

This is my quick review of  2022 Spring NJSLA Analysis - 2022/11/14 BOE Meeting (Also: [here](#)). Note that I'm seeing *just* this presentation, and not any actual data itself. Moreover, the time horizon of the presentation is extremely short, looking only one year earlier than the Pandemic. This obscures trends unrelated to the Pandemic. That's especially problematic as a reasonable concern is that the Pandemic accelerated ongoing trends. By hiding those trends, our view of the pandemic's effects is therefore limited. It's the equivalent of seeing a snapshot instead of a video.

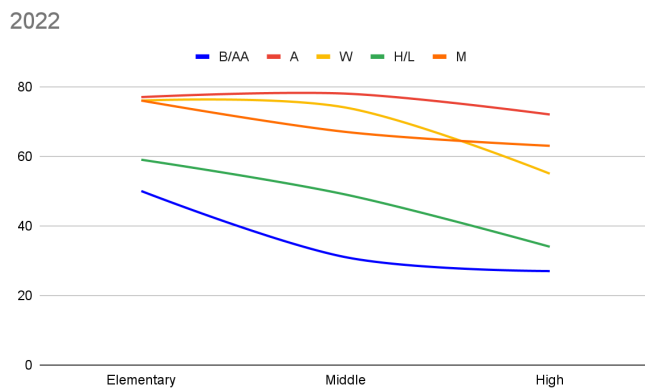
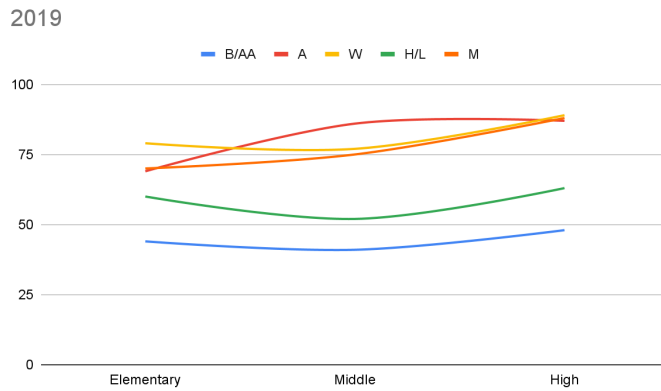
This document also contains some reflections on statements made as part of the presentation of this material during the 2022/11/14 Board of Ed meeting. A video of this may be found at [Video of 2022/11/14 BOE Meeting Achievement Report](#) with the math portion of the presentation [starting at 11:13](#).

ELA

Racial AGAP

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There appear to be two independent trends moving in the same (bad) direction. First, it appears that there is a general downward trend from elementary to middle school for all groups except Asians in 2019, but it then climbs again going into high school. There's a downward trend from 2019's to 2022's data, and this extends the previously mentioned downward trend as students age into HS. Therefore, as of 2022, there's a steady downward trend for all groups going from elementary to high school.



Unless we make the assumption that the pandemic had a more adverse impact on older students, the change from 2019 to 2022 should be of deep concern. Unfortunately, we've typically assumed that older students would be positioned to gain more from remote teaching than younger students.

