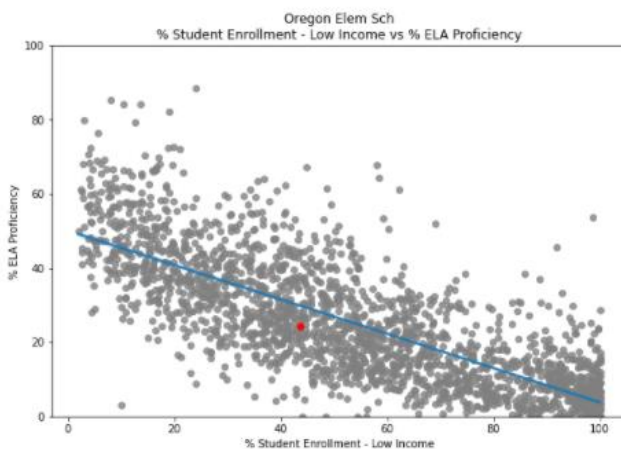
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Elementary Schools:

	% ELA Proficiency	% Math Proficiency
# Student Enrollment	0.048934	0.057267
% Student Enrollment - Low Income	-0.776767	-0.803804
% Student Enrollment - White	0.411163	0.391927
% Student Enrollment - Children with Disabilities	-0.141821	-0.139105
% Student Enrollment - EL	-0.475038	-0.460999
% Student Enrollment - Homeless	-0.165733	-0.186713
Student Attendance Rate	0.551610	0.533635
\$ Instructional Expenditure per Pupil	-0.094966	-0.070392
% ELA Proficiency	1.000000	0.908093
% Math Proficiency	0.908093	1.000000

All of these relationships were explored graphically as well through scatterplots, and the relationship between low income and achievement shows the strongest negative correlation of all of the predictors (elementary schools):





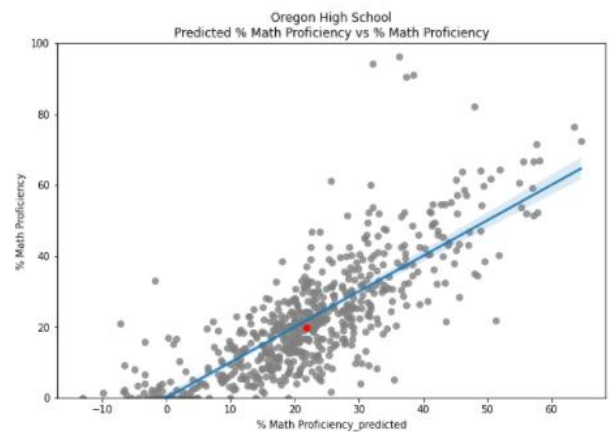
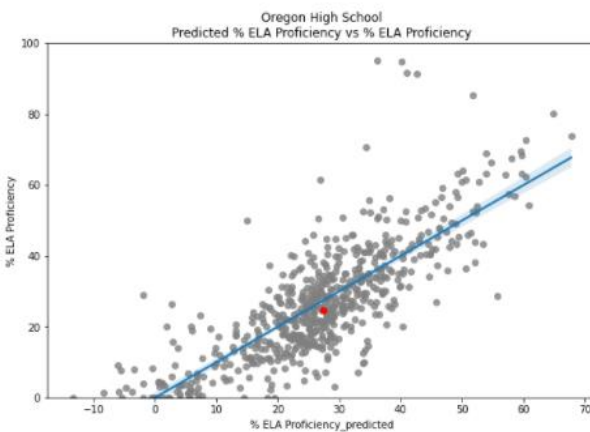
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Construction a Regression Model

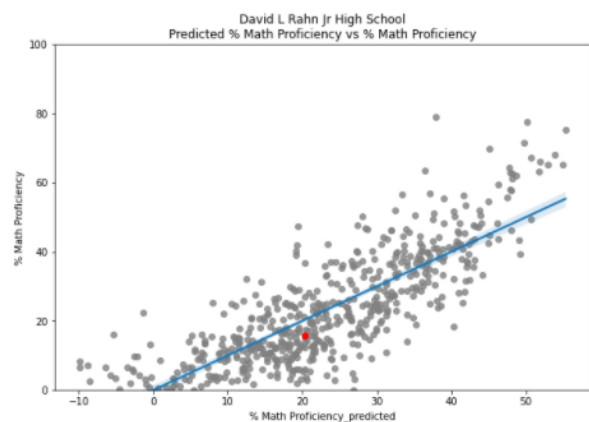
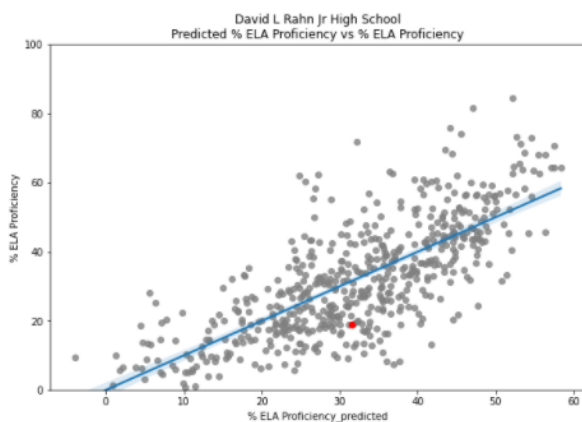
While examining each factor individually is interesting, it isolates the relationships in a narrow fashion and fails to capture the predictive power of combining the factors into a single model. Using simple regression, and without computing interaction terms, a model was built for each school level for each outcome using the combination of all eight factors. Once those regression weights are fed back into the model, it is possible to compute predicted and actual outcomes. The result is a graph that compares where a school is expected to achieve versus where is actually does.

English/Language Arts and Math graphs are computed for each school level. Based on the trained model, if a school were to perform at expected level, its red dot would fall on the blue regression line. Over-achieving would be represented by a dot above the line, while over-achieving falls below the line.

Oregon High School (compared to all high schools):



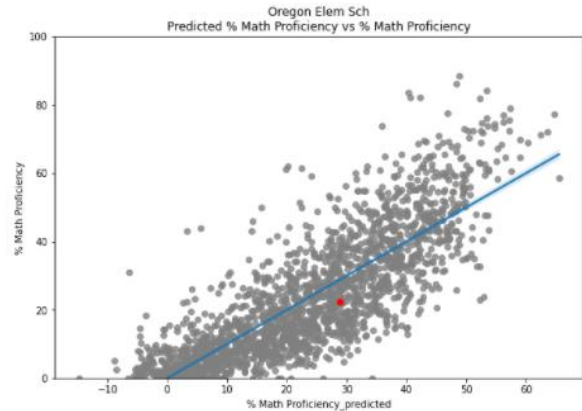
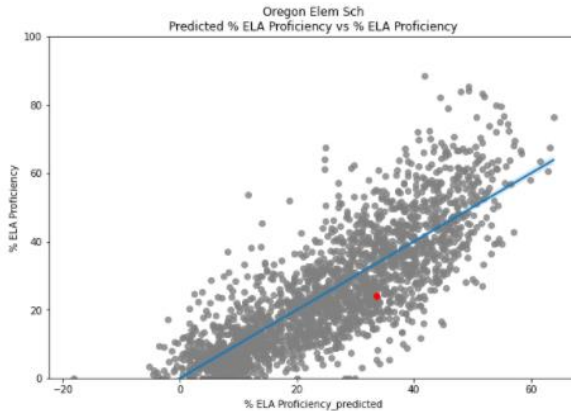
DLR Junior High School (compared to all junior high schools):





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Oregon Elementary School (compared to all elementary schools):



All of the red dots fall below the regression lines, with the most significant under-achievement occurring in ELA at DLR Junior High and Oregon Elementary School. The greater the distance between the red dot and the blue regression, the greater the degree of under-achievement.

Comparison Schools

One clear path for identifying remediation is to identify similar schools whose achievement is above the regression line and try to understand what those schools are doing differently in order to have better outcomes. There are different procedures for identifying these similar schools. The approach taken here was to narrow the search down to schools with similar grade bands, with enrollment numbers within 20% and free/reduced numbers within 10% of the target school. Once those schools were isolated, they were further narrowed by standardizing the 8 predictors and computing an average distance between each comparison school and the target school, then choosing the nearest 20 schools. Any schools with poorer achievement than the target school were dropped. Finally, the schools were sorted by achievement level, with schools performing the best appearing at the top of the list.

The result is several lists of schools which have similar characteristics but are achieving higher than our three schools. Some notable schools which appear on multiple lists and/or are geographically near our location:

Oregon High School:

- El Paso-Gridley High School
- Forrester
- Eastland
- Seneca
- Paxton-Buckley-Loda High School

DLR Junior High School:

- Paxton-Buckley-Loda Jr High Sch
- Wilmington Middle School
- Reed-Custer Middle School
- Fieldcrest Middle School



Oregon Elementary School

- Saratoga Elementary School
- Churchill Elementary School
- Lincoln Elementary School (Palatine)

Next Steps

The next steps are less clear, but we will definitely rely on professional networks and opportunities to engage with building and district leaders at these identified schools. This will be a qualitative approach, trying to identify trends or themes that seem to be apparent at these buildings. While some obvious differences will emerge such as schools having slightly more time for math instruction or a different reading intervention program, our goal is to focus more on the long-term, systemic differences that exist between our approach and theirs. These might include the culture around student intervention, the nature and substance of teacher collaboration, and expectations for achievement at the building and district levels. We are excited to network with colleagues whose schools are most like ours to see what we can learn from them.

The complete school comparison analysis is attached.

Respectfully Submitted,

A handwritten signature in blue ink that reads 'Adam P. Larsen'. The signature is fluid and cursive, with the first letters of each word being capitalized and prominent.

