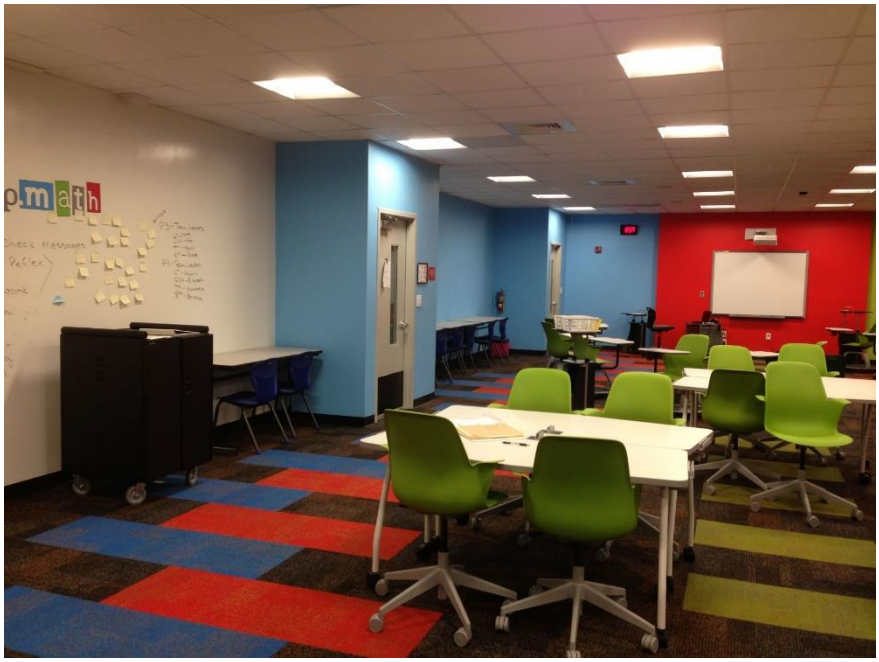

iPrep Math

August 2014 Report

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Executive Summary

Overview of Program Design

Funded by a Race to the Top-District grant, iPrep Math learning centers were implemented in 49 middle schools in the Miami-Dade County Public Schools during the 2013-2014 school year. The centers were designed to address three issues of concern to the school district: a lull in mathematics achievement during the middle school years; high rates of failure in Algebra 1; and a high number of overage students resulting from the State of Florida's mandatory third grade retention policy.

Expectations were that the iPrep Math program, including re-designed classroom space and technology resources, coupled with content-expert teachers, would address the variability in the prior math preparation of incoming students and the need to remediate over-aged students, as well as the need to provide mastery-based acceleration options for students.

The learning centers were designed to serve 240 students in each middle school. iPrep Math classrooms could accommodate 60 students at a time with multiple teaching and student learning stations. The configurable space could be changed to afford meaningful learning activities. Students would be able to move around according to their individual learning goals and teachers could circulate around the room based on students' needs.

As local staff at each school determined how best to implement the reform effort across different grades and subject areas, there was variation in the grade levels of students, their proficiency in prior standardized testing, and in the subjects taught in the 49 learning centers. Nevertheless, all learning centers were expected to develop a personalized learning environment for students in the program that would lead to student success in math as reflected in increased student achievement.

Evaluation Methodology

A multi-method evaluation design was formulated to evaluate the effectiveness of the iPrep Math program. The design involves the collection of both qualitative and quantitative data to provide formative and summative evaluation reports throughout each year of the grant.

The qualitative component for the present report included school site visits consisting of classroom observations, teacher and principal interviews, and student focus groups. Members of the evaluation team visited 12 randomly selected iPrep Math school sites throughout the year. Reports on the first nine visits were provided to the District in earlier reports. Results from the last three school site visits are included in this report.

The quantitative component includes student, teacher, and parent surveys for students enrolled in iPrep Math courses, principal surveys, and analyses of district data on FCAT Math and Algebra End-of-Course standardized test performance, academic content, effort, and conduct grades, and absences and suspensions.

On-line surveys were administered to key stakeholders of the iPrep Math program: classroom teachers, students, parents/guardians, and principals of the middle school where the learning centers were located. This report includes results of a pre-post "Middle Moves" assessing fall to spring changes in the adjustment of entering 6th grade iPrep Math students. It also includes pre/post data on changes in student academic and math efficacy from fall to spring.

The evaluation team also used a quasi-experimental design to analyze academic and non-academic outcomes for students in the iPrep Math program compared to students in the 49 middle schools who were enrolled in equivalent non-iPrep math courses. Academic outcomes included FCAT Math and Algebra End-of-Course exams. Non-academic outcomes were absences and suspensions.

The current assessment of the iPrep Math program yielded several key findings, both from the qualitative studies and from the quantitative analysis of survey results and school academic and non-academic outcomes that were the focus of iPrep Math.

Qualitative Findings

- Site visits confirmed earlier impressions that most students were excited about the physical classroom design and the technology available to them. Many were able to use the technology at home, but some did not have access to the Internet, or did not have a computer at home. Most students appreciated the self-pacing and independence of iPrep Math, others indicated a desire for more direct instruction by their teachers.

- In general, teachers at the site visits shared concerns about the selection of the students placed in iPrep, noting that students varied in their ability to be successful in the iPrep Math classroom. They often noted that students who were academically motivated and able to work independently, regardless of their FCAT Level, adapted more readily and progressed at a faster pace, and many students who were initially challenged by the iPrep design learned how to work more independently and to adhere to the regimen established in the iPrep Math class. This was not universal, however.

- Overall, principals interviewed at site visits appeared to be satisfied with the implementation of the iPrep Math program. They were aware of and appreciated innovative aspects of the program, and were hopeful that student performance in math would be positively impacted. The principals were mindful of the central role played by the iPrep Math teachers. The teachers' expertise with classroom organization and management, their ability to work as a team, and their comfort with technology, and excitement about innovation were recognized as being pivotal.

- The principals also viewed the current year, to some extent, as a pilot year and they were monitoring the data being generated about student performance on different measures of math achievement. This information will inform decisions about how to move forward in the next two years of the implementation of the iPrep Math program.

Quantitative Findings

- The Middle Moves Survey assessing 6th graders' adjustment to middle school showed some gains from fall to spring. Students were better able to identify key individuals and resources, less likely to feel lost and less worried about having more teachers. For other areas, including those pertaining to the amount of work, worry about grades, and consequences regarding failing to following the rules there was a decline over the year. As surveys were not administered to non-iPrep Math students, it was not possible to determine if iPrep Math students were better served with the Middle Moves curriculum.

- Academic and Math Efficacy Surveys administered to iPrep Math students in the fall and the spring showed that student ratings of their personal efficacy were generally high across the year, but efficacy ratings declined somewhat from fall to spring.

- iPrep Math students performed better than the comparison students on the FCAT Math measures (scores and proficiency levels) in both 2013 and 2014, but gains in performance were somewhat smaller than those for the Non-iPrep Math comparison students.

- On the Algebra End-of-Course exam, there were no significant differences between groups in Grade 7 but iPrep Math students in Grade 8 had significantly lower scores and pass rates compared to non-iPrep Math students.

- iPrep Math students received somewhat lower course academic content grades, but higher effort grades, compared to non-iPrep Math students.

- iPrep Math students had fewer absences and were less likely to be suspended relative to the comparison group, but whether there were pre-existing absence and suspension rate differences between the iPrep Math and comparison students is unknown.

- iPrep Math student progress with the Carnegie MATHia software was related to better performance on both the FCAT Math and Algebra End-of-Course (EOC) tests.

- Increases in student academic self-efficacy were also associated with higher FCAT Math and Algebra End-of-Course (EOC) scores.

In sum, iPrep Math has not yet resulted in observable gains in FCAT performance and 8th grade performance on the Algebra End-of-Course (EOC) exam was lower for iPrep Math students. This is a finding that would be important for program administrators to address.
However, as this is the initial year of iPrep Math implementation, no definitive conclusions can be drawn about the effectiveness of the program. As a primary goal of the program is to innovate markedly new ways of teaching and learning, it will likely take additional time for teachers and students to adjust. Thus, it is not surprising that gains are not demonstrable at this point.

As students, teachers, and school administrators undertake the second operational year following a year of experience with the model, we may see that returning students and teachers have adapted to this new learning environment. New students admitted to the iPrep Math program in

2014-2015 may face the same challenges and issues as the first cohort of students confronted in 2013-2014.

Attention, also, needs to be given to the question of the target audience for the iPrep Math program. There is a tendency in some schools for the iPrep program to become an enrichment program for mid-to high performing students, rather than, as was initially designed, a program for those who are or are at risk of falling behind. The comments provided by teachers, principals, and students in surveys, as well as during interviews and focus groups contained in this and earlier reports provide a basis for the future direction of the program.

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Section 1: Introduction

The iPrep Math learning centers began their implementation at 49 middle schools in the Miami-Dade County Public schools (M-DCPS) during the 2013-2014 school years. The innovative learning centers were designed to address three educational issues confronting the District: the lull in mathematics achievement during the middle school years of students; the unusually high rates of failure in Algebra 1; and the overage middle school years of students resulting from the State of Florida's mandatory third grade retention policy. The expectation was that the iPrep Math program at the middle schools, particularly the technology resources coupled with the content-expert teachers, would address the variability in the prior math preparation of incoming students, the need to remediate over-aged students, and the need to provide mastery-based acceleration options for students. Because there were 49 middle schools where the iPrep Math program would be implemented, it was expected that local staff at each school would be in the best situation to determine how best to implement the reform effort across different grades and subject areas. Therefore, there would be variation in the grade level of students, their proficiency in prior standardized testing, and in the subjects taught in the 49 learning centers.

Although it was expected that there would be variability across the 49 middle schools as to the implementation of the iPrep Math program, nevertheless, all learning centers were expected to develop a personalized learning environment for students in the program that would lead to student success in math as reflected in increased student achievement. The one learning center at each middle school was designed to serve 240 students. The classrooms were designed to accommodate 60 students at a time with multiple teaching and student learning stations. The configurable space could be changed to accommodate meaningful learning activities according to the individual learning needs of students in the class at that time. Students would be able to move around the room according to their individual learning needs at any one time and teachers could circulate around the room based on students' learning needs.

Evaluation Design

The data to be collected during the three years of implementation will enable a systematic analysis of the iPrep Math model and its components, using a multi-method evaluation design. Multi-method evaluation includes both qualitative and quantitative methods. The design allows for a triangulation of data to provide, during each of the three years of implementation, formative and summative evaluation reports that the M-DCPS can review to monitor and, perhaps, to modify the program if so desired.

