IWERC Dashboard

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BADM 550

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<center>IWERC Dashboard - Release 4 Document</center>

Project Overview:

We began by individually designing layouts for the IWERC dashboard, each incorporating specific variables and visualizations that we believed would be most effective. Afterward, we met as a team to review our designs and align in a direction. We then presented our concepts to the client and received feedback on which visualizations and features would be most beneficial to include in the final dashboard.

Objectives for Release 4:

- Prepare in-class presentation slides and finish the presentation on 5/1

- Create the newest dataset containing ESL data and the type of districts

- Publish the IWERC dashboard to Tableau Public

Work Progress:

Below is a summary of each team member's contribution, including the dashboard, key features, and client feedback.

Lechen's Dashboard
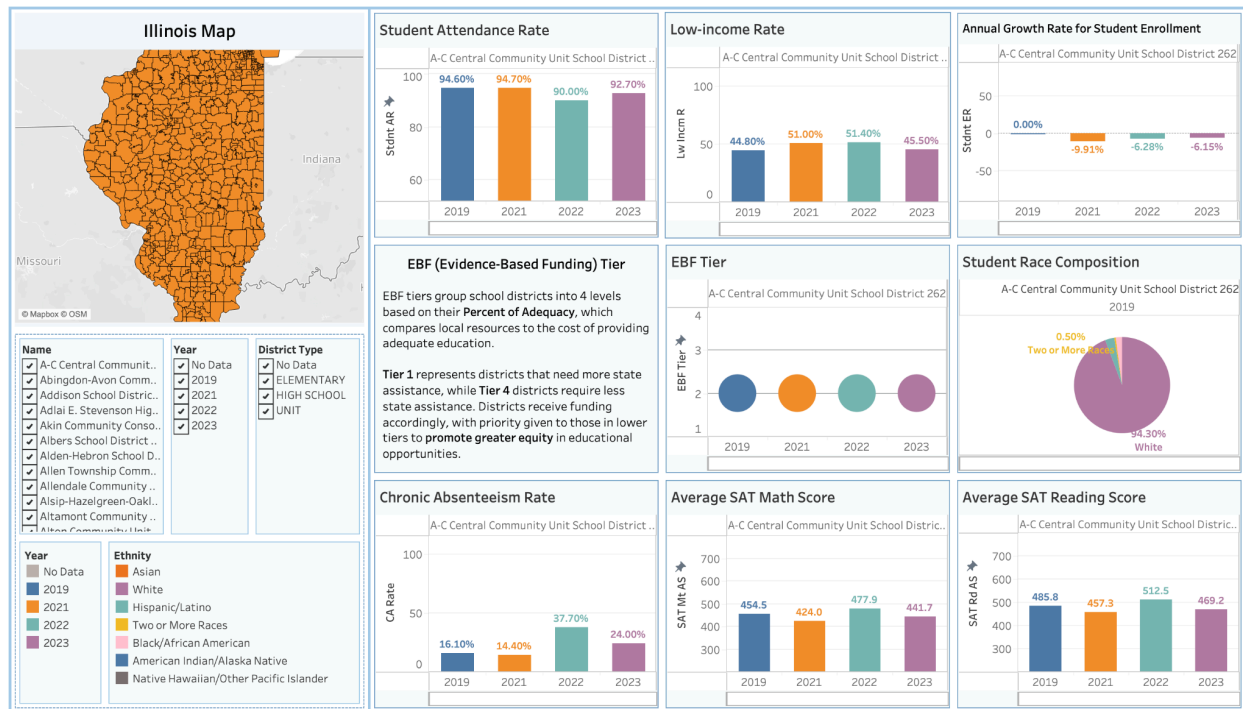
Newest dataset

Year	RCDTS	District	Student Enrollment Rate	Low Income Rate	EBF Tier	Student Attendance Rate	SAT Reading Average Score	SAT Math Average Score	CA Rate	Total Teacher FTE	Avg Teaching Experience	Avg Class Size - All Grades	$ Total Per-Pupil Expenditures - Subtotal	% Student Enrollment - White	% Student Enrollment - Black or African American	% Student Enrollment - Hispanic or Latino	% Student Enrollment - Asian	% Student Enrollment - Native Hawaiian or Other Pacific Islander	% Student Enrollment - American Indian or Alaska Native	% Student Enrollment - Two or More Races	Proficient students IAR ELA	Proficient students IAR Math	District Type	% Student Enrollment - EL
2019	010092620260000	A-C Central Community Unit School District	0	44.8	2	94.6	485.8	454.5	16.1	34	12.2	13.9	10604.97	94.3	2.1	3.1				0.5	22.78333	14.71667	UNIT	0.2
2021	010092620260000	A-C Central Community Unit School District	-9.90566	51	2	94.7	457.3	424	14.4	34.23	10.9	13.8	9218.85	94.2		2.9					16.76667	8.666667	UNIT	
2022	010092620260000	A-C Central Community Unit School District	-6.282723	51.4	2	90	512.5	477.9	37.7	37.45	12.2	13.8	14505.3	95.5							32.43333	24.05	UNIT	
2023	010092620260000	A-C Central Community Unit School District	-6.145251	45.5	2	92.7	469.2	441.7	24	39.191	12.3	13.1	15493.78	94.6							3	26.28333	20.91667	UNIT	
