



YONKERS PUBLIC SCHOOLS



"Achieving Excellence Together"

**Testimony Before
The New York State
Department of Education
Reform Commission**

September 10, 2012

Presented By:

Bernard P. Pierorazio
Superintendent of Schools
Yonkers Public Schools

Good Afternoon, my name is Bernard P. Pierorazio, I am the Superintendent of the Yonkers City School District in Westchester County. Yonkers is the fourth largest school district in New York currently serving 26,342 students and grappling with ongoing annual enrollment increases, this year soaring by approximately 1,000 additional students.

I want to thank Governor Cuomo, Chairman Parsons and all the members of the Commission for the opportunity to present data and information about the advantages of full-day prekindergarten, especially for urban children.

Prekindergarten Levels Playing Field for Urban Students

I would like begin by introducing findings from a study conducted by Hart & Risley that investigated language acquisition and the effects of home experiences on a child's development¹. The study divided children ranging in ages from ten months to three years into three socioeconomic categories based on parent education levels and family income. Please note that, regardless of subcategory placement, all participant families were considered "well-functioning." The study found that students from professional homes heard, on average, 900 more words an hour than children in working class families and over 1,500 more words an hour than children in welfare-recipient families.

By age three, the observed cumulative vocabulary for children in the professional families was about 1,100 words. For children from working class families, the observed cumulative vocabulary was about 750 words and for children from welfare-recipient families it was just above 500 words. In fact, by age four, this equated to a student from a welfare-recipient family hearing up to 32 million fewer words than a classmate from a professional family.

Children in professional families heard a higher ratio of encouragements to discouragements than their working class and welfare-supported counterparts.

Because language acquisition is the foundation for success in all other subjects, the benefits that young students from less affluent homes receive in full-day prekindergarten not only ensures their development, but also balances readiness across subcategories, making all students prepared for academic achievement.

¹ Hart, B and Risley, T.R. (1995, 2003). Meaningful Differences in the Everyday Experiences of Young American Children. Brookes Publishing.

National, State and District Studies Support Full-Day Prekindergarten

The advantages of a full-day prekindergarten program have been confirmed by peer-reviewed national studies as well as state-funded and District-commissioned studies that have compared the impact of half-day versus full-day programs. All validate that students in full-day prekindergarten programs, particularly those in low-income, urban districts, incur significantly greater academic advantages.

The following is an overview of national and state studies that support these findings.

- In 2006, the National Institute on Early Education conducted a randomized controlled trial², considered the “gold standard” approach to addressing cause and effect questions in education research, in which 4-year-olds in a low income urban district were randomly assigned to prekindergarten programs of different durations. The results showed:
 - The added hours of a full-day program were substantially effective at closing the achievement gap between these urban children and their more advantaged peers.
 - Even students who were far behind at entry to preschool could develop vocabulary, math, and literacy skills that approached national norms if provided with extended-duration preschool
- In 2004, the Center for Evaluation and Education Policy conducted a meta-analysis of all national studies that compare full to half-day prekindergarten programs³. In this study:
 - Results supported the effectiveness of full-day over half-day programs in “achievement, grade retention, special education referrals, and social and behavioral effects, generally.”
 - Disadvantaged students in full-day kindergarten were found to experience greater academic benefits than students in half day programs.”

Both studies showed that parents are more satisfied with full-day prekindergarten programs than with half-day programs. For parents, decreased childcare expenses, more convenient arrangements, and a great opportunity to foster the academic, social, and emotional growth of the children are cited as major advantages.

² Robin, K.B.; Frede, E.C., and Barnett, W.S. (2006). Is More Better? The Effects of Full-Day vs. Half-Day Preschool on Early School Achievement. Accessed at www.nieer.org on September 5th 2012.

³ Plucker, J.A.; Eaton, J.J.; Rapp, K.E.; Woong, L; Nowak, J; Hansen, J.A. and Bartleson, A. (2004). The Effects of Full Day Versus Half Day Kindergarten: Review and Analysis of National and Indiana Data. Prepared for the Indiana Association of Public School Superintendents by The Center for Evaluation and Education Policy. Accessed on September 5th 2012.

My informal conversations with Yonkers' parents echo these findings. The struggle to negotiate childcare needs with half-day prekindergarten forced many of our families out of the program last year. As the data has confirmed, missing prekindergarten may cause long-term negative effects on our students' academic achievement.

Conducting our own research, Yonkers compiled twelve years of data to evaluate our full-day prekindergarten program. Our findings revealed that, overall, by grade, and across all subgroups, those who attended full-day prekindergarten in Yonkers outperformed their counterparts who did not. Let me provide examples:

- When compared to students who did not attend full-day prekindergarten, students that did incurred substantial academic advantages on both the New York State Assessments in English Language Arts and Mathematics through eighth grade.
- Subgroup analyses reveal that the most substantial academic gains are incurred by the neediest students in Yonkers; those living in poverty, those who carry a disability status, those who are not English language dominant and, finally, students who carry a minority group race/ethnic status.
- The relationship between participation in full-day prekindergarten and high school graduation is strong and consistent across three years of data, 2007 through 2009; these students were significantly more likely to graduate from high school than students who did not.

As we research strategies to address the national, state and local goals to increase achievement, we must incorporate data-proven programs that have continually garnered improvement. Full-day prekindergarten is a vital component to raising academic standards and narrowing the achievement gap. It levels the playing field for our urban students by proactively engaging them in linguistic and social development that will, over the long-term, minimize the need for remediation and optimize their potential for high school graduation and college success.



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Prekindergarten Participation Advantage

New York State Assessments to Graduation Percentages

data analysis

Bernard P. Pierorazio, Superintendent of Schools
Dr. David Weinberger, Executive Director Student Information, Assessment & Reporting
Shanit Cohen-Halperin, Research Analyst

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Executive Summary

Students who participate in Yonkers Public Schools prekindergarten (PreK) program demonstrate significant increases in achieving proficiency on English Language Arts (ELA) and mathematics exams. The district compared proficiency on the mandated New York State (NYS) Grades 3-8 ELA and math exams for students who attended Yonkers Public Schools (YPS) PreK with those who did not. The difference in performance is statistically significant across ten years of data; all examined grade levels, and within most examined subgroups: ethnic, disabled, English language learners, gender and free/reduced lunch populations. For example, the 2008 examination results illustrated a statistically significant 13 to 16 percentage point advantage in attaining proficiency for those students who participated in YPS PreK.

Moreover, high school graduation as a function of YPS PreK participation is examined and reveals a similarly robust trend. Compared to students who do not participate in YPS PreK, students who participate in YPS PreK are more likely to graduate from high school ($p < .05$). This relationship is consistent across two of the three years of data.

Study Criterion

To be included in this longitudinal analysis, students must have either:

1. A PreK enrollment record and an ELA and/or Math Score.
2. No PreK enrollment record and an ELA and/or Math Score.

Therefore, a student is excluded from this analysis if s/he does not have a Math and/or ELA score. Such cases are likely the result of a multitude of factors, such as out-of-district transfers, no enrollment record in a given year, and absenteeism on exam days.

Defining ELA and Math Proficiency

Two types of scores assigned through the NYS ELA and Math exams were used in the analysis:

- Proficiency Status Score:
 - Below Proficiency (Levels 1+2)
 - At/Above Proficiency (Levels 3+4)
- Performance Levels:
 - Level 1: Not Meeting Learning Standards
 - Level 2: Partially Meeting Learning Standards
 - Level 3: Meeting Learning Standards
 - Level 4: Meeting Learning Standards with Distinction

Both ELA & Math performance level and proficiency status scores are consistent and comparable across all years. The analyses will begin by comparing the percent of students at or above proficiency in order to estimate the impact of attending YPS PreK on student's ability to achieve proficiency in ELA and Math. Thereafter, performance level scores will be examined in order to reveal subtler variations in the data.

Yonkers Public Schools PreK Student Enrollment

YPS PreK attendance has nearly doubled within the decade presented in this analysis, reflecting a policy change implemented in 1997-98. YPS altered its early childhood program to include universal PreK in hopes of giving every child the opportunity to attend a public PreK program. The numbers of students enrolled in YPS PreK ranged from a low of **754** in 1993-94 to a high of **1598** in 1998-99 (Table 1). Before 1998-99, there was an average of 15 PreK programs in Yonkers; this number more than doubled in the years following 1998-99.

Table 1: Yonkers District PreK Program Enrollment:

Year	Yonkers PreK Enrollment
1993-1994	754
1994-1995	845
1995-1996	852
1996-1997	858
1997-1998	889
1998-1999	1598
1999-2000	1529
2000-2001	1456
2001-2002	1475
2002-2003	1533

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Table 2 presents the total number of students in each of the two comparison groups (YPS PreK Attendees and students who did not attend YPS PreK) by the year students took the 4th grade ELA and/or Math exams.

Table 2: Number of Fourth Grade Students with a Recorded ELA and/or Math Score: by Year and YPS PreK Attendance

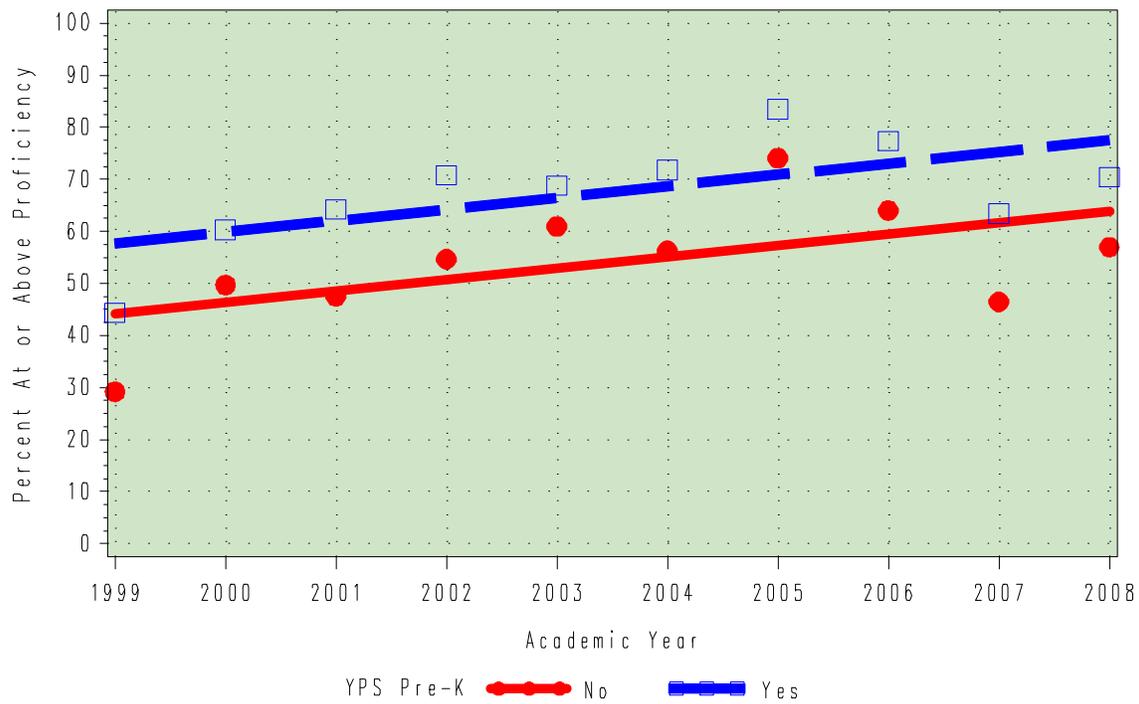
Year	YPS Pre-K	ELA: Number of Students with a recorded score	Math: Number of Students with a recorded score
1999	No	1120	1288
	Yes	462	493
2000	No	1170	1377
	Yes	434	481
2001	No	1172	1433
	Yes	526	559
2002	No	1174	1326
	Yes	504	525
2003	No	1107	1324
	Yes	549	600
2004	No	712	894
	Yes	922	976
2005	No	672	824
	Yes	771	893
2006	No	720	890
	Yes	752	857
2007	No	815	836
	Yes	873	868
2008	No	777	806
	Yes	891	883
All Years	No	9439	10998
	Yes	6684	7135
Grand Total		16,123	18,133

ELA 1999-2008

A Comparison of ELA Proficiency Status – YPS PreK Participation vs. Non-Participation

Students who attended YPS PreK have a consistent and substantial ELA proficiency status advantage over students who did not attend YPS PreK ($p < .0001$). This relationship is statistically significant across each of the ten years of analysis ($p < .0001$). Chart 3 provides a visual representation of this robust YPS PreK participation advantage.

Chart 3: At or Above ELA Proficiency: 1999-2008



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A Comparison of ELA Performance Levels – YPS PreK Participation vs. Non-Participation

The relationship between YPS PreK participation and ELA Performance Levels is statistically significant across all years of analysis ($p < .0001$). Overall, students who attended YPS PreK were substantially less likely to score at ELA Performance levels 1 and 2 and more likely to score at performance levels 3 and 4. Chart 4 displays this difference in ELA performance levels across all years of the analysis. While 12.9% of students who did not attend YPS PreK scored at performance level 1, only 5.7% of YPS PreK students performed at performance level 1 (Table 5). This 7.2% difference in Level 1 and the commensurate differences at all ELA performance levels further strengthen the argument that YPS PreK programs are beneficial to YPS students.