Qualitative Design Components. The qualitative component includes school site visits consisting of classroom observations, teacher and principal interviews, and student focus groups. It also includes focus groups with teachers conducted on professional development occasions. Teacher focus group findings were included in a previous report.

As part of the effort to monitor implementation of the initial 2013-2014 school year, members of the evaluation team visited 12 randomly selected iPrep Math school sites. The 12 site visits were conducted periodically throughout the 2013-2014 school year. The *iPrep Math-External*

Evaluators Implementation Fidelity Rubric (IFR) developed by the iPrep Math staff, the Carnegie staff, and the external evaluation team was utilized to observe iPrep Math classes during the school day. In addition, during each site visit iPrep Math teachers and the principals were individually interviewed, and a focus group was conducted with students. Reports on the first nine visits were provided to the District in earlier reports. Results from the last three school site visits can be found in Section 7 of this report.

Quantitative Design Components. The quantitative components includes student, teacher, and parent surveys for students enrolled in iPrep Math courses, principal surveys, and analyses of district data on FCAT Math and Algebra End-of-Course standardized test performance, academic content, effort, and conduct grades, and absences and suspensions.

On-line surveys were administered to key stakeholders of the iPrep Math program: classroom teachers, students, parents/guardians, and principals of the middle school where the learning centers were located. The questionnaires for the teachers and students were mostly aligned with each other in terms of content. The results of the teacher and the parent/guardian surveys were provided to the District in earlier reports by the external evaluation team.

Section 2 of this report includes the results of the pre/post "Middle Moves" student surveys that assess changes in student adjustment to middle school for students in Grade 6. Section 3 includes pre/post data on changes in student academic and math efficacy during the 2013-2014 school years. The results of the principal survey can be found in Section 6 of this report.

The evaluation team also analyzed academic and non-academic outcomes for students in the iPrep Math program and a comparison group of students in the 49 middle schools who were not enrolled in iPrep Math. A quasi-experimental research design was developed by the external evaluation team to enable comparisons of iPrep Math students with students who are not enrolled in iPrep Math. Specifically, in order to examine the effectiveness of the iPrep Math model academic and non-academic outcomes are examined for iPrep Math students compared to Non-iPrep math students in the same schools who are taking equivalent math courses in Non-iPrep Math classrooms.

A quasi-experimental design is used rather than a true experimental design because neither schools nor students were randomly selected for the iPrep Math model. Some students self-selected iPrep Math, others were placed in iPrep Math classes. Some schools placed their highest performing students in iPrep Math, others their lowest performing students. Some schools limited iPrep Math to one grade while others had two to three grades in iPrep Math.

Academic outcomes that were examined included FCAT Math and Algebra End-of-Course exams. The results of these analyses can be found in Section 4 of this report. The non-academic outcomes examined were absenteeism and suspensions. Analyses of these outcomes can be found in Section 5 of this report.

Section 2: "Middle Moves" Survey Results [Performance Measure (E)(3)(c)]

The transition from elementary to middle school is often associated with declines in academic motivation and performance and increases in behavioral problems, leading to efforts to create developmentally appropriate curricula for middle school students (Ryan, Shim, & Makara, 2013). During each year of the iPrep Math program, incoming Grade 6 students at each middle school are exposed to the "Middle Moves" curriculum. This curriculum is designed to ease the transition from elementary to middle school.

In order to assess the impact of the curriculum on iPrep students, an online 24-item "Middle Moves" survey was developed by the External Evaluation Team and administered twice during the 2013-2014 school year. The items in the survey are tied to the goals of the curriculum, which are for students to (1) identify the role of key individuals and where to secure information and receive services; (2) develop self-confidence in their ability to function within the middle school environment; (3) be able to compare and contrast learning in elementary and in middle school; (4) be able to generate strategies and identify behaviors for succeeding in middle school; and (5) be able to generate consequences that result when rules are not followed.

The "Middle Moves" survey was completed in the beginning of the 2013-2014 school year (fall), from 8/19/2013 to 8/30/2013, by 2,572 incoming 6th grade students enrolled in the iPrep Math program. The survey was re-administered at the end of the school year (spring), from 5/18/2014 to 6/04/2014. Of those students completing the survey during the fall administration, 1732 (67.3%) completed the survey again in the spring.

The grant-specified goal of the project [Performance Measure (E)(3)(c)] was to increase, by 10% over the fall baseline, students' "knowledge of and comfort with the procedures and requirements of middle school" as student "understanding of how middle school works and how to work effectively in middle school" is viewed as a "key factor in success in middle school." The results for this baseline year for all participants with fall and spring surveys are presented in Tables 1 and 2. These tables include the items developed to assess each goal and the fall and spring student responses to each item.

For the first set of items, assessing students' ability to identify key individuals and resources (Goal 1), the numbers and percentages of students who indicated that they knew of the relevant resource are presented in Table 1. These results indicate that 3 of the 4 items assessing knowledge of resources evidenced positive change of at least 10%. These changes were statistically significant, as assessed through McNemar's non-parametric test for related samples, with a probability less than.0001 that the observed pre-post differences were due to chance.

Specifically, students were more likely to know the names of the school counselor and the principal and more likely to know at least one place to go for an attendance admit form. Almost all students were able to identify at least one person to go to if they were experiencing trouble with other students and this did not change over time.

The numbers and percentages of students checking specific answers regarding where to go for attendance admit forms and if they were experiencing trouble with other students are also presented. (These numbers/percentages do not add up to the total numbers/percentages of students knowing at least one resource because students could check multiple responses on these items). Students were more likely in the spring to indicate the attendance office and the person collecting excuse letters as sources for admit forms. They were also more likely in the spring to indicate counselors, Trust specialists, administrators, and parents, as someone to talk to about trouble with other students. These results were consistent with the aims of Goal 1.

Table 1
Middle School Transition Survey for Evaluation of "Middle Moves" Curriculum: Goal 1

Goal and Items Assessing Goal	Fall		Spring		
Goal 1: Identify the role of key individuals & where to secure information & receive services	**N**	**%**	**N**	**%**	**% Change**
I know the name of my school counselor at this middle school	707	40.8	1456	84.1	106.13
I know the name of the principal for my middle school	1237	71.4	1623	93.7	31.23
*If I need an "attendance admit form," I know that I need to go to…..	1456	84.1	1622	93.6	11.30
….the attendance office	843	48.7	1034	59.7	22.59
….the main office	948	54.7	971	56.1	2.56
….my homeroom teacher	382	22.1	420	24.2	9.50
….the person who collects absence excuse letters	280	16.2	424	24.5	51.23
….someone else	43	2.5	51	2.9	16.00
*If I am having trouble with other students in this middle school, I know that I need to talk to …	1661	95.9	1661	95.9	0.00
….my school counselor	1322	76.3	1407	81.2	6.42
….the TRUST specialist	385	22.2	471	27.2	22.52
….a school administrator	637	36.8	738	42.6	15.76
….my parent	876	50.6	1055	60.9	20.36
....my teacher	977	56.4	899	51.9	-7.98
….someone else	83	4.8	138	8.0	66.67

**Total knowing at least one source. Because students could check multiple answers, figures for specific resources do not add to the total knowing a source.*

For the remaining items, assessing Goals 2 through 5, students were asked to indicate the extent to which they agreed or disagreed with each item on a 4-point scale. Scale points and numeric values for these items are Really Disagree (1), Sort of Disagree (2), Sort of Agree (3) and Really Agree (4). To determine whether there were significant pre-post differences in students' responses to these items, paired sample *t*-tests were conducted for each item. Table 2 includes

the mean (average scores), standard deviation (variability of response), pre-post difference *t* value, and percent change for each item. Higher means indicate greater agreement with the item.

Two items reflected a positive change consistent with the curriculum goals. These were items under Goal 2, "I feel lost in my middle school because it's bigger than my elementary school" and "I worry about having so many more teachers in middle school than I had in elementary school." Students were significantly less likely to report feeling lost and less worried about having more teachers in the spring. Both items met the criterion of 10% change in a goal consistent direction. [Performance Measure (E)(3)(c)].

Table 2
Middle School Transition Survey for Evaluation of "Middle Moves" Curriculum: Goals 2-5

Goals and Items Assessing Each Goal	**Fall**		**Spring**		***t***	**% Change**
Goal 2: Develop self confidence in ability to function within middle school environment	**Mean**	**Std. Dev.**	**Mean**	**Std. Dev.**		
I am excited about being in middle school.	3.74	0.52	3.31	0.80	20.90*	-11.45
I feel lost in my middle school because it's bigger than my elementary school.	2.52	1.09	1.84	0.98	21.58*	-27.19
I am sure that I can successfully complete the school work expected of me in middle school.	3.62	0.60	3.39	0.72	11.63*	-6.35
I can handle the different things that different teachers expect of me in middle school.	3.47	0.63	3.28	0.75	9.09*	-5.19
I worry about having so many more teachers in middle school than I had in elementary school.	2.29	1.10	2.06	1.06	7.29*	-10.17
Goal 3: Compare and contrast learning in elementary to learning in middle school	**Mean**	**SD**	**Mean**	**SD**	***t***	**% Change**
I think I will have to study harder in middle school than I did in elementary school.	3.74	0.55	3.55	0.70	9.95*	-5.19
I worry that my grades will be worse in middle school than they were elementary school.	2.32	1.06	2.60	1.08	-8.92*	12.10
More is expected of me in middle school than when I was in elementary school	3.64	0.63	3.61	0.66	1.39	-0.78
I have to take more notes in my middle school classes than I did in elementary school.	3.62	0.66	3.49	0.75	5.64*	-3.40

Goal 4: Generate strategies and identify behaviors for succeeding in middle school	**Mean**	**SD**	**Mean**	**SD**	***t***	**% Change**
I understand how I am expected to behave in middle school.	3.87	0.39	3.63	0.62	14.32*	-6.07
I always fight back when someone picks on me.	2.24	1.06	2.60	1.07	-12.12*	16.09
I often say whatever comes to my mind, without thinking about others.	1.88	0.99	2.12	1.03	-8.09*	12.78
When I'm angry, people had better get out of my way.	1.92	1.05	2.24	1.13	-11.26*	16.88
I'll try anything once. I don't care if it's not safe	1.56	0.90	1.88	1.04	-11.88*	20.79
Goal 5: Generate consequences that result when rules are not followed	**Mean**	**SD**	**Mean**	**SD**	***t***	**% Change**
I think that I will get into more trouble in middle school than I did in elementary school.	1.68	0.91	2.26	1.08	-19.66*	34.57
Sometimes I get in trouble because I copy what my friends are doing.	1.35	0.78	1.71	0.97	-13.86*	26.77
I know that I might get into trouble if I don't follow the rules in this middle school.	3.80	0.60	3.68	0.63	6.12*	-3.22
I am aware of what would happen if I come to school late.	3.80	0.51	3.62	0.66	9.38*	-4.56
I am aware of what would happen if I don't do my homework on time.	3.84	0.45	3.66	0.61	10.40*	-4.56
I need to work on controlling my temper when I get angry.	2.17	1.20	2.24	1.17	-2.05	3.00

*Fall-spring difference is statistically significant, with less than a.0001 probability that the difference is due to chance.