Adam P. Larsen
Assistant Superintendent
Oregon CUSD #220

```
In [ ]: import pandas as pd
```

```
In [ ]: # Read general tab with school and district characteristics
general = pd.read_excel("2021 Report Card Public Data Set v3.xlsx", sheet_name='General').set_index(['RCDTS'])

# Construct district (0000) RCDTS for each school
general['RCDTS_district'] = general.index.str[:11] + '0000'
```

```
In [ ]: # Read academic assessment tab
ela_math_science = pd.read_excel("2021 Report Card Public Data Set v3.xlsx", sheet_name='ELA Math Science').set_index(['RCDTS'])
```

```
In [ ]: # Read finance tab
finance = pd.read_excel("2021 Report Card Public Data Set v3.xlsx", sheet_name='Finance').set_index(['RCDTS'])

# Filter df to districts since all of the information we want is at the district level
finance = finance[ finance['Type'] == 'District' ]
```

```
In [ ]: # Join academic information on index
df = general.join(ela_math_science, rsuffix='_ela_math_science')

# Merge financial information using the district RCDTS and the financial index
df = df.merge(finance, left_on=['RCDTS_district'], right_index=True, suffixes=('', '_Finance'))

# Drop columns that are duplicated from the academic and financial dfs
df.drop( df.filter(regex='_(ela_math_science|Finance)$').columns.tolist(), axis=1, inplace=True )

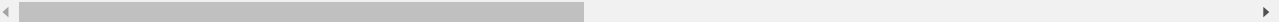
# Set the index to useful information about each school
df = df.reset_index().set_index([
    'RCDTS',
    'School Name',
    'District',
    'City',
    'County',
    'District Type',
    'District Size',
    'Grades Served'
])

df.head()
```

Out []:

								Type	School Type	Summative Designation	Summative Designation: Student Group(s)	
RCDTS	School Name	District	City	County	District Type	District Size	Grades Served					
010010010260000	NaN	Payson CUSD 1	Payson	Adams	UNIT	MEDIUM	PK K 1 2 3 4 5 6 7 8 9 10 11 12	District	NaN	NaN	NaN	
010010010260001	Seymour High School	Payson CUSD 1	Payson	Adams	UNIT	MEDIUM	7 8 9 10 11 12	School	HIGH SCHOOL	Not Calculated	Not Calculated	P in
010010010262002	Seymour Elementary School	Payson CUSD 1	Payson	Adams	UNIT	MEDIUM	PK K 1 2 3 4 5 6	School	ELEMENTARY	Not Calculated	Not Calculated	Sc
010010020260000	NaN	Liberty CUSD 2	Liberty	Adams	UNIT	MEDIUM	PK K 1 2 3 4 5 6 7 8 9 10 11 12	District	NaN	NaN	NaN	
010010020260001	Liberty High School	Liberty CUSD 2	Liberty	Adams	UNIT	MEDIUM	7 8 9 10 11 12	School	HIGH SCHOOL	Not Calculated	Not Calculated	P in

5 rows × 1427 columns




```
In [ ]: keep = [
        'Type',
        'School Type'
      ]

predictors = [
    '# Student Enrollment',
    '% Student Enrollment - Low Income',
    '% Student Enrollment - White',
    '% Student Enrollment - Children with Disabilities',
    '% Student Enrollment - EL',
    '% Student Enrollment - Homeless',
    'Student Attendance Rate',
    '$ Instructional Expenditure per Pupil'
]

outcomes = [
    '% ELA Proficiency',
    '% Math Proficiency'
]

# Limit to the columns of interest
df = df[ keep + predictors + outcomes ]
df.head()
```

Out []:

								Type	School Type	# Student Enrollment	% Student Enrollment - Low Income	% St Enrol -
RCDTS	School Name	District	City	County	District Type	District Size	Grades Served					
010010010260000	NaN	Payson CUSD 1	Payson	Adams	UNIT	MEDIUM	PK K 1 2 3 4 5 6 7 8 9 10 11 12	District	NaN	504	42.7	
010010010260001	Seymour High School	Payson CUSD 1	Payson	Adams	UNIT	MEDIUM	7 8 9 10 11 12	School	HIGH SCHOOL	241	36.9	
010010010262002	Seymour Elementary School	Payson CUSD 1	Payson	Adams	UNIT	MEDIUM	PK K 1 2 3 4 5 6	School	ELEMENTARY	263	47.9	
010010020260000	NaN	Liberty CUSD 2	Liberty	Adams	UNIT	MEDIUM	PK K 1 2 3 4 5 6 7 8 9 10 11 12	District	NaN	625	25.3	
010010020260001	Liberty High School	Liberty CUSD 2	Liberty	Adams	UNIT	MEDIUM	7 8 9 10 11 12	School	HIGH SCHOOL	270	22.2	

```
In [ ]: # Build our list of schools
schools = df[ (df.index.get_level_values('RCDTS').str.startswith('47071220026')) & (df['Type'] == 'School') ].index

schools
```

```
Out [ ]: MultiIndex([('470712200260001', 'Oregon High School', ...),
                    ('470712200261001', 'David L Rahn Jr High School', ...),
                    ('470712200262006', 'Oregon Elem Sch', ...)],
                  names=['RCDTS', 'School Name', 'District', 'City', 'County', 'District Type', 'District Size', 'Grades Served'])
```

```
In [ ]: # Show columns of interest for our schools of interest
df.loc[ schools ]
```

Out[]:

								Type	School Type	# Student Enrollment	% Student Enrollment - White	% Stude Enrollment - Childr wi Disabiliti
RCDS	School Name	District	City	County	District Type	District Size	Grades Served					
470712200260001	Oregon High School	Oregon CUSD 220	Oregon	Ogle	UNIT	MEDIUM	9 10 11 12	School	HIGH SCHOOL	406	84.7	14
470712200261001	David L Rahn Jr High School	Oregon CUSD 220	Mount Morris	Ogle	UNIT	MEDIUM	7 8	School	MIDDLE SCHL	239	82.8	17
470712200262006	Oregon Elem Sch	Oregon CUSD 220	Oregon	Ogle	UNIT	MEDIUM	PK K 1 2 3 4 5 6	School	ELEMENTARY	806	83.4	13

```
In [ ]: import seaborn as sns
import matplotlib.pyplot as plt

from sklearn.linear_model import LinearRegression

# Prepare for linear regression
lr = LinearRegression()
```

```

In [ ]: for school in schools:
        display( school )

        # Create list to hold war outputs
        wars = []

        # Create comparison df for schools of the same type
        comparison_df = df[ df['School Type'] == df.loc[ school ]['School Type'] ]

        # Display correlation matrix for this school type's outcomes
        display( "Correlation matrix" )
        display( comparison_df[ predictors + outcomes ].corr()[ outcomes ] )

        graph = True

        if graph:
            # Create figure and axes
            fig, axs = plt.subplots(nrows=len(predictors)+1, ncols=len(outcomes), figsize=(20, 60))
            fig.tight_layout(pad=10)

            # Loop over outcomes
            for outcome in outcomes:
                # Loop over predictors
                for predictor in predictors:
                    # Create comparison df for schools of the same type
                    # Drop schools that do not have a value for this predictor or outcome
                    comparison_df = df[ df['School Type'] == df.loc[ school ]['School Type'] ].dropna(subset=[predictor, outcome])

                    if graph:
                        # Plot predictor against outcome
                        sns.regplot(x=predictor, y=outcome, data=comparison_df, ax=axs[predictors.index(predictor), outcomes.index(outcome)], scatter_kws={"color": "gray"})

                        # Add title and axis labels
                        axs[predictors.index(predictor), outcomes.index(outcome)].set_title(f'{school[1]}\n{predictor} vs {outcome}')
                        axs[predictors.index(predictor), outcomes.index(outcome)].set_ylim(0,100)

                        # Identify target school in the graph
                        axs[predictors.index(predictor), outcomes.index(outcome)].scatter(df.loc[school][predictor], df.loc[school][outcome], color = 'red')

                    # Create comparison df for schools of the same type
                    # Drop schools that do not have a value for this outcome
                    comparison_df = df[ df['School Type'] == df.loc[ school ]['School Type'] ].dropna(subset=[outcome])[ predictors + [outcome] ]

                    # Fill predictors with 0 because a lack of value usually means not enough to form a subgroup
                    comparison_df[predictors] = comparison_df[predictors].fillna(0)

                    # Fit the model for this outcome
                    lr.fit( comparison_df[predictors], comparison_df[outcome] )

                    # Compute a predicted value for this outcome
                    comparison_df[ outcome + '_predicted' ] = lr.predict( comparison_df[predictors] )

                    if graph:
                        # Plot predictor against outcome
                        sns.regplot(x=outcome + '_predicted', y=outcome, data=comparison_df, ax=axs[len(predictors), outcomes.index(outcome)], scatter_kws={"color": "gray"})
                        axs[len(predictors), outcomes.index(outcome)].set_title(f'{school[1]}\nPredicted {outcome} vs {outcome}')
                        axs[len(predictors), outcomes.index(outcome)].set_ylim(0,100)

                        # Identify target school in the graph
                        axs[len(predictors), outcomes.index(outcome)].scatter(comparison_df.loc[school][outcome + '_predicted'], comparison_df.loc[school][outcome], color = 'red')

                    # Filter df to schools within 20% of target school's size
                    comparison_df = comparison_df[ (abs(comparison_df['# Student Enrollment'] - comparison_df.loc[school]['# Student Enrollment']) / comparison_df.loc[school]['# Student Enrollment'] < .2 ) ]

