ACT Analysis Report for the Class of 2017

September 18, 2017

Introduction

This report has been produced annually since 2010 and provides the Board of Education with information on the ACT performance of the latest graduating class.   For the graduating class of 2017, the ACT scores and test taking patterns of 1000 students were analyzed. As sophomores, this class took a retired PLAN test, administered in the fall of 2014. A total of 843 students took both the PLAN test and the ACT test, and those scores are used in the analysis of student growth.

For the graduating class of 2016, the ACT scores and test taking patterns of 978 students were analyzed. A total of 924 students in the Class of 2016 took both the PLAN test and ACT test, and those scores are used in the analysis of student growth.

New in this report is a comparative analysis of the graduating classes of 2017 and 2016. This comparison should give perspective to the strength and consistency of student achievement and growth, as well as highlight areas for further investigation.

Early in 2016, Illinois changed its state-mandated college entrance test to the SAT from the ACT. In response, starting with the Class of 2019, we piloted two new sophomore tests: the Pre-ACT and the PSAT-10. The first administration of those tests was in the fall of 2016 and spring of 2017. The ACT Analysis Report for the Class of 2019 will take on a new format due to the change in tests. The table below summarizes the timelines and tests by graduating class:

Graduating Class	Testing Report Date	Sophomore Test Date	College Entrance Test	Student Growth Measure
2016	September 2016	PLAN (fall 2013)	ACT	PLAN → ACT
2017	September 2017	Retired PLAN (fall 2014)	ACT	Retired PLAN → ACT
2018	September 2018	Retired PLAN (fall 2015)	ACT SAT	Retired PLAN → ACT
2019	September 2019	Pre-ACT (fall 2016) PSAT-10 (spring 2017)	ACT SAT	Pre-ACT → ACT PSAT-10 → SAT

Key findings for the Class of 2017

Our overall achievement on the ACT continues to be the top in the state for open enrollment high schools. ***As importantly, the achievement of our students in our non-AP curriculum is at remarkably/consistently high levels.*** Two important pieces of data illustrate this fact. First, the 561 students who enrolled in level 3 English during their senior year, never having taken an AP English class, averaged 28.4 on the English ACT, with nearly 50% of these students scoring in the top ten percent of the nation, and 99.3% of them meeting the college readiness benchmark (Table 1.3). Second, the 297 students who enrolled in level 3 Pre-Calculus senior year, averaged 27.8 on the math portion of the ACT, with over 50% of these students scoring in the top nine percent of the nation, and 97% of them meeting the college readiness benchmark (Table 1.6).

These data tell an important story about the strength of our non-AP curriculum and we added data to the school profile that we send the send to colleges.

The PLAN to ACT analysis in the report focuses on the growth of our students compared to benchmarks set by ACT. First, using historical data, ACT predicts an ACT score range for each student based on their PLAN score. The higher a student's PLAN score, the higher the range for the predicted ACT score. At every level of performance on the PLAN, New Trier students exceed the predicted high value of that range in numbers far greater than expected based on ACT's analysis (Table 3.1).

Our second student growth measure considers the College Readiness Benchmarks set by ACT for both the PLAN test and the ACT test. Students not reaching these benchmarks are more at-risk than their peers in terms of post-secondary success. In mathematics, college readiness grew from 74% of the class on the PLAN to 85% of the class on the ACT. That represents a net total of 11% of the class, who reached the college readiness level between the PLAN and the ACT. The results were similar on the science and reading tests (Table 3.3).

These growth measures support our belief that students in all levels of classes experience a dynamic and engaging curriculum, have excellent teachers, and are dedicated to learning.

Finally, for the third year in a row, the number of ACT tests taken per student has decreased. The Class of 2017 averaged 2.8 ACT tests per student (Table 2.4). Three years ago, for the Class of 2014, the average number of ACT tests per student was 3.1 and that represents a statistically significant decrease in the number of tests per student over that time. Since our average scores have increased over that time, this change represents a positive redirection of time and effort for our students.

What follows are specific analyses on the depth and quality of our students' achievement, ACT test taking patterns, PLAN to ACT growth, and ACT scores broken down by gender.