Pre-post differences on the remaining items were not in a goal-consistent direction. Under Goal 2, developing self-confidence, students were less excited about being in middle school and less sure they could complete school work or meet teacher expectations. Under Goal 3, comparing learning in elementary and middle school, students were less likely to say they have to study harder, more worried that their grades will be worse, and less likely to say they have to take more notes in middle school. Under Goal 4, generating success strategies and behaviors, and Goal 5, generating consequences for failing to follow rules, all items changed in a goal inconsistent direction, except the last item regarding need to control temper. *Subgroups*

The results for this baseline year for each of the grant-required subgroups (ethnic groupings [Black, Hispanic, White, Other], economically disadvantaged [ED], English language learners [ELL] and students with disabilities [SWD]) are presented in Table 3. As indicated, similar to the pattern found among the overall student population, the numbers and percent of students in each subgroup (ethnic groupings [Black, Hispanic, White, Other], economically disadvantaged [ED], English language learners [ELL] and students with disabilities [SWD]); knowledge of resources increased at least 10% in 3 of the 4 areas explored (Goal 1). In the spring more than 80% of the students knew the name of their school counselor and school principal, an increase of at least

10% from the fall survey. Also indicating a positive change of more than 10%, in the spring, more than 89% in each of the subgroups were able to identify at least one place to go for an attendance admit form. In the spring, more than 90% of the students in each subgroup were also able to identify at least one person to go to if they were experiencing trouble with other students. This did not change over time.

Each of the subgroups also reflected a positive change in their responses to some of the items pertaining to Goal 2. All of the subgroups met the criterion of 10% change in the goal-consistent direction in their responses to the statement, "I feel lost in my middle school because it's bigger than my elementary school." This was not the case in the responses to the statement, "I worry about having so many more teachers." The students in the Hispanic, White, and Other subgroups demonstrated a change of at least 10%. A change of less than 10% was indicated among students in the ED (-9.50) and ELL (9.57) subgroups, as well as in the Black (-6.05) and SWD (-6.04) subgroups.

Table 3
Middle School Transition Survey for Evaluation of "Middle Moves" Curriculum

Goals and Items Assessing Each Goal					
Goal 1: Identify the role of key individuals & where to secure information & receive services	**Fall**		**Spring**		
I know the name of my school counselor at this middle school	**N**	**%**	**N**	**%**	**% Chg.**
All Participants	707	40.80	1456	84.10	106.13
Black	154	37.60	334	81.50	116.76
Hispanic	462	40.90	955	84.50	106.60
White	70	46.40	132	87.40	88.36
Other	21	51.20	35	85.40	66.80
ED	544	40.30	1126	83.30	106.70
ELL	94	48.50	170	87.60	80.62
SWD	31	52.50	48	81.40	55.05
I know the name of the principal for my middle school	**N**	**%**	**N**	**%**	**% Chg.**
All Participants	1237	71.40	1623	93.70	31.23
Black	288	70.20	394	96.10	36.89
Hispanic	795	70.40	1048	92.70	31.68
White	123	81.50	140	92.70	13.74
Other	31	75.60	41	100.00	32.28
ED	950	70.30	1268	93.90	33.57
ELL	129	66.50	176	90.70	36.39
SWD	38	64.40	52	88.10	36.80

If I need an "attendance admit form", I know that I need to go to…..	**N**	**%**	**N**	**%**	**% Chg.**
All Participants	1456	84.10	1622	93.60	11.30
Black	348	84.40	380	92.70	9.83
Hispanic	956	84.60	1063	94.10	11.23
White	121	80.10	140	92.70	15.73
Other	33	80.50	39	95.10	18.14
ED	1132	83.80	1269	93.90	12.05
ELL	162	83.50	181	93.30	11.74
SWD	50	84.70	55	93.20	10.04
If I am having trouble with other students in this middle school, I know that I need to talk to …	**N**	**%**	**N**	**%**	**% Chg.**
All Participants	1661	95.90	1661	95.90	0.00
Black	380	92.70	391	95.40	2.91
Hispanic	1094	96.80	1087	96.20	-0.62
White	148	98.00	146	96.70	-1.33
Other	39	95.10	37	90.20	-5.15
ED	1290	95.50	1290	95.50	0.00
ELL	175	90.20	184	94.80	5.10
SWD	54	91.50	53	89.80	-1.86

Goal 2: Develop self confidence in ability to function within middle school environment		**Fall**		**Spring**		
I am excited about being in middle school.	**N**	**Mean**	**Std. Dev.**	**Mean**	**Std. Dev.**	**% Chg.**
All Participants	1732	3.74	0.52	3.31	0.80	-11.45
Black	410	3.74	0.56	3.47	0.74	-7.31
Hispanic	1130	3.78	0.48	3.27	0.81	-13.36
White	151	3.55	0.57	3.26	0.80	-8.21
Other	41	3.59	0.67	3.20	0.78	-10.88
ED	1351	3.77	0.51	3.33	0.80	-11.80
ELL	194	3.81	0.48	3.44	0.77	-9.73
SWD	59	3.73	0.52	3.31	0.86	-11.36
I feel lost in my middle school because it's bigger than my elementary school.	**N**	**Mean**	**SD**	**Mean**	**SD**	**% Chg.**
All Participants	1732	2.52	1.09	1.84	0.98	-27.19
Black	410	2.61	1.10	2.05	0.98	-21.38
Hispanic	1130	2.50	1.09	1.79	0.98	-28.20
White	151	2.45	1.05	1.68	0.88	-31.35
Other	41	2.66	1.02	1.49	0.75	-44.04
ED	1351	2.58	1.10	1.89	1.01	-26.67
ELL	194	2.78	1.07	2.07	1.09	-25.74
SWD	59	2.68	1.15	2.17	1.10	-18.99

I am sure that I can successfully complete the school work expected of me in middle school.	**N**	**Mean**	**SD**	**Mean**	**SD**	**% Chg.**
All Participants	1732	3.62	0.60	3.39	0.72	-6.35
Black	410	3.62	0.64	3.36	0.75	-7.27
Hispanic	1130	3.61	0.59	3.38	0.72	-6.42
White	151	3.63	0.55	3.52	0.60	-2.92
Other	41	3.68	0.47	3.39	0.63	-7.95
ED	1351	3.61	0.61	3.37	0.73	-6.82
ELL	194	3.47	0.73	3.31	0.80	-4.46
SWD	59	3.46	0.73	3.29	0.81	-4.90
I can handle the different things that different teachers expect of me in middle school.	**N**	**Mean**	**SD**	**Mean**	**SD**	**% Chg.**
All Participants	1732	3.47	0.63	3.28	0.75	-5.49
Black	410	3.48	0.66	3.31	0.73	-4.97
Hispanic	1130	3.45	0.63	3.25	0.76	-6.02
White	151	3.56	0.51	3.44	0.71	-3.53
Other	41	3.41	0.67	3.29	0.72	-3.57
ED	1351	3.46	0.65	3.26	0.77	-5.76
ELL	194	3.35	0.73	3.26	0.80	-2.47
SWD	59	3.27	0.58	3.12	0.91	-4.66
I worry about having so many more teachers in middle school than I had in elementary school.	**N**	**Mean**	**SD**	**Mean**	**SD**	**% Chg.**
All Participants	1732	2.29	1.10	2.06	1.06	-10.17
Black	410	2.42	1.14	2.27	1.07	-6.05
Hispanic	1130	2.24	1.09	2.00	1.06	-10.47
White	151	2.30	1.04	1.91	1.03	-16.71
Other	41	2.32	1.15	1.83	0.92	-21.05
ED	1351	2.32	1.13	2.10	1.08	-9.50
ELL	194	2.64	1.13	2.39	1.17	-9.57
SWD	59	2.53	1.15	2.37	1.13	-6.04

Goal 3: Compare and contrast learning in elementary to learning in middle school		Fall		Spring		
I think I will have to study harder in middle school than I did in elementary school.	**N**	**Mean**	**SD**	**Mean**	**SD**	**% Chg.**
All Participants	1732	3.74	0.55	3.55	0.70	-5.19
Black	410	3.73	0.59	3.53	0.67	-5.49
Hispanic	1130	3.74	0.54	3.54	0.71	-5.32
White	151	3.72	0.55	3.58	0.73	-3.74
Other	41	3.83	0.44	3.68	0.52	-3.82
ED	1351	3.74	0.57	3.53	0.70	-5.47
ELL	194	3.68	0.67	3.55	0.73	-3.64
SWD	59	3.76	0.57	3.54	0.77	-5.86
I worry that my grades will be worse in middle school than they were elementary school.	**N**	**Mean**	**SD**	**Mean**	**SD**	**% Chg.**
All Participants	1732	2.32	1.06	2.60	1.08	12.10
Black	410	2.18	1.13	2.54	1.06	16.55
Hispanic	1130	2.35	1.04	2.64	1.09	12.14
White	151	2.39	1.01	2.48	1.05	3.88
Other	41	2.51	1.19	2.54	1.12	0.97
ED	1351	2.32	1.08	2.64	1.08	13.83
ELL	194	2.71	1.11	2.95	1.05	8.75
SWD	59	2.39	1.02	2.76	1.06	15.60
More is expected of me in middle school than when I was in elementary school	**N**	**Mean**	**SD**	**Mean**	**SD**	**% Chg.**
All Participants	1732	3.64	0.63	3.61	0.66	-0.78
Black	410	3.66	0.64	3.66	0.64	-0.07
Hispanic	1130	3.63	0.65	3.59	0.67	-1.12
White	151	3.62	0.57	3.65	0.57	0.73
Other	41	3.71	0.51	3.56	0.71	-3.95
ED	1351	3.63	0.65	3.60	0.67	-0.84
ELL	194	3.52	0.76	3.51	0.70	-0.44
SWD	59	3.64	0.55	3.58	0.62	-1.86
I have to take more notes in my middle school classes than I did in elementary school.	**N**	**Mean**	**SD**	**Mean**	**SD**	**% Chg.**
All Participants	1732	3.62	0.66	3.49	0.75	-3.40
Black	410	3.67	0.69	3.46	0.76	-5.72
Hispanic	1130	3.60	0.66	3.49	0.76	-3.17
White	151	3.61	0.58	3.63	0.65	0.55
Other	41	3.59	0.67	3.56	0.81	-0.68
ED	1351	3.62	0.68	3.47	0.77	-4.01
ELL	194	3.62	0.69	3.47	0.79	-4.27
SWD	59	3.58	0.67	3.44	0.86	-3.79

