MINISTRY OF EDUCATION
TE TĀHUHU O TE MĀTAURANGA

Understanding e-asTTle – a longitudinal analysis

Mercy Mhuru

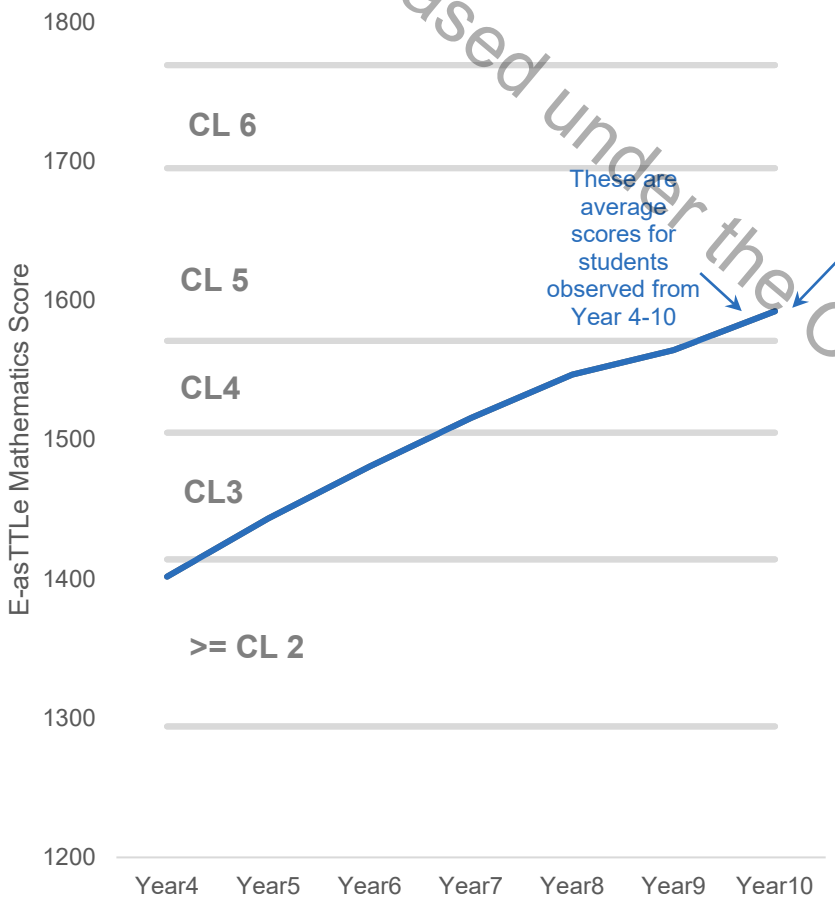
September 2020

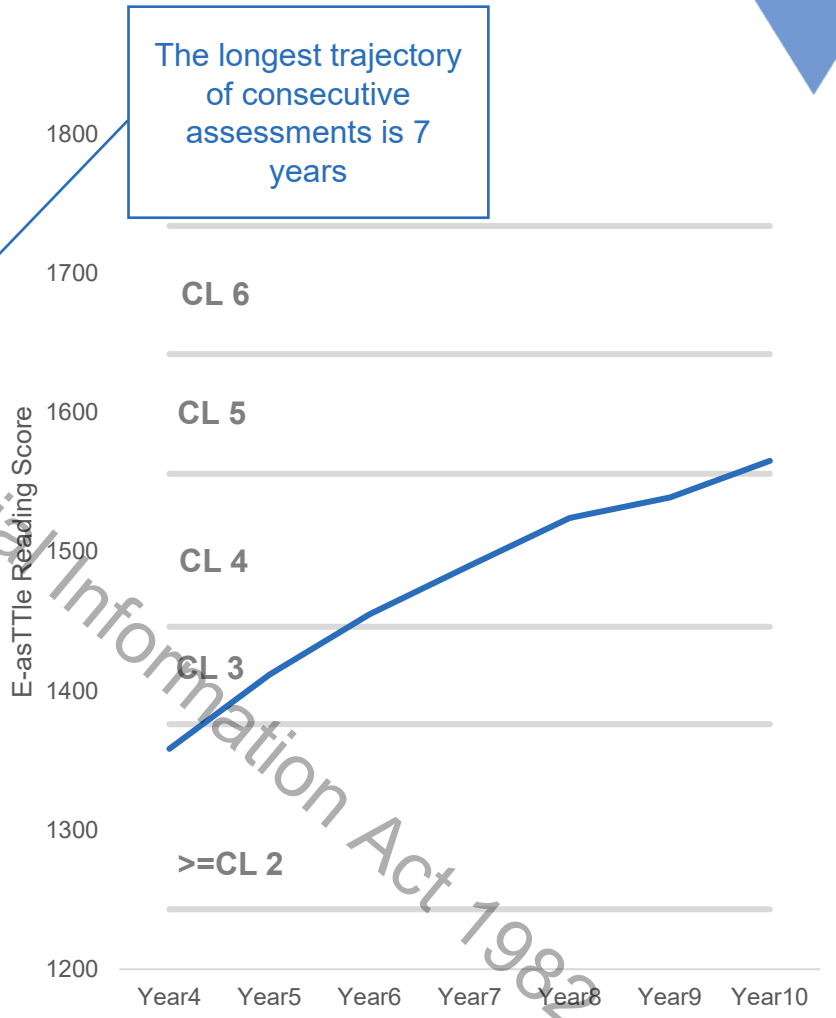
Longitudinal analysis of progress using E-asTTle

- E-asTTle has end of year assessment results for students in Year levels 4-10 in the period 2011-2019.
- Average end-of-year scores across year levels show that students' levels of achievement increase at a decreasing rate.
- However, the composition of students from which the averages are calculated is different. The students from which average scores per year level are drawn from are different with each year level.
- Some students have only one assessment while others get assessments in consecutive years during their schooling years.
- To show the progress that students make in E-asTTle assessments, we identify students with consecutive assessments across different year levels.