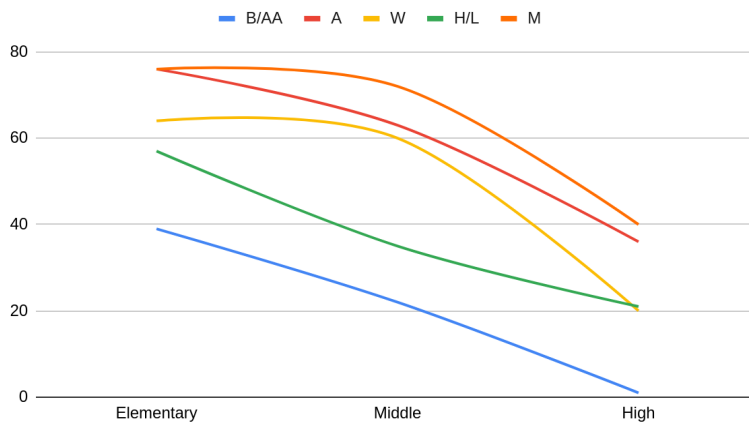
Math

Racial AGAP

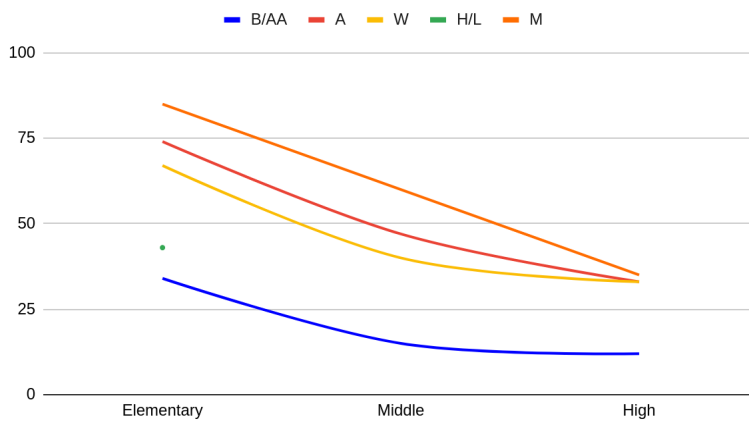
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Both 2019 and 2022 data show severe downward trends for all groups over time in MPSD schools. The data for 2022 has worsened significantly from 2019, though the increased loss in middle school is somewhat mitigated by reduced loss in high school.

2019



2022



Multi-Year Trend

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The fact that students perform worse in math over their time in MPSD schools is also evident in the multi-year trend graph. There are apparent exceptions in the data which, unfortunately, have alternative explanations:

- Higher Algebra 2 scores reflect that not all MHS students take Algebra 2 as it is not required for graduation. Presumably, it is the better math students taking Algebra 2. This is not something Ms. Goforth mentioned during the presentation, so it would be interesting to learn what percentage of students do/don't take the Algebra 2 test as compared to the earlier tests. *Note: While Algebra 2 is not a stated graduation requirement, I'm not clear what class can replace it in the documented requirement of "a course that builds upon Algebra I and Geometry skills".*

- The 2019 spike in Geometry reflects that only middle school students were tested. Only advanced math students take Geometry in middle school. Ms. Goforth mentioned this during the presentation.

Correctly ignoring these outliers paints a remarkably consistent and negative picture: MPSD is not adding value in terms of math but subtracting it.

Ms. Goforth, during the presentation, stated that “the gap between White and Black students got smaller in middle school and stayed about the same in elementary and high school.” The one promising note - the shrinking gap in middle school - has a less-than-promising reason. Results for both sets of students dropped in middle school from 2019 to 2022, but the drop was more severe for White students. Shrinking the AGAP by reducing student performance is less than ideal.

Conversely, though the gap was roughly unchanged in high school, this reflects an increase in results for both groups. Again, this is less than ideal, but having all students improve their results is a far better outcome than having all students experience declining results.

Although these two groups improved between 2019 and 2022 in high school, Hispanic/Latino, Asian, and Multiple experienced very slight decreases over the same period.

Comparison to State Average

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MPSD students exceed state results in 7th-grade math, but the amount by which they exceed is decreasing over time, most markedly after 5th grade. This trend continues, with New Jersey state averages exceeding MPSD student performance in more advanced math.

Ms. Goforth offered as an explanation for our students’ poor performance in Algebra and beyond that our students start Algebra in middle school whereas most of the students in the state start Algebra in high school. Unfortunately, no comparison was offered to one or more districts which have Algebra as a middle school subject as does Montclair. Such a comparison would show whether our deficient performance in these subjects was related to the earlier introduction or something else.

There is also reason to be suspicious of this reasoning beyond the lack of comparative data. While most NJ students take Algebra in high school, they do so over a single year. Our middle school Algebra spreads the subject over two years. This should offer the opportunity for slower and deeper coverage of the material as well as months of additional practice with it.