Goal 4: Generate strategies and identify behaviors for succeeding in middle school		Fall		Spring		
I understand how I am expected to behave in middle school.	**N**	**Mean**	**SD**	**Mean**	**SD**	**% Chg.**
All Participants	1732	3.87	0.39	3.63	0.62	-6.07
Black	410	3.84	0.41	3.53	0.65	-8.25
Hispanic	1130	3.87	0.40	3.65	0.62	-5.70
White	151	3.92	0.29	3.78	0.53	-3.55
Other	41	3.93	0.26	3.76	0.54	-4.35
ED	1351	3.86	0.41	3.61	0.63	-6.35
ELL	194	3.77	0.52	3.52	0.74	-6.83
SWD	59	3.71	0.64	3.41	0.89	-8.22
I always fight back when someone picks on me.	**N**	**Mean**	**SD**	**Mean**	**SD**	**% Chg.**
All Participants	1732	2.24	1.06	2.60	1.07	16.09
Black	410	2.49	1.12	2.68	1.15	7.54
Hispanic	1130	2.20	1.04	2.63	1.04	19.87
White	151	1.95	0.91	2.21	0.98	13.61
Other	41	2.00	0.92	2.34	0.99	17.07
ED	1351	2.30	1.09	2.67	1.08	16.11
ELL	194	2.21	1.12	2.76	1.07	25.23
SWD	59	2.20	1.08	2.71	1.08	23.08
I often say whatever comes to my mind, without thinking about others.	**N**	**Mean**	**SD**	**Mean**	**SD**	**% Chg.**
All Participants	1732	1.88	0.99	2.12	1.03	12.78
Black	410	2.12	1.10	2.36	1.13	11.26
Hispanic	1130	1.81	0.94	2.07	1.00	14.85
White	151	1.81	0.88	1.87	0.91	3.30
Other	41	1.73	0.92	1.88	0.93	8.45
ED	1351	1.93	1.02	2.19	1.05	13.51
ELL	194	2.09	1.14	2.26	1.07	8.40
SWD	59	2.29	1.00	2.49	1.02	8.89
When I'm angry, people had better get out of my way.	**N**	**Mean**	**SD**	**Mean**	**SD**	**% Chg.**
All Participants	1732	1.92	1.05	2.24	1.13	16.88
Black	410	2.27	1.15	2.47	1.18	8.83
Hispanic	1130	1.83	1.01	2.23	1.11	21.44
White	151	1.66	0.88	1.80	1.00	8.37
Other	41	1.63	0.80	1.95	0.97	19.40
ED	1351	2.00	1.08	2.31	1.14	15.83
ELL	194	2.06	1.14	2.60	1.10	26.32
SWD	59	2.22	1.22	2.42	1.00	9.16

I'll try anything once. I don't care if it's not safe	**N**	**Mean**	**SD**	**Mean**	**SD**	**% Chg.**
All Participants	1732	1.56	0.90	1.88	1.04	20.79
Black	410	1.62	1.01	1.83	1.10	13.25
Hispanic	1130	1.54	0.88	1.92	1.03	24.41
White	151	1.56	0.81	1.74	0.95	11.91
Other	41	1.32	0.65	1.78	0.91	35.19
ED	1351	1.58	0.93	1.92	1.06	21.26
ELL	194	1.64	1.00	2.14	1.20	30.50
SWD	59	1.83	1.09	2.22	1.26	21.30
Goal 5: Generate consequences that result when rules are not followed		**Fall**		**Spring**		
I think that I will get into more trouble in middle school than I did in elementary school.	**N**	**Mean**	**SD**	**Mean**	**SD**	**% Chg.**
All Participants	1732	1.68	0.91	2.26	1.08	34.57
Black	410	1.81	1.02	2.41	1.05	33.11
Hispanic	1130	1.64	0.87	2.25	1.08	36.69
White	151	1.64	0.87	2.05	1.07	25.51
Other	41	1.63	0.83	2.05	1.16	25.37
ED	1351	1.70	0.93	2.31	1.08	35.75
ELL	194	1.87	1.06	2.53	1.11	35.36
SWD	59	1.86	0.97	2.31	1.12	23.64
Sometimes I get in trouble because I copy what my friends are doing.	**N**	**Mean**	**SD**	**Mean**	**SD**	**% Chg.**
All Participants	1732	1.35	0.78	1.71	0.97	26.77
Black	410	1.51	0.96	1.90	1.00	25.28
Hispanic	1130	1.32	0.72	1.70	0.97	28.85
White	151	1.23	0.60	1.43	0.79	16.76
Other	41	1.20	0.56	1.44	0.84	20.41
ED	1351	1.39	0.82	1.77	1.00	27.94
ELL	194	1.59	0.97	2.13	1.15	33.98
SWD	59	1.68	0.97	1.95	1.14	16.16
I know that I might get into trouble if I don't follow the rules in this middle school.	**N**	**Mean**	**SD**	**Mean**	**SD**	**% Chg.**
All Participants	1732	3.80	0.60	3.68	0.63	-3.22
Black	410	3.74	0.70	3.55	0.67	-5.28
Hispanic	1130	3.81	0.59	3.70	0.63	-3.09
White	151	3.87	0.44	3.89	0.42	0.34
Other	41	3.80	0.60	3.80	0.51	0.00
ED	1351	3.79	0.62	3.65	0.65	-3.61
ELL	194	3.69	0.72	3.63	0.68	-1.68
SWD	59	3.46	0.97	3.58	0.86	3.43

I am aware of what would happen if I come to school late.	**N**	**Mean**	**SD**	**Mean**	**SD**	**% Chg.**
All Participants	1732	3.80	0.51	3.62	0.66	-4.56
Black	410	3.73	0.60	3.47	0.73	-7.05
Hispanic	1130	3.82	0.48	3.67	0.61	-3.85
White	151	3.80	0.46	3.68	0.70	-3.14
Other	41	3.90	0.37	3.71	0.64	-5.00
ED	1351	3.80	0.53	3.61	0.67	-4.99
ELL	194	3.68	0.67	3.56	0.70	-3.23
SWD	59	3.78	0.53	3.49	0.68	-7.62
I am aware of what would happen if I don't do my homework on time.	**N**	**Mean**	**SD**	**Mean**	**SD**	**% Chg.**
All Participants	1732	3.84	0.45	3.66	0.61	-4.56
Black	410	3.78	0.54	3.47	0.71	-8.26
Hispanic	1130	3.85	0.41	3.71	0.58	-3.70
White	151	3.84	0.46	3.79	0.52	-1.38
Other	41	3.95	0.22	3.80	0.46	-3.70
ED	1351	3.83	0.46	3.63	0.64	-5.37
ELL	194	3.75	0.54	3.57	0.67	-4.81
SWD	59	3.75	0.58	3.54	0.70	-5.43
I need to work on controlling my temper when I get angry.	**N**	**Mean**	**SD**	**Mean**	**SD**	**% Chg.**
All Participants	1732	2.17	1.20	2.24	1.17	3.00
Black	410	2.51	1.25	2.44	1.23	-2.82
Hispanic	1130	2.10	1.18	2.22	1.15	5.65
White	151	1.90	1.04	1.91	1.06	0.70
Other	41	1.83	1.09	1.98	1.08	8.00
ED	1351	2.26	1.23	2.31	1.18	2.20
ELL	194	2.58	1.26	2.53	1.19	-2.20
SWD	59	2.56	1.19	2.44	1.19	-4.64

Summary and Conclusions

In sum, consistent with the aims of Goal 1, students were better able to identify key individuals and resources from the fall to the spring survey administrations. Some aspects of Goal 2 also evidenced positive change, in that students were less likely to feel lost and less worried about having more teachers in the spring. Changes on items reflecting aspects of the remaining goals were largely goal-inconsistent.

These findings are consistent with the general trend toward less desirable behavior observed in many students following the middle school transition (Galvin et al., 2013). In a study of elementary and middle school student norms and values, Galvin, Spatzier, and Juvonen (2011) found that increases in student social status or "coolness" in middle school were associated with the extent to which they were perceived by their peers as devaluing academic performance and endorsing antisocial behavior.

It should be noted, however, that responses at both times were generally positive, with mean values between 3 (Somewhat Agree) and 4 (Strongly Agree) on items for which agreement indicated goal consistency (such as being excited about middle school), and mean values less than 3 on items for which disagreement indicated goal consistency (such as worry that grades will be worse). Also, because the survey was administered only to students in iPrep Math classes, there is no way to determine whether the "Middle Moves" curriculum was more or less effective for iPrep Math students than for those not in iPrep Math. It is possible that these changes might have been more negative in the absence of the "Middle Moves" curriculum.

Section 3: General Academic and Math Self-Efficacy Survey Results [Performance Measure (E)(3)(j)]

In a search of the relevant literature, the Evaluation Team identified two scales with demonstrated reliability and validity that could be used to assess academic and math efficacy in middle school students. These are the Morgan-Jinks Student Efficacy Scale (Jinks & Morgan, 1999) and the math efficacy subscale of the Fouad and Smith (1997) Middle School Self Efficacy Scale. Both scales have been used in research and in evaluation of prior school enhancement programs (Conners & Walters, 2007; Dimmitt, 2007; Fouad & Smith, 1997; Navarro et al,, 2007; Niehaus et al., 2012; Public Profit, 2010).

At the beginning of the 2013-2014 school year (from 8/19/2013 to 8/30/2013), and at the end of the year (5/18/2014 to 6/04/2014), students were asked to complete an on-line Student Academic/Math Self-Efficacy Survey, posted by the External Evaluation Team. The survey included both the general Morgan-Jinks academic self-efficacy scale (Jinks & Morgan, 1999) and the Fouad-Smith math-specific self-efficacy scale.