Chart 4

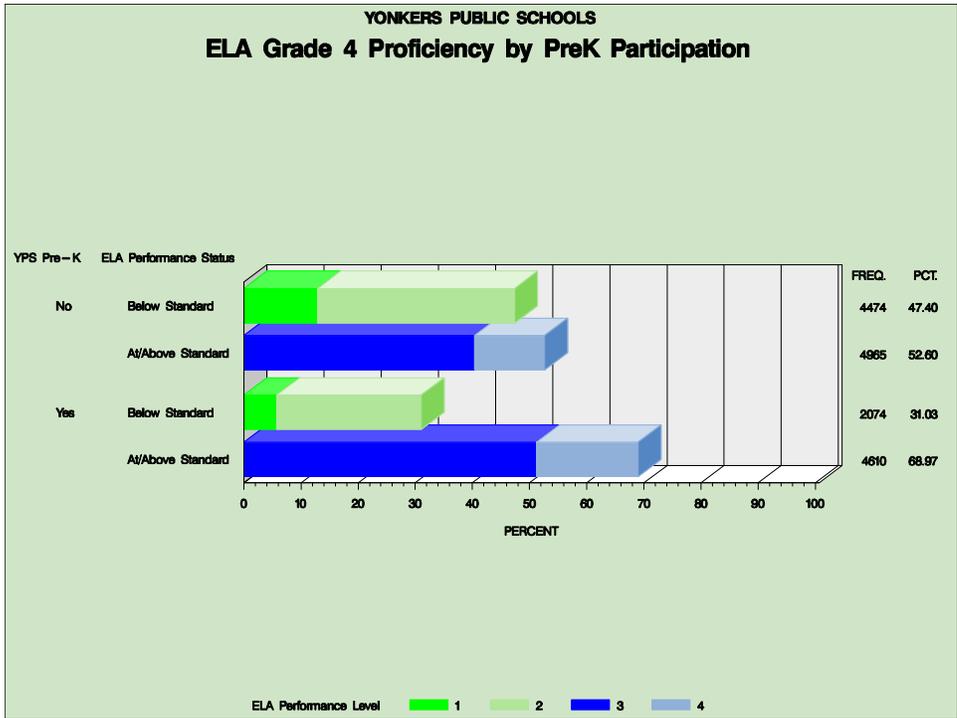
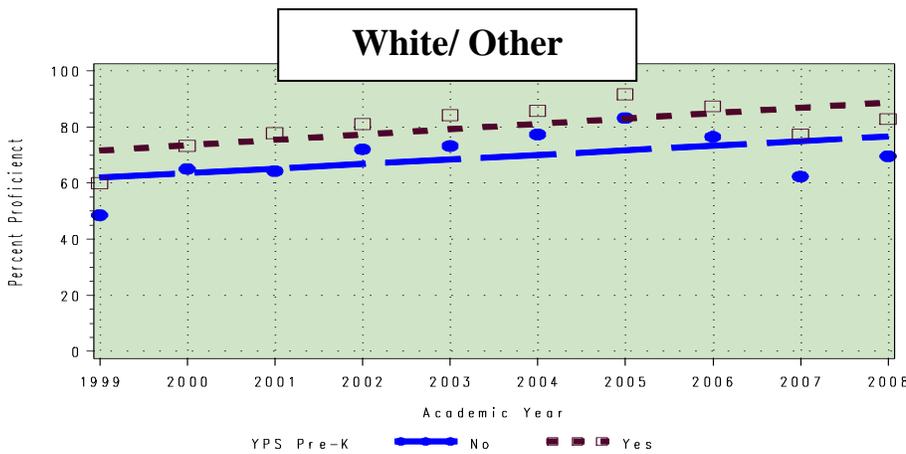
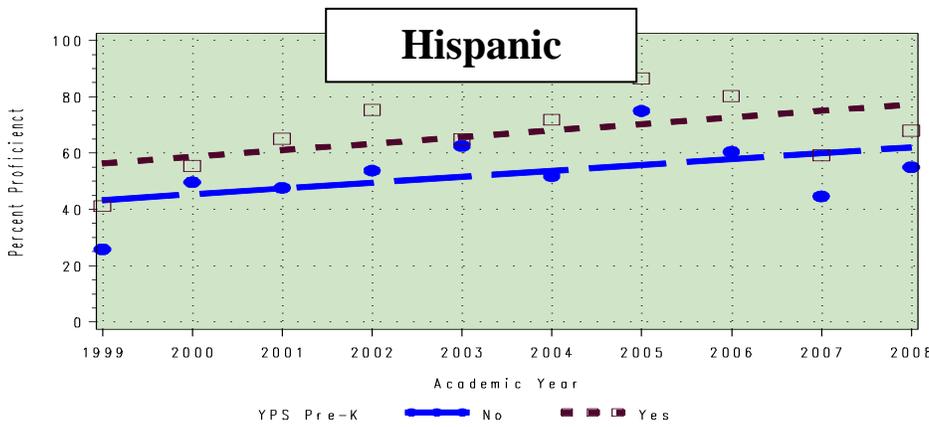
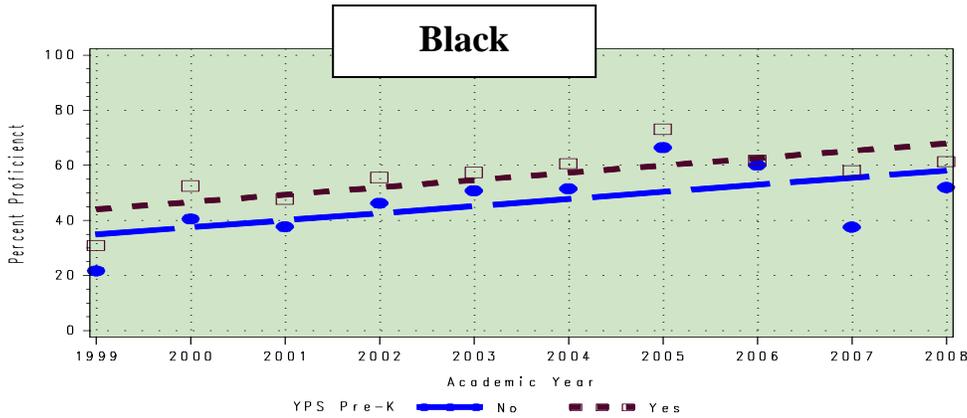


Table 5

Attended YPS Pre-K?		ELA Performance Level			
		1	2	3	4
No	Number	1219	3255	3812	1153
	Percent	12.9	34.5	40.4	12.2
Yes	Number	384	1690	3424	1186
	Percent	5.7	25.3	51.2	17.7
Percent Difference (No minus Yes)		7.2	9.23	10.84	5.52

NCLB Analysis of the YPS PreK Participation Advantage Ethnicity

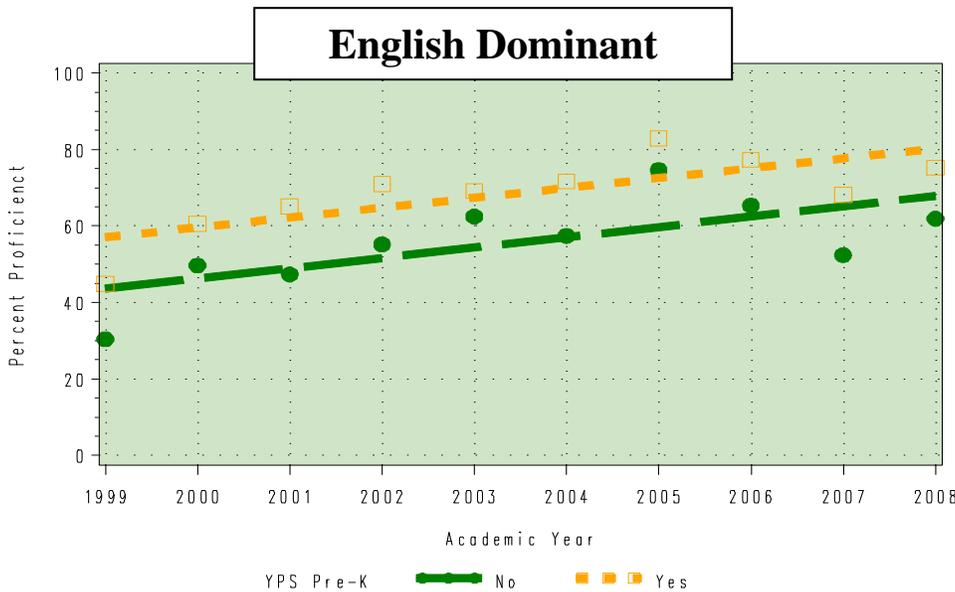
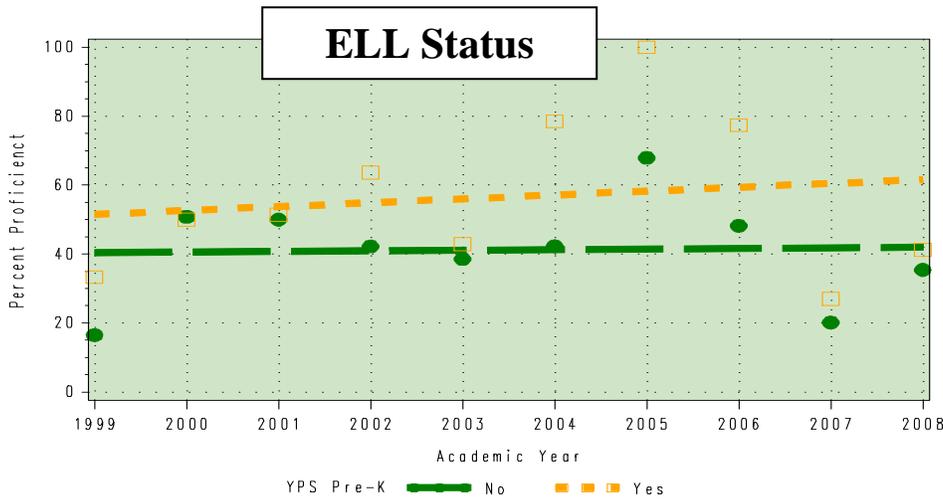
According to the charts below, Black, Hispanic and White students who attended YPS PreK are more likely to achieve proficiency on the NYS ELA exam than their ethnic counterparts who did not attend YPS PreK. The gap in ELA achievement is widest for Hispanic students, followed by Black and, finally, White students. A statistical test revealed that these relationships are statistically significant across most years of the analysis ($p < .05$).



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ELL Status

According to the charts below, the YPS PreK participation advantage exists in both the ELL and English Dominant populations. This gap between students who did and students who did not attend YPS PreK is seemingly larger in the ELL population. However, a statistical test revealed that although the YPS PreK participation advantage in the English dominant population is statistically significant across all ten years of the analysis ($p < .05$), this advantage for students with ELL status is statistically significant in only 3 years of the analysis – 2003-04 to 2005-06. This is likely due to the disproportionately smaller numbers of students who have ELL status and did (or did not) attend YPS PreK*.

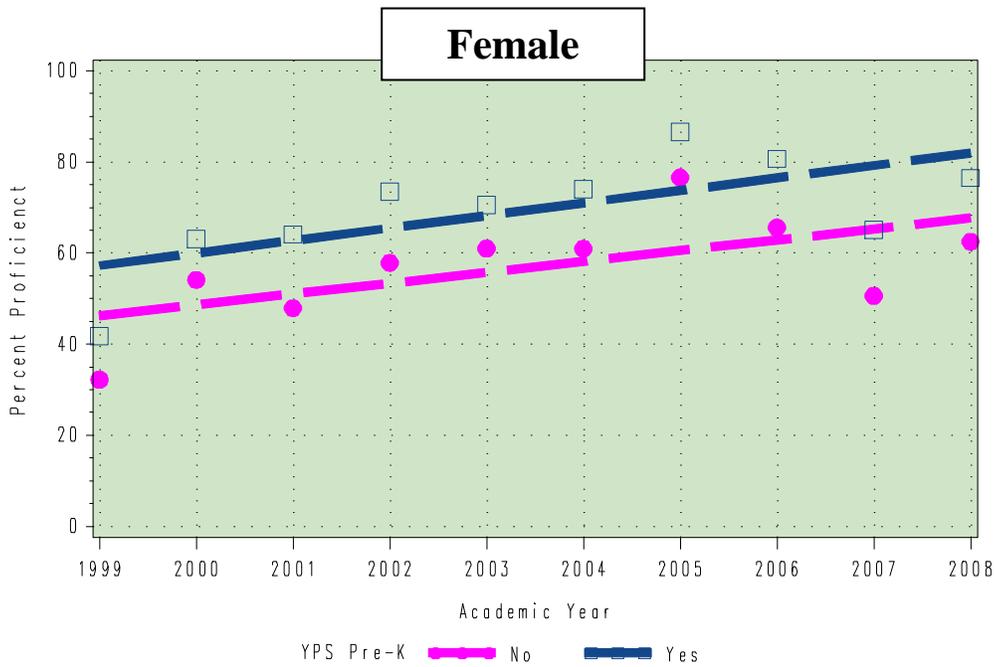
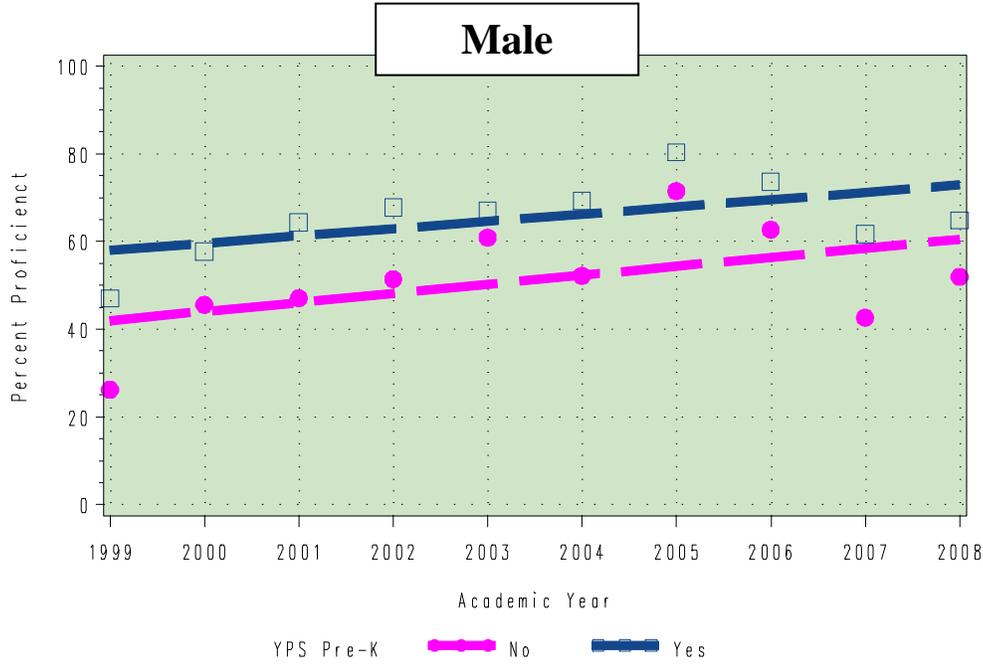


* A small sample is less likely to reflect the range of variability that exists within the population of interest and thus often does not reflect the actual patterns that exist in the data.