Students that have long histories of assessments **are** representative of the broader population.

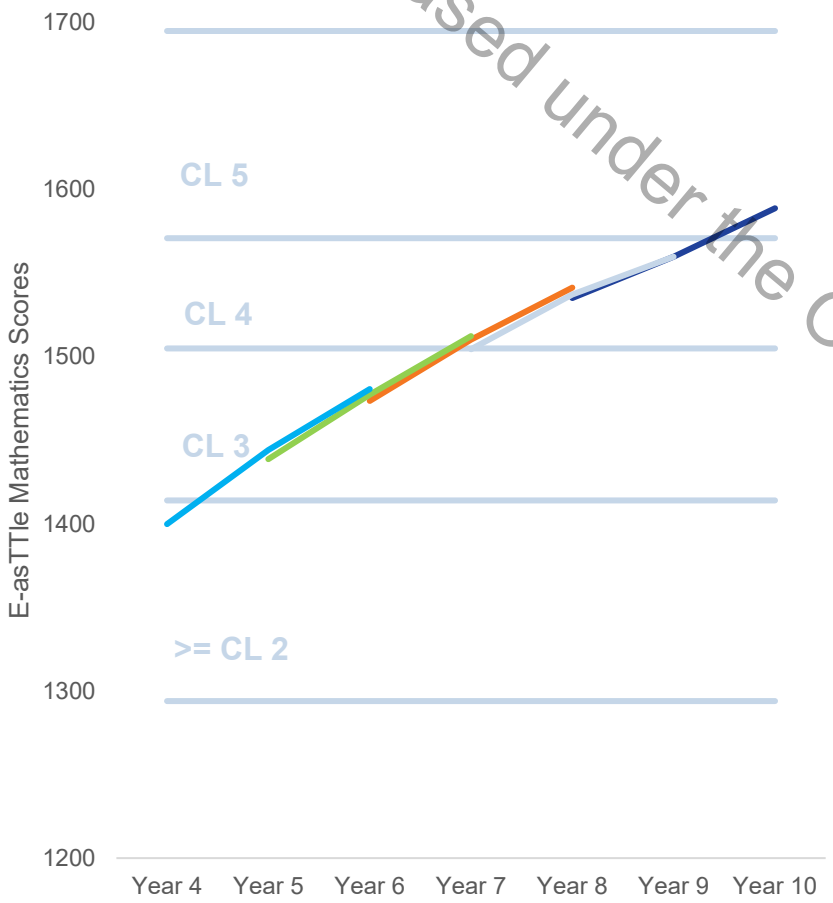
Students with frequent assessments



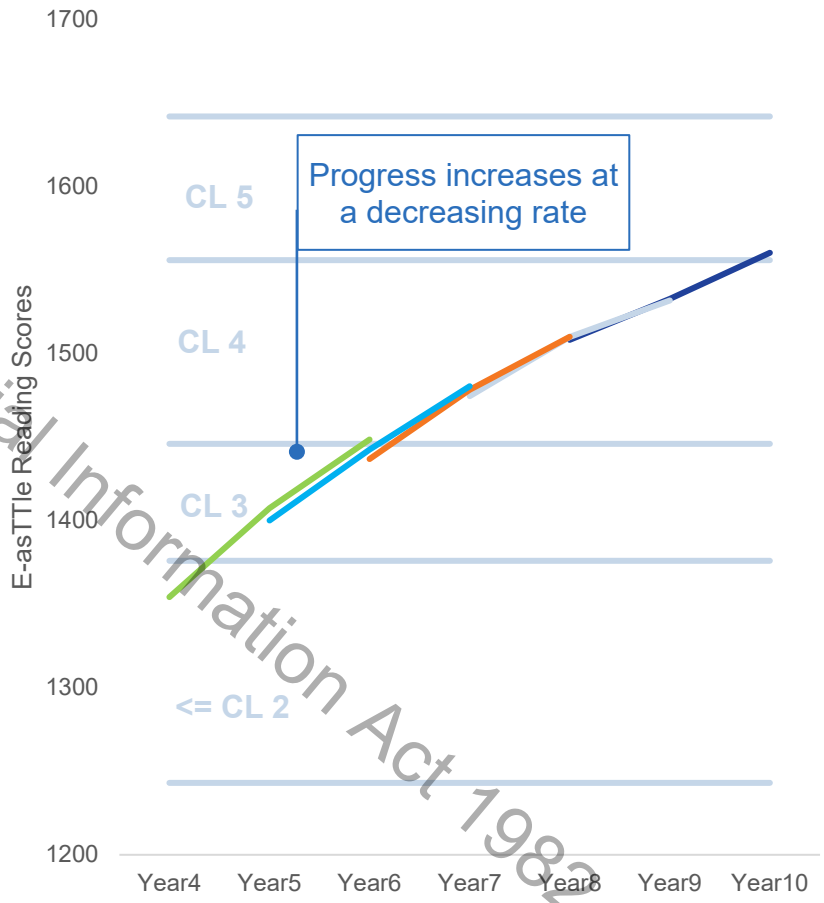


The 7-year trajectory shows the progress of students that have been assessed in consecutive years from Year 4-10.

Yearly progress increases at declining rates across year levels.