I. Depth and Quality of Student Achievement

- The average ACT composite score Illinois was 21.4.
- The average ACT composite score in the nation was 21.0.
- The average ACT composite score of New Trier students was 27.8.

Grad Class	Avg CMP Score	% NT in Top 1% of Nation (Score >=34)	%NT in Top 5% of Nation (Score >=31)	% NT in Top 10% of Nation (Score >=29)	% NT in Top 25% of Nation (Score >= 24)
2017	27.8	10.7%	32.6%	48.5%	81.7%
2016	27.8	10.3%	34.0%	50.1%	81.4%

Table 1.1

English

- The average English score for New Trier students was 28.4.
- 16% of New Trier students were in the top 1% of the nation.
- 53% of New Trier students were in the top 10% of the nation.
- The average English score for Illinois was 21.0.

Grad Class	Avg English Score	% NT in Top 1% of Nation (Score >=35)	% NT in Top 10% of Nation (Score >=29)
2017	28.4	16.2%	52.7%
2016	28.3	13.3%	53.2%

Table 1.2

Scores by Capstone English Course

Class of 2017					
Capstone English Course	# of Students	Avg Last English Score	% NT in Top 10% of Nation (Score >= 29)	% NT Above National Avg (Score >= 20.3)	Meet College Readiness Benchmark (Score >= 18)
AP English	184	33.3	90.8%	99.5%	100.0%
English, Level 4	73	32.1	89.0%	100.0%	100.0%
English, Level 3	561	28.4	49.4%	97.3%	99.3%
English, Level 2	158	21.8	7.0%	65.8%	77.8%

Table 1.3

Class of 2016					
Capstone English Course	# of Students	Avg Last English Score	% NT in Top 10% of Nation (Score >= 29)	% NT Above National Avg (Score >= 20.3)	Meet College Readiness Benchmark (Score >= 18)
AP English	145	33.4	95.2%	100.0%	100.0%
English, Level 4	79	32.4	87.3%	100.0%	100.0%
English, Level 3	584	28.7	51.9%	97.9%	99.7%
English, Level 2	150	20.8	4.0%	58.0%	76.0%

Math
- The average math score for New Trier students was 27.1.
- 11% of New Trier students were in the top1% of the nation.
- 49% of New Trier students were in the top 9% of the nation.

Grad Class	Avg Math Score	% NT in Top 1% of Nation (Score >=34)	%NT in Top 9% of Nation (Score >=28)
2017	27.1	11.1%	48.8%
2016	27.4	12.3%	53.3%

Table 1.5

Scores by Math Capstone Course

Class of 2017					
Capstone Math Course	# of Students	Avg Last Math Score	% NT in Top 9% of Nation (Score >= 28)	% NT Above National Avg (Score >= 20.7)	Meet College Readiness Benchmark (Score >= 22)
AP Mathematics	328	31.7	89.9%	100.0%	100.0%
Level 3 Pre-Calculus or beyond	297	27.8	56.2%	97.6%	97.0%
Level 2 Pre-Calculus or beyond	258	23.6	5.8%	82.9%	76.0%
Other	93	19.4	3.2%	30.1%	25.8%

Table 1.6

Class of 2016					
Capstone Math Course	# of Students	Avg Last Math Score	% NT in Top 9% of Nation (Score >= 28)	% NT Above National Avg (Score >= 20.7)	Meet College Readiness Benchmark (Score >= 22)
AP Mathematics	398	31.5	92.5%	100.0%	100.0%
Level 3 Pre-Calculus or beyond	237	27.9	54.9%	100.0%	100.0%
Level 2 Pre-Calculus or beyond	231	23.6	8.2%	84.0%	77.9%
Other	92	18.6	0.0%	27.2%	23.9%

Table 1.7

ACT Averages by Math Capstone Course

Capstone Math Course	Class of 2017		Class of 2016	
	# of Students with ACT	Avg Last Math Score	# of Students with ACT	Avg Last Math Score
MV Calculus	21	34.9	25	34.8
BC Calculus	89	33.8	107	33.5
AB Calculus	193	30.6	217	30.6
AP Statistics	25	29.3	49	29.9
Post Pre-Calculus, level 3	104	28.5	67	28.3
Pre-Calculus, level 3	193	27.4	170	27.8
Post Pre-Calculus, level 2	29	24.9	36	25.4
Pre-Calculus, level 2	229	23.4	195	23.3
Other	93	19.4	92	18.6

Table 1.8

ACT College Readiness Benchmarks

According to ACT a benchmark score is the "*minimum score needed on an ACT subject-area test to indicate a 50% chance of obtaining a B or higher or about a 75% chance of obtaining a C or higher in the corresponding credit-bearing college.*"

ACT derived these benchmarks from empirical data of student ACT scores and grades in the initial college courses in these areas. The reading scores were compared to college grades in social science classes and the science scores were compared to college grades in Biology.

Test	ACT Benchmark Score	Class of 2017		Class of 2016	
		% of All Students Nationally meeting this Benchmark	% of New Trier Students meeting this Benchmark	% of All Students Nationally meeting this Benchmark	% of New Trier Students meeting this Benchmark
English	18	61%	95.9%	64%	95.5%
Math	22	41%	85.1%	41%	86.6%
Reading	22	47%	89.6%	42%	85.5%
Science	23	37%	81.3%	36%	80.8%
All 4	--	27%	73.5%	26%	75.5%

Table 1.9

The data show an exceptional level of college readiness as compared to the nation. Examination of the students who do not meet the benchmarks is underway, but not all benchmarks are of equal concern. As an example, many students will not take biology in college, but they will almost all take a social science class leading to more concern about the Reading benchmark than the Science benchmark.

The results of this analysis are very positive; however, the benchmarks have a number of shortcomings. First, this type of analysis does not look at the underlying reasons for why some students reach the benchmark yet do **not** perform well in these college classes or why some students do **not** reach the benchmark and do perform well in these college classes.

Second, many aspects of college academic readiness cannot be measured by a multiple choice test. Simple examples that teachers integrate into their classes are writing assignments in English and social studies and assessing thought processes and problem solving skills in math and science.

Finally, we also know that college success depends on significant social-emotional factors not captured by tests such as time management skills, persistence, resilience, self-awareness, and relationship skills needed to navigate dormitory and college life. These social-emotional life skills are a critical element of the New Trier experience, and our alumni report feeling very well-prepared in these areas. The administration will continue to supplement this analysis through student surveys and data from the National Student Clearinghouse. Future reports to the board will include those analyses.

II. Student ACT Test Taking Patterns

The next chart shows the number of times our students took the ACT along with the average of their first, last, and best ACT score. As a reminder, ACT does all of their analysis using the last score. The first and best scores are shown to give an indication of average growth.

# of ACT Tests Taken	# of Students with ACT	% of Students	Avg First Score	Avg Last Score	Avg Best Score	% of Students Achieved New Best Score on Last Test
1	151	15.1%	27.2	27.2	27.2	100
2	302	30.2%	27.5	28.2	28.7	54
3	287	28.7%	26.3	27.9	28.5	39
4	171	17.1%	25.6	27.1	28.1	35
5	63	6.3%	26.1	28.6	29.1	38
6	18	1.8%	25.7	28.8	29.3	50
7	7	0.7%	23.7	27.6	28.6	14
8	1	0.1%	25.0	29.0	29.0	0
Total 2017	*1000**	*100%*	*26.6*	*27.8*	*28.3*	*52*
(2016)	*(978)*		*(26.3)*	*(27.8)*	*(28.3)*	*(55)*

*Includes all Class of 2017 students with ACT scores (graduated and inactive).

Date of First ACT – Class of 2017

Class of	ACT Date	# of Students with ACT	Avg First Score	Comment
2017	Before Junior Year	27	24.6	Before Junior Year
	September 2015	72	29.5	Start of Junior Year
	October 2015	122	28.8	After 1st Quarter Junior Year
	December 2015	128	26.7	Near end of 1st semester Junior Year
	February 2016	170	27.2	Early 2nd semester Junior Year
	April 2016	98	26.0	Early 3rd Quarter Junior Year
	April 2016	371	25.5	State Testing Date Junior Year
	Senior Year	12	24.1	Start of Senior Year
	Total	*1000**	*26.6*	

*Includes all Class of 2017 students with ACT scores (graduated and inactive).