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Gender

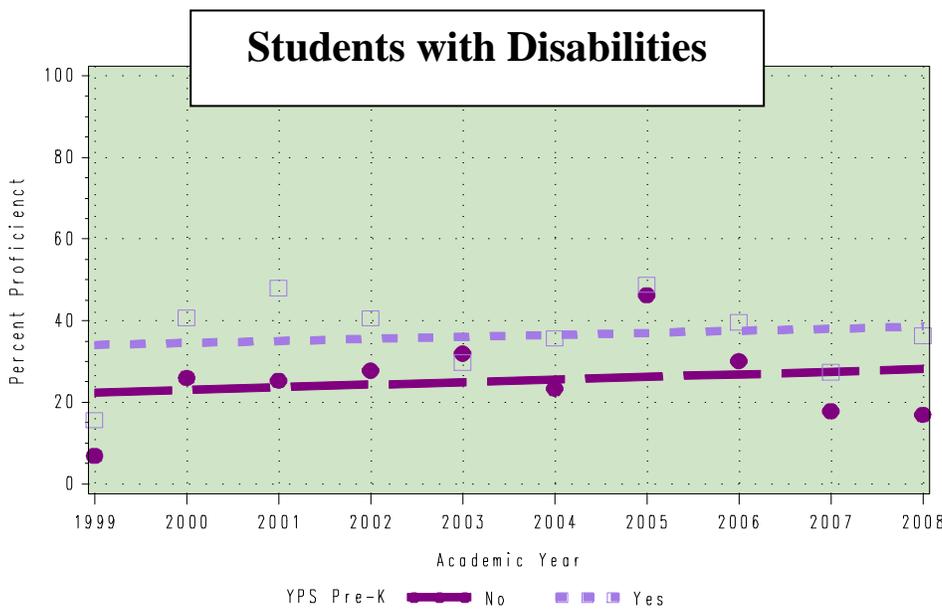
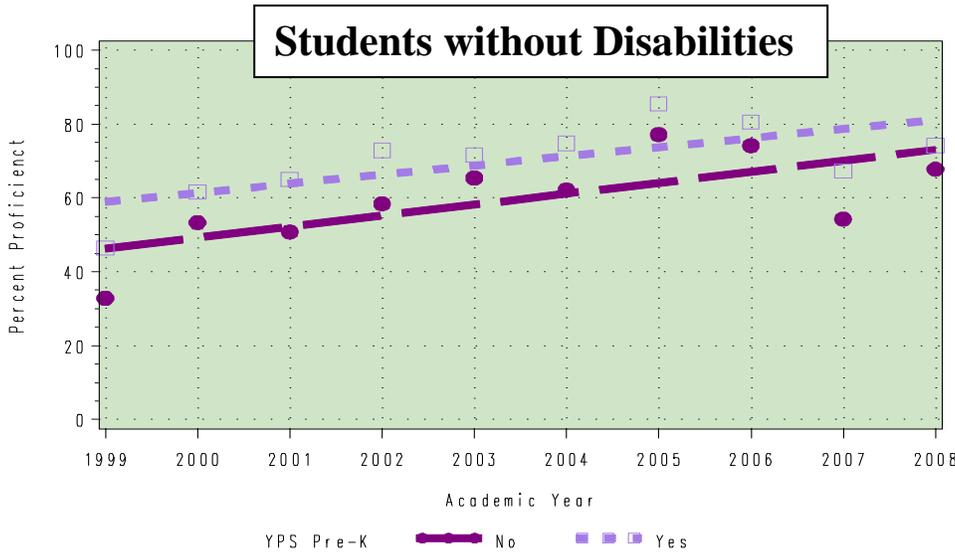
According to the charts below, the YPS PreK Participation advantage exists for both Males and Females. A statistical test revealed that this relationship exists for both genders across all years of the analysis ($p < .05$), with the exception of Males in 2002-03.



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Disability Status

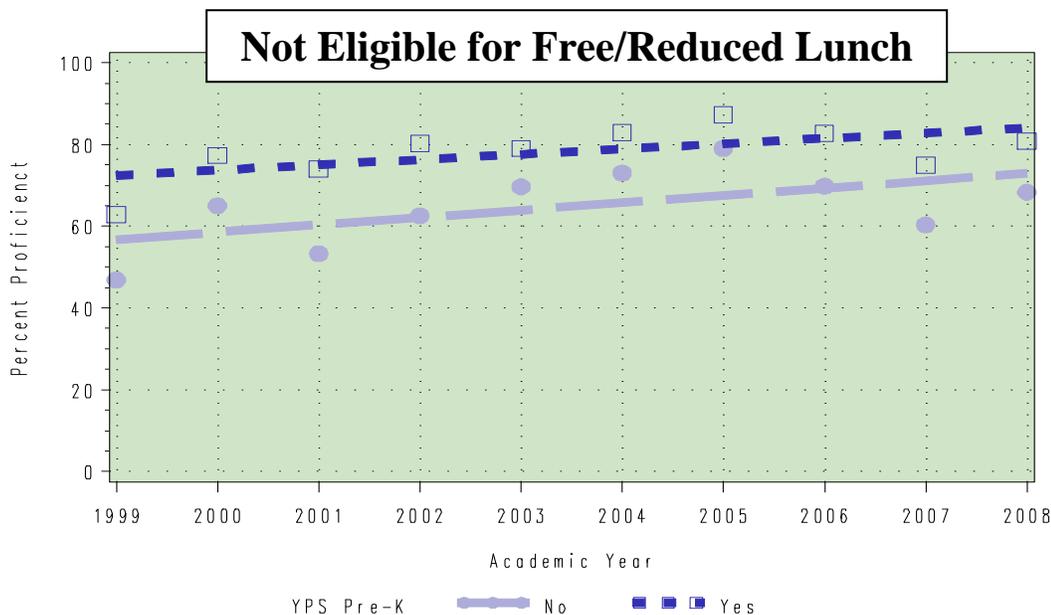
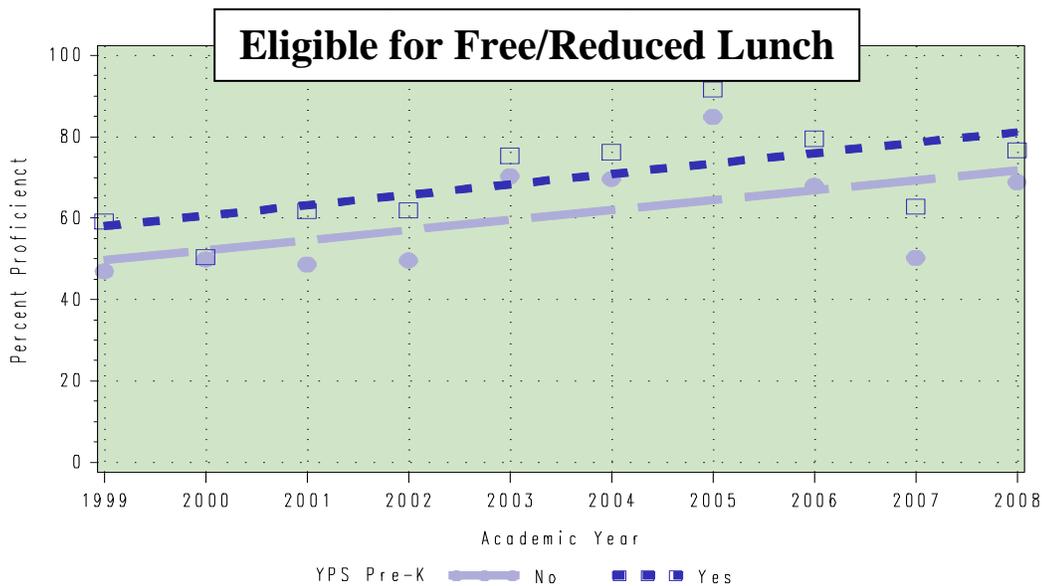
According to the charts below, the YPS PreK Participation advantage exists in both the disabled and non-disabled populations. A statistical test revealed that although the YPS PreK participation advantage in the non-disabled population is statistically significant across all ten years of the analysis ($p < .05$), for students with disabilities, this advantage is statistically significant in only two years of the analysis: 2000-01 and 2007-08. This is likely due to the disproportionately smaller numbers of students who have disabilities and did (or did not) attend YPS PreK[†].



[†] A small sample is less likely to reflect the range of variability that exists within the population of interest and thus often does not reflect the actual patterns that exist in the data.

YONKERS PUBLIC SCHOOLS Free and Reduced Lunch Eligibility

According to the charts below, the YPS PreK participation advantage exists for both students who are and students who are not eligible for free or reduced lunch. A statistical test revealed that students not eligible for free or reduced lunch who did attend YPS PreK are significantly more likely to score above proficiency on the ELA exam for each of the ten years ($p < .05$). Students who are eligible for free or reduced lunch were more likely to score above proficiency on the ELA exam if they did attend YPS PreK in eight of the ten years of analysis ($p < .0005$).

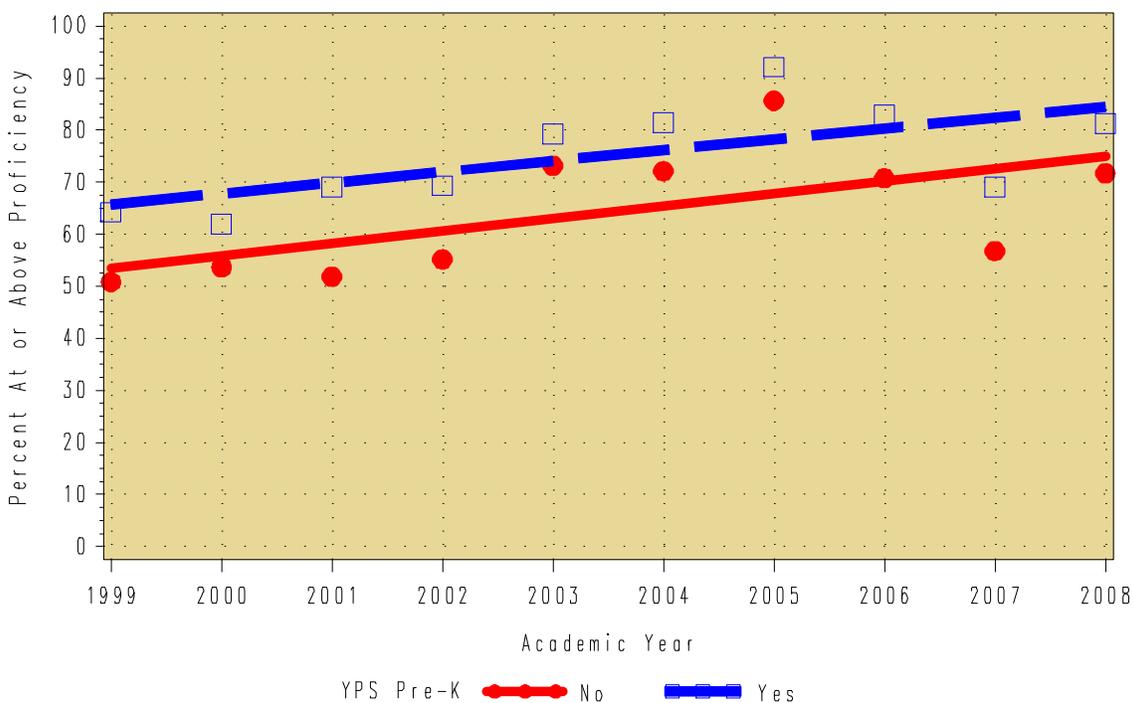


Math 1999-2008

A Comparison of Math Proficiency Status – YPS PreK Participation vs. Non-Participation

Students who attended YPS PreK have a consistent and substantial math proficiency advantage over students who did not attend YPS PreK ($p < .0001$). Additionally, the relationship between YPS PreK participation and math proficiency was examined by year and was statistically significant in every year of the analysis ($p < .0001$). Chart 6 illustrates this YPS PreK attendance advantage in math proficiency.

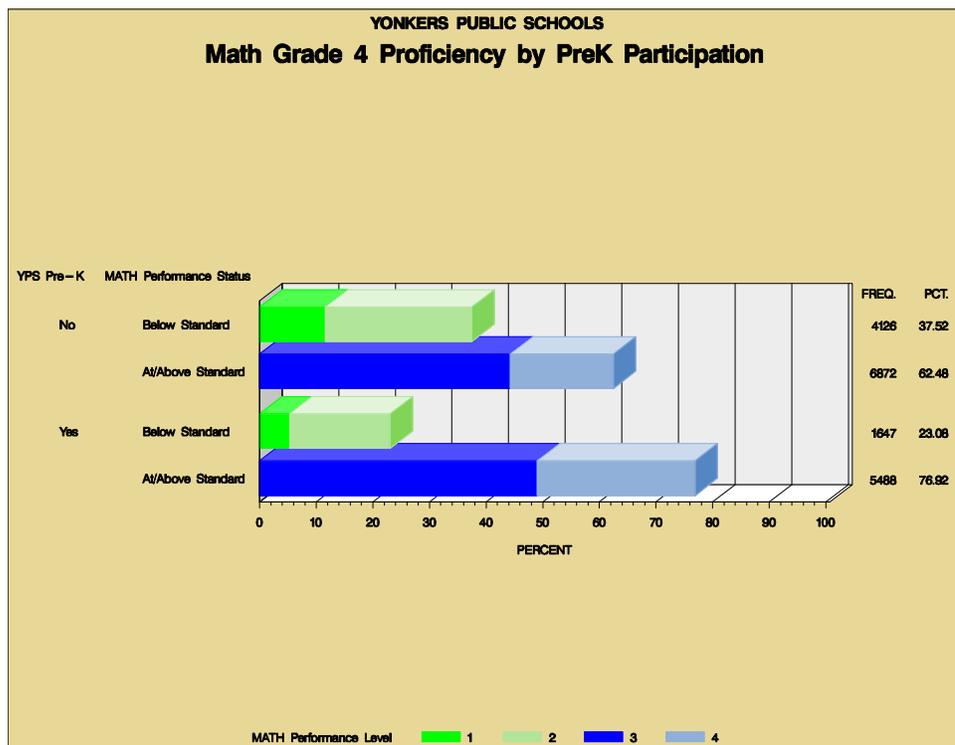
Chart 6: At or Above Math Proficiency: 1999-2008



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A Comparison of Math Performance Levels – YPS PreK Participation vs. Non-Participation

The relationship between YPS PreK participation and math performance levels is statistically significant across all ten years of analysis ($p < .0001$). Overall, students who attended YPS PreK were substantially less likely to score at math Performance levels 1 and 2 and more likely to score at performance levels 3 and 4. Chart 7 displays this difference in math performance levels across all years of the analysis. While 11.6% of students who did not attend YPS PreK scored at performance level 1, only 5.3% of YPS PreK students performed at performance level 1 (Table 8). Conversely, almost one third of YPS PreK attendees achieved a performance level 4 score, compared to 18.2% of Non-YPS PreK students. These differences on either end of the Math performance spectrum indicate that even at the lower end, YPS PreK students perform at a higher level than non-YPS PreK students.

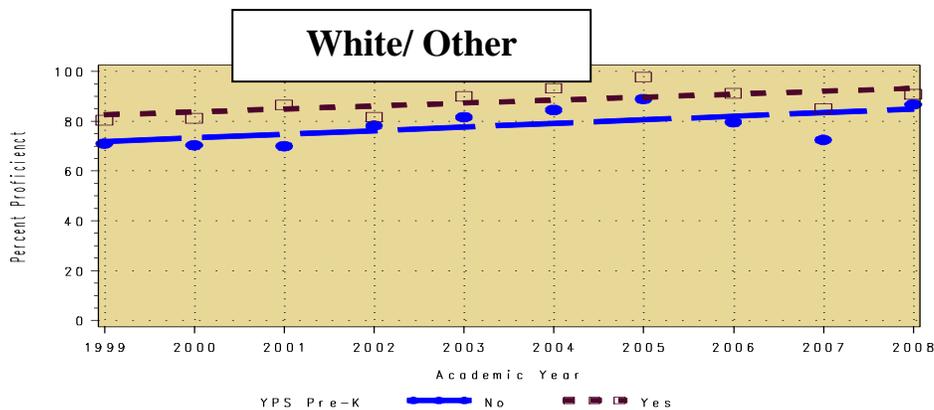
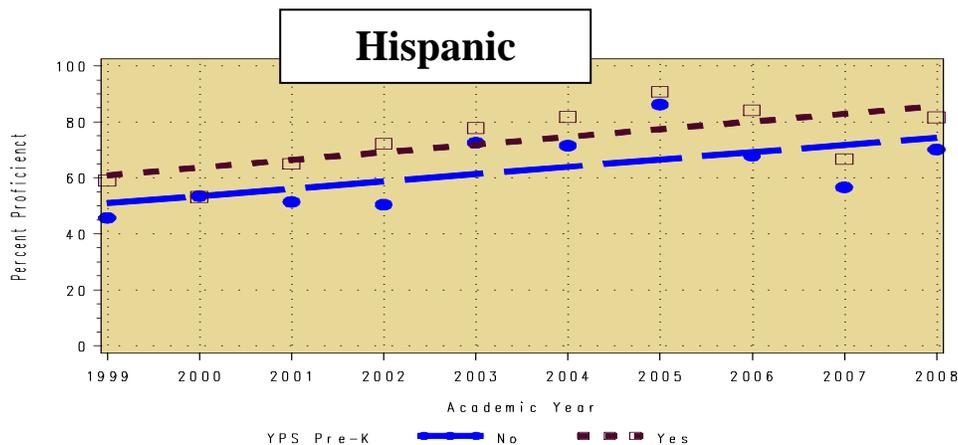
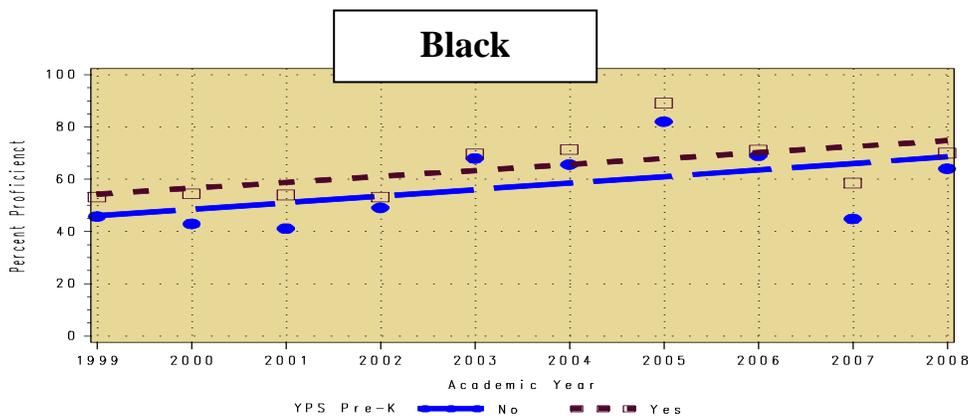
Chart 7**Table 8**

Attended a YPS Pre-K?		Math Performance Level			
		1	2	3	4
No	Number	1280	2846	4872	2000
	Percent	11.6	25.9	44.3	18.2
Yes	Number	379	1268	3497	1991
	Percent	5.3	17.8	49	27.9
Percent Difference (No minus Yes)		6.3	8.1	4.7	9.7

NCLB Analysis of the YPS PreK Participation Advantage

Ethnicity

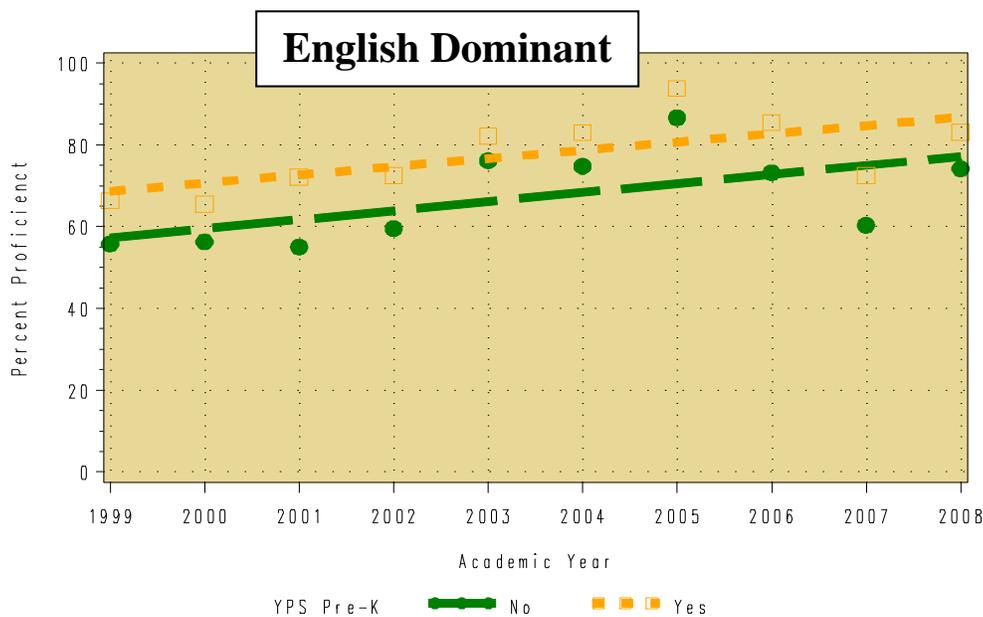
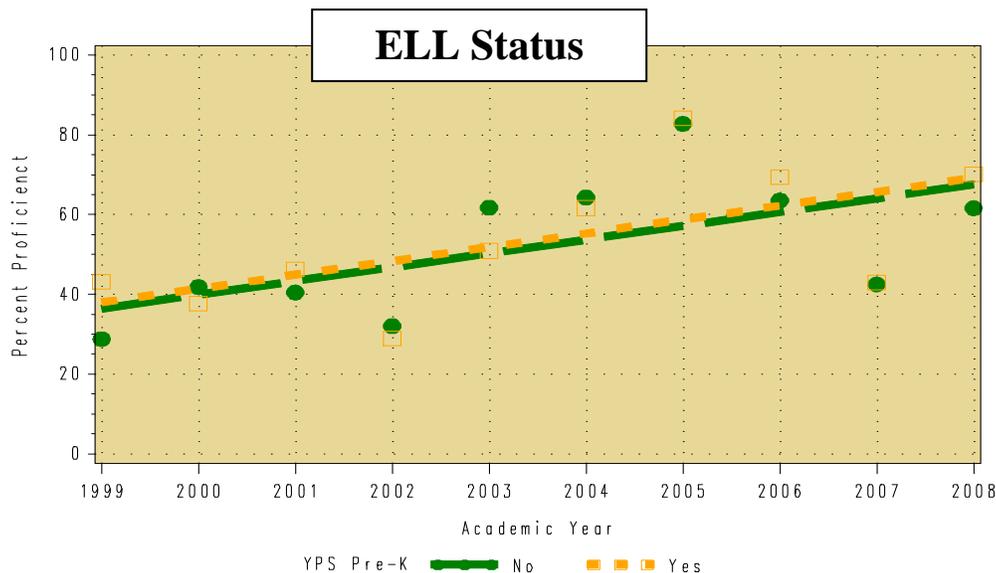
According to the charts below, Black, Hispanic and White students who attended YPS PreK are more likely to achieve proficiency on the NYS math exam than their ethnic counterparts who did not attend YPS PreK. The gap in math achievement is widest for Hispanic students, followed by White and, finally, Black students. With the exception of Black students, a statistical test revealed that the relationship between YPS PreK participation and math proficiency is statistically significant across most years of the analysis ($p < .05$). For Black students, the relationship between YPS PreK participation and math proficiency was statically significant in only four of the ten years of analysis – 1999-00, 2000-01, 2004-05 and 2006-07.



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ELL Status

According to the charts below, the YPS PreK participation advantage does not exist in the populations of students with ELL status. The opposite is true for English dominant students. A statistical test revealed that although the YPS PreK participation advantage in the English dominant population is statistically significant across all ten years of the analysis ($p < .005$), this advantage for students with ELL status is statistically significant in only the first year of this analysis – 1998-99. This is likely due to the disproportionately smaller numbers of students who have ELL status and did (or did not) attend YPS PreK¹.

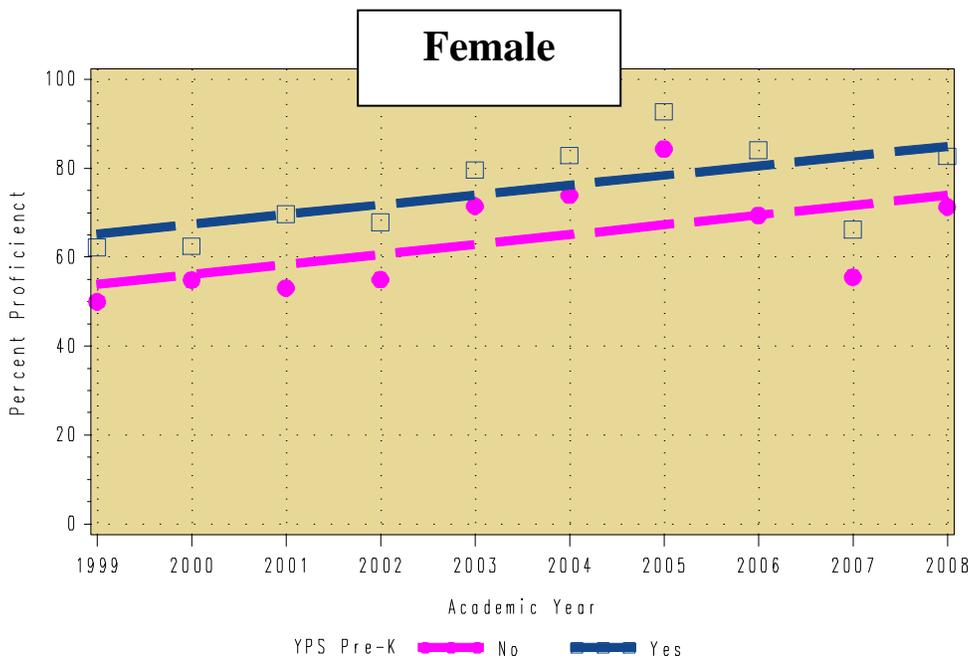
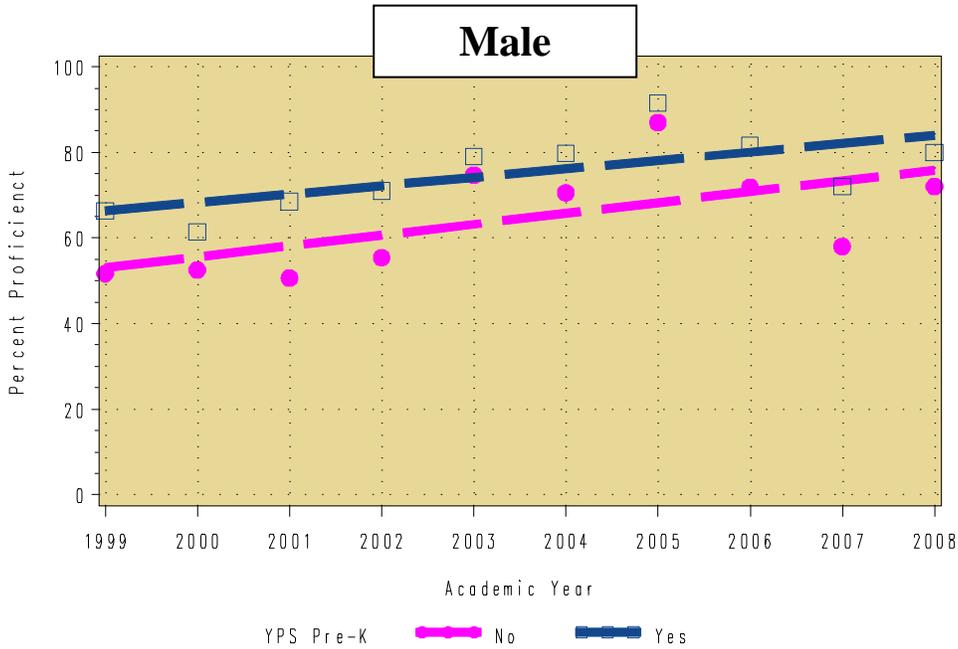


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Gender

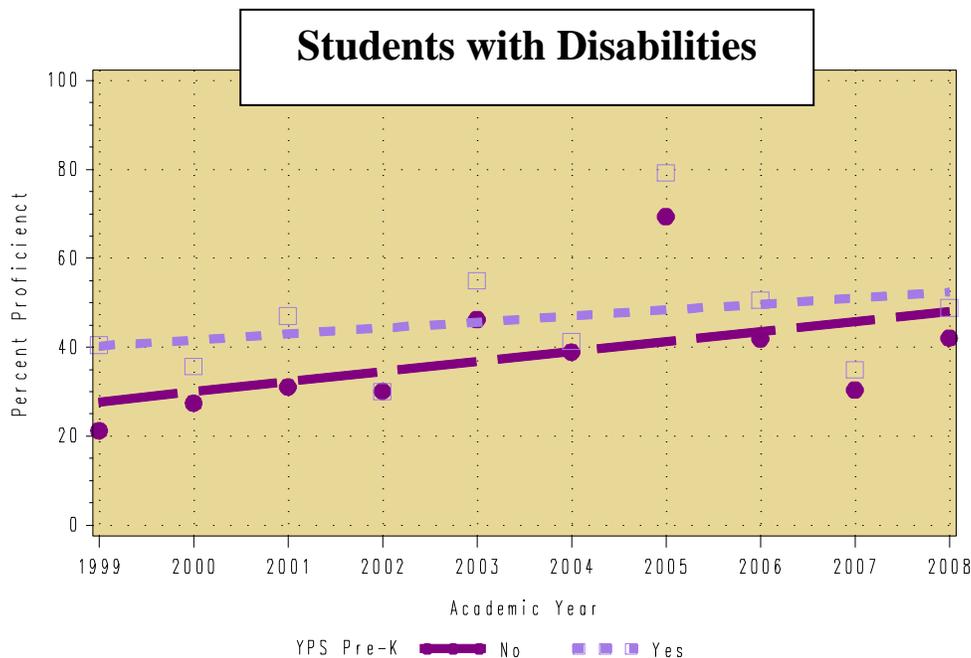
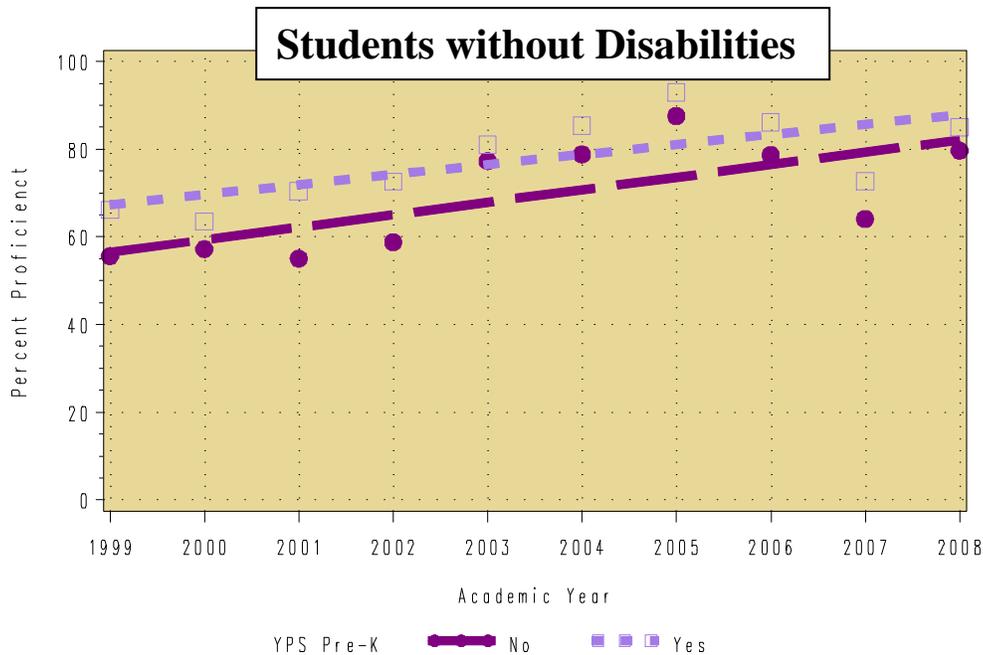
According to the charts below, the YPS PreK Participation advantage exists for both Males and Females. A statistical test revealed that this relationship exists for both genders across all years of the analysis ($p < .05$), with the exception of Males in 2002-03.



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Disability Status

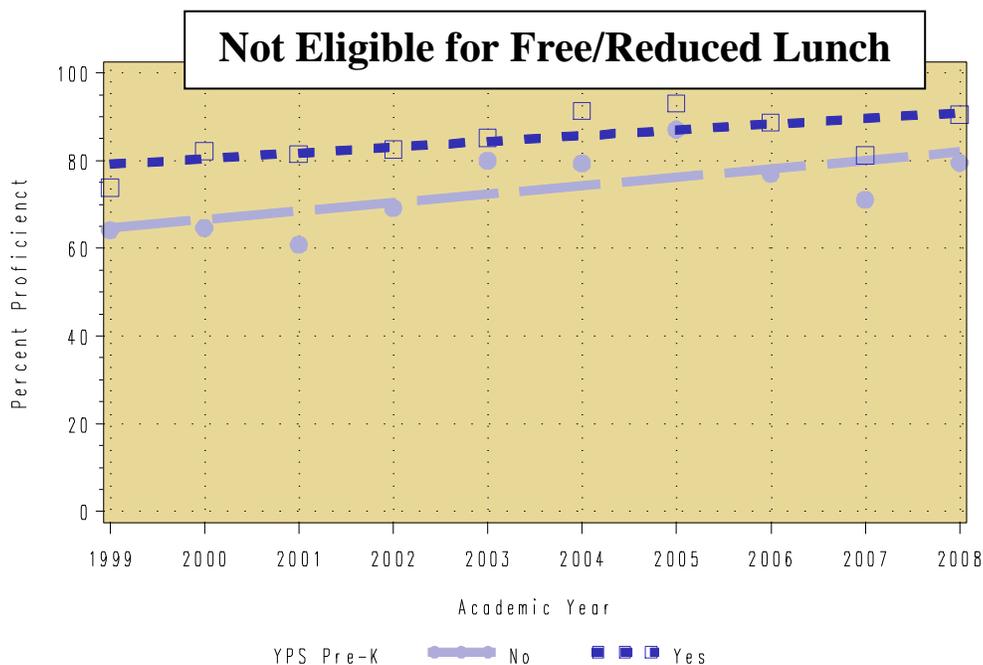
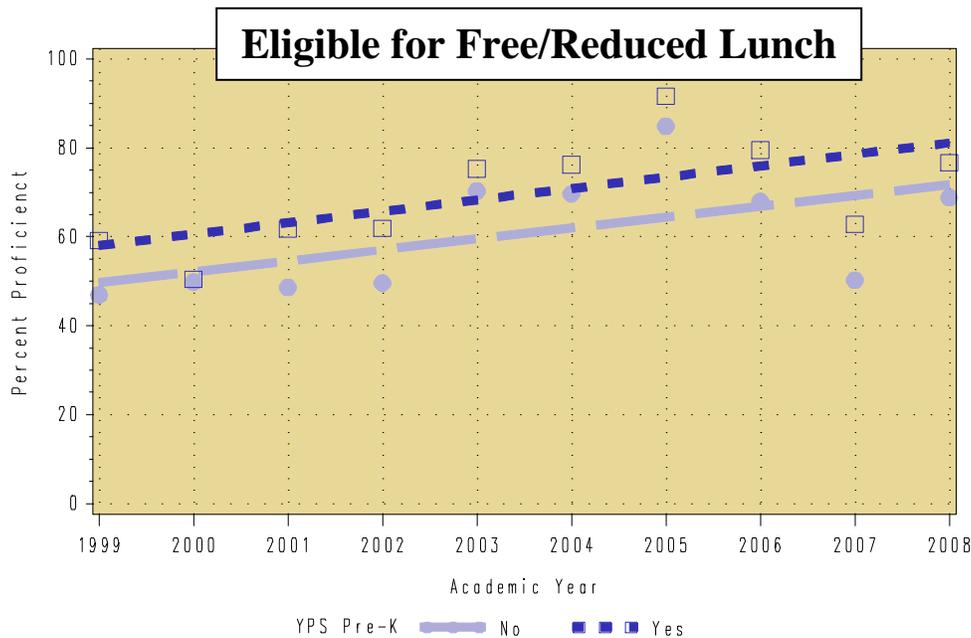
A statistical test revealed that although the YPS PreK participation advantage in the non-disabled population is statistically significant across all ten years of the analysis ($p < .05$), for students with disabilities, this advantage is statistically significant in only two years of the analysis: 2000-01 and 2007-08 ($p < .05$). This is likely due to the disproportionately smaller numbers of students who have disabilities and did (or did not) attend YPS PreK².



² A small sample is less likely to reflect the range of variability that exists within the population of interest and thus often do not reflect the actual patterns that exist in the data.

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Free and Reduced Lunch Eligibility

The YPS PreK participation advantage exists for both students who are and students who are not eligible for free or reduced lunch. A statistical test revealed that students not eligible for free or reduced lunch who did attend YPS PreK are significantly more likely to score above proficiency on the math exam in each of the ten years ($p < .05$). In eight of the ten examined years, students eligible for free or reduced lunch who did attend PreK were more likely to score above proficiency on the math exam ($p < .005$).



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Grade 4: ELA & Math
Summary of NCLB Analyses

Overall, the results indicate that there is a strong relationship between YPS PreK participation and achieving proficiency on both the NYS ELA and math exams. Students with ELL status and those with disabilities are the only two subgroups that displayed a weak relationship between PreK participation and ELA and math proficiency. These subgroups are particularly small in size and thus do not facilitate adequate statistical analysis. The PreK participation advantage is weakest in 2002-03 for both ELA and Math. Students who took the ELA and math exams in 2002-03 are the same students who attended (or did not attend) YPS PreK in 1997-98, the year in which the change to universal PreK was implemented.

The Grade 4 YPS PreK Participation Advantage:
Math vs. ELA

This section seeks to answer the following question: Is the relationship between YPS PreK participation stronger with either ELA or Math? According to Table 9, the YPS PreK advantage is slightly more prominent in ELA than in math. For ELA, the YPS PreK advantage in proficiency ranges from a low of 7.9% to a high of 16.8%. Similarly, this advantage in Math proficiency ranges from a low of 6.1% to a high of 17.3%. The average percent ELA advantage is 13.5% as compared to the average percent math advantage of 10.92%. That is, 13.5% more students who attended a YPS PreK program were able to achieve ELA proficiency, as compared to students who did not attend a YPS PreK program.

Table 9: Percent Advantage of PreK Attendees over Students who did not attend a Yonkers PreK Program

Year	ELA Proficiency: Percent <u>Advantage</u> of PreK Attendees over PreK Non-Attendees	Math Proficiency: Percent <u>Advantage</u> of PreK Attendees over PreK Non-Attendees
1999	15.2	13.4
2000	10.7	8.3
2001	16.8	17.3
2002	16.1	14.1
2003	7.9	6.1
2004	15.5	9.4
2005	9.4	6.5
2006	13.4	12.2
2007	17	12.3
2008	13.5	9.6

Grades 3, 5, 6 and 7: The YPS PreK advantage in ELA and Math Proficiency

The following analyses explore the relationship between YPS PreK attendance and ELA and math proficiency across grades 3, 5, 6, and 7. Three years of data are used– 2005-06 through 2007-08. While the grade 4 report analysis examined the YPS PreK advantage in ELA and math separately, the relationships between YPS PreK attendance and ELA and math proficiency are explored within the context of each grade level.

Grade 3

The YPS PreK participation advantage is prominent in the third grade across the three years of analysis: third grade students who did attend YPS PreK are significantly more likely to score at or above proficiency on the ELA and math exams than students who did not attend YPS PreK (Charts 3.1-3.2; $p < .05$). In addition, a comparison of performance level scores reveals that students who did attend YPS PreK are more likely to attain a Level 4 score when scoring above proficiency and less likely to attain a Level 1 score when scoring below proficiency on both the ELA and math exams (Charts 3.3-3.4).

Chart 3.1 ELA 2006-2008: Grade 3 At or Above Proficiency

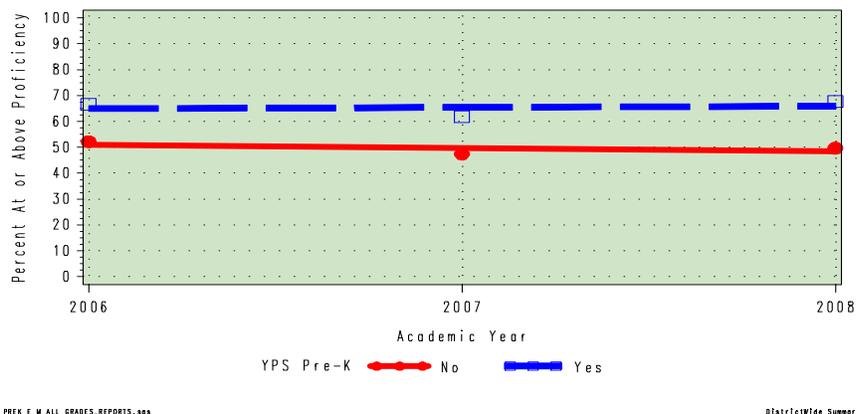
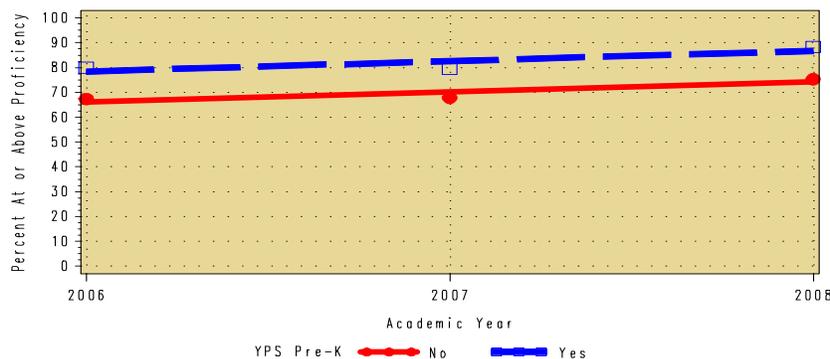


Chart 3.2 Math 2006-2008: Grade 3 At or Above Proficiency



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Chart 3.3 ELA 2008: Grade 3 Performance Levels

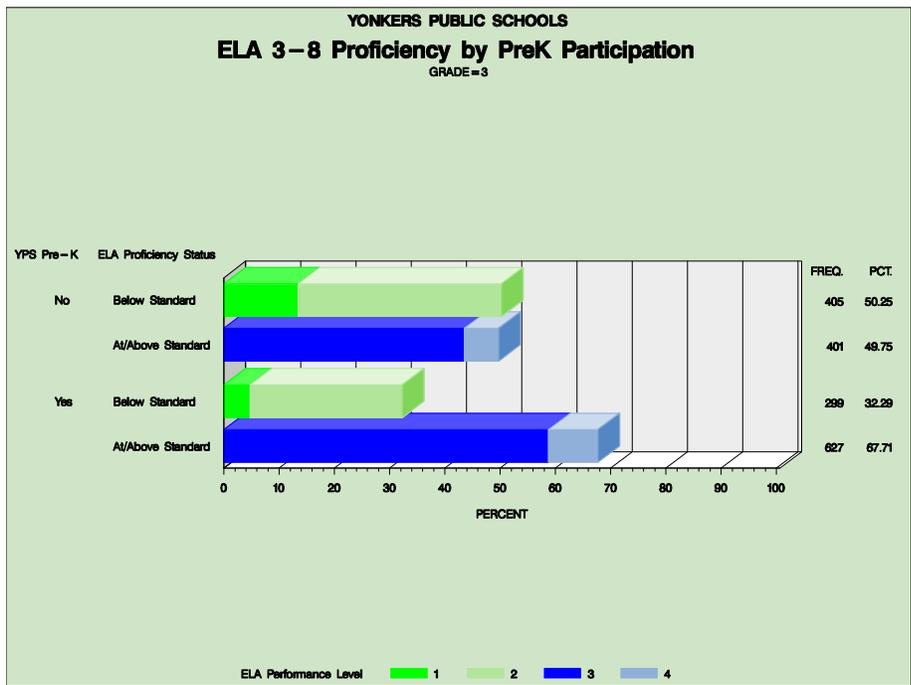
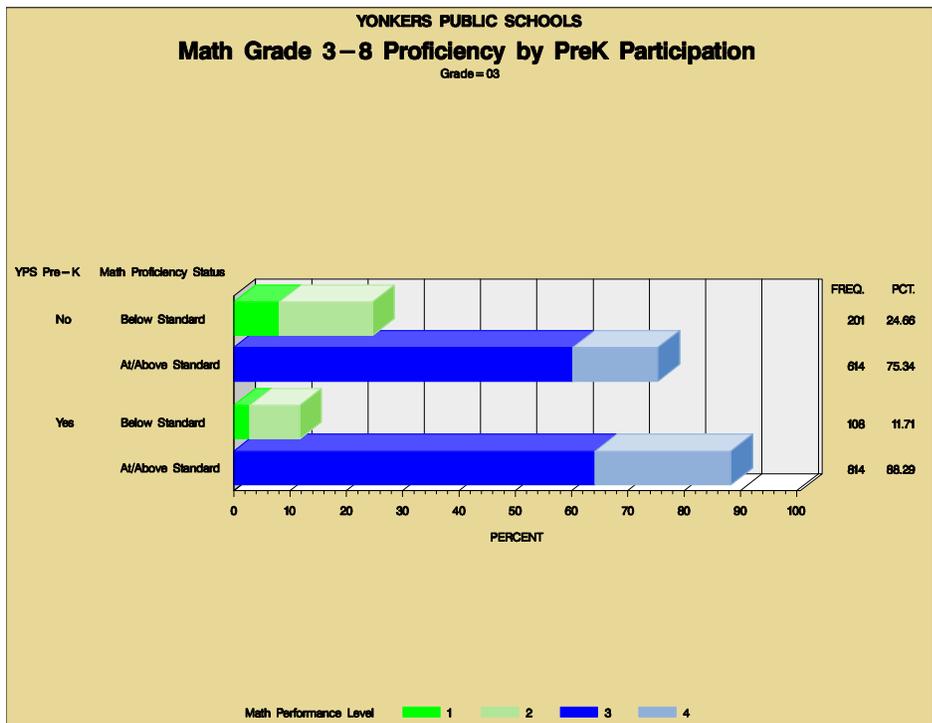


Chart 3.4 Math 2008: Grade 3 Performance Levels



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Grade 5

Fifth grade students who did attend YPS PreK are more likely to score at or above proficiency on the ELA and math exams ($p < .05$). This advantage is slightly more prominent in ELA than in math (Charts 5.1-5.2). Furthermore, in comparison to students who did not attend YPS PreK, students who did attend YPS PreK were more likely to achieve a Level 4 score when scoring above proficiency and less likely to attain a Level 1 score when scoring below proficiency on both the ELA and math exams (Chart 5.3-5.4).

Chart 5.1 ELA 2006-2008: Grade 5 At or Above Proficiency

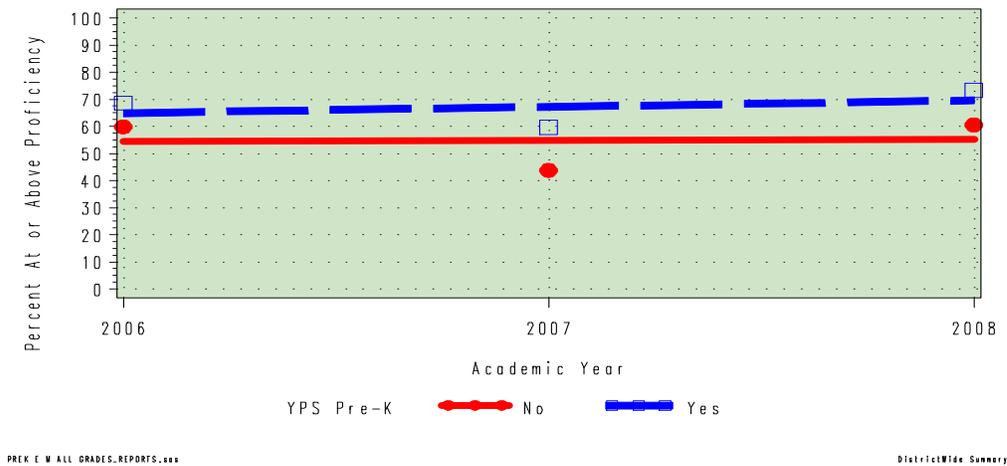
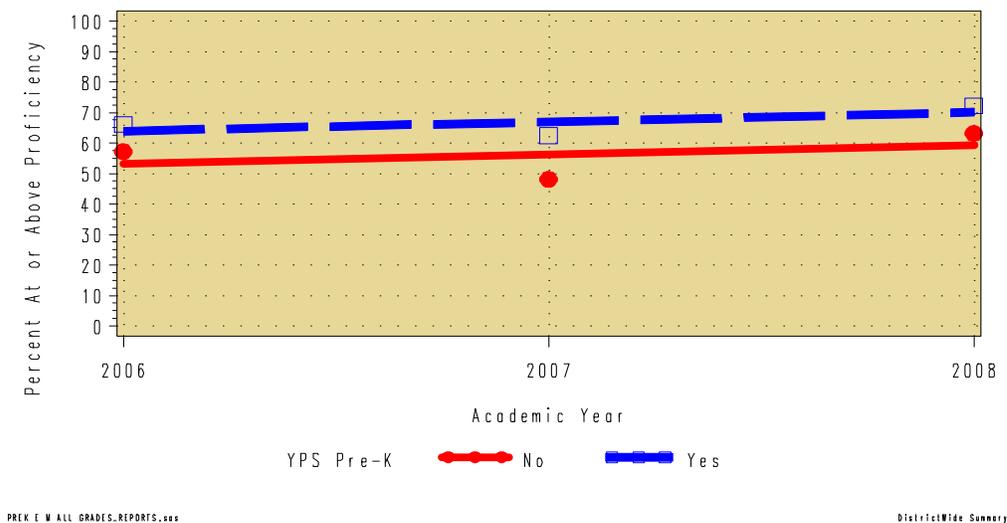


Chart 5.2 Math 2006-2008: Grade 5 At or Above Proficiency



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Chart 5.3 ELA 2008: Grade 5 Performance Levels

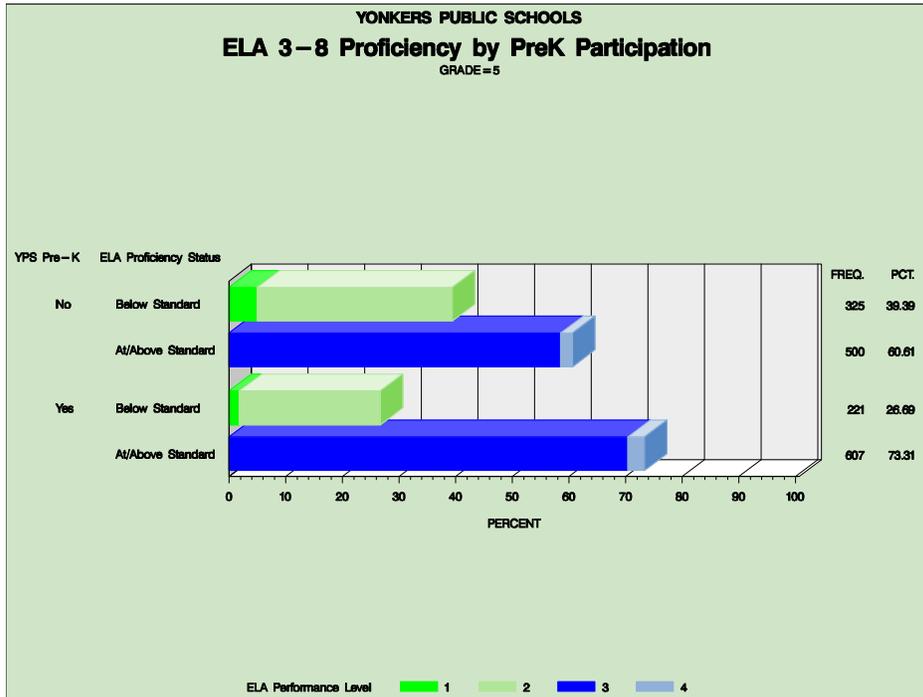
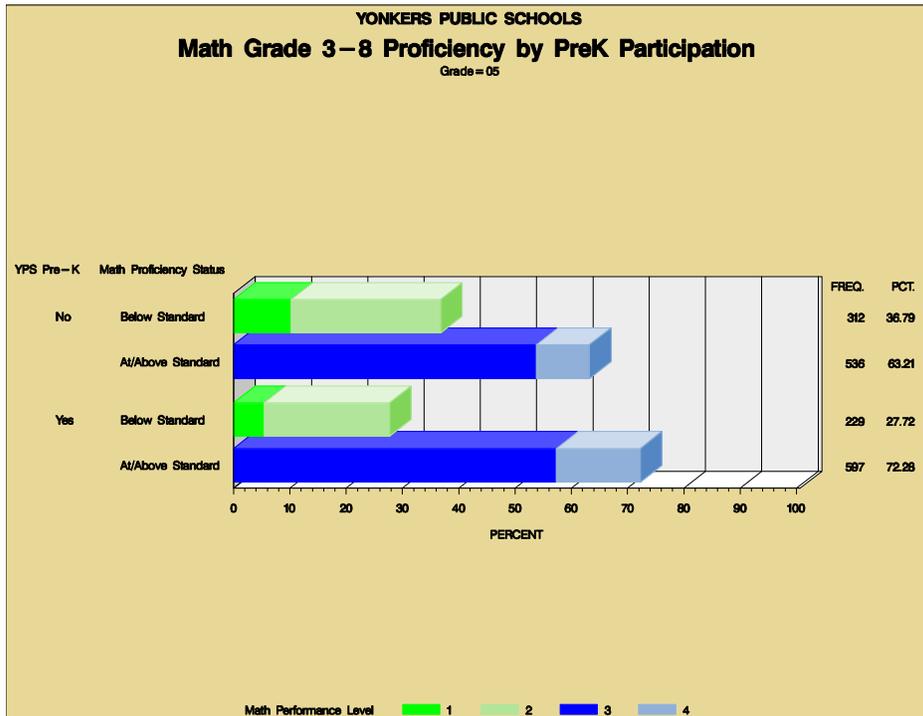


Chart 5.4 Math 2008: Grade 5 Performance Levels



Grade 6

According to Charts 6.1 and 6.2, sixth grade students who did attend YPS PreK attained significantly higher scores on the ELA and math exams across each of the 3 years of analysis ($p < .05$). Charts 6.3 and 6.4 highlight YPS PreK attendee's higher likelihood to achieve a Level 4 score when scoring at or above proficiency and a Level 2 score when scoring below proficiency in ELA and math (Charts 6.3-6.4).