The general scale consists of 30 items (28 items were used in the present evaluation) with possible responses ranging from 1 (really disagree) to 4 (really agree). The scale has three subscales assessing various components of academic efficacy: Talent, Context, and Effort. Sample items are "I am one of the best students in my class" (Talent), "Teachers like kids even if they don't always make good grades" (Context), and "I always get good grades when I try hard" (Effort). However, Jinks and Morgan (1999) indicated that the subscales are correlated with each other and with self-reported school grades, and the internal consistency (alpha) reliability of the scale as a whole (.82) was higher than for the subscales (.66 to.78). Thus, although subscale results are included in this report for descriptive purposes, the full scale is the primary means of assessing academic self-efficacy in the evaluation of the iPrep Math program. The scale had high internal consistency (alpha) reliability (.80) for the current sample of iPrep Math students.

The math-specific scale consists of 6 items measuring students' perceptions of their ability to perform in math-related tasks. Response options range from 1 (very low ability) to 5 (very high ability). A sample item is, "How much ability do you think you have to earn an A in math this year?" Fouad and Smith (1997) reported an internal consistency (alpha) reliability coefficient of.70 for the math efficacy scale for a sample of middle school students participating in an intervention program to promote math/science career goals. Internal consistency (alpha) reliability of the scale was.76 for the current sample of iPrep Math students.

The Student Academic/Math Self-Efficacy Survey was completed at the beginning of the year by 9,129 incoming 6th, 7th, and 8th grade students enrolled in the iPrep Math program. The responses provided baseline data on students' general academic and math self-efficacy beliefs prior to their immersion in the new iPrep Math teaching and learning model. A report on those results was included in the December 2013 iPrep Math Formative Report prepared by the Evaluation Team.

In May 2014, this survey was conducted again and responses were received by 7,062 students. Of those, 5,476 (78%) respondents had both fall and spring survey results. These matched surveys represent approximately 50% of the total number of iPrep Math participants (11,419 as of October, 2013). The fall administration represents the baseline measure of academic and math efficacy for the following years, as students develop greater familiarity with the iPrep Math model. The fall and spring administrations for each year provide a measure of change over each year for those students who continue in the iPrep Math program.

For all participants with fall and spring surveys, the results are presented in Table 4 for the general academic self-efficacy scale and in Table 5 for the math-specific self-efficacy scale. These tables include average (mean) scores and indices of variability (standard deviations) for fall and spring, along with the results of *t*-tests assessing the statistical significance of fall-spring score differences. These tables also include the percentages of change in mean values from fall to spring, as the grant specified criterion of improvement is a 10% increase over baseline. [Performance Measure (E)(3)(j)].

Table 4
Morgan-Jinks Student Self-Efficacy Scale
Total Scale and Subscale Means and Standard Deviations for 2013-2014 Baseline Year
(Range 1-4; Higher scores=higher efficacy)

	Fall (Baseline)		**Spring**		***t***	**% Change**
	Mean	**Std. Dev.**	**Mean**	**Std. Dev.**		
Total Scale	3.38	0.27	3.19	0.35	43.60*	-5.58
Talent Subscale	3.28	0.32	3.11	0.40	34.42*	-5.23
Context Subscale	3.55	0.27	3.35	0.37	40.95*	-5.64
Effort Subscale	3.37	0.45	3.15	0.50	31.20*	-6.48

*Pre-post difference in mean scores was statistically significant, with less than.0001 probability that the difference was due to chance.

Table 5
Fouad & Smith Perceived Math Ability Scale
Scale Means and Standard Deviations for 2013-2014 Baseline Year
(Range 1-5; Higher scores = higher efficacy)

Fall (Baseline)		**Spring**		***t***	**% Change**
Mean	**Std. Dev.**	**Mean**	**Std. Dev.**		
3.84	0.61	3.80	0.74	4.58*	-1.23

*Pre-post difference in mean scores was statistically significant, with less than.0001 probability that the difference was due to chance.

As can be seen in Tables 4 and 5, in both fall and spring, all of the mean scores were above 3 on the 4-point academic self-efficacy scale and above 3.8 on the 5-point perceived math ability scale, indicating relatively high self-efficacy and perceived ability. However, there was some reduction in students' self-ratings of both general academic and math efficacy. The decline in general efficacy was consistent across subscales.

The results for the fall and spring surveys for the general academic self-efficacy scale and the math-specific self-efficacy scale for subgroups (ethnic groupings [Black, Hispanic, White, Other], economically disadvantaged [ED], English language learners [ELL], and students with disabilities [SWD]) are presented in Table 6. Table 6 includes means and standard deviations of the subgroup scores for fall and spring, along with the results of *t*-tests assessing the statistical significance of fall-spring score differences, and percentages of change in the mean values from fall to spring [Performance Measure (E)(3)(j)]

Table 6
Means, Standard Deviations, and Percentages of Change in General Academic Self Efficacy (Total Scale) and Math Efficacy Scores for 2013-2014 Baseline Year

		Fall (Baseline)		Spring		*t*	% Change
All Participants	**N**	**Mean**	**Std.Dev.**	**Mean**	**Std.Dev.**		
Self- Efficacy Total Scale	5476	3.38	0.27	3.19	0.35	-43.59*	-5.58
Math Efficacy Scale	5476	3.84	0.61	3.80	0.74	-4.59*	-1.23
Black							
Self- Efficacy Total Scale	1245	3.43	0.26	3.23	0.32	-22.18*	-5.73
Math Efficacy Scale	1245	3.96	0.61	3.92	0.73	-1.89	-1.05
Hispanic							
Self- Efficacy Total Scale	3711	3.36	0.27	3.17	0.36	-35.63*	-5.62
Math Efficacy Scale	3711	3.80	0.61	3.74	0.73	-4.98*	-1.63
White							
Self- Efficacy Total Scale	406	3.43	0.25	3.26	0.37	-11.35*	-4.99
Math Efficacy Scale	406	3.87	0.61	3.90	0.72	1.02	0.95
Other							
Self- Efficacy Total Scale	114	3.41	0.27	3.24	0.37	-4.69*	-4.97
Math Efficacy Scale	114	3.80	0.58	3.87	0.80	1.04	2.00
ED							
Self- Efficacy Total Scale	4350	3.37	0.28	3.18	0.36	-39.46*	-5.75
Math Efficacy Scale	4350	3.83	0.62	3.78	0.74	-5.11*	-1.56
ELL							
Self- Efficacy Total Scale	512	3.30	0.30	3.15	0.36	-9.65*	-4.54
Math Efficacy Scale	512	3.83	0.62	3.82	0.69	-.36	-0.34
SWD							
Self- Efficacy Total Scale	255	3.31	0.28	3.18	0.32	-6.24*	-3.90
Math Efficacy Scale	255	3.79	0.63	3.69	0.70	-2.19*	-2.72

As indicated in Table 6, the findings were consistent across subgroups. In both fall and spring, all of the mean scores were above 3 on the 4-point academic self-efficacy scale and the 5-point math ability scale, indicating relatively high self-efficacy and perceived ability, but significant general self-efficacy declines were found for each subgroup. Significant math efficacy declines were also found for several subgroups (Hispanic students, economically disadvantaged [ED] students, and students with disabilities [SWD].

Summary and Conclusions

In sum, students' self-perceived academic efficacy was relatively high across time, but declined somewhat from the fall to the spring. Previous evaluations have found improvement in student self-efficacy perceptions following program implementation (Dimmit, 2007; Fouad & Smith, 1999) and Friedel et al. (2010) reported increases in math self-efficacy among students whose teachers emphasized mastery goals in the classroom. However, other evaluations have found either no change or a slight decline in efficacy following the implementation of programs designed to enhance efficacy and achievement (Niehaus et al., 2012; Public Profit, 2010). In general, in the absence of programs promoting greater efficacy, academic self-efficacy has been found to decline in the middle school environment (Friedel et al., 2010).

The slight decline in student self-efficacy occurring in this first year of the iPrep Math program may be a response to students' need to adapt to a new way of learning and perhaps to greater rigor in the iPrep Math curriculum than students had expected. Other responses from student focus groups and the Student Understanding and Experience Survey have indicated that students find the model more intense and requiring greater effort then they may have encountered in previous math classes. As the program is more established and continuing students have more experience in the iPrep Math classroom, their academic/math self-efficacy may yet increase.

Section 4. Academic Outcomes for iPrep Math and Non-iPrep Math Students

The RTT-D grant specified evaluation of the effects of the iPrep Math program on a number of academic indicators, including standardized test (FCAT and End-Of-Course) data and course grades. To examine the effects of the iPrep Math model for this initial operational 2013-2014 year, data were gathered from several sources.

Miami-Dade County Public schools provided files for each quarter containing demographic, course, and 2013 FCAT data. The first quarter file became the base file of our data set containing 11,419 identified iPrep Math participants. This data set was used to inform the formative reports presented to program staff regarding the demographic and academic characteristics of iPrep Math participants and 32,733 comparison students attending the Middle Schools participating in the iPrep Math program. Comparison students were students enrolled in math courses with course codes equivalent to those for the iPrep designated math courses.

To this file, we added the results of the fall and spring administration of the iPrep Learners Survey. This online student survey included the measures of general academic self-efficacy and math specific efficacy described in detail in a preceding section of this report.

Another addition to this dataset was the annual outcome report from Carnegie Learning which summarized each student's cumulative activity on Carnegie MATHia software, the technology component of iPrep Math. Two indicators of student progress with the MATHia software were included in the present analyses. These were (1) the number of skills encountered by the student and (2) the percentage of skills mastered by the student.

The final outcome file provided by Miami-Dade County Public Schools consisted of fourth quarter/final course grades, FCAT 2014 results, Algebra End-of-Course results, cumulative days absent and counts of suspensions for all students attending Middle Schools that offered the iPrep Math program. These data were subsequently added to the dataset.

These files were integrated such that we could identify iPrep Math participants with an indicator for initial participation and a separate indicator for students who were iPrep Math participants at the end of the school year. New indicators were constructed, (1) to select for students who had been enrolled or not enrolled in iPrep Math courses for the entire year and (2) to select, for analyses involving FCAT data, students who had both baseline (2013) FCAT data and current 2014 FCAT data.