Table 2.2

| Class of	ACT Date	# of Students with ACT	Avg First Score	Comment
2016	Before Junior Year	39	24.4	Before Junior Year
	September 2014	56	30.2	Start of Junior Year
	October 2014	84	28.3	After 1st Quarter Junior Year
	December 2014	217	27.5	Near end of 1st semester Junior Year
	February 2015	118	26.9	Early 2nd semester Junior Year
	March 2015	446	24.9	State Testing Date Junior Year
	April 2015	3	29	After State Testing Date Junior Year
	June 2015	4	23.3	After State Testing Date Junior Year
	Senior Year	11	25.6	Start of Senior Year
	Total	*978*	*26.3*	

Table 2.3

Average Number of ACT Tests Taken
A longitudinal comparison of some of these data helps to identify an area for investigation. The average number of ACT tests taken by New Trier students decreased for the third year in a row. The number of tests per student has decreased to 2.8 for the Class of 2017 from 3.1 tests per student for the Class of 2014 (table 2.4). That represents a statistically significant difference in the number of tests taken per student

Class of	# of Students with ACT	Avg # of ACTs Taken
2013	1016	2.8
2014	1049	3.1
2015	1049	3
2016	978	2.9
2017	1000	2.8

Table 2.4

Average Number of ACT Tests Taken
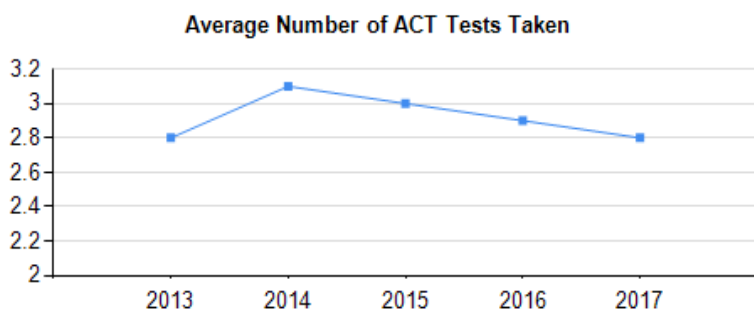
III.   PLAN to ACT Growth

The student growth measure analysis is presented in two parts: 1) growth of composite score from PLAN to ACT and 2) growth in the college readiness benchmark by subject from PLAN to ACT.

Because the graduation Class of 2016 was the last class for which we were able to administer an official PLAN test, the graduating Class of 2017 took a retired PLAN test in order for us to continue measuring student growth on standardized tests. While we did not have national PLAN test data for 2017 as a baseline for comparison, the data remains remarkably consistent at the national level, and we were able to project ACT high and low ranges using historical data trends as the basis for the 2017 analysis.

Growth in Composite Score from PLAN to ACT

Again this year, a large percentage of our students exceeded ACT's projected high score while few ended below the predicted composite low score. ACT uses historical data to set a mid-50% range for ACT scores based on a student's PLAN score. The higher the PLAN score, the higher the predicted ACT range. ***Remarkably, at every PLAN score, our students exceeded, by a large margin, the percentage of students who were expected to achieve above predicted ACT range.*** Overall, 55% of our students exceed the mid-50% range (table 3.1). The growth in these scores are exemplary and speak to dedicated students, excellent teaching, and a dynamic and engaging curriculum.

Class of 2017						
Plan Score Range % National	**Plan Score Range National**	**# of Students**	**% of Students**	**% Below projected ACT**	**% Within projected ACT**	**% Exceeding projected ACT**
Lowest 25%	1-14	12	1.4%	16.7	50.0	33.3
Mid-50%	15-18	160	19.0%	1.9	46.9	51.3
Top 25%	19-26	617	73.2%	2.4	40.2	57.4
Top 1%	27-32	54	6.4%	5.6	44.4	50.0
	Total	*843**	*100%*	*3%*	*42%*	*55%*

Table 3.1

*Includes Class of 2017 students who took both PLAN and ACT (graduated and inactive).

Class of 2016						
Plan Score Range % National	**Plan Score Range National**	**# of Students**	**% of Students**	**% Below projected ACT**	**% Within projected ACT**	**% Exceeding projected ACT**
Lowest 25%	1-14	15	1.6%	13.3	46.7	40.0
Mid-50%	15-18	144	15.6%	5.6	48.6	45.8
Top 25%	19-26	593	64.2%	3.7	52.8	43.5
Top 1%	27-32	172	18.6%	4.7	70.9	24.4
	Total	*924*	*100.0%*	*4%*	*55%*	*40%*

Table 3.2

Growth in College Readiness by Subject from PLAN to ACT

Class of 2017					
Subject	**PLAN Benchmark Score**	**% Meeting PLAN Benchmark**	**ACT Benchmark Score**	**% Meeting ACT Benchmark**	**% Increase in Students Meeting Benchmark**
English	16	89.9%	18	95.9%	6.0%
Math	19	74.4%	22	85.1%	10.7%
Reading	18	78.9%	22	89.7%	10.8%
Science	20	65.8%	23	81.4%	15.6%

Table 3.3

Includes students who took PLAN or ACT or both.

Class of 2016					
Subject	**PLAN Benchmark Score**	**% Meeting PLAN Benchmark**	**ACT Benchmark Score**	**% Meeting ACT Benchmark**	**% Increase in Students Meeting Benchmark**
English	16	94.2%	18	95.5%	1.3%
Math	19	78.4%	22	86.7%	8.3%
Reading	18	77.2%	22	85.6%	8.4%
Science	20	73.1%	23	80.9%	7.8%

IV.   Gender Differences

ACT Composite Score

Grad Class	Gender	# of Students with ACT	Composite	English	Math	Reading	Science
2017	Female	491	27.9	29.2	26.7	28.7	26.6
	Male	509	27.6	27.7	27.5	27.9	27.1
2016	Female	501	27.8	29.0	26.9	28.3	26.5
	Male	477	27.8	27.6	27.9	28.0	27.3

- This analysis includes students who were not at New Trier for four years.
- 2017: The difference in average ACT scores by gender is statistically significant for English, Math, Reading, Science, but not Composite.
- 2016: The difference in the average ACT scores by gender is statistically significant for English, Math, and Science, but not Reading or Composite.

Number of ACT Tests Taken

Gender	Class of 2017		Class of 2016	
	# of Students	Avg # of ACTs Taken	# of Students	Avg # of ACTs Taken
Female	491	2.9	501	3.1
Male	509	2.6	477	2.7

Note: The difference in the average number of ACT tests taken is not statistically significant for 2017, but is statistically significant for 216.

ACT Scores by Capstone Math Class

Capstone Math Class	Gender	Class of 2017		Class of 2016	
		# of Students	Avg Math ACT Score	# of Students	Avg Math ACT Score
AP	Female	143	31.0	190	30.8
	Male	165	32.2	208	32.2
Pre-Calculus, level 3	Female	150	27.6	129	27.7
	Male	134	28.1	108	28.2
Pre-Calculus, level 2	Female	129	23.2	132	23.6
	Male	114	24.2	99	23.7
Other	Female	34	19.1	41	18.5
	Male	43	19.8	51	18.7

The difference in average ACT scores in 2017 is statistically significant in all categories. The difference in average ACT scores in 2016 is statistically significant in AP Mathematics, but not in the other three categories

ACT Score by Capstone English Class

Capstone English Class	Gender	Class of 2017		Class of 2016	
		# of Students	Avg English ACT Score	# of Students	Avg English ACT Score
AP	Female	115	33.3	89	33.3
	Male	69	33.3	56	33.6
English, Level 4	Female	49	31.8	56	32.3
	Male	24	32.9	23	32.6
English, Level 3	Female	264	28.5	290	28.9
	Male	297	28.3	294	28.4
English, Level 2	Female	55	21.6	57	20.8
	Male	103	21.9	93	20.7

Table 4.6
Note: The difference in average ACT scores in 2017 is statistically significant in level 4, but not in the other categories. The difference in average ACT scores in 2016 is not statistically significant in any single category.

V. Conclusions

This report gives the district an opportunity to dig deeper into our test score data more than just reporting overall averages. That deeper analysis confirms the high level of achievement of New Trier students and the significant growth they make in their four years at New Trier. Beliefs in the rigor of our curriculum, the quality of our instruction, and the dedication of our students are affirmed by the data in this report. The results truly represent the cumulative effect of a rich core academic and elective curriculum that emphasizes thinking and mastery. Such a collective effort by each and every student, family, and teacher is reflected in this the strength of these scores.

In addition to validating those positive beliefs, this analysis informs New Trier of opportunities for further growth and raises some questions for the school to examine. While New Trier has great test scores, we need to ask questions such as:

- For students with low average scores in comparison to their New Trier peers, what is their overall experience like? What are their grades and course taking patterns, and do those measures tell a different story?
- While New Trier has one of the highest public school percentages of students reaching the College Readiness Benchmarks, how can the curriculum and instruction be improved for those students who are not?
- Are male and female students, and all subgroups, being provided equitable opportunities for learning in each discipline?

Finally, this report sets a priority for the school - ensure our students, families, wider community, and colleges know about the depth and breadth of achievement of our students. The administration will work toward this goal by integrating these data into the Profile of the Class 2017, presenting the data and discussing it with Parent Association groups, and working with Post-High School Counseling to make sure college admissions offices have the key pieces of data in the report that show the rigor of our curriculum and the college readiness of our students in all academic levels.

Appendix I – Background and Methodology

The Tests

The ACT test is the standardized college entrance test taken most frequently by New Trier students. In addition, through the 2013-14 school year, the state of Illinois required all juniors to take the ACT as part of state testing in order to determine if a school is making *Adequate Yearly Progress* (AYP) according to the regulations set forth in *No Child Left Behind* (NCLB) legislation. ACT scores range from 1-36 except for writing which ranges from 1-12. The validity of the ACT writing test in predicting a student's ability to tackle college level writing assignments is questioned by many groups, in particular the National Council of Teachers of English (NCTE). The writing scores are not part of this analysis.
From the ACT Website:

The ACT

The ACT® test assesses high school students' general educational development and their ability to complete college-level work.

- *The multiple-choice tests cover four skill areas: English, mathematics, reading, and science.*
- *The Writing Test, which is optional, measures skill in planning and writing a short essay.*

The PLAN

*As a "pre-ACT" test, **PLAN** is a powerful predictor of success on the ACT. At the same time, many schools recognize the importance of PLAN testing for all students, as it focuses attention on both career preparation and improving academic acheievement.*

The PreACT (new)

PreACT, administered in grade 10, gives students practice with the ACT test and empowers them, their parents, and educators with these valuable insights even sooner. PreACT provides: Early indication of progress and ideas for improvement; fast, robust reporting; easy, flexible, and affordable administration. The choices a student makes in high school help chart a course for life after it. Educators can use insights from PreACT report data to help students prepare for success— and start making informed choices well before graduation.

From the College Board Website:

The SAT Suite of Assessments

The College Board has expanded its suite of assessments, and we use three of the tests within this collection: PSAT-10, PSAT/NMSQT, and SAT.

From the College Board website: *Each assessment in the SAT Suite of Assessments — the SAT, PSAT/NMSQT, PSAT 10, and PSAT 8/9 — includes a Reading Test, a Writing and Language Test, and a Math Test. The SAT also features an optional essay component, which some colleges will require. Questions throughout the assessments focus on skills that matter most*

for college readiness and success, according to the latest research.

Methodology

These analyses are mainly based on a student's last ACT score. While it is tempting to use a student's best score, doing that would introduce systemic error into the analyses. ACT acknowledges that a given test has error in reflecting a student's "true" ACT score, sometimes higher and sometimes lower. By using the best score, we would be over-representing our student's overall achievement on these tests. ACT uses the same methodology to compile its official reports.

While ACT uses the last score attained by a student for statistical analysis, colleges use the best score attained by a student. Many schools also use a composite "super score" in which they use the best sub-score in each of the four areas and use those scores to calculate a new composite "super score."

When comparing test scores of two groups, it is quite rare for the two averages to be the same. Yet, the difference of the averages between the two groups may not be significant. In fact, the difference in the averages may just be due to random chance of a few kids having a very good day. If we were to repeat the test next year, the group with the lower average might outperform the group with the higher average.

A standard t-test was used to evaluate whether the averages of two groups were significantly different. Using this type of test, two averages are statistically different if it is at least 95% certain that the difference in the averages is not due to random chance.