Chart 6.1 ELA 2006-2008: Grade 6 At or Above Proficiency

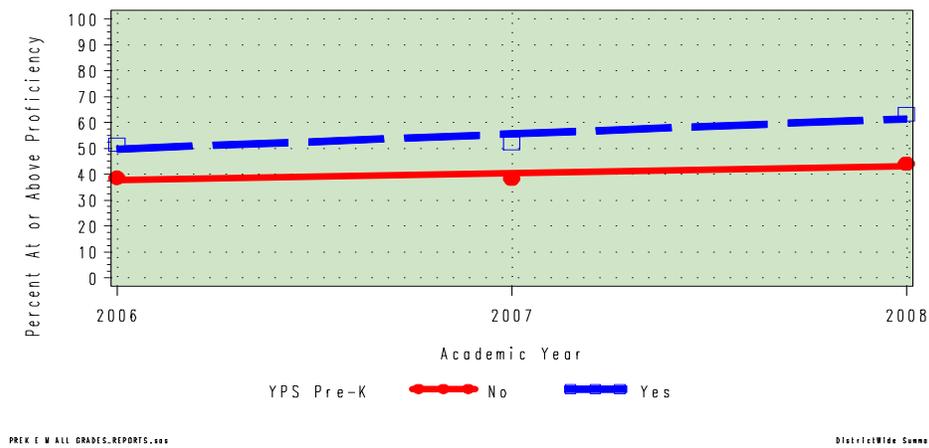
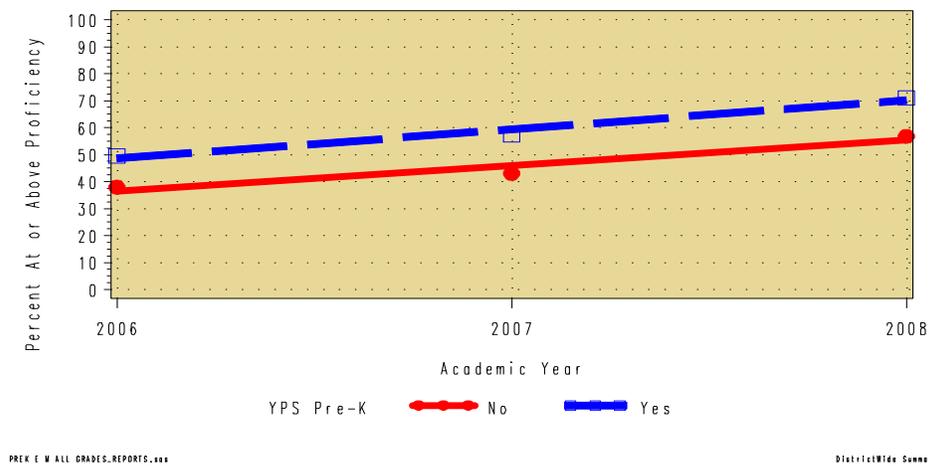


Chart 6.2 Math 2006-2008: Grade 6 At or Above Proficiency



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Chart 6.3 ELA 2008: Grade 6 Performance Levels

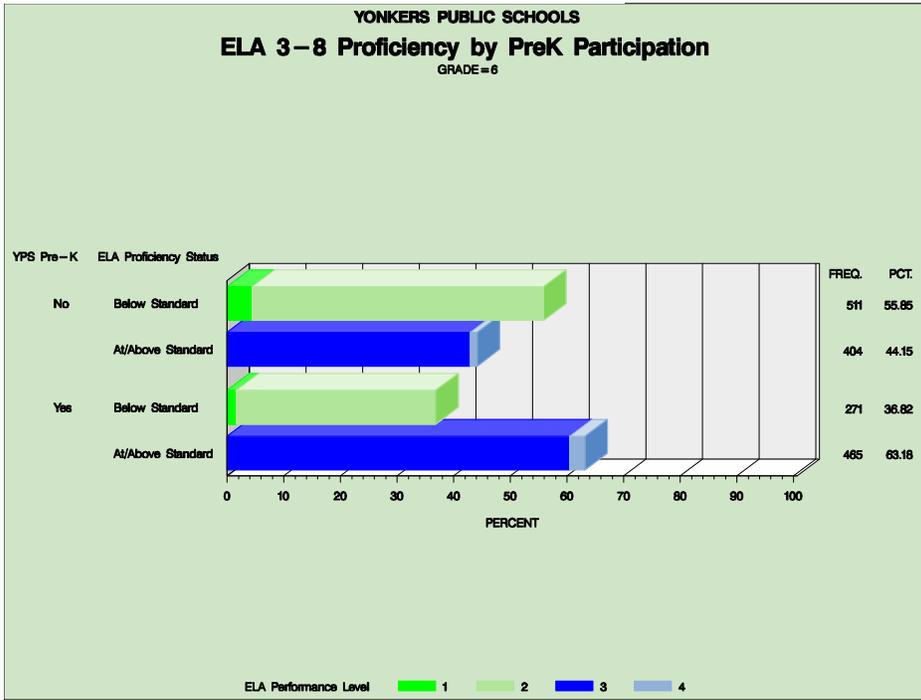
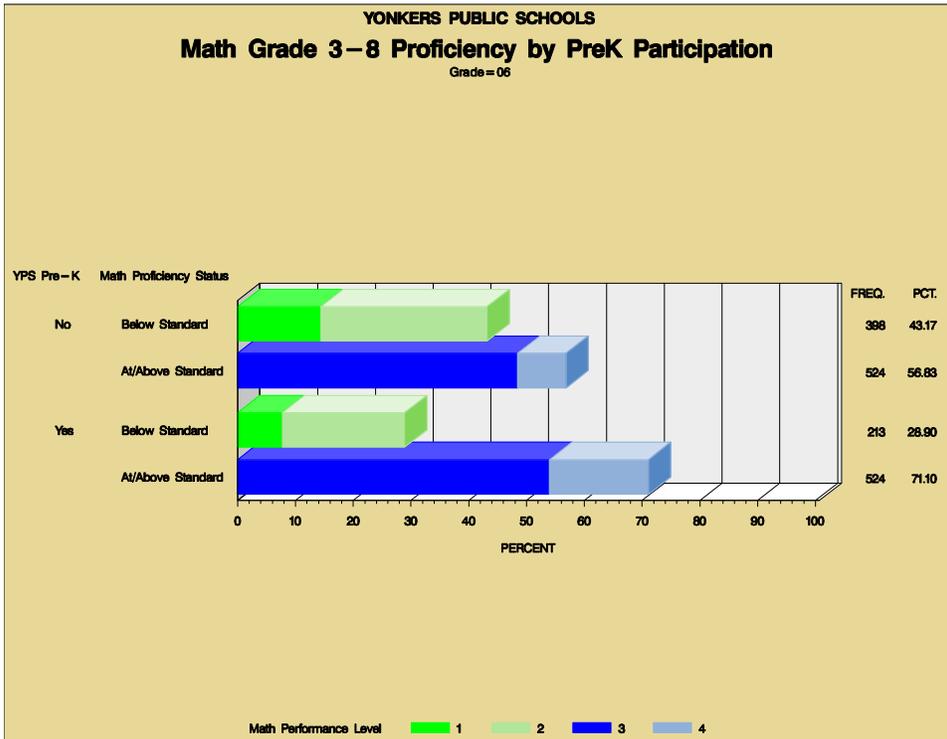


Chart 6.4 Math 2008: Grade 6 Performance Levels



Grade 7

As compared to their counterparts who did not attend YPS PreK, seventh grade students who did attend YPS PreK were significantly more likely to score at or above proficiency on the ELA and math exams across the 3 years of analysis (Charts 7.1-7.2; $p < .05$). A comparison of each groups performance level scores reveals that YPS PreK attendees were more likely to achieve a level 2 score than a level 1 score and substantially more likely to achieve a level 4 score when scoring above proficiency. This trend is most prominent in math (Chart 7.3-7.4).

Chart 7.1 ELA 2006-2008: Grade 7 At or Above Proficiency

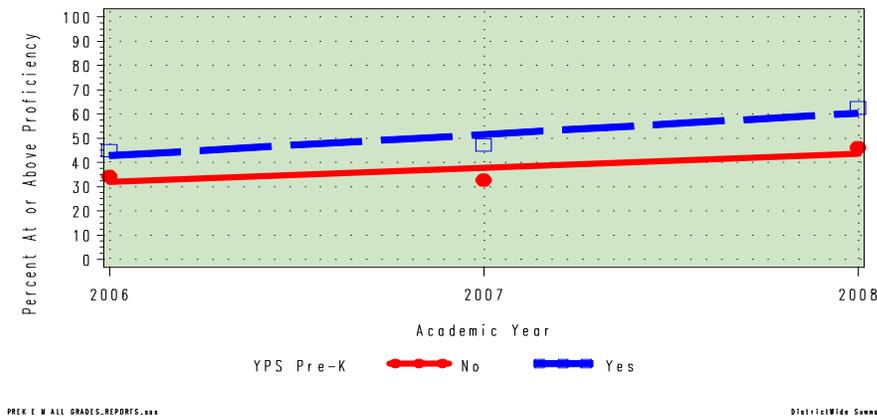
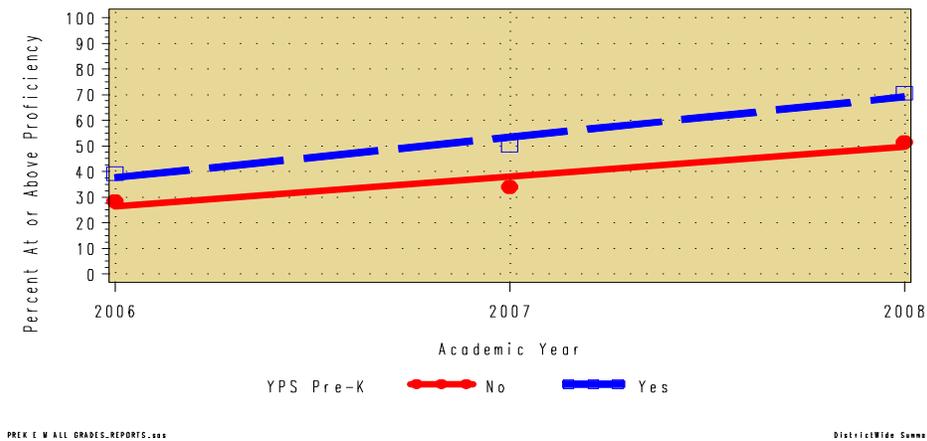


Chart 7.2 Math 2006-2008: Grade 7 At or Above Proficiency



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Chart 7.3 ELA 2008: Grade 7 Performance Levels

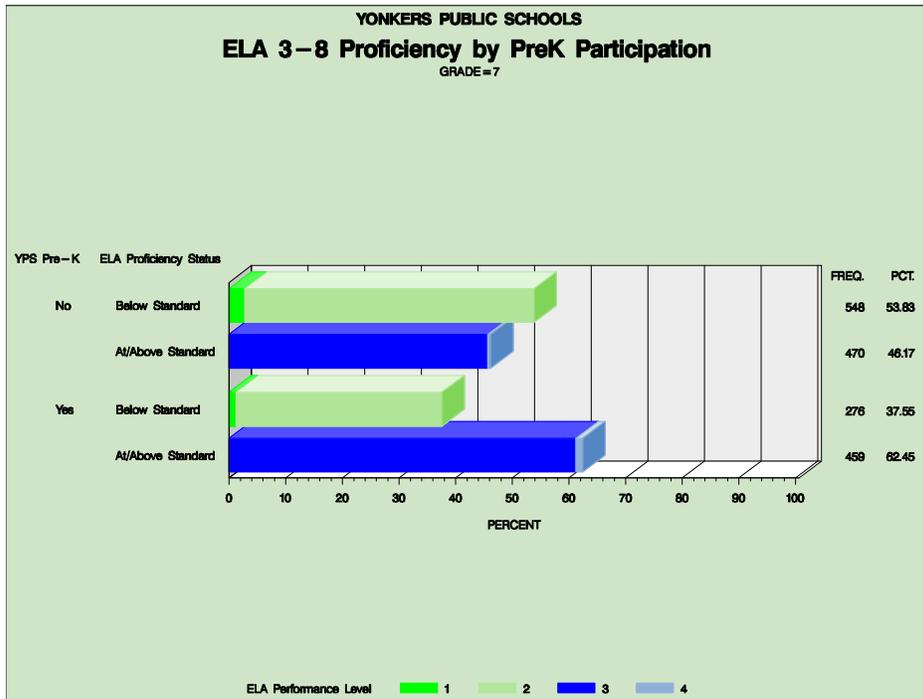
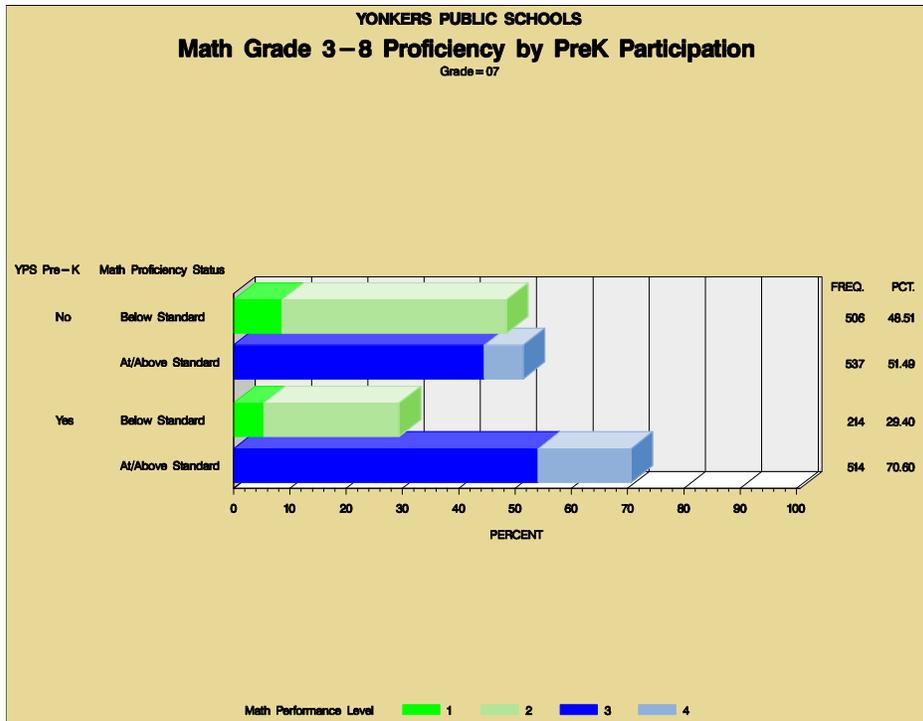


Chart 7.4 Math 2008: Grade 7 Performance Levels



Grade 8: 2002-03 – 2007-08

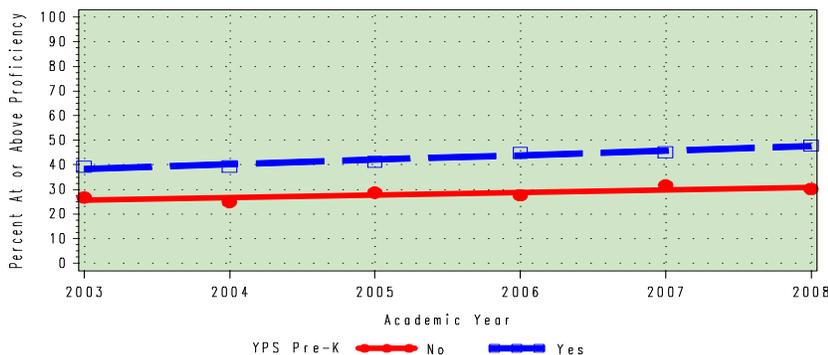
The YPS PreK advantage in ELA and Math Proficiency

The 2007-08 academic year was a successful year for YPS as ELA and Math performance substantially improved in grades 3-8. However, a disconcerting trend persists: as grade-level increases, ELA and Math proficiency decreases. Therefore, eighth grade is the grade with lowest number of students at or above proficiency in both ELA and math. In light of this persistent trend, this eighth grade six-year analysis of the relationship between YPS PreK participation and ELA and math proficiency is imperative. If the YPS PreK participation advantage extends through the eighth grade, and thus ensures a greater likelihood of students achieving proficiency in the ELA and math, then efforts to enroll students in YPS’s universal PreK program must be increased.

Grade 8

Similar to the trends that emerge in Grades 3-5, the YPS PreK participation advantage extends to the eighth grade. Students who did attend YPS PreK achieve higher scores on the ELA and math exams across the six years of analysis (Charts 8.1-8.2; $p < .05$). In addition, a comparison of performance level scores reveals that eighth grade students who did attend YPS PreK are more likely to attain a Level 4 score when scoring above proficiency and less likely to attain a Level 1 score when scoring below proficiency on both the ELA and Math exams (Charts 8.3-8.4).

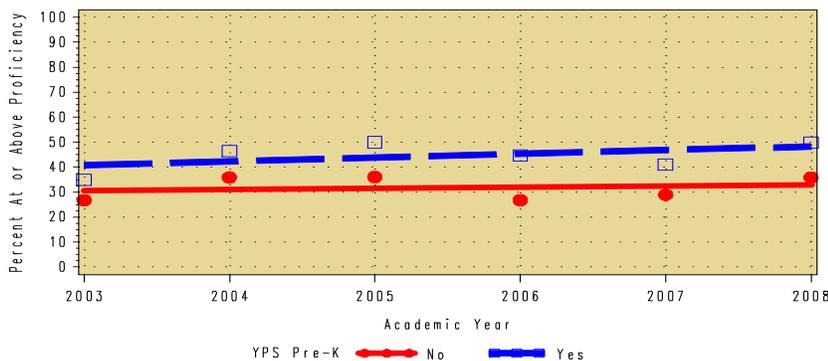
Chart 8.1 ELA 2006-2008: Grade 8 At or Above Proficiency



PREK E W ALL GRADES.REPORTS.SAS

DistrictWide Summary

Chart 8.2 Math 2006-2008: Grade 8 At or Above Proficiency



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Chart 8.3 ELA 2008: Grade 8 Performance Levels

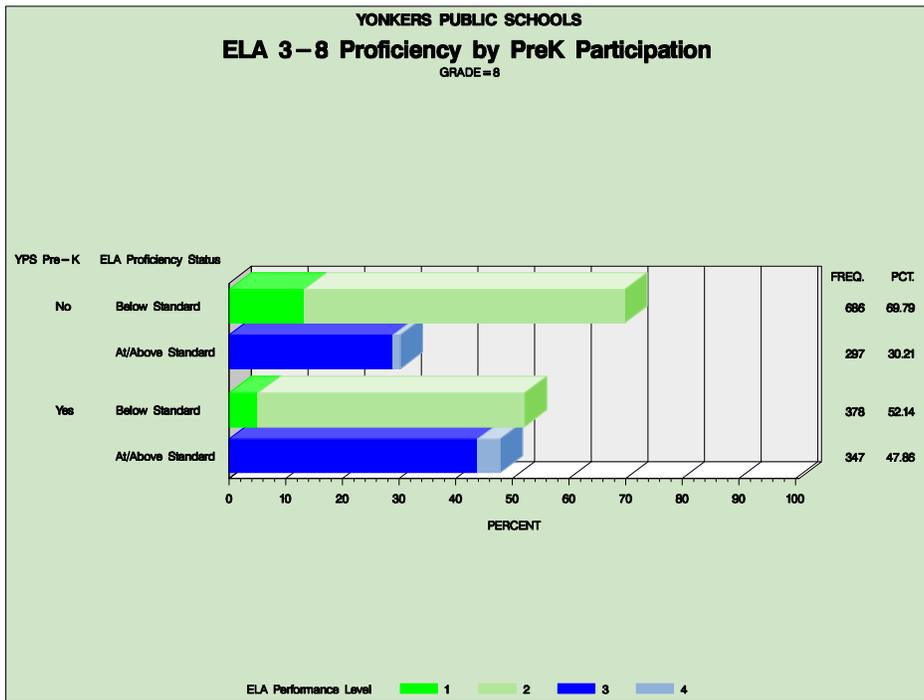
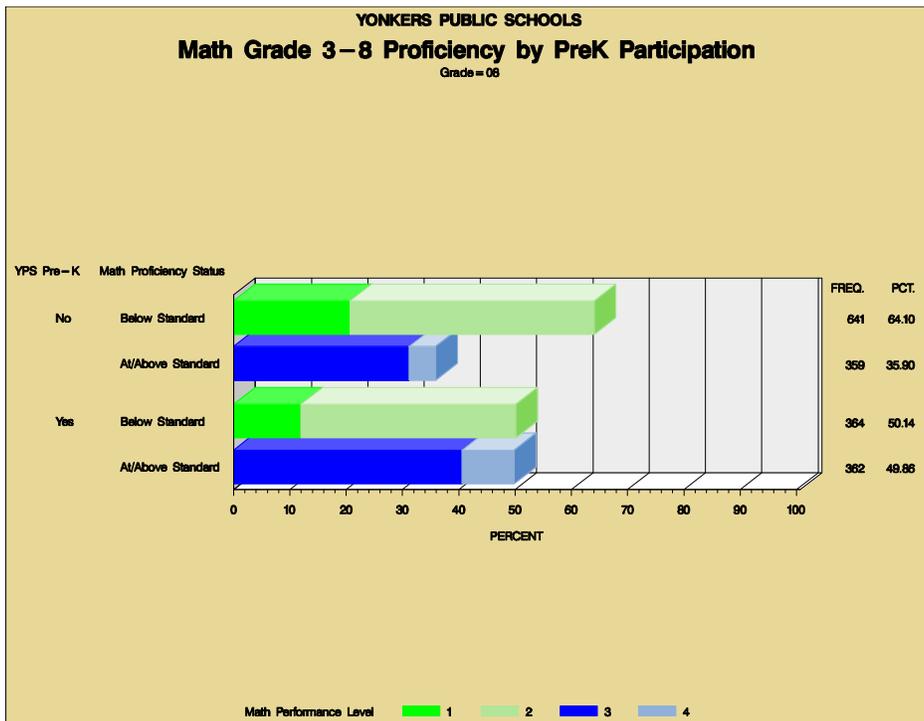


Chart 8.4 Math 2008: Grade 8 Performance Levels



High School Graduation: 2007-2009

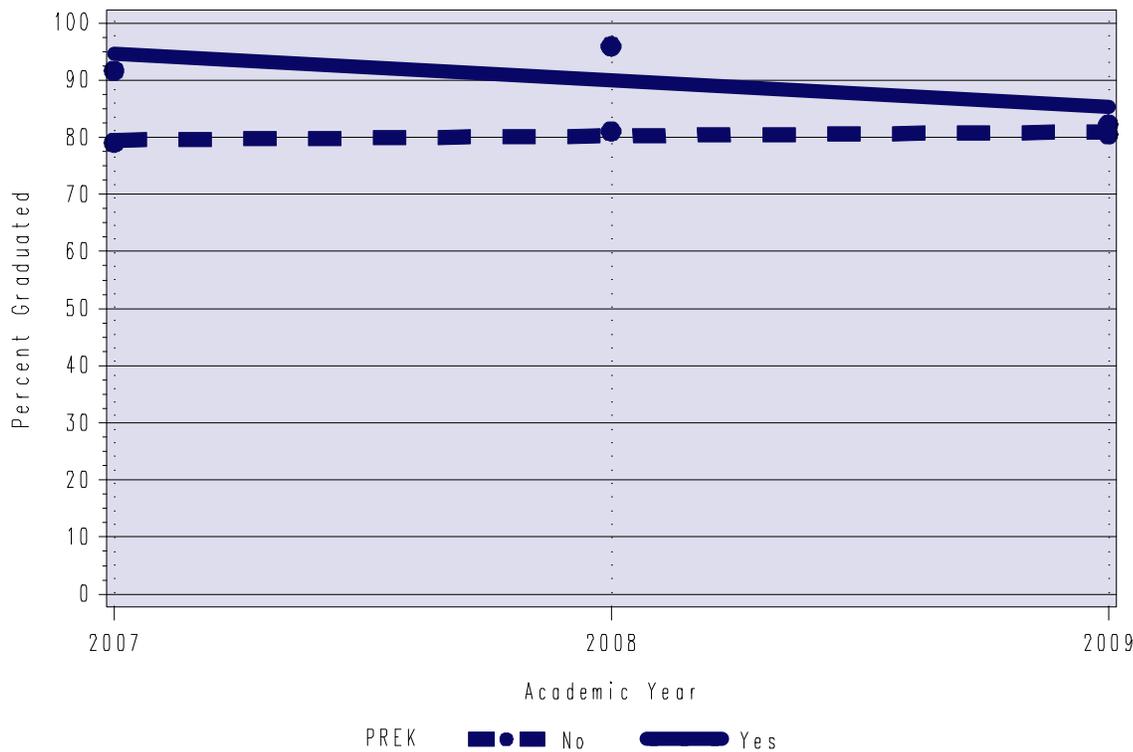
The relationship between participation in Yonkers Public Schools (YPS) Pre-Kindergarten (PreK) and high school graduation is strong and consistent across three years of data. Compared to students who do not participate in YPS PreK, students who participate in YPS PreK are more likely to graduate from high school than students who do not ($p < .05$).

Despite a reduction in this trend in 2009, the accumulated evidence suggests that Yonkers PreK participants have a substantial educational advantage over those students who did not participate in YPS PreK. A previous analysis revealed a robust relationship between PreK participation and improved achievement on the ELA and Math exams across ten years of data and all NCLB subgroups.

Table 1: Percent of High School Graduates, by year and YPS PreK Attendance

Academic Year	Attended Prek?	Percent Graduated	Number Graduated	Difference
2007	Yes	92	209	13
2007	No	79	911	
2008	Yes	96	236	15
2008	No	81	1101	
2009	Yes	82	260	1
2009	No	81	1161	

Table 2: Trend Line Analysis: Percent of High School Graduates



Conclusion

Overall, across all years and grades, the proficiency benefit for students who attended Yonkers PreK versus students who did not attend YPS PreK is substantial. For example, on the 2008 ELA exam, an average of 64% of students who did attend YPS PreK achieved proficiency; compared to roughly 48% of students who did not attend YPS PreK in grades 3-8. Additionally, on the 2008 math exam, approximately 72% of students who did attend Yonkers PreK scored at or above proficiency, while only 59% of students in grades 3-8 who did not attend YPS PreK achieved proficiency. The 16% advantage in ELA proficiency and 13% advantage in math proficiency in 2008 are indicative of the results found in all years of the study. This trend reflects a significant advantage gained through participation in Yonkers PreK.

Even more, the significant results found in high school graduation percentages approximately twelve years after PreK participation reflects the persistence of this trend.

In summary, the YPS PreK Advantage is a strong and persistent trend. Students who attend YPS Pre-K are substantially more likely to achieve proficiency on the NYS ELA and math exams and are also more likely to graduate from high school than their counterparts who do not attend YPS PreK. Moreover, the stability of these results within district subpopulations suggests that attending Yonkers PreK presents all students, including members of disadvantaged populations with important benefits.



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