Only students who were in iPrep Math during the entire school year were subject to analysis. An examination of the numbers of iPrep Math participants and comparison participants indicated that 11,419 students were initially enrolled in iPrep Math and 32,733 students were in the comparison classes. By the fourth quarter, 9, 919 of the original iPrep Math participants were still enrolled in iPrep Math courses. An additional 195 students were placed in iPrep Math classes between the first and fourth quarters and 893 of the original iPrep Math students were no longer enrolled in iPrep Math classes. Of the original students in the comparison courses, 30,206 were still enrolled in comparable non-iPrep Math courses at the end of the year. The external

evaluation team will continue to maintain a record of student attrition and addition over the duration of the project, so that students can be identified who participated for one, two, or three years.

Two general research questions were addressed for this August 2014 Report regarding the first operational year of the iPrep Math program: (1) how do iPrep Math students compare to non-iPrep Math students on key academic and non-academic school outcomes specified in the RTT-D grant, and (2) to what extent are student self-efficacy and Carnegie MATHia progress related to academic outcomes for the students enrolled in iPrep Math.

In the analyses conducted for this report, outcome measures included FCAT Math 2013 and 2014 scores and proficiency, Algebra End-of-Course exam scores and pass rates, math course content grades, effort grades, and conduct grades, and student absences and suspensions. The fall and spring general academic and mathematics efficacy student survey results and cumulative activity reports for the Carnegie MATHia software were also included in the analyses. Student demographic characteristics were accounted for, as well as students' initial academic standing.

As noted in the Introduction, these analyses represent a quasi-experimental design. Some students self-selected iPrep Math, others were placed in iPrep Math classes. Some schools placed their highest performing students in iPrep Math, others their lowest performing students. Some schools limited iPrep Math to one grade while others had two to three grades in iPrep Math. Although variation across students and schools is accounted for to some extent by including 2013 test scores and demographics in the analyses, as students were not randomly assigned to the iPrep Math program, less confidence can be placed in the results than would be possible with a true experimental design.

A. Performance on the FCAT Math Test

a. Proficiency (Achievement Level 3) or Higher on FCAT Math Test Among iPrep Math Students [Performance Measure (E)(3)(b)]

iPrep Math students' proficiency indicators for the 2013 and 2014 FCAT Math test are presented in Table 7. The iPrep Math student group consists of students who were designated by M-DCPS as enrolled in an iPrep Math course in both the first and last quarters of the 2013-2014 school year and who completed the 2013 and 2014 FCAT test. Results are also reported for the grant-specified subgroups (Gender, Ethnicity [Black, White, Hispanic, Other], economically disadvantaged (ED), English language learners (ELL), and students with disability (SWD).

The target noted in Performance Measure (E)(3)(b) is a 50% reduction in the percent of Level 1-2 students over a five year period. An examination of the 2013 and 2014 FCAT Math test results served as an initial examination of progress toward this target. As indicated in Table 7, significant changes were noted in the percent of students performing at Level 1-2 across all subgroups. An overall reduction of 0.5% in the percent of students performing at Level 1-2 was found. The results also found a 5.9% reduction among 7th graders and an 8.8% reduction among 8th graders. Sixth graders, however, experienced an increase in the percent of students performing at Level 1-2.

The data also indicated a 2.7% reduction in the percent of students performing at Level 1-2 among females but a 1.6% increase among males. A decrease was noted for Hispanic (-1.1%) and White (-2.1%) students, but a 1.2% increase was noted for Black students. A reduction in the percent of Level 1-2 students was found for economically disadvantaged (ED students (-0.5%), English language learners (ELL) (-0.6%), and students with disabilities (SWD) (-0.1%).

Table 7.
FCAT Math 2013-2014 Proficiency for iPrep Math Students
Level 1-2 and Level 3 or higher

	2013 FCAT		2014 FCAT			Chi Sq.
	Level 3 or higher	**Level 1-2**	**Level 3 or higher**	**Level 1-2**	**Change in Level 1-2**	
All Students	47.8%	52.2%	48.3%	51.7%	- 0.5%	83.29*
Grade						
6	62.6%	37.4%	53.0%	47.0%	+ 9.6%	8.67*
7	45.6%	54.4%	51.5%	48.5%	- 5.9%	8.19*
8	19.3%	80.7%	28.1%	71.9%	- 8.8%	9.48*
Gender						
Female	46.5%	53.5%	49.2%	50.8%	- 2.7%	17.43*
Male	49.0%	51.0%	47.4%	52.6%	+ 1.6%	71.52*
Ethnicity						
Black	37.6%	62.4%	36.4%	63.6%	+ 1.2%	30.27*
Hispanic	49.1%	50.9%	50.2%	49.8%	- 1.1%	70.37*
White	72.9%	27.1%	75.0%	25.0%	- 2.1%	8.06*
Other	77.7%	22.3%	81.3%	18.7%	- 3.6%	8.11*
ED	43.5%	56.5%	44.0%	56.0%	- 0.5%	93.22*
ELL	22.9%	77.1%	23.5%	76.5%	- 0.6%	21.18*
SWD	31.3%	68.7%	31.4%	68.6%	- 0.1%	53.81*

b. Comparison of FCAT Math Test Scores for iPrep Math and Non-iPrep Math Students Enrolled in Comparable Courses

Analyses were conducted to compare the FCAT Math performance of iPrep Math students to non-iPrep Math comparison students in 2013, before the implementation of the iPrep Math program, and in 2014, at the end of the first year of implementation. These analyses included only students with test scores at both times. The iPrep Math student group consists of students who were designated by M-DCPS as enrolled in an iPrep Math course in both the first and last quarters of the 2013-2014 school year. The non-iPrep Math comparison student group consists of students enrolled in equivalent non-iPrep Math courses (courses with the same course code, but not designated as iPrep courses). Results are also reported for the grant-specified

subgroups (Gender, Ethnicity [Black, White, Hispanic, Other], economically disadvantaged (ED), English language learners (ELL), and students with disability (SWD).

Repeated measures analyses of variance were conducted, comparing FCAT 2013 and 2014 Math scores for iPrep Math versus non-iPrep Math students by grade. The results can be seen in Figure 1 and in Table 8.

These results indicate that scores for the iPrep Math group exceeded those for the non-iPrep Math group in both 2013 and 2014. However, a significant iPrep Math Group by Time interaction shows greater gains for the non-iPrep Math students than for the iPrep Math students, although the difference is quite small. Note that the lower scores observed for 8th grade students are likely low because the comparison includes only 8th graders who took the FCAT Math test, not those who took the alternative Algebra End-of-Course (EOC) test.

Figure 1
2013-2014 FCAT Math iPrep Math and Non-iPrep Math Students' Scores by Grade

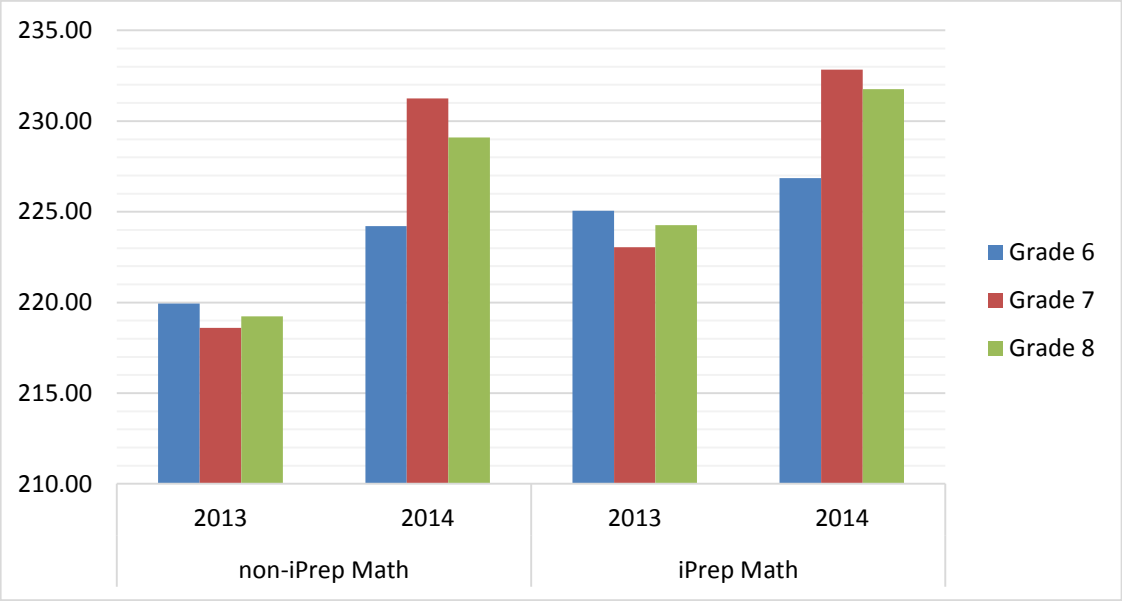


Table 8
2013-2014 Change in FCAT Math Performance for iPrep Math versus Non-iPrep Math Students

	Non-iPrep Math					iPrep Math					Effects	
	FCAT Math 2013		FCAT Math 2014			FCAT Math 2013		FCAT Math 2014			iPrep	iPrep x Time
	Mean	Std. Dev.	Mean	Std. Dev.	N	Mean	Std. Dev.	Mean	Std. Dev.	N	*F*	*F*
Total	219.32	20.44	227.81	21.39	23141	224.00	17.83	230.41	19.28	8610	188.42*	203.19*
Grade												
6	219.94	22.19	224.22	24.52	9389	225.05	19.20	226.86	22.20	3238	77.26*	76.85*
7	218.60	21.13	231.25	20.37	7474	223.04	17.86	232.83	17.78	3983	67.02*	136.97*
8	219.24	16.44	229.09	16.09	6278	224.26	13.83	231.76	14.21	1389	80.07*	37.11*
Gender												
Female	219.91	20.00	229.48	20.54	10951	223.77	17.46	231.13	18.58	4308	68.38*	87.53*
Male	218.79	20.81	226.31	22.02	12190	224.23	18.19	229.69	19.94	4302	160.85*	68.04*
Ethnicity												
Black	214.47	19.63	223.12	20.17	5339	218.83	16.28	224.63	17.76	2418	45.38*	70.86*
Hispanic	219.66	20.34	228.10	21.48	15922	224.81	17.75	231.38	19.04	5545	200.57*	75.03*
White	229.97	18.63	238.62	19.48	1533	235.65	16.73	243.01	18.59	535	31.83*	4.89
Other	230.95	20.32	238.93	20.92	347	239.61	16.87	247.14	19.40	112	16.68*	0.10
ED	217.12	20.03	225.52	21.00	19002	222.25	17.25	228.49	18.71	7163	246.31*	124.38*
ELL	204.40	18.45	214.51	21.37	4771	211.20	17.84	218.43	20.01	1224	88.02*	27.86*
SWD	206.17	20.42	212.95	22.47	3283	215.08	20.99	221.79	22.07	512	87.80*	0.01

*p <.0001

c. Course by Course Comparison of FCAT Math Test Scores for iPrep Math and Non-iPrep Math Students Enrolled in Comparable Courses

The 2013-2014 FCAT Math scores were also compared for students enrolled in each iPrep Math and comparison course. As can be seen in Figure 2 and Table 9, significant but slight differences emerged between the iPrep Math and comparison groups by course. iPrep Math students in M/J Math 1 had higher test scores at both times, but in M/J Math 1 Advanced, non-iPrep Math students had higher scores in 2014, compared to the iPrep Math students. Similar results emerged for the M/J Math 2 and M/J Math 2 Advanced comparisons. iPrep students in M/J Pre-Algebra scored higher in 2013 and 2014, but did not show greater gain in test performance compared to the non-iPrep Math students.