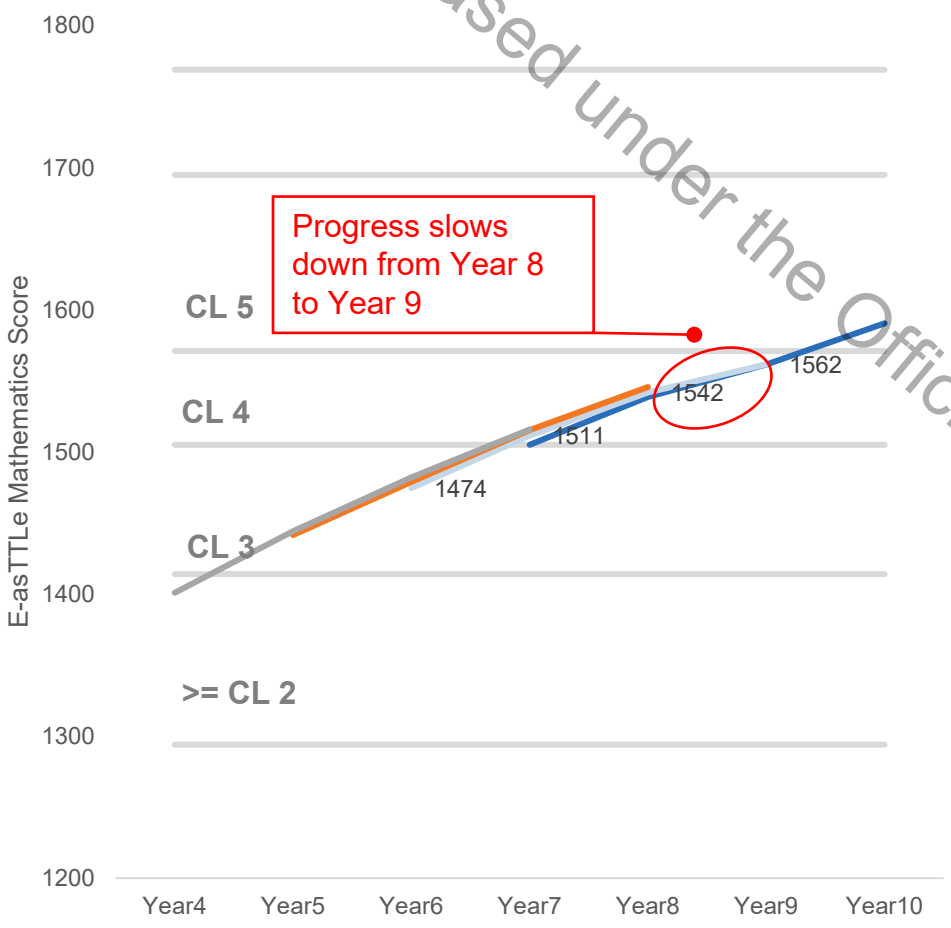


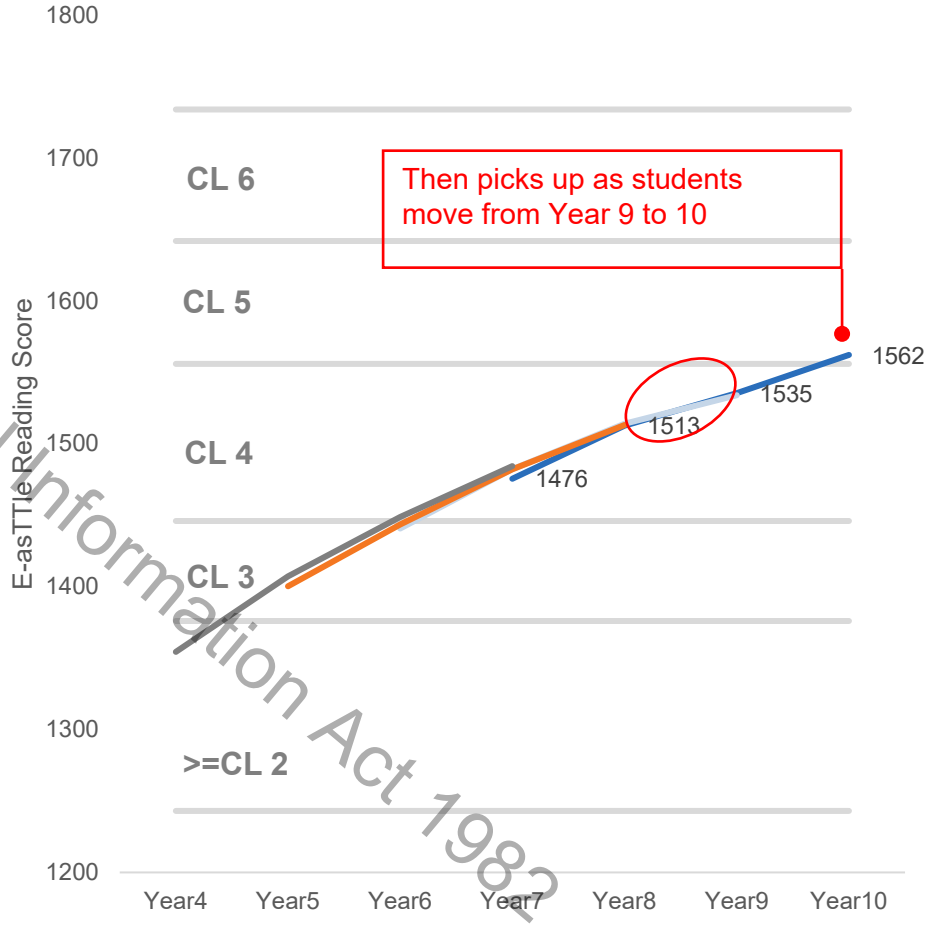
For all the 3-yearly trajectories across years 4-10, the highest yearly progress is 44 points from year 4 to year 5 in Mathematics