```

```

# Filter df to schools within 10% of target school's Low Income %
comparison_df = comparison_df[ (abs(comparison_df['% Student Enrollment - Low Income'] - comparison_df
.loc[school]['% Student Enrollment - Low Income']) < 10 ) ]

for predictor in predictors:
    # Standardize each predictor
    comparison_df[ 'z_' + predictor ] = (comparison_df[ predictor ] - comparison_df[ predictor ].mean
()) / comparison_df[ predictor ].std()

    # Compute a predictor difference between each school and the target school
    comparison_df[ 'zdiff_' + predictor ] = abs( comparison_df['z_' + predictor] - comparison_df.loc[s
chool]['z_' + predictor] )

    # Compute a sum of the predictor differences
    comparison_df[ 'diff' ] = comparison_df[ list(filter(lambda x: x.startswith('zdiff'), comparison_df.colu
mns)) ].apply(lambda x: x.sum(), axis=1)

    # Compute a difference score between each school's outcome and the target school's outcome
    comparison_df[ outcome + '_diff' ] = comparison_df[ outcome ] - comparison_df.loc[school][outcome]

# Sort df by difference between school's predictors and target school's predictors and filter to close
st
comparison_df = comparison_df.sort_values(by=['diff']).head(20)

# Filter to schools where outcome was higher than target school
comparison_df = comparison_df[ comparison_df[ outcome + '_diff' ] >= 0 ]

# Sort df by difference between school's outcome and target school's outcome
comparison_df = comparison_df.sort_values(by=[outcome + '_diff'], ascending=False)

# Append this styled df to wars
wars.append( {"outcome": outcome, "df": comparison_df[ list(filter(lambda x: not x.startswith('z'), co
mparison_df.columns)) ].style.background_gradient(cmap=sns.light_palette("green", as_cmap=True), subset=[outco
me + '_diff'])} )

if graph:
    # Output figure
    display( fig )
    fig.clear()

# Loop over war outputs
for war in wars:
    display( "WAR " + war['outcome'] )
    display( war['df'] )

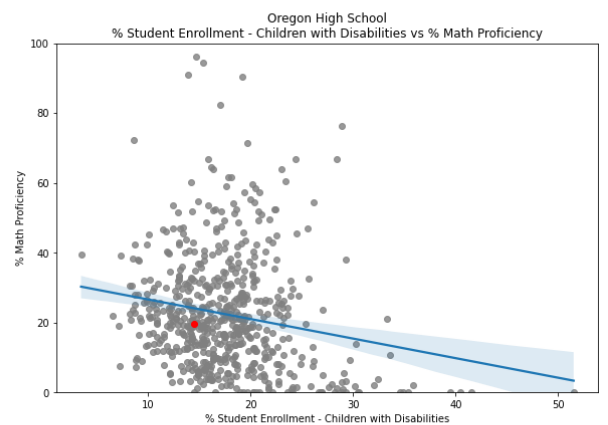
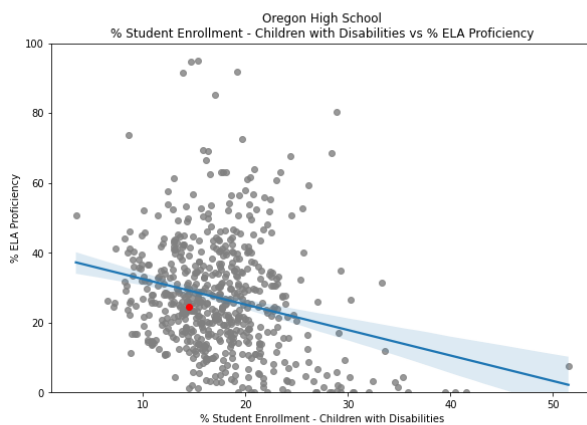
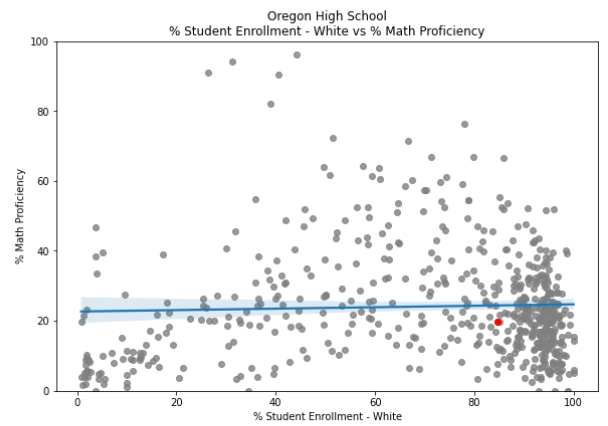
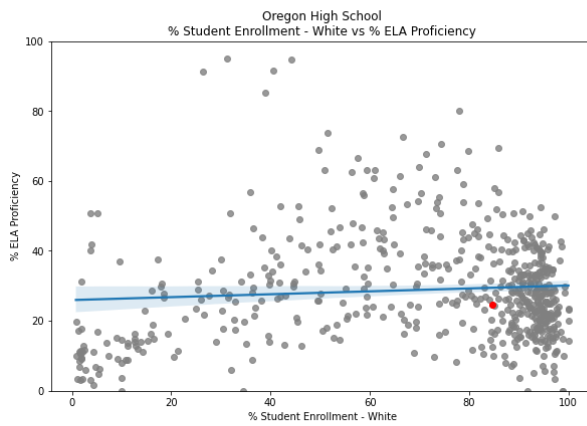
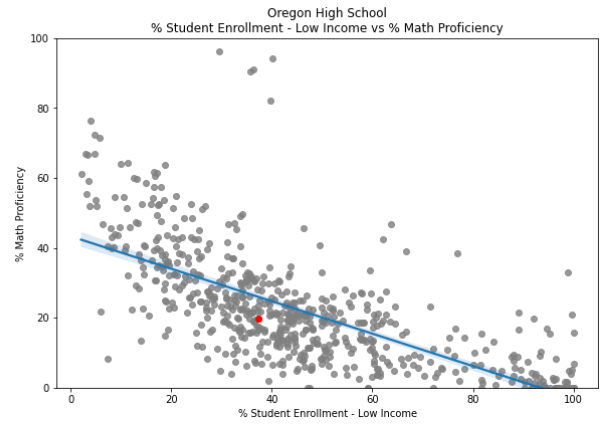
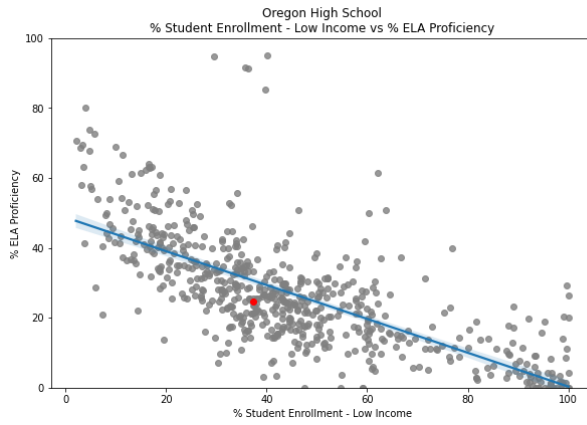
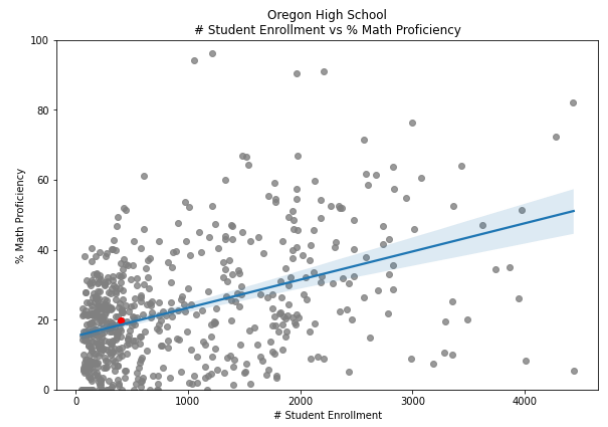
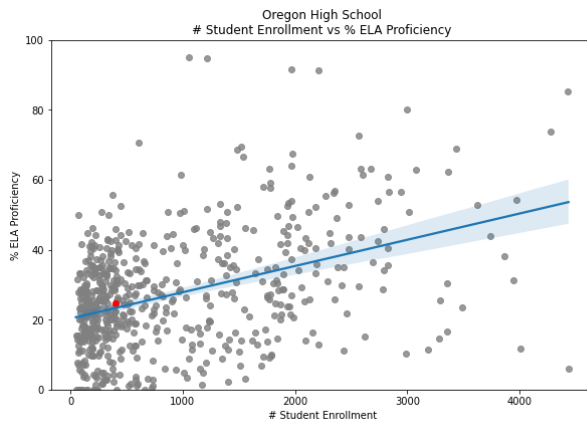
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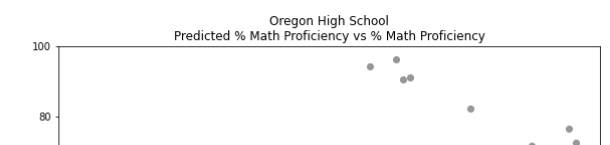
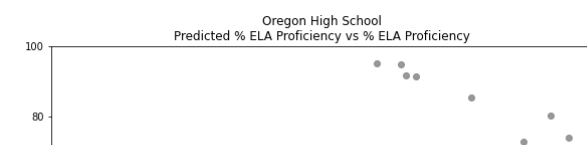
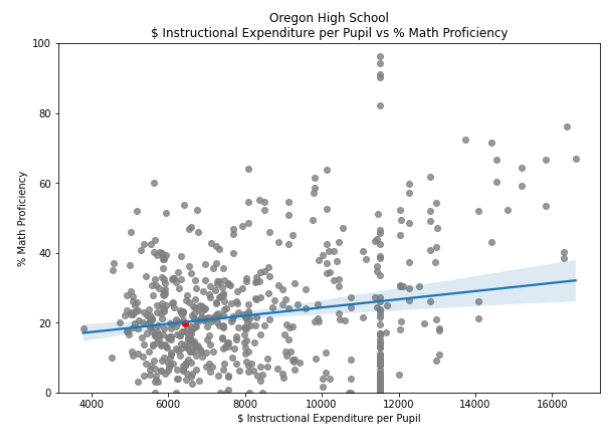
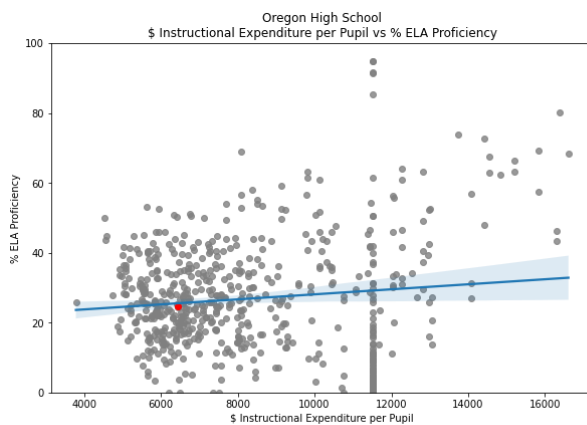
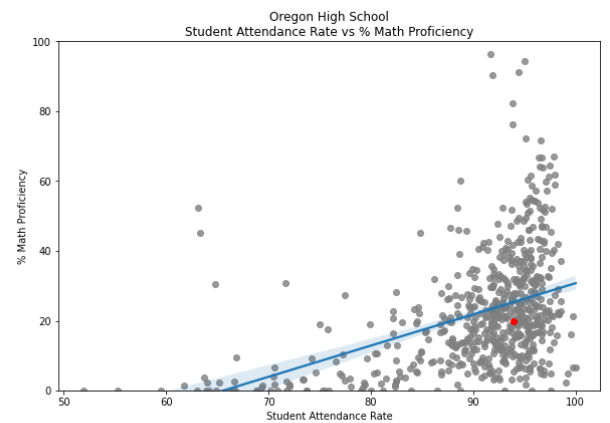
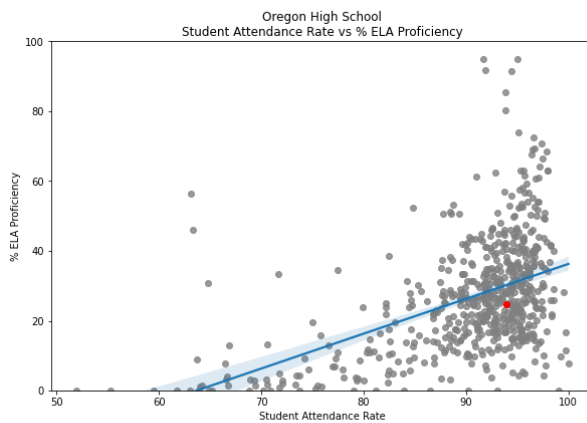
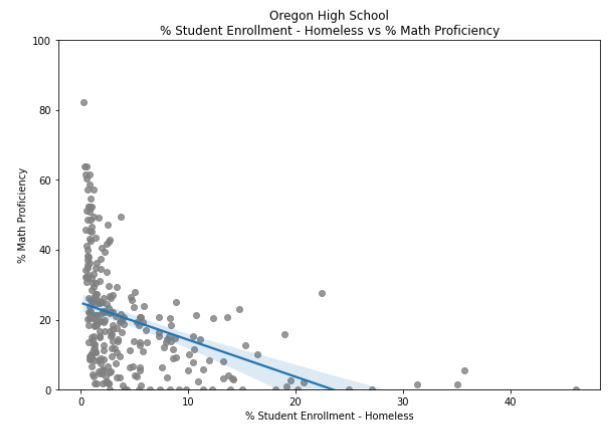
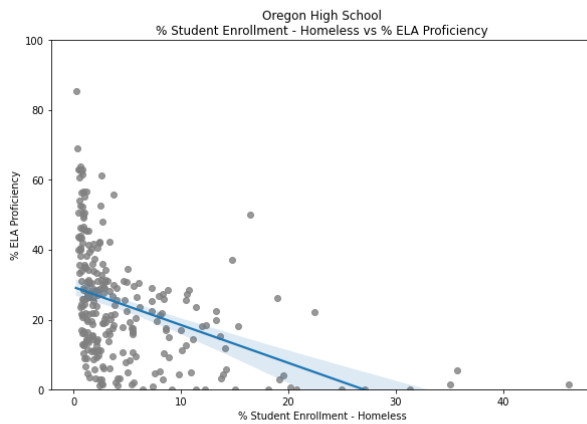
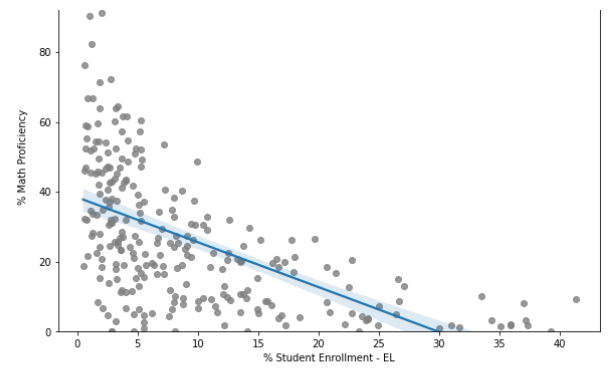
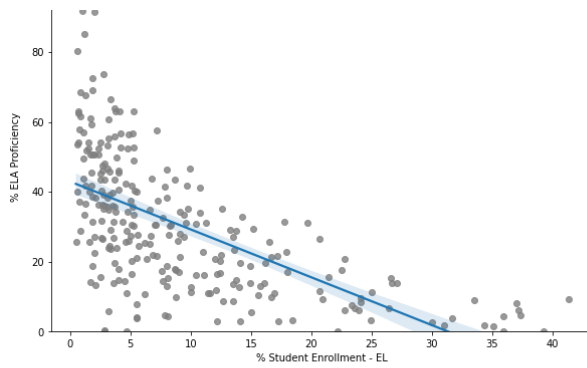
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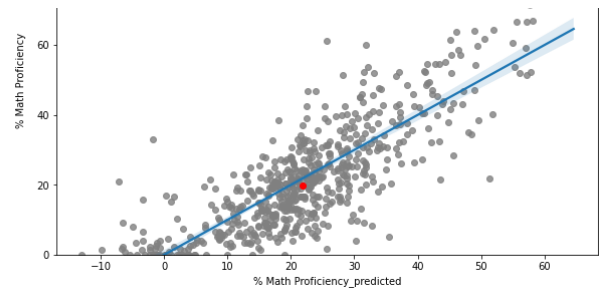
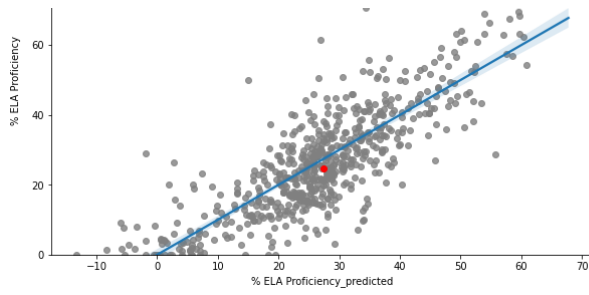
```
( '470712200260001',
  'Oregon High School',
  'Oregon CUSD 220',
  'Oregon',
  'Ogle',
  'UNIT',
  'MEDIUM',
  ' 9 10 11 12')
```

'Correlation matrix'

	% ELA Proficiency	% Math Proficiency
# Student Enrollment	0.412478	0.441141
% Student Enrollment - Low Income	-0.714123	-0.681943
% Student Enrollment - White	0.080113	0.038444
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% Math Proficiency	0.931025	1.000000







'WAR % ELA Proficiency'

								# Student Enrollment	% Student Enrollment - Low Income	% Student Enrollment - White
RCDTS	School Name	District	City	County	District Type	District Size	Grades Served			
531020110260001	El Paso-Gridley High School	El Paso-Gridley CUSD 11	El Paso	Woodford	UNIT	MEDIUM	9 10 11 12	359	35.400000	89.100000
470712210260004	Forreston Jr/Sr High Sch	Forrestville Valley CUSD 221	Forreston	Ogle	UNIT	MEDIUM	6 7 8 9 10 11 12	416	29.100000	88.000000
080083080260001	Eastland Jr/Sr High School	Eastland CUSD 308	Lanark	Carroll	UNIT	MEDIUM	6 7 8 9 10 11 12	339	38.100000	89.100000
130140030260006	Wesclin Sr High School	Wesclin CUSD 3	Trenton	Clinton	UNIT	MEDIUM	9 10 11 12	385	31.400000	88.800000
350501600170001	Seneca High School	Seneca Twp HSD 160	Seneca	La Salle	HIGH SCHOOL	SMALL	9 10 11 12	398	34.900000	88.400000
130950990160001	Nashville Comm High School	Nashville CHSD 99	Nashville	Washington	HIGH SCHOOL	SMALL	9 10 11 12	408	32.800000	93.900000
090270100260001	Paxton-Buckley-Loda High School	Paxton-Buckley-Loda CUD 10	Paxton	Ford	UNIT	MEDIUM	9 10 11 12	418	39.500000	88.500000
400560340260001	North Mac High School	North Mac CUSD 34	Virden	Macoupin	UNIT	MEDIUM	9 10 11 12	376	38.600000	93.600000
400560090260001	Southwestern High School	Southwestern CUSD 9	Piasa	Macoupin	UNIT	MEDIUM	9 10 11 12	410	36.600000	95.600000
470712200260001	Oregon High School	Oregon CUSD 220	Oregon	Ogle	UNIT	MEDIUM	9 10 11 12	406	37.400000	84.700000
330482020260001	Knoxville Sr High School	Knoxville CUSD 202	Knoxville	Knox	UNIT	MEDIUM	9 10 11 12	330	35.800000	94.200000

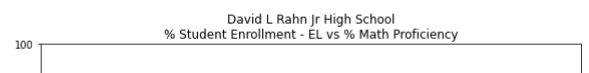
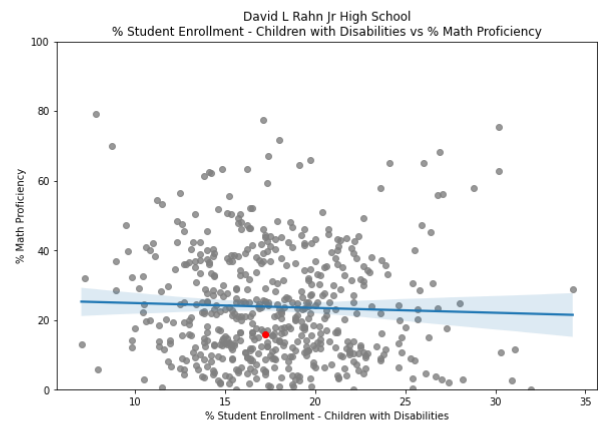
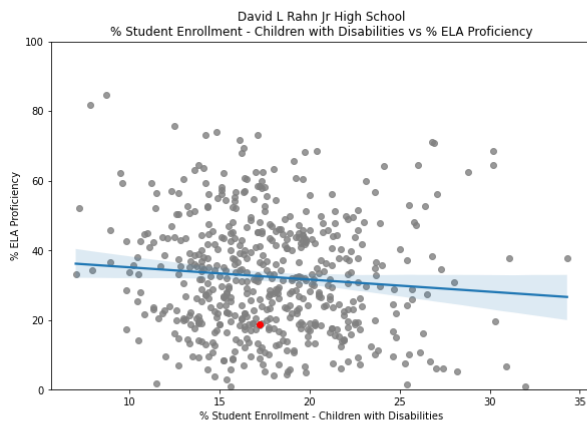
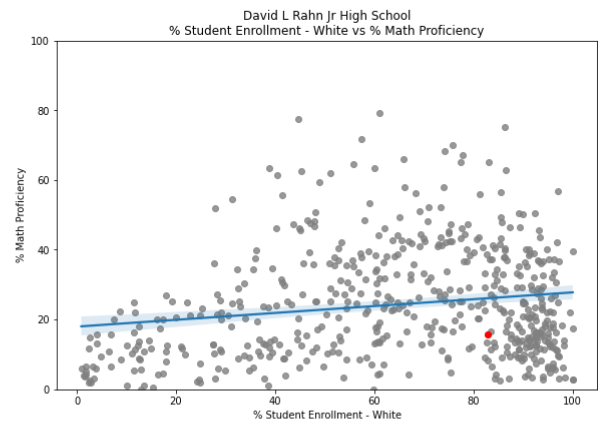
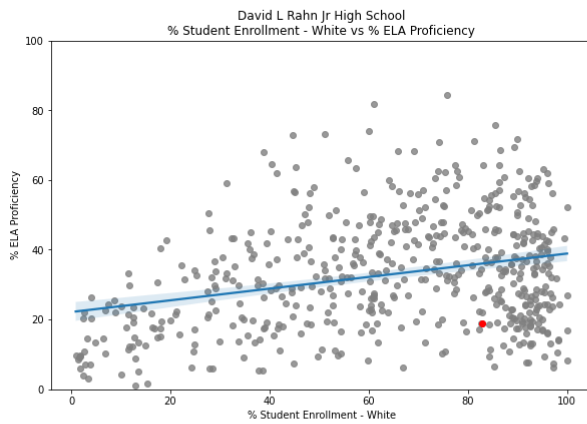
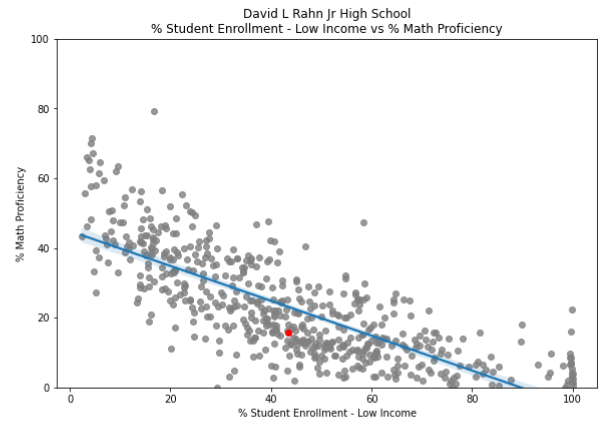
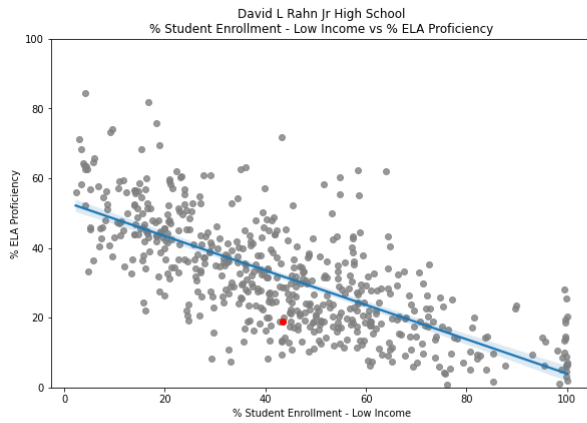
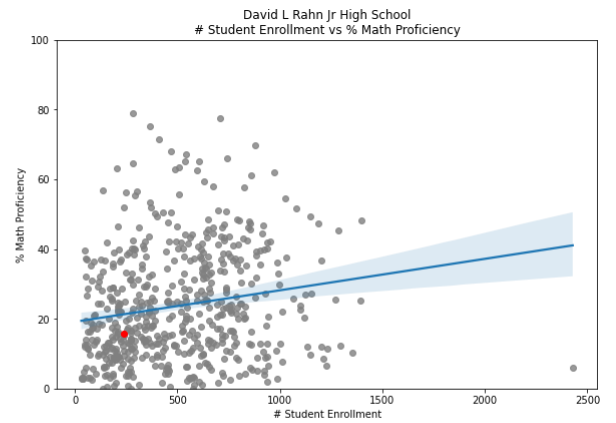
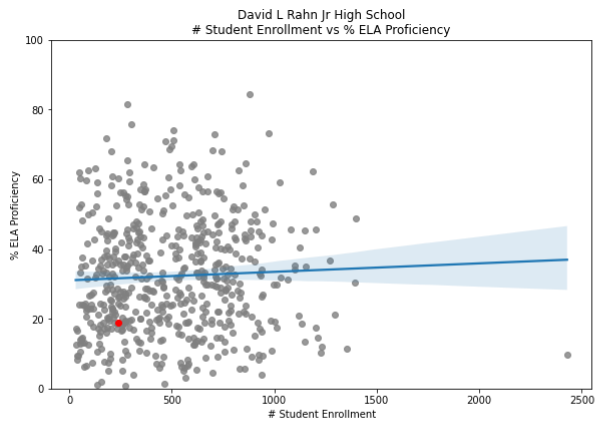
'WAR % Math Proficiency'

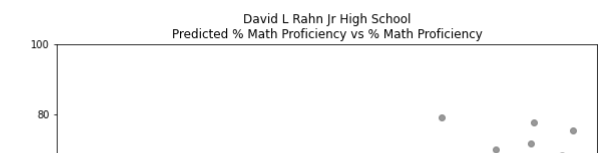
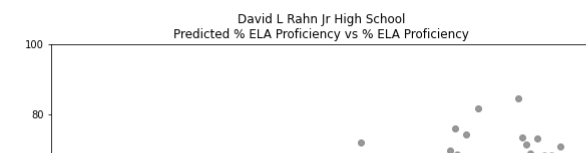
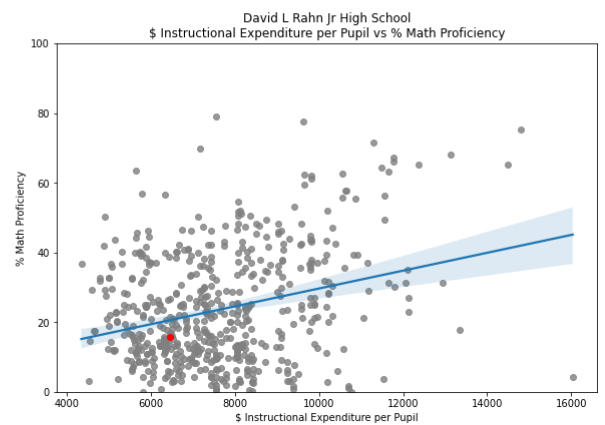
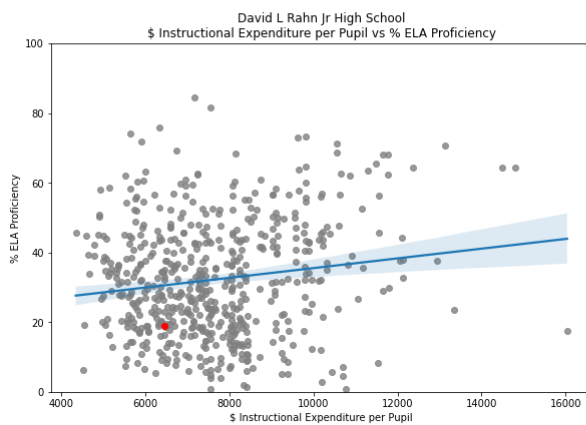
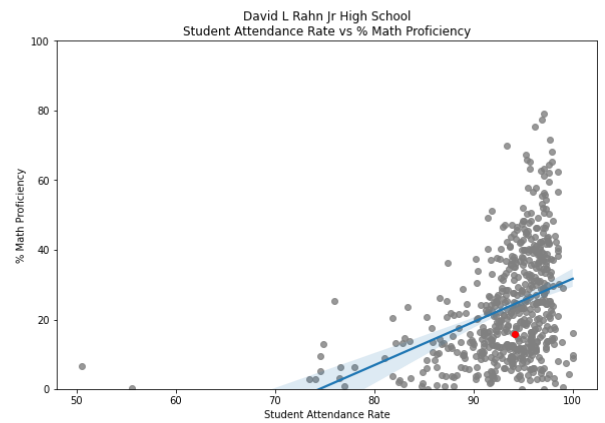
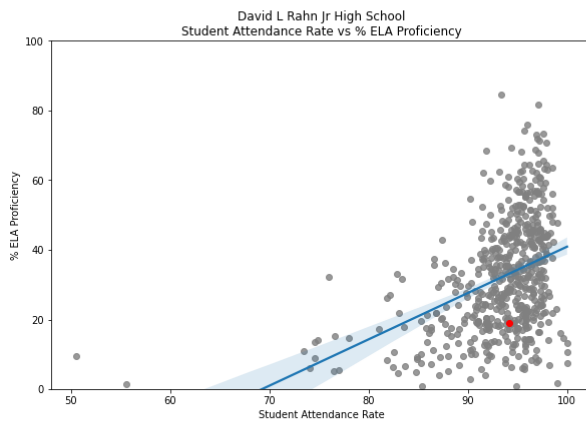
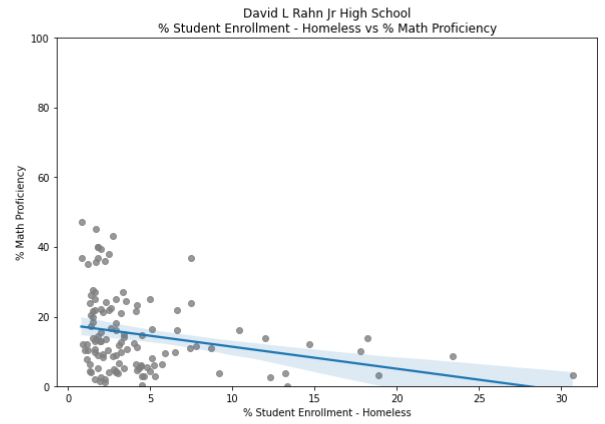
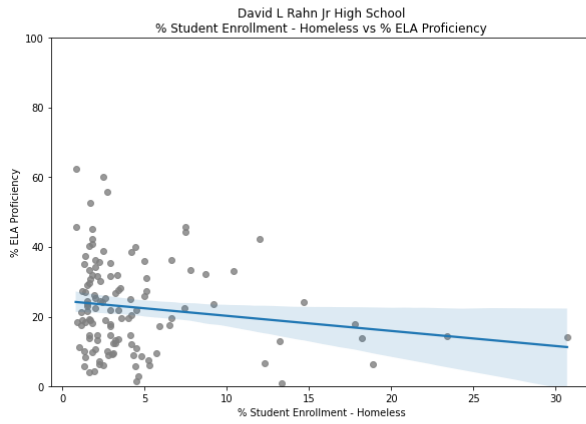
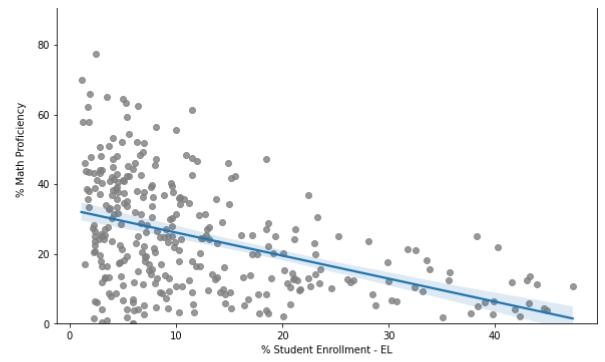
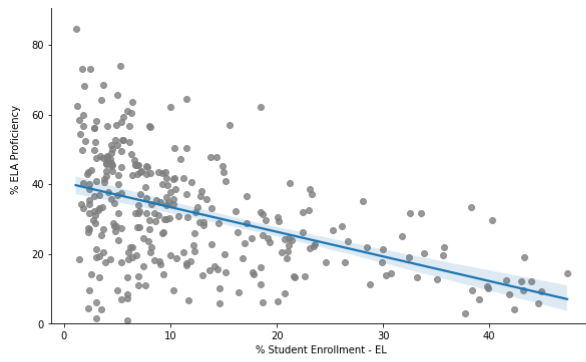
									# Student Enrollment	% Student Enrollment - Low Income	% Student Enrollment - White	E
RCDTS	School Name	District	City	County	District Type	District Size	Grades Served					
090270100260001	Paxton-Buckley-Loda High School	Paxton-Buckley-Loda CUD 10	Paxton	Ford	UNIT	MEDIUM	9 10 11 12	418	39.500000	88.500000		
130140030260006	Wesclin Sr High School	Wesclin CUSD 3	Trenton	Clinton	UNIT	MEDIUM	9 10 11 12	385	31.400000	88.800000		
330482020260001	Knoxville Sr High School	Knoxville CUSD 202	Knoxville	Knox	UNIT	MEDIUM	9 10 11 12	330	35.800000	94.200000		
350501600170001	Seneca High School	Seneca Twp HSD 160	Seneca	La Salle	HIGH SCHOOL	SMALL	9 10 11 12	398	34.900000	88.400000		
080083080260001	Eastland Jr/Sr High School	Eastland CUSD 308	Lanark	Carroll	UNIT	MEDIUM	6 7 8 9 10 11 12	339	38.100000	89.100000		
531020110260001	El Paso-Gridley High School	El Paso-Gridley CUSD 11	El Paso	Woodford	UNIT	MEDIUM	9 10 11 12	359	35.400000	89.100000		
470712210260004	Forreston Jr/Sr High Sch	Forrestville Valley CUSD 221	Forreston	Ogle	UNIT	MEDIUM	6 7 8 9 10 11 12	416	29.100000	88.000000		
400560060260001	Staunton High School	Staunton CUSD 6	Staunton	Macoupin	UNIT	MEDIUM	9 10 11 12	380	37.400000	94.500000		
400560090260001	Southwestern High School	Southwestern CUSD 9	Piasa	Macoupin	UNIT	MEDIUM	9 10 11 12	410	36.600000	95.600000		
470712200260001	Oregon High School	Oregon CUSD 220	Oregon	Ogle	UNIT	MEDIUM	9 10 11 12	406	37.400000	84.700000		

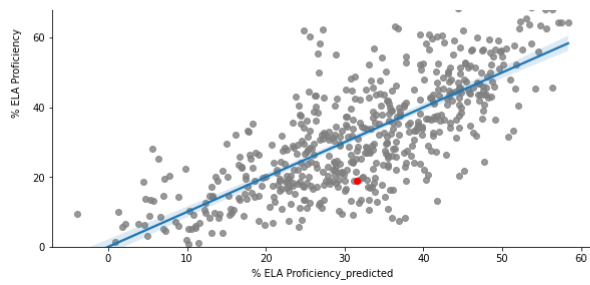
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 'UNIT',
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'Correlation matrix'

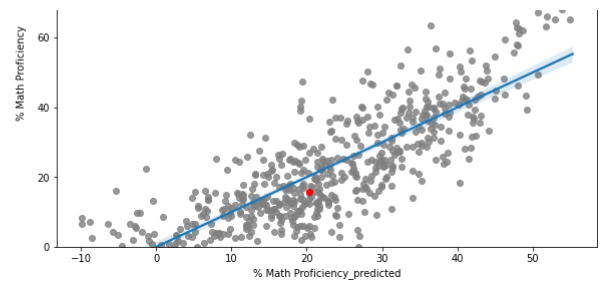
	% ELA Proficiency	% Math Proficiency
# Student Enrollment	0.045522	0.174456
% Student Enrollment - Low Income	-0.716625	-0.767648
% Student Enrollment - White	0.286602	0.172951
% Student Enrollment - Children with Disabilities	-0.091563	-0.037429
% Student Enrollment - EL	-0.468358	-0.436017
% Student Enrollment - Homeless	-0.156475	-0.265780
Student Attendance Rate	0.396819	0.382702
\$ Instructional Expenditure per Pupil	0.150870	0.286428
% ELA Proficiency	1.000000	0.871286
% Math Proficiency	0.871286	1.000000







'WAR % ELA Proficiency'



								# Student Enrollment	% Student Enrollment - Low Income	% Student Enrollment - White
RCDTS	School Name	District	City	County	District Type	District Size	Grades Served			
56099209U261002	Wilmington Middle School	Wilmington CUSD 209U	Wilmington	Will	UNIT	MEDIUM	6 7 8	278	34.500000	84.200000
090270050261003	GCMS Middle School	Gibson City-Melvin-Sibley CUSD 5	Gibson City	Ford	UNIT	MEDIUM	6 7 8	208	41.800000	89.900000
531020060261003	Fieldcrest Middle School	Fieldcrest CUSD 6	Wenona	Woodford	UNIT	MEDIUM	6 7 8	196	48.500000	89.800000
400560090261002	Southwestern Middle School	Southwestern CUSD 9	Piasa	Macoupin	UNIT	MEDIUM	7 8	211	43.100000	95.300000
090270100261002	Paxton-Buckley-Loda Jr High Sch	Paxton-Buckley-Loda CUD 10	Paxton	Ford	UNIT	MEDIUM	6 7 8	277	46.900000	86.300000
56099255U261001	Reed-Custer Middle School	Reed Custer CUSD 255U	Braidwood	Will	UNIT	MEDIUM	6 7 8	279	38.700000	87.500000
390550110261002	Warrensburg-Latham Middle Sch	Warrensburg-Latham CUSD 11	Warrensburg	Macon	UNIT	MEDIUM	6 7 8	234	44.000000	86.800000
330664040261001	Mercer County Jr High School	Mercer County School District 404	Joy	Mercer	UNIT	MEDIUM	7 8	208	38.500000	93.800000
390550150261001	Meridian Middle School	Meridian CUSD 15	Macon	Macon	UNIT	MEDIUM	6 7 8	246	39.000000	94.700000
110213010261004	East Prairie Middle School	Tuscola CUSD 301	Tuscola	Douglas	UNIT	MEDIUM	5 6 7 8	286	36.400000	90.200000
470980060261001	Morrison Jr High School	Morrison CUSD 6	Morrison	Whiteside	UNIT	MEDIUM	6 7 8	218	40.800000	86.200000
320380040261002	John L Nash Middle School	Central CUSD 4	Clifton	Iroquois	UNIT	MEDIUM	5 6 7 8	275	36.700000	87.600000
080083140261001	West Carroll Middle School	West Carroll CUSD 314	Mount Carroll	Carroll	UNIT	MEDIUM	6 7 8	210	52.900000	89.000000
010050010261002	Brown County Middle School	Brown County CUSD 1	Mount Sterling	Brown	UNIT	MEDIUM	5 6 7 8	207	50.200000	93.700000
160194250261001	Indian Creek Middle School	Indian Creek CUSD 425	Waterman	Dekalb	UNIT	MEDIUM	5 6 7 8	208	39.400000	82.200000
330482760261001	Abingdon-Avon Middle Sch	Abingdon-Avon CUSD 276	Avon	Knox	UNIT	MEDIUM	6 7 8	216	50.000000	89.400000
400560340261001	North Mac Middle School	North Mac CUSD 34	Girard	Macoupin	UNIT	MEDIUM	6 7 8	275	42.900000	94.200000
470712200261001	David L Rahn Jr High School	Oregon CUSD 220	Mount Morris	Ogle	UNIT	MEDIUM	7 8	239	43.500000	82.800000

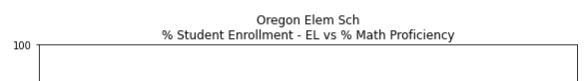
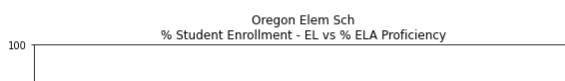
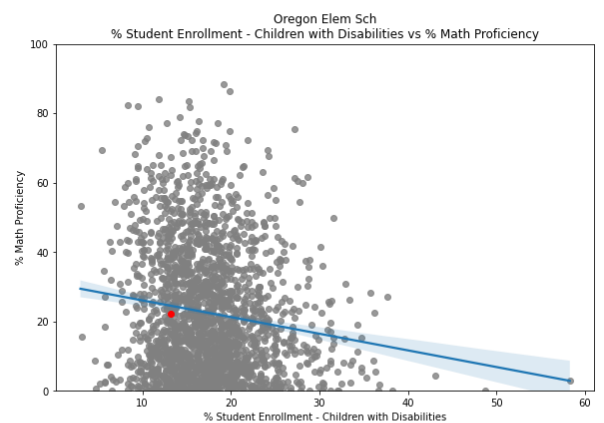
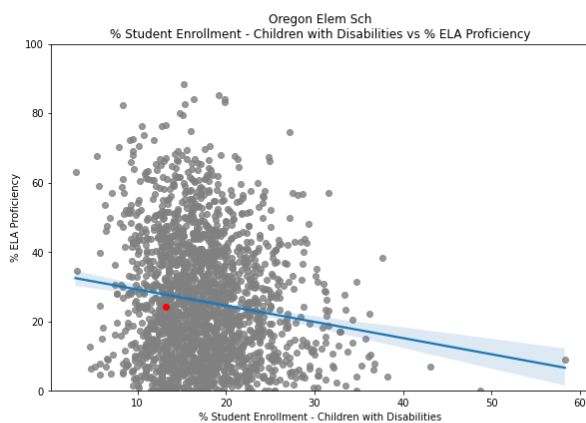
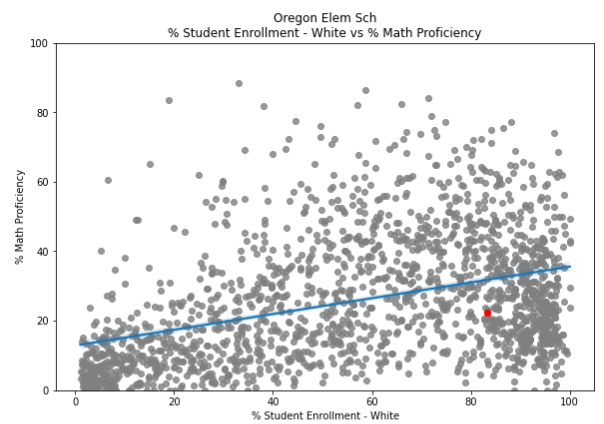
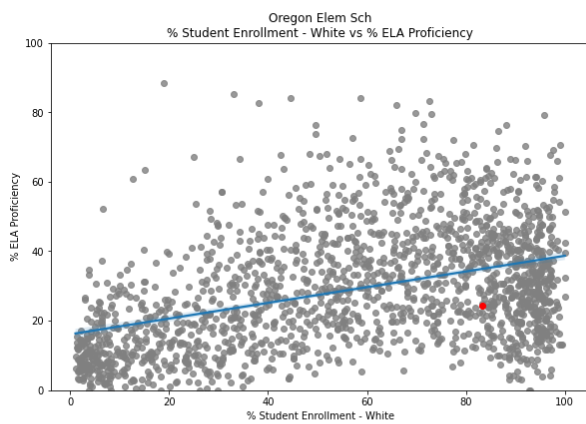
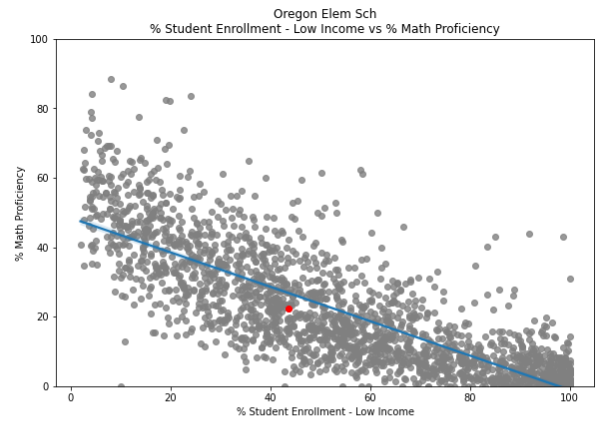
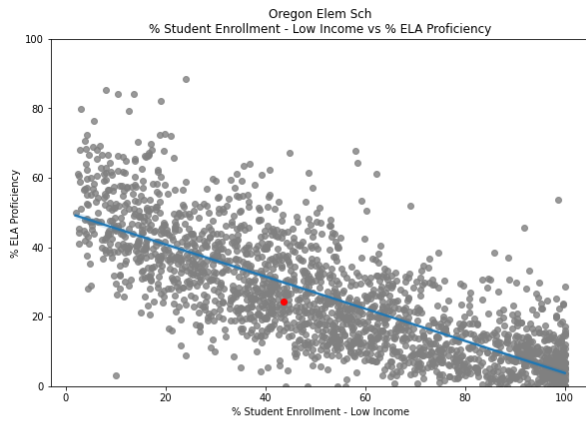
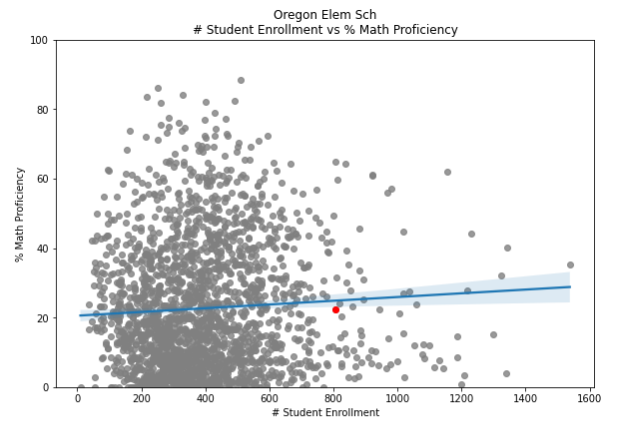
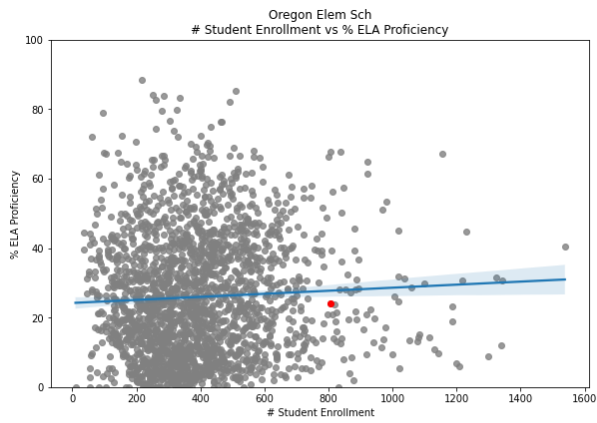
'WAR % Math Proficiency'

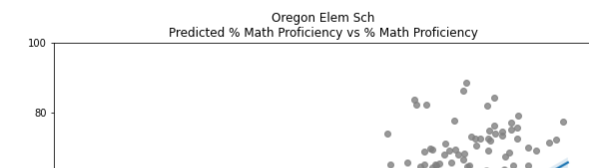
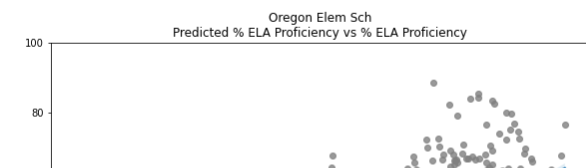
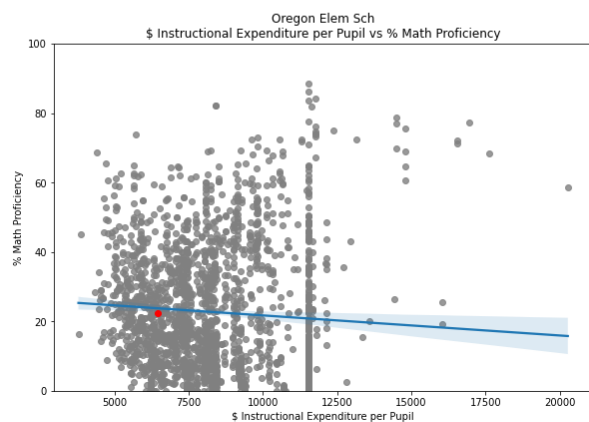
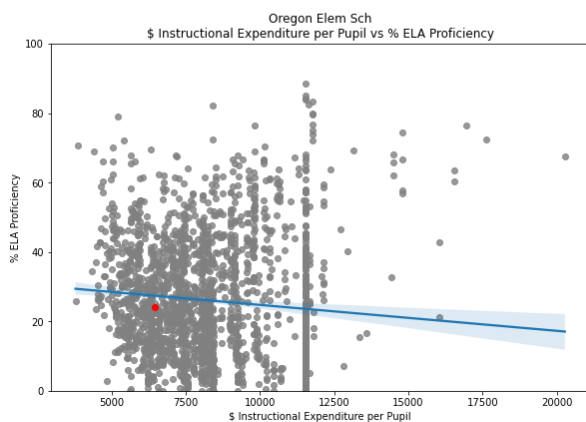
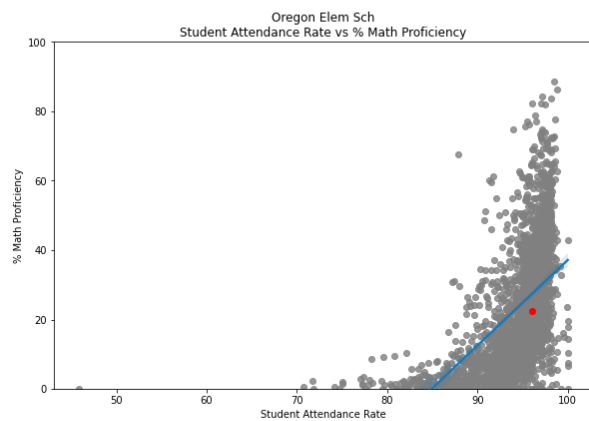
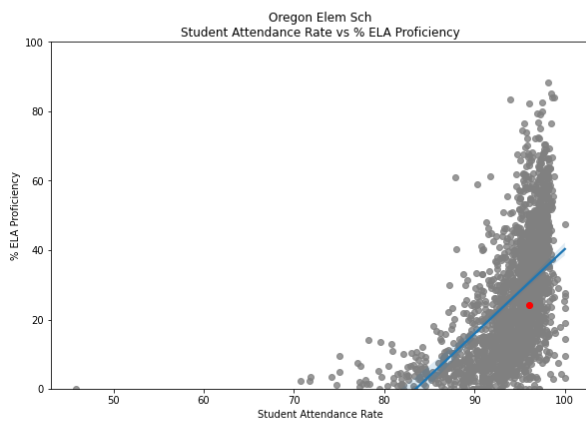
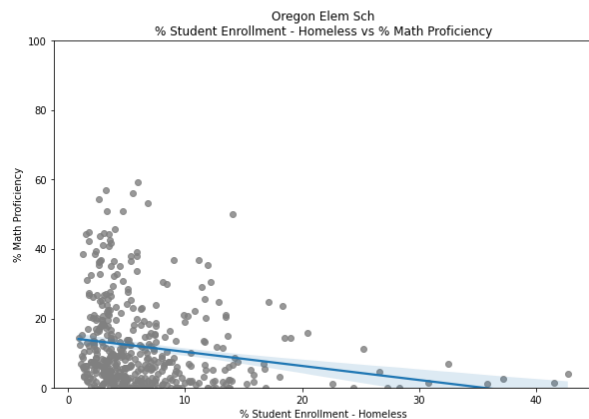
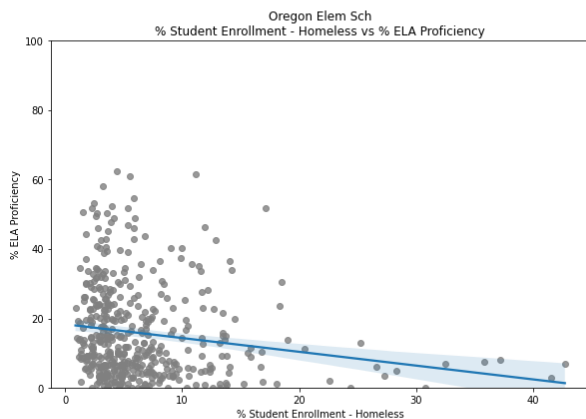
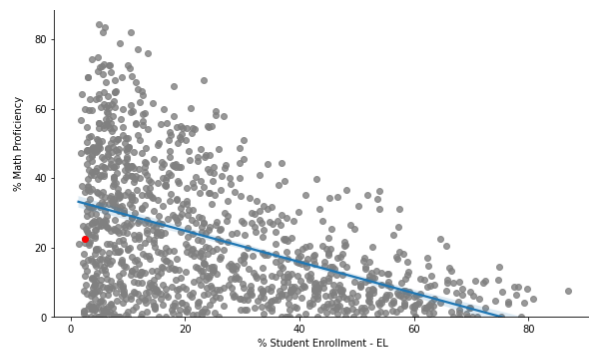
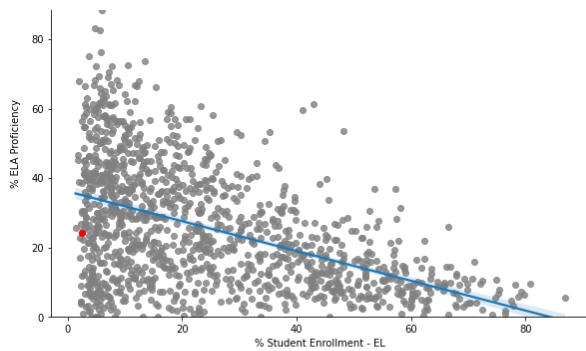