2019	330482760260000	Abingdon-Avon Community Unit School Dis	0	51.6	1	93.8	473.4	431.9	19.2	70	11.4	16.7	9248.81	89.7	0.3	4.4	0.2		0.1	5.3	24.01667	18.4	UNIT	0.2
2021	330482760260000	Abingdon-Avon Community Unit School Dis	-3.549061	51.2	1	94.2	467.1	426.2	17.9	66.35	12.4	15.7	10371.44	88.2		5.4				5.6	18.86667	13.68333	UNIT	
2022	330482760260000	Abingdon-Avon Community Unit School Dis	-4.220779	44	1	89.8	457.7	401.4	38	68.54	11.8	15	12936.98	87.9		5.4				5.4	27.98333	15.68333	UNIT	
2023	330482760260000	Abingdon-Avon Community Unit School Dis	1.694915	51.2	1	90.3	448.1	416.8	36.9	71.89	12	15.8	12818.87	87.2	1.2	5.4				5.7	42.85	19.51667	UNIT	
2019	190220040020000	Addison School District 4	0	63.4	2	94.6			13.5	285	11.2	20.3	11387.64	25.8	2.3	63.3	4.3	0.2	2.8	1.3	28.4	19.96667	ELEMENTAR	40.4
2021	190220040020000	Addison School District 4	-7.816848	61.9	1	92.3			22.9	283.44	12.2	21.3	12556.15	23.8	2.8	64.5	4.4		3.3	1.1	17.96667	14.9	ELEMENTAR	45.4
2022	190220040020000	Addison School District 4	-2.277717	51.9	2	92.2			24.7	289.5	12.6	22	14265.73	24.7	2.6	63.2	4.4		4	1.2	17.81667	14.33333	ELEMENTAR	49.5
2023	190220040020000	Addison School District 4	-3.257512	65.2	1	93.2			19	292.82	12.8	21.4	14898.49	20.8	2.5	68.5	4.1		2.8	1.3	21.2	16.16667	ELEMENTAR	52.4

- Summary: I focused on improving the layout and performance of the dashboard. Firstly, I combined the geographic data with educational indicators data as the new data source in Tableau so that stakeholders can select one district on the map or use filter functions to check the district situation. Secondly, for every variable, I added labels to show the values, further helping stakeholders without a technical background to understand the situation of the districts. In particular, for the chart of student race composition, I only

labeled the most and least common races on the pie chart to help stakeholders quickly obtain the most important information. Thirdly, I added a new filter named `District Type`, enabling stakeholders to see district data from elementary, high school, and unit perspectives. Lastly, I applied a more eye-catching color to the Illinois map.
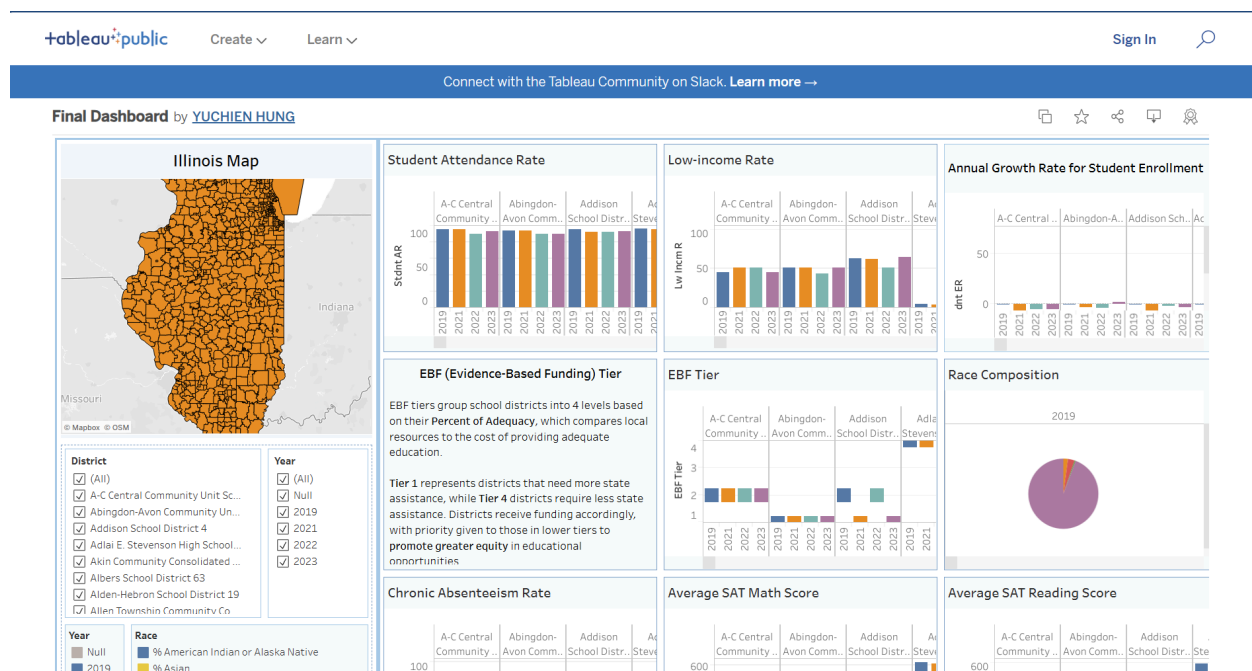
- Client Feedback:

    1. Try to add ESL data to the dashboard, this variable may have some relationships with SAT and IAR.

    2. Try some methods to put more visualizations on one dashboard, maybe Toggle function.

Yuchien's Dashboard

Tableau Public Link:

https://public.tableau.com/app/profile/yuchien.hung/viz/FinalDashboard_17457809857630/Dashboard1

- Summary: I'm focused on several key deliverables. First, I prepared the slides and finalized the content for an in-class presentation scheduled for May 1st. Simultaneously, I'm ensuring the smooth progress of release 4 by updating all associated tasks, responsibilities, due dates, and statuses within ClickUp.

  Another important objective is to make the IWERC dashboard publicly accessible by publishing it to Tableau Public. Following this, I'll be diligently working on incorporating the valuable feedback received from clients to further enhance the dashboard's effectiveness and user experience. Lastly, I'm also in the process of drafting the comprehensive documentation for release 4.

Claudia's Analysis

For this Release, I focused on working on the data report requested by our client. Feedback from the last client meeting was implemented. The feedback requested was to add more student demographic information that has an impact on student performance. I ran an analysis to understand SAT Reading/Math and IAR scores and the relationship with student race/ethnicity. Here are the results:

i. **SAT Reading and Race/Ethnicity:**
    1. % White Enrollment: A weak positive correlation (0.17) with SAT Reading scores.
    2. % Black or African American Enrollment: A moderate negative correlation (-0.46) with SAT Reading scores.
    3. % Hispanic or Latino Enrollment: A weak negative correlation (-0.17) with SAT Reading scores.
    4. % Asian Enrollment: A moderate positive correlation (0.50) with SAT Reading scores.

ii. **SAT Math and Race/Ethnicity:**
    1. % White Enrollment: A weak positive correlation (0.12) with SAT Math scores.
    2. % Black or African American Enrollment: A moderate negative correlation (-0.44) with SAT Math scores.

3. **% Hispanic or Latino Enrollment:** A weak negative correlation (-0.12) with SAT Math scores.
4. **% Asian Enrollment:** A moderate positive correlation (0.51) with SAT Math scores.

iii. IAR ELA and Race/Ethnicity:
1. **% White Enrollment:** A weak positive correlation (0.26) with IAR ELA proficiency.
2. **% Black or African American Enrollment:** A moderate negative correlation (-0.47) with IAR ELA proficiency.
3. **% Hispanic or Latino Enrollment:** A weak negative correlation (-0.28) with IAR ELA proficiency.
4. **% Asian Enrollment:** A moderate positive correlation (0.38) with IAR ELA proficiency.

iv. IAR Math and Race/Ethnicity:
1. **% White Enrollment:** A weak positive correlation (0.23) with IAR Math proficiency.
2. **% Black or African American Enrollment:** A moderate negative correlation (-0.48) with IAR Math proficiency.
3. **% Hispanic or Latino Enrollment:** A weak negative correlation (-0.27) with IAR Math proficiency.
4. **% Asian Enrollment:** A moderate positive correlation (0.45) with IAR Math proficiency.

The original report also included data just to understand SAT performance in pre- and post-COVID, but the client requested to also see IAR data. So, for the updated report, that was included. The visualizations below showcase IAR performance and the relationship between IAR Reading Scores and Student Attendance, as this had the strongest correlation.
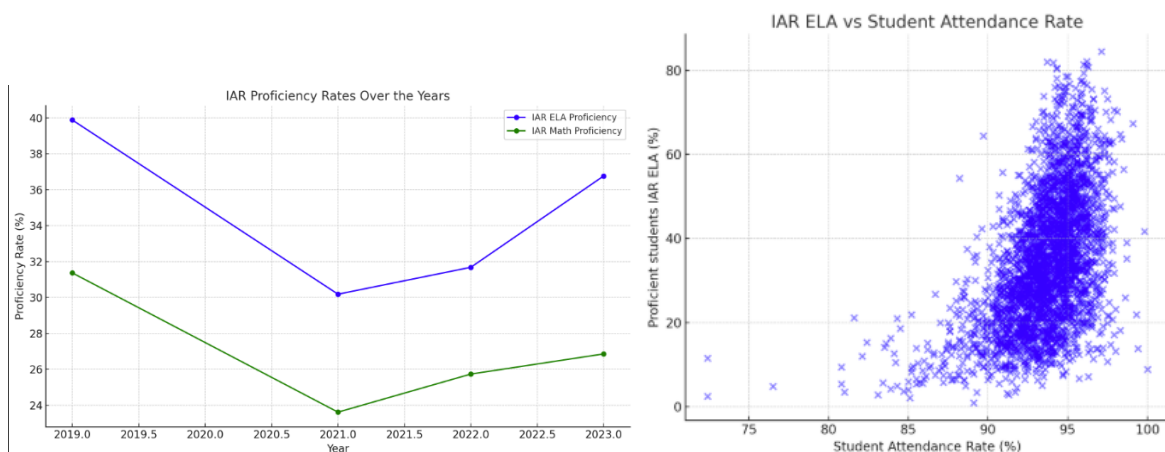
The client also requested to emphasize how we found that Teacher Experience had an impact on Student performance. So, I created two new visualizations to show how Average Teaching Experience impacted SAT Reading and Math scores.

Avg Teaching Experience vs SAT Reading Average Score / Avg Teaching Experience vs SAT Math Average Score
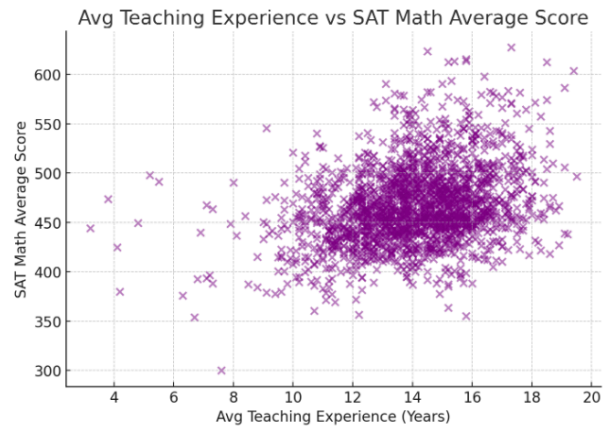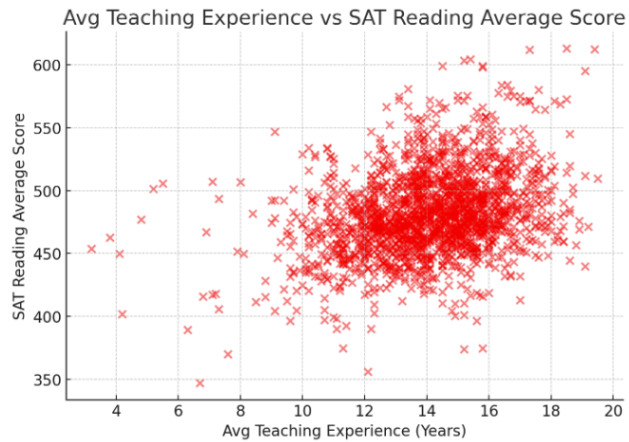
No relationship was found between IAR scores and teacher experience.

For further improvement on the report, there will be a more detailed explanation and interpretation for each visualization, as well as an explanation of the importance behind the relationships discovered.

Next Steps

- Finalize presentation for the Client Final happening on May 13, 2025

- Implement advanced features into the dashboard

    - Toggle Function

        - Changing between Student Performance and Student Demographics

- Finalize Report

    - Will get published with DPI

- Finishing writing up summaries for each visualization on the dashboard and implement

    into the dashboard