The highest yearly progress is 53 points from year 4 to year 5 in Reading. Progress declines in subsequent year levels

Rate of progress is lower in Y8 to Y9



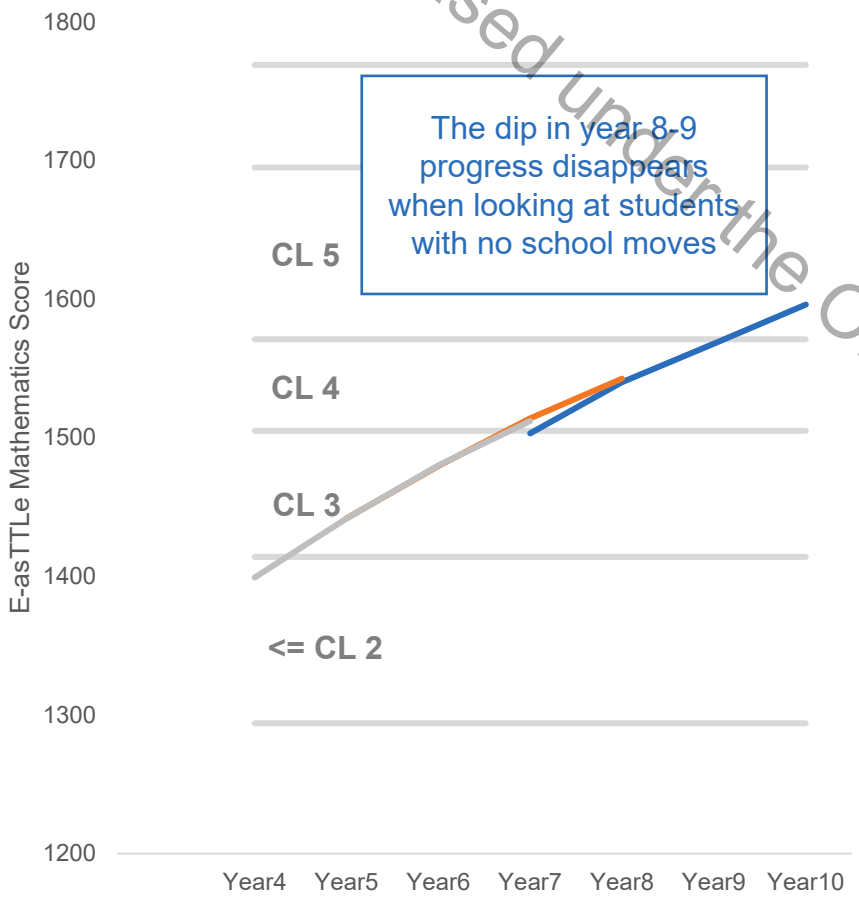


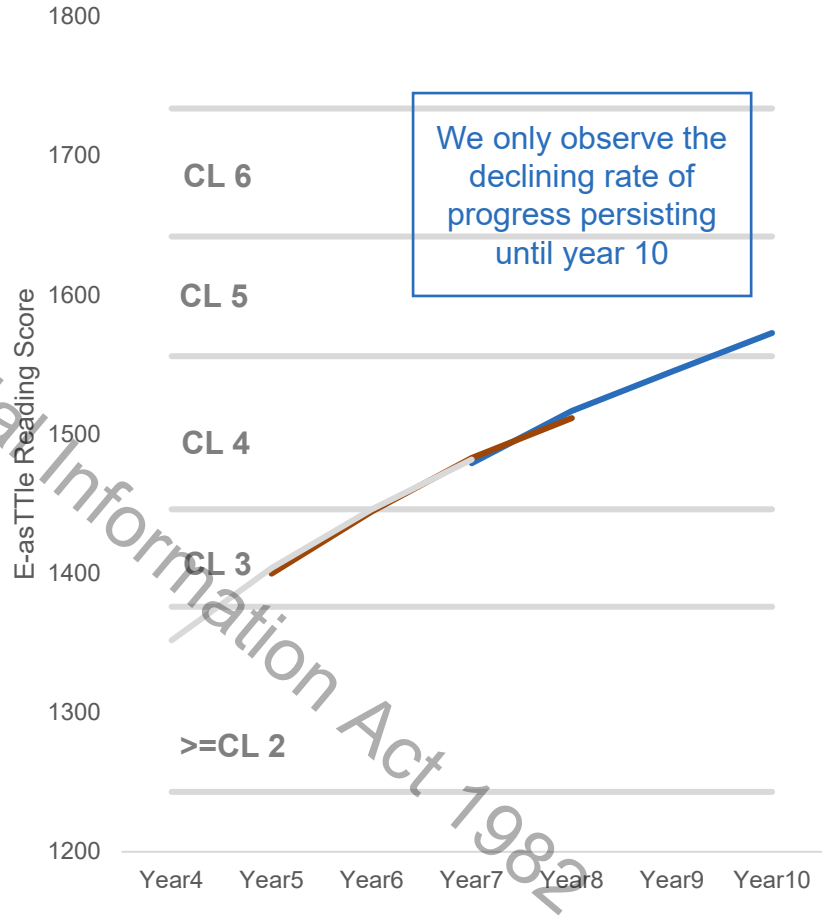
Yearly progress is the lowest from Year 8 to Year 9 in Mathematics and Reading, whichever trajectory is picked.

Yearly progress is lower than the expected 50 points

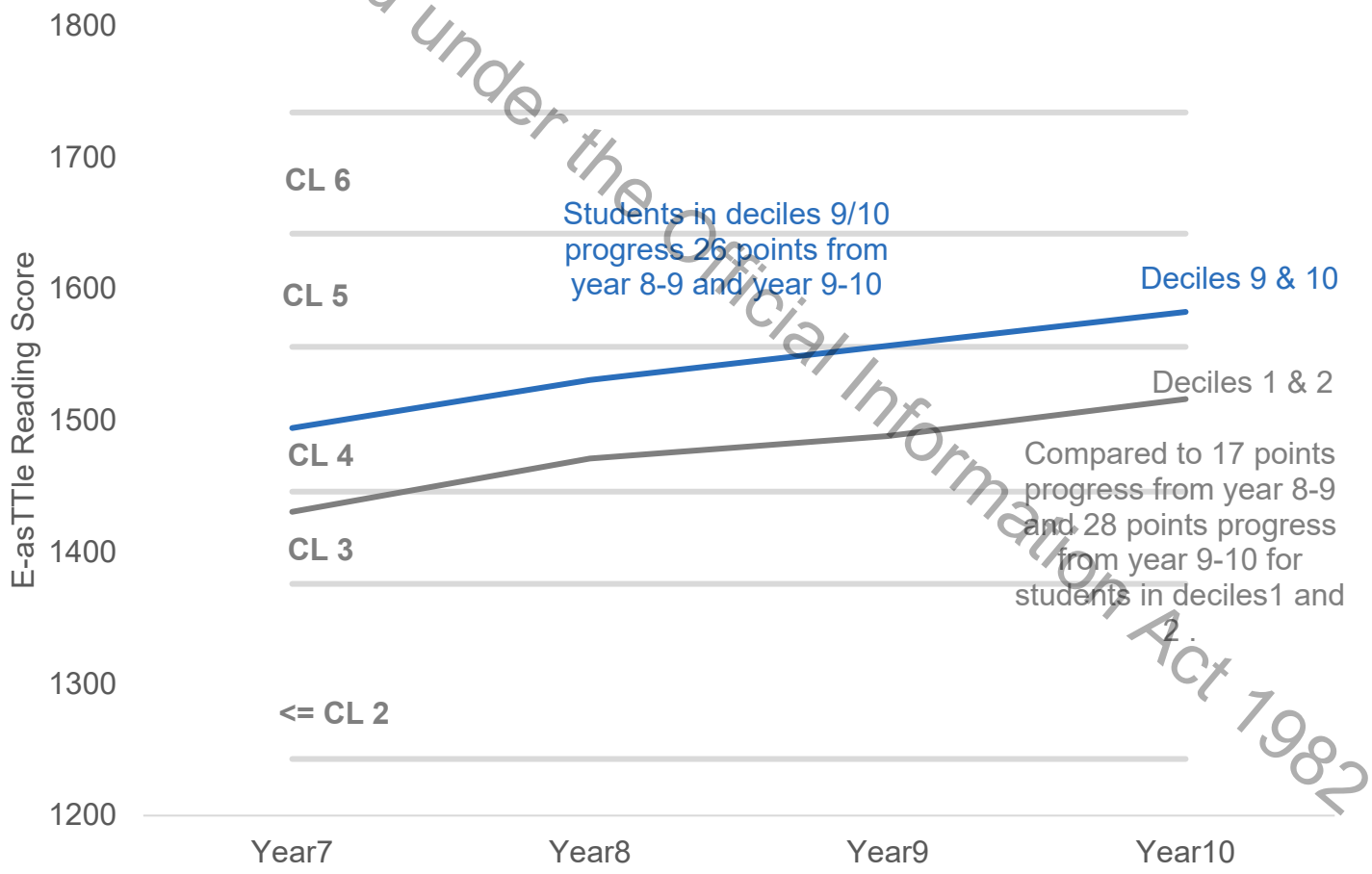
- The highest yearly progress is 44 points in Mathematics and 53 points in Reading from Year 4 to Year 5.
- As students progress to higher year levels, yearly progress declines in both Mathematics and Reading.
- The lowest yearly progress is noted when students move from Year 8 to Year 9.
- Students with 3 year trajectories of linked scores in Mathematics and Reading in year levels 7-9 and 8-10 show that yearly progress from Year 8 to Year 9 is between 22-25 points.
- It is not clear why we observe lowest yearly progress as students with linked scores move from Year 8 to Year 9.