									# Student Enrollment	% Student Enrollment - Low Income	% Student Enrollment - White	
RCDTS	School Name	District	City	County	District Type	District Size	Grades Served					
090270100261002	Paxton-Buckley-Loda Jr High Sch	Paxton-Buckley-Loda CUD 10	Paxton	Ford	UNIT	MEDIUM	6 7 8	277	46.900000	86.300000		
56099209U261002	Wilmington Middle School	Wilmington CUSD 209U	Wilmington	Will	UNIT	MEDIUM	6 7 8	278	34.500000	84.200000		
090270050261003	GCMS Middle School	Gibson City-Melvin-Sibley CUSD 5	Gibson City	Ford	UNIT	MEDIUM	6 7 8	208	41.800000	89.900000		
010050010261002	Brown County Middle School	Brown County CUSD 1	Mount Sterling	Brown	UNIT	MEDIUM	5 6 7 8	207	50.200000	93.700000		
160194250261001	Indian Creek Middle School	Indian Creek CUSD 425	Waterman	Dekalb	UNIT	MEDIUM	5 6 7 8	208	39.400000	82.200000		
400560090261002	Southwestern Middle School	Southwestern CUSD 9	Piasa	Macoupin	UNIT	MEDIUM	7 8	211	43.100000	95.300000		
470980060261001	Morrison Jr High School	Morrison CUSD 6	Morrison	Whiteside	UNIT	MEDIUM	6 7 8	218	40.800000	86.200000		
56099255U261001	Reed-Custer Middle School	Reed Custer CUSD 255U	Braidwood	Will	UNIT	MEDIUM	6 7 8	279	38.700000	87.500000		
390550150261001	Meridian Middle School	Meridian CUSD 15	Macon	Macon	UNIT	MEDIUM	6 7 8	246	39.000000	94.700000		
531020060261003	Fieldcrest Middle School	Fieldcrest CUSD 6	Wenona	Woodford	UNIT	MEDIUM	6 7 8	196	48.500000	89.800000		
470712200261001	David L Rahn Jr High School	Oregon CUSD 220	Mount Morris	Ogle	UNIT	MEDIUM	7 8	239	43.500000	82.800000		

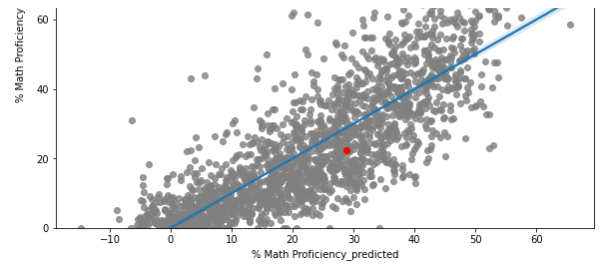
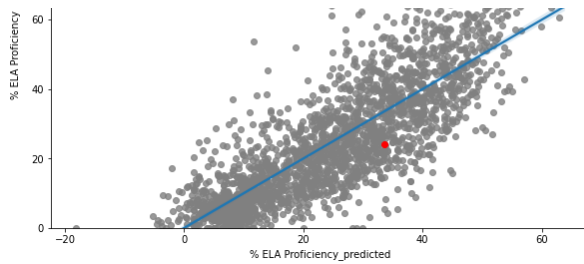
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'Correlation matrix'

	% ELA Proficiency	% Math Proficiency
# Student Enrollment	0.048934	0.057267
% Student Enrollment - Low Income	-0.776767	-0.803804
% Student Enrollment - White	0.411163	0.391927
% Student Enrollment - Children with Disabilities	-0.141821	-0.139105
% Student Enrollment - EL	-0.475038	-0.460999
% Student Enrollment - Homeless	-0.165733	-0.186713
Student Attendance Rate	0.551610	0.533635
\$ Instructional Expenditure per Pupil	-0.094966	-0.070392
% ELA Proficiency	1.000000	0.908093
% Math Proficiency	0.908093	1.000000







'WAR % ELA Proficiency'

								# Student Enrollment	% Student Enrollment - Low Income	% Student Enrollment - White
RCDTS	School Name	District	City	County	District Type	District Size	Grades Served			
150162990252510	Pritzker Elem School	City of Chicago SD 299	Chicago	Cook	UNIT	LARGE	PK K 1 2 3 4 5 6 7 8	723	33.900000	30.600000
24032060C042001	Saratoga Elem School	Saratoga CCSD 60C	Morris	Grundy	ELEMENTARY	MEDIUM	PK K 1 2 3 4 5 6 7 8	744	34.700000	73.000000
211000050262001	Tri-C Elementary School	Carterville CUSD 5	Carterville	Williamson	UNIT	LARGE	K 1 2 3	647	43.300000	83.200000
190220410022003	Churchill Elem School	Glen Ellyn SD 41	Glen Ellyn	Dupage	ELEMENTARY	LARGE	K 1 2 3 4 5	686	44.800000	39.800000
150162990252119	Canty Elem School	City of Chicago SD 299	Chicago	Cook	UNIT	LARGE	PK K 1 2 3 4 5 6 7 8	766	52.900000	50.000000
150162990252413	Pulaski Intl Sch of Chicago	City of Chicago SD 299	Chicago	Cook	UNIT	LARGE	PK K 1 2 3 4 5 6 7 8	881	47.900000	27.600000
150162990252214	Garvy J Elem School	City of Chicago SD 299	Chicago	Cook	UNIT	LARGE	K 1 2 3 4 5 6 7 8	777	36.200000	52.800000
56099030C042006	Orenic Intermediate School	Troy CCSD 30C	Plainfield	Will	ELEMENTARY	LARGE	5 6	884	43.600000	48.000000
150162990252358	Inter-American Elem Magnet School	City of Chicago SD 299	Chicago	Cook	UNIT	LARGE	PK K 1 2 3 4 5 6 7 8	697	46.100000	11.300000
050160150042008	Lincoln Elementary School	Palatine CCSD 15	Palatine	Cook	ELEMENTARY	LARGE	K 1 2 3 4 5 6	650	42.300000	41.800000
190220020022006	Tioga Elementary School	Bensenville SD 2	Bensenville	Dupage	ELEMENTARY	LARGE	PK K 1 2 3 4 5	735	47.100000	20.500000
470712200262006	Oregon Elem Sch	Oregon CUSD 220	Oregon	Ogle	UNIT	MEDIUM	PK K 1 2 3 4 5 6	806	43.700000	83.400000

'WAR % Math Proficiency'

								# Student Enrollment	% Student Enrollment - Low Income	% Stu Enrollm - W
RCDTS	School Name	District	City	County	District Type	District Size	Grades Served			
150162990252510	Pritzker Elem School	City of Chicago SD 299	Chicago	Cook	UNIT	LARGE	PK K 1 2 3 4 5 6 7 8	723	33.900000	30.600000
24032060C042001	Saratoga Elem School	Saratoga CCSD 60C	Morris	Grundy	ELEMENTARY	MEDIUM	PK K 1 2 3 4 5 6 7 8	744	34.700000	73.000000
150162990252413	Pulaski Intl Sch of Chicago	City of Chicago SD 299	Chicago	Cook	UNIT	LARGE	PK K 1 2 3 4 5 6 7 8	881	47.900000	27.600000
050160150042008	Lincoln Elementary School	Palatine CCSD 15	Palatine	Cook	ELEMENTARY	LARGE	K 1 2 3 4 5 6	650	42.300000	41.800000
190220410022003	Churchill Elem School	Glen Ellyn SD 41	Glen Ellyn	Dupage	ELEMENTARY	LARGE	K 1 2 3 4 5	686	44.800000	39.800000
150162990252119	Canty Elem School	City of Chicago SD 299	Chicago	Cook	UNIT	LARGE	PK K 1 2 3 4 5 6 7 8	766	52.900000	50.000000
211000050262001	Tri-C Elementary School	Carterville CUSD 5	Carterville	Williamson	UNIT	LARGE	K 1 2 3	647	43.300000	83.200000
150162990252214	Garvy J Elem School	City of Chicago SD 299	Chicago	Cook	UNIT	LARGE	K 1 2 3 4 5 6 7 8	777	36.200000	52.800000
320460530022005	Liberty Intermediate School	Bourbonnais SD 53	Bourbonnais	Kankakee	ELEMENTARY	LARGE	4 5 6	714	41.300000	66.700000
150162990252380	Ogden Elem School	City of Chicago SD 299	Chicago	Cook	UNIT	LARGE	PK K 1 2 3 4 5	944	43.000000	27.200000
470712200262006	Oregon Elem Sch	Oregon CUSD 220	Oregon	Ogle	UNIT	MEDIUM	PK K 1 2 3 4 5 6	806	43.700000	83.400000

<Figure size 1440x4320 with 0 Axes>

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