Figure 2
Prep Math and Non-iPrep Math Students FCAT 2013-2014 FCAT Math Scores by Course

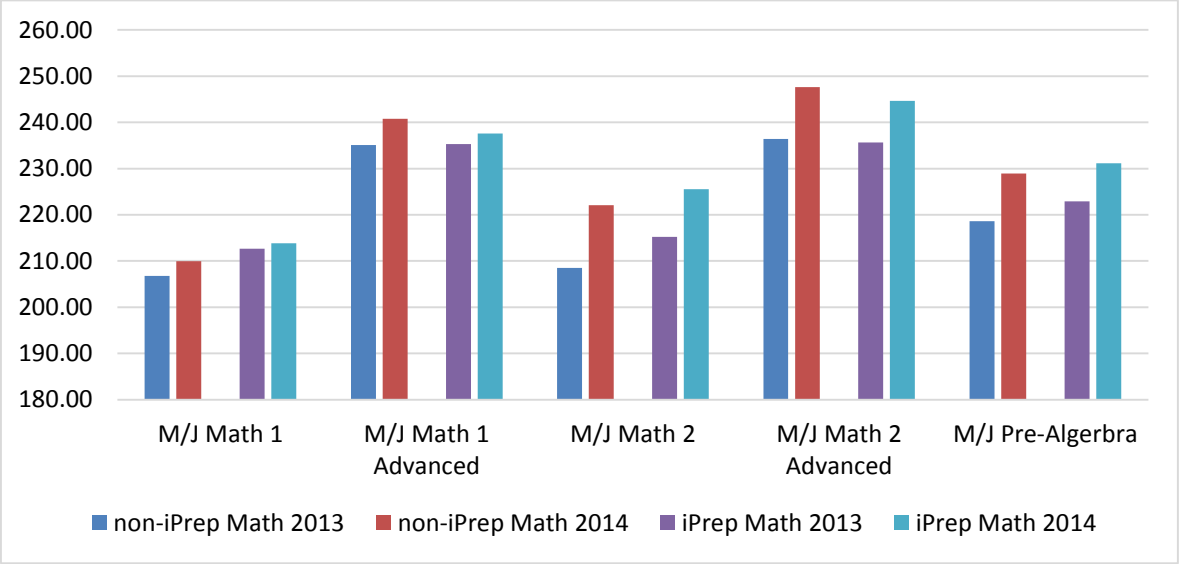


Table 9
Course by Course Analyses of Change in FCAT Scores from 2013 to 2014 for iPrep Math and Non-iPrep Math Students

	Non-iPrep Math					iPrep Math					Effects	
	FCAT Math 2013		FCAT Math 2014			FCAT Math 2013		FCAT Math 2014			iPrep	iPrep x Time
	Mean	Std. Dev.	Mean	Std. Dev.	N	Mean	Std. Dev.	Mean	Std. Dev.	N	*F*	*F*
M/J Math 1	206.80	18.25	209.93	20.91	5063	212.69	15.57	213.86	19.23	1486	90.4*	18.2*
M/J Math 1 Adv.	235.13	15.30	240.75	16.40	4229	235.31	15.50	237.63	18.24	1733	11.65*	100.56*
M/J Math 2	208.53	17.84	222.09	17.47	4764	215.20	15.83	225.53	15.77	2437	168.93*	90.36*
M/J Math 2 Adv.	236.44	13.90	247.66	14.46	2709	235.67	13.18	244.63	14.25	1558	20.63*	51.33*
M/J Pre-Alg.	218.62	16.19	228.90	16.17	6123	222.90	13.24	231.14	14.30	1292	54.38*	26.91*

p <.0001

The next analysis was a multiple regression analysis of predictors of FCAT 2014 performance, including initially the 2013 FCAT scores, followed by iPrep Math enrollment, grade and grant-specified demographic subgroup indicators. Finally, terms representing interactions of iPrep

Math enrollment with grade and with the demographic indicators were included. Significant interaction effects indicate that differences between the iPrep Math and comparison groups varied by grade or demographic group. The standardized beta weights are an indicator of the magnitude and direction of the effect of each predictor on the test scores.

As might be expected, the best predictor of 2014 FCAT performance was the 2013 performance, which accounted for 60% of the variance in 2014 scores (R^2 change) (Table 10). Grade and the demographic predictors together accounted for a small but significant amount of additional variance, as did the following interaction terms. However, of these, only English language learners (ELL) and students with disability (SWD) were affected differentially by enrollment in iPrep Math. ELL students in iPrep Math had lower 2014 test scores whereas SWD students in iPrep Math had higher scores; however, it must be noted that these effects were very slight and likely have little or no practical significance.

Table 10
Predictors of Change in FCAT Math Performance for iPrep Math and Non-iPrep Math Students

Predictor	**Beta**	***T***	**Sig.**	**R^2 Change**	***F* Change**	**Sig. *F* Chg.**
FCAT Math Score 2013	**0.78**	**217.12**	**0.00**	**0.60**	**47141.80**	**<.0001**
Main Effects				**0.03**	**272.87**	**<.0001**
IPrep Math Enrollment	-0.02	-6.76	0.00			
Grade (6, 7, 8)	0.13	37.75	0.00			
Gender (Male)	-0.04	-12.10	0.00			
Black	-0.07	-5.71	0.00			
Hispanic	-0.04	-3.01	0.00			
White	0.00	-0.23	0.82			
Economically disadvantaged	-0.05	-14.41	0.00			
ELL (English language learner)	-0.04	-10.42	0.00			
SWD (Students with disability)	-0.08	-21.24	0.00			
Interactions				**0.00**	**5.83**	**<.0001**
iPrep x Grade	0.04	1.16	0.25			
iPrep x Male	0.00	-0.11	0.91			
iPrep x Black	-0.03	-1.61	0.11			
iPrep x Hispanic	-0.04	-1.51	0.13			
iPrep x White	-0.01	-0.67	0.50			
iPrep x ED	0.00	-0.49	0.63			
iPrep x ELL	-0.01	-2.25	0.02			
IPrep x SWD	0.02	5.78	0.00			

d. Comparison of Proficiency on FCAT Math Test for iPrep Math and Non-iPrep Math Students Enrolled in Comparable Courses

An analysis was also conducted to compare the percentages of iPrep Math and non-iPrep Math students who were deemed proficient (Level 3 and above) on the 2013 and 2014 FCAT Math tests. These results can be seen in Figure 3 and Table 11.

Overall, in 2013, the proficiency rate for iPrep Math students (47.8%) exceeded that for non-iPrep Math students (38.3%). The rate remained higher for iPrep Math students in 2014 (48.3%), although there was only a 0.5% increase in the percentage of these students who were proficient. The proficiency rate for non-iPrep Math students increased by 4.3% in 2014 to 42.6%.

By grade, the proficiency rates overall declined somewhat over time for students in the 6th grade and increased in the 7th and 8th grades. The decline was somewhat greater in the iPrep Math group compared to the non-iPrep Math group, although the iPrep Math 6th graders scored higher on both occasions.

Figure 3
iPrep Math and Non-iPrep Math Students' Math Proficiency on 2013 and 2014 FCAT Math Test by Grade

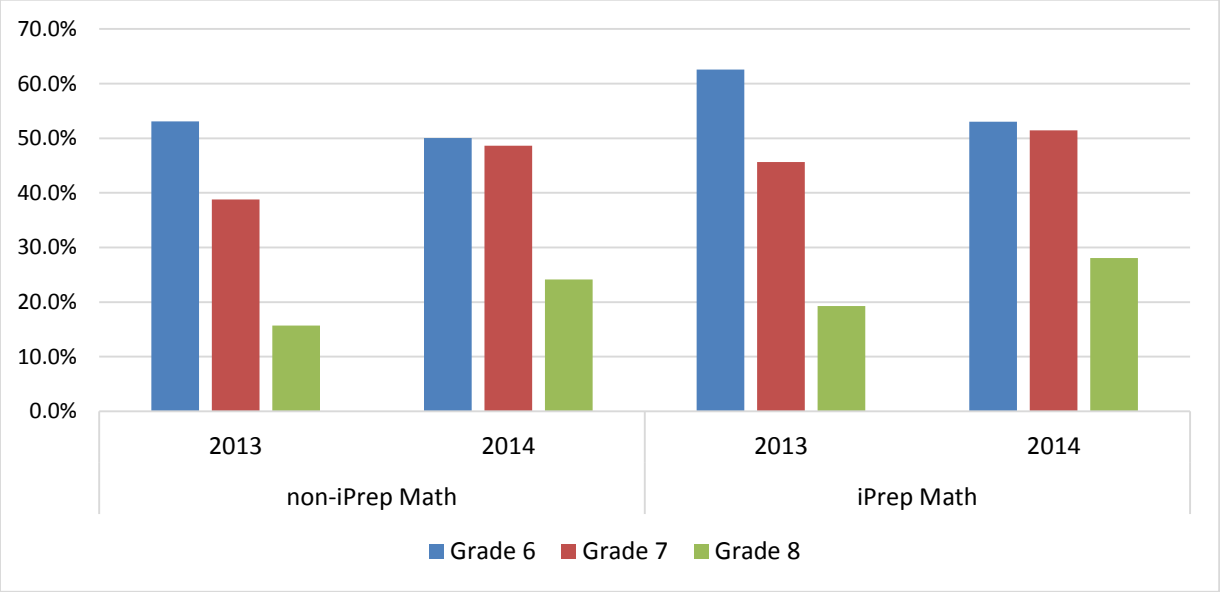


Table 11 also includes proficiency comparison data by the grant-required subgroups. Both females and males in iPrep Math had higher rates of proficiency across time than did females and males who were not in iPrep Math. However, the percentage of iPrep Math males who were proficient dropped slightly over time, whereas the proficiency rate of iPrep Math females increased over time.