Conclusion

Dr. Morgan called the math scores “a little disheartening” in her closing remarks. She note that “mathematical reasoning and modeling ‘cause that seems to be our lowest point.” That seems fair, but she also expressed her belief that “if you are taught the proper strategies, you can be successful whether it’s the NJSLA or the SAT.” I worry that an emphasis on *strategies* bypasses what I believe is the more critical need when it comes to reasoning and modeling: *understanding*. When we’re speaking of early math - arithmetic - we call this “number sense”. It does well beyond this, however, and plays a key role in success within mathematics and any field making use of it (ie. engineering, sciences, etc.).

Dr. Morgan did go on to emphasize the need for teachers to be able to ask “that important question: why?” with which I am in wholehearted and emphatic agreement.

Ms. Hopkins asked for a comparison of our results to neighboring districts. That would be useful, but we should also ask for a comparison to districts which - as does Montclair - teach algebra over two years of middle school.

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- [NJSLA Graphs in Printable Form](#)
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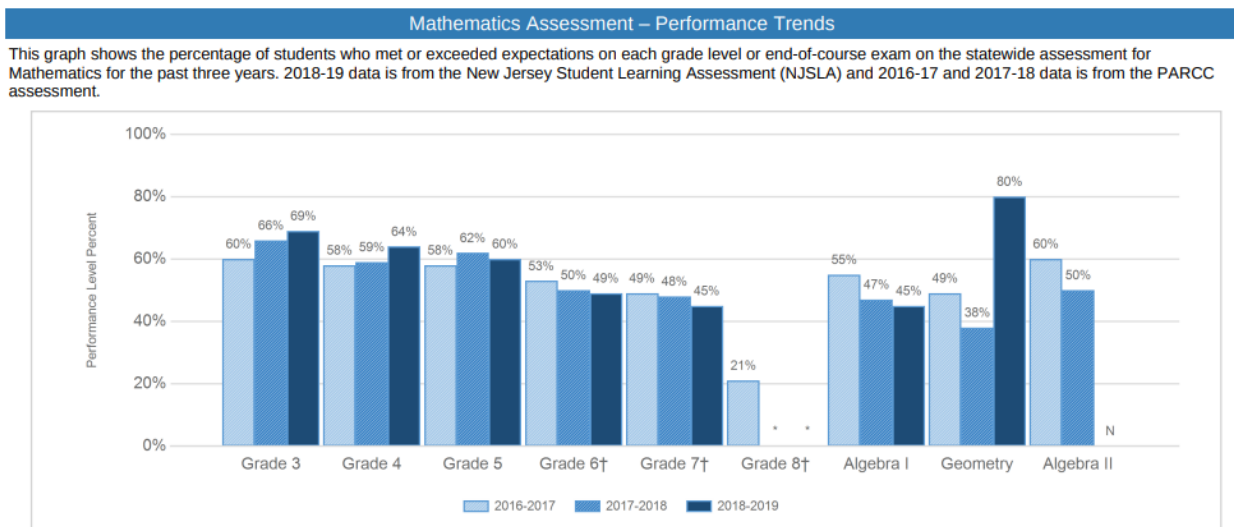
Addendum

I’ve begun a review of older data from the state. In general, these trends are visible there too. I may incorporate what I find into the main portion of the document, but for now I am adding these notes here.

2018-2019

This uses data from [2018-2019 NJ School Performance Report](https://rc.doe.state.nj.us/prioryearreport/2018-2019/13/3310) which can be found on <https://rc.doe.state.nj.us/prioryearreport/2018-2019/13/3310>. This is important data because it is the most recent data untainted by the covid-related school closures and remote teaching.

Page 20 of this report contains the following graphic:



† 2018-19 results for Algebra I, Geometry, and Algebra II do not include students in grade 11, but 2016-17 and 2017-18 results do include students in grade 11. Therefore, trend data for these assessments may not be comparable.

This shows outcome decreases over both years of time and progress of students through grades. I'm unclear about the 2018-19 peak in Geometry. I don't see how it can be the exclusion of 11th grade since we'd only 15 students in 11th grade taking Geometry in 2018-19 out of a total of 735 Geometry students that year.