Slow-down effect for students with no school moves

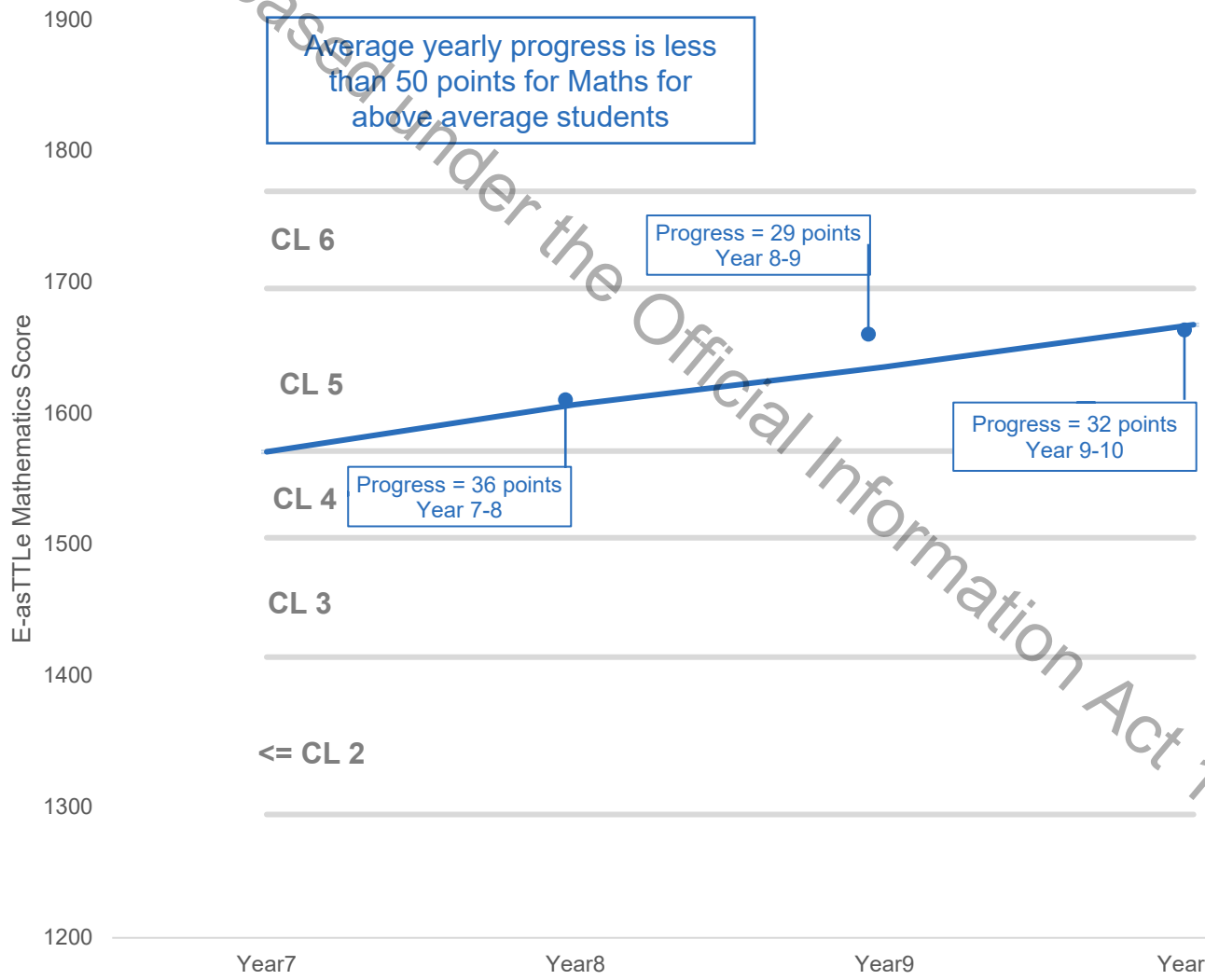




Slowdown effect is more pronounced in low decile schools

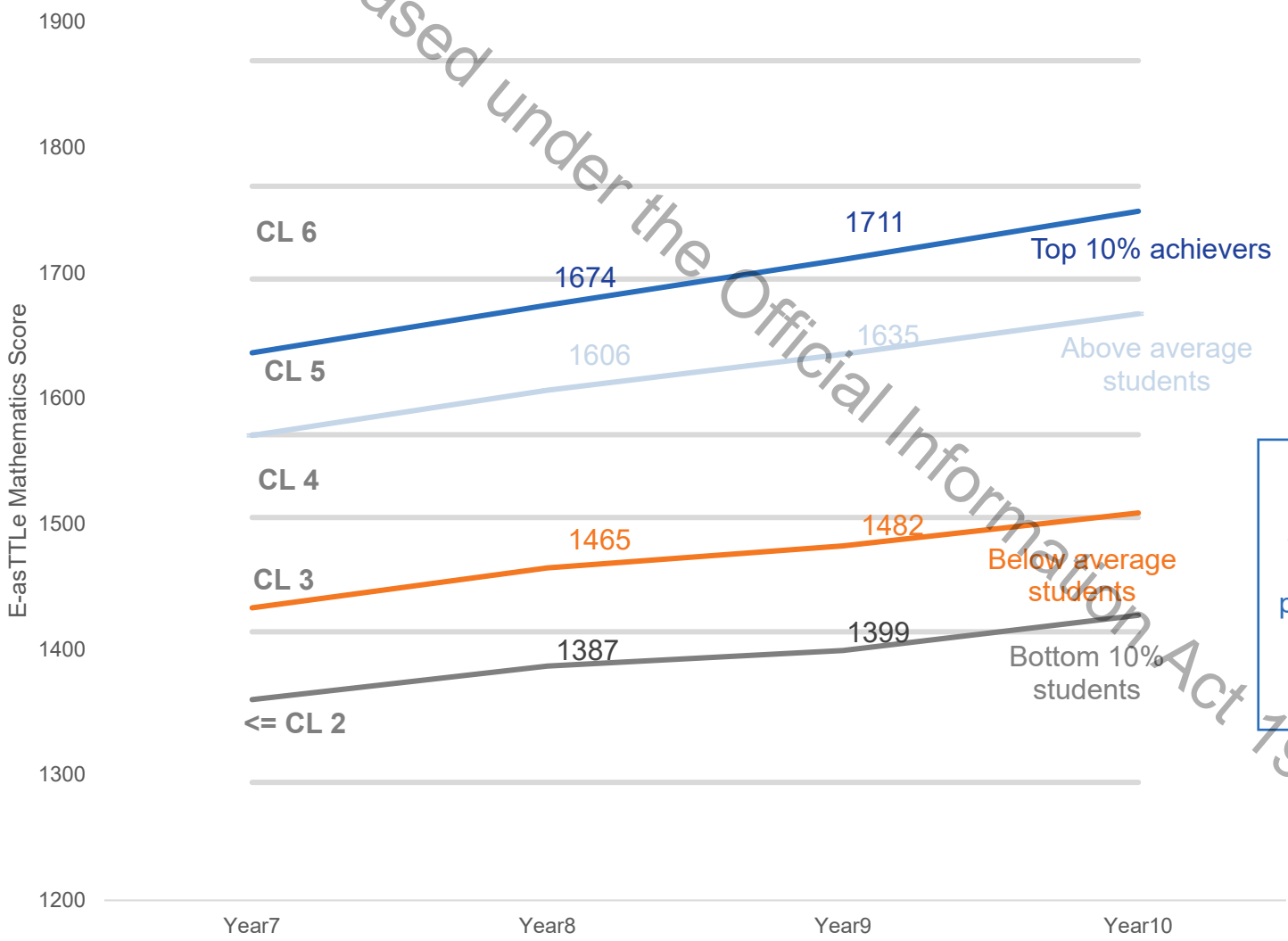


Do top performers also slow-down?



Students who are consistently above average in consecutive assessments also slowdown in progress from Year 8 to Year , although the decline is very minimal compared to all students

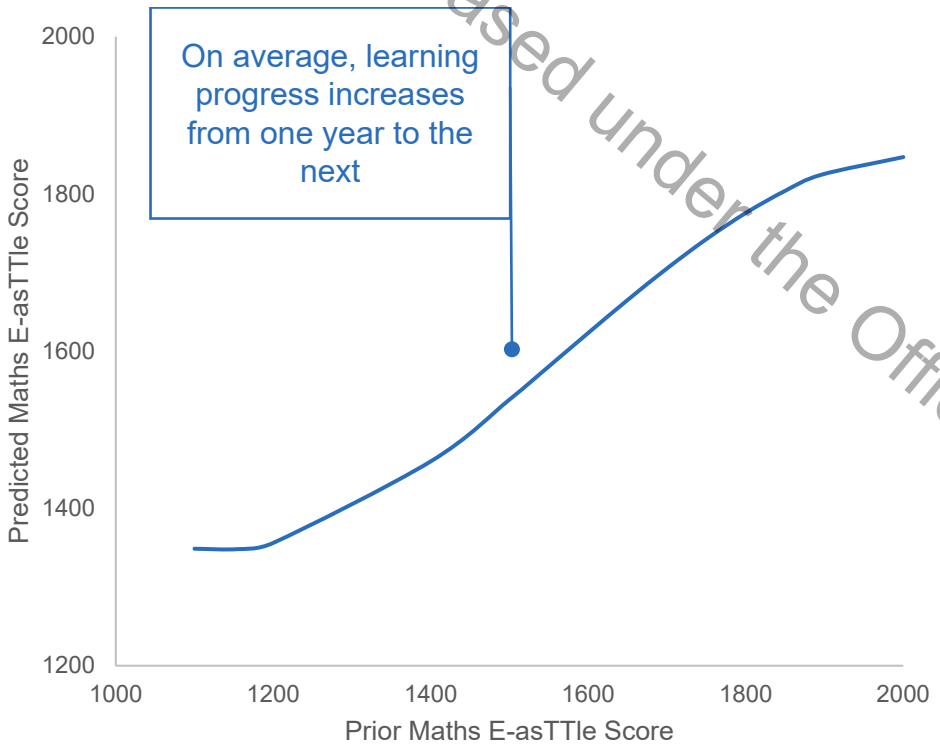
Progress is different for students within the same groups

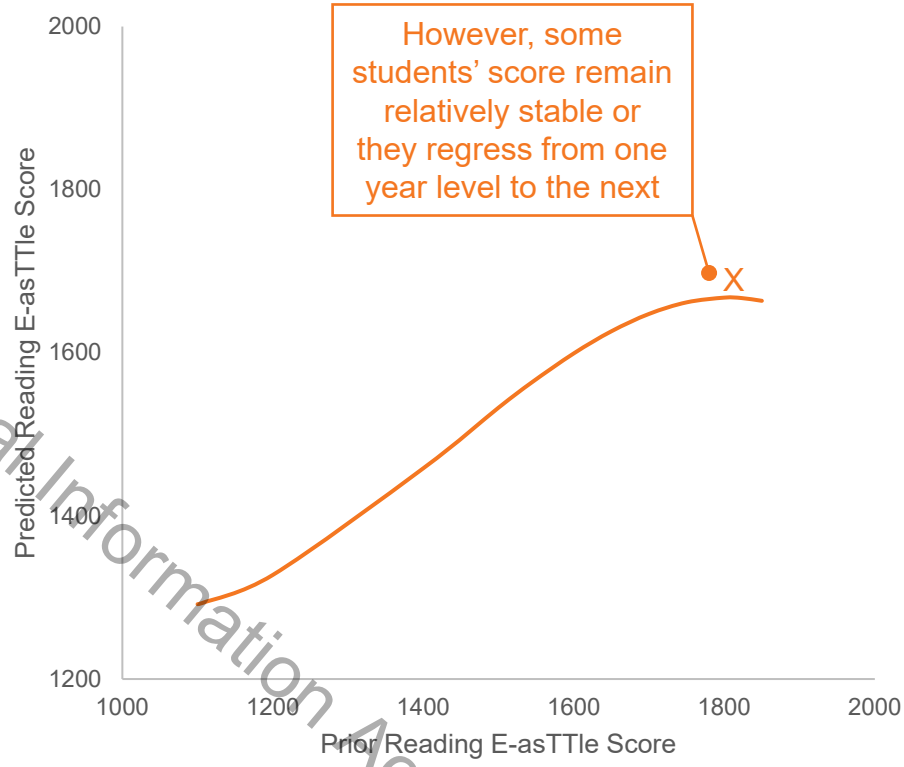


Y8-Y9 progress for students below average is 12 points lower than the progress made by above average students

Students in the bottom 10% almost flat-line across the 4 years from Y7-Y10. In Y8-Y9, their progress is 3 times lower (12 points) than the progress for top 10% students (36 points)

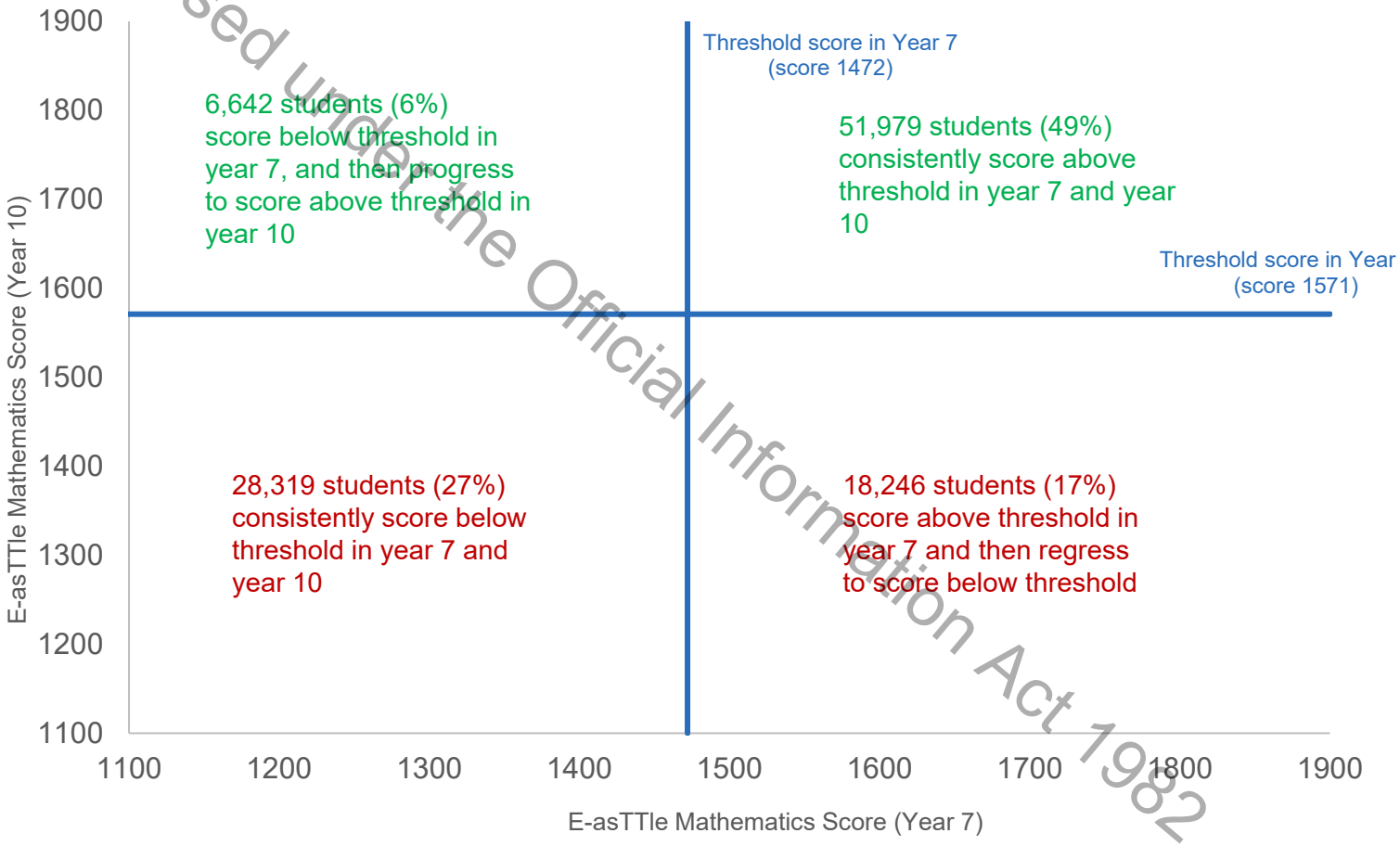
Prior scores predict future scores





Most students with linked scores have positive progress from one year level to the next. Some students regress in scores from one year to the next. This could be because of structure/topics covered in e-asTTle assessment taken.

Most prior and current scores are positively related



Longitudinal analysis identifies students who aren't progressing

- About 17% of students with linked scores show a decline in learning. In Year 7, they score above threshold score and then score below threshold in Year 10.
- This group shows a concerning trend although a number of factors are at play e.g. the structure/topics covered in e-asTTle assessment taken and school moves from intermediate to secondary school.
- About 6% of students with linked scores show improvement in learning, from scoring below threshold in Year 7 to achieving above threshold scores in Year 10.
- This group represents a group of students where progress in learning is positive. Identifying unique characteristics within this group may unlock some factors that contribute positively to the learning process.
- About 27% of students with linked scores consistently score below threshold in Years 7 and 10. This group potentially identifies students who require additional support to progress as expected across curriculum levels.