The pattern of findings across the remaining subgroups was comparable to that for the students as a whole. That is, the proficiency rate was higher for iPrep Math students in both 2013 and 2014, but proficiency rates increased more from 2013 to 2014 for the Non-iPrep Math students.

Table 11
FCAT Math 2013-2014 Proficiency for iPrep Math and Non-iPrep Math Students

	Non-iPrep Math			iPrep Math		
	2013	**2014**	**Chi Sq.**	**2013**	**2014**	**Chi Sq.**
All Students	38.3%	42.6%	231.88*	47.8%	48.3%	83.29*
Grade						
6	53.1%	50.0%	87.92*	62.6%	53.0%	8.67*
7	38.8%	48.7%	50.63*	45.6%	51.5%	8.19*
8	15.7%	24.1%	10.91*	19.3%	28.1%	9.48*
Gender						
Female	39.4%	45.5%	64.59*	46.5%	49.2%	17.43*
Male	37.3%	40.0%	179.86*	49.0%	47.4%	71.52*
Ethnicity						
Black	24.5%	30.1%	141.52*	37.6%	36.4%	30.27*
Hispanic	40.1%	43.7%	139.20*	49.1%	50.2%	70.37*
White	62.4%	68.4%	19.37*	72.9%	75.0%	8.06*
Other	65.1%	67.1%	6.15	77.7%	81.3%	8.11*
ED	33.3%	37.5%	234.36*	43.5%	44.0%	93.22*
ELL	11.1%	17.8%	114.89*	22.9%	23.5%	21.18*
SWD	15.4%	17.6%	77.16*	31.3%	31.4%	53.81*

*p <.005 or less

B. Academic Content, Effort, and Conduct Grades for iPrep Math and Non-iPrep Math Students in Comparable Math Courses

Analyses of variance were conducted to assess differences in end-of-year content, effort, and conduct grades for iPrep Math versus non-iPrep Math students. Content and conduct grades were assigned numeric scores of 0 (F) to 4 (A). Effort grades had values ranging from 1 for high effort to 3 for low effort. These were reverse coded, so that higher numbers indicate greater effort. The results are presented in Table 12. Non-iPrep Math students earned higher content grades, but iPrep Math students earned higher grades for effort. There were no differences in conduct grades between the two groups.

Table 12 2014 Academic, Effort, and Conduct Grades for iPrep Math and Non-iPrep Math Students							
	Non-iPrep Math			**iPrep Math**			
	Mean	**Std. Dev.**	**N**	**Mean**	**Std. Dev.**	**N**	***F***
Math Grade	2.43	1.04	30156	2.33	1.11	9881	69.02*
Math Effort	1.69	0.71	30156	1.77	0.75	9881	85.63*
Math Conduct	3.25	0.97	30156	3.27	0.87	9881	1.80

C. Performance on the Algebra End-of-Course (EOC) Test

a. Achievement on the Algebra End-of-Course (EOC) Test Among iPrep Math Students [Performance Measure (E)(3)(a)]

iPrep Math students' performance on the 2014 Algebra End-of-Course (EOC) test are presented in Tables 13 and 14. The iPrep Math students presented in these tables consist of students who were enrolled in an iPrep Math course in both the first and last quarters of the 2013-2014 school year and completed the 2014 EOC test. Results are also reported for the grant-specified subgroups (Gender, Ethnicity [Black, White, Hispanic, Other], economically disadvantaged (ED) students, English language learners (ELL), and students with disability (SWD).

The target noted in Performance Measure (E)(3)(a) is a 50% reduction in the "not-on-track" students over a five year period, using the 2012 Algebra EOC test as a baseline. An examination of the 2014 Algebra EOC test results serves as an initial indicator of student performance. As indicated in Table 13, the average EOC test score was higher than 411 for the iPrep Math student group examined, as well as each of the subgroups examined. As noted in Table 14, the majority of the 7th graders attained an Achievement Level of 3 or higher (91.7%) on the 2014 Algebra EOC; with more than half (55.4%) attaining an Achievement Level of 4 or higher. The majority of 8th graders achieved a score at Achievement Level 3 or higher (79.8%); one third (33.2%) attained Achievement Level 4 or higher.

Table 13 2014 End-of-Course (EOC) Algebra Test Scores for iPrep Math Students			
	Mean	**Std. Dev.**	**N**
Total	419.50	21.99	1823
Grade			
7	427.69	21.83	610
8	415.39	20.90	1213
Gender			
Female	420.68	21.08	880
Male	418.41	22.76	943
Ethnicity			
Black	411.19	20.21	303
Hispanic	420.67	21.65	1324
White	421.93	22.74	147
Other	432.12	25.24	49
ED	416.80	21.37	1337
ELL	412.84	22.12	32
SWD	413.64	24.19	58

Note: Achievement Level 3 or higher = score of 399 or higher

Table 14 iPrep Math Students' Achievement Level 3 or Higher, and 4 or Higher on the Algebra End-of-Course (EOC) Test by Grade				
	Achievement Level 3 or Higher		**Achievement Level 4 or Higher**	
	N	**%**	**N**	**%**
Grade 7	543	91.7%	338	55.4%
Grade 8	965	79.8%	403	33.2%

b. Comparison of Scores on the Algebra End-of-Course (EOC) Test for iPrep Math and Non-iPrep Math Students

The analyses conducted assessed whether the 2014 Algebra EOC test results differed between iPrep Math and non-iPrep Math students. The first analysis was an analysis of variance comparing the Algebra End-of-Course (EOC) test scores for iPrep Math and non-iPrep Math students by grade. As can be seen in Figure 4 and Table 15, the test performance of 7th grade iPrep Math students did not differ significantly from that of the non-iPrep Math students. However, the scores for the 8th grade non-iPrep Math students were significantly higher than those for the iPrep Math students. These differential effects by grade were evident in the significant Grade by iPrep Math interaction effect noted in the table.

Table 15 also includes results comparing iPrep Math and non-iPrep Math students in each grant-required subgroup. Non-iPrep Math males and females had higher scores than their counterparts in iPrep Math, but this effect was stronger for females. By ethnicity, Black, Hispanic, and White students enrolled in non-iPrep Math classes had higher scores than those in the iPrep Math classes, with the differences somewhat more pronounced for Black and White students. Economically disadvantaged (ED) students in iPrep Math also had significantly lower test scores, but there were no differences between iPrep Math and non-iPrep Math students in the English language learners (ELL) and Students with disability (SWD) subgroups

Figure 4
iPrep Math and Non-iPrep Math Students Algebra End-of-Course (EOC) Scores by Grade

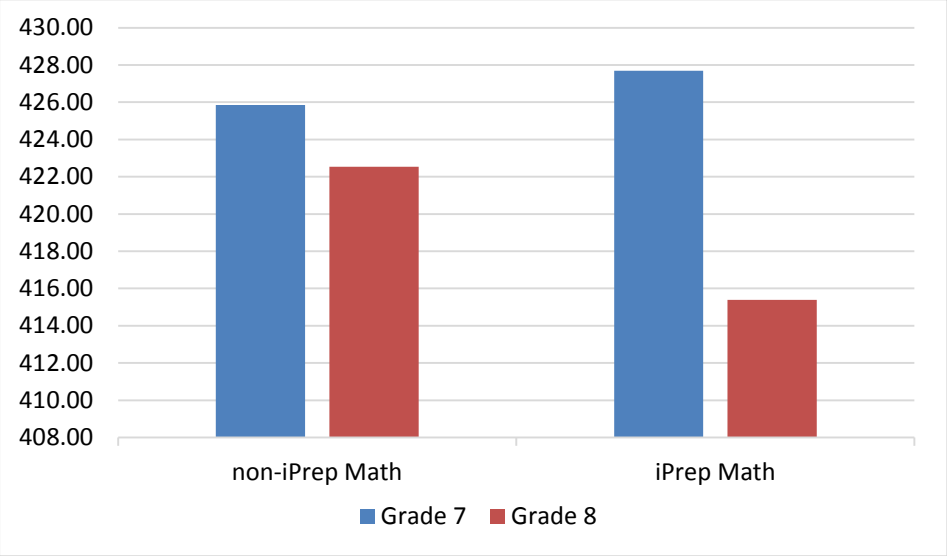


Table 15
2014 EOC Algebra Test Scores for iPrep Math and Non-iPrep Math Students

	Non-iPrep Math			iPrep Math				
	Mean	**Std. Dev.**	**N**	**Mean**	**Std. Dev.**	**N**	**iPrep**	**iP x Grade**
Total	423.44	21.09	5358	419.50	21.99	1823	18.61*	53.46*
Grade								
7	425.85	22.96	1459	427.69	21.83	610	2.81	
8	422.54	20.28	3899	415.39	20.90	1213	112.53*	
Gender								
Female	425.79	20.46	2723	420.68	21.08	880	40.99*	
Male	421.01	21.49	2535	418.41	22.76	943	9.86*	
Ethnicity								
Black	417.96	18.96	881	411.19	20.21	303	27.76*	
Hispanic	422.75	21.19	3718	420.67	21.65	1324	9.32*	
White	432.53	19.71	630	421.93	22.74	147	32.50*	
Other	436.29	20.25	129	432.12	25.24	49	1.30	
ED	420.30	20.59	3640	416.80	21.37	1337	27.83*	
ELL	418.95	21.10	192	412.84	22.12	32	2.26	
SWD	416.49	23.81	153	413.64	24.19	58	0.60	

*p <.002 or less.

A multiple regression analysis of predictors of 2014 Algebra End-of-Course (EOC) scores was conducted (Table 16). The 2013 FCAT scores were entered first and were the best predictors of the Algebra EOC scores, accounting for 41% of the variance (R^2 change). The main predictors of iPrep Math enrollment, grade, and the demographic subgroups were entered next, accounting for a relatively small (4.8%) but significant amount of variance in the Algebra EOC scores. The standardized beta weights are an indicator of the magnitude and direction of the effect of each predictor on the test scores. Thus, iPrep Math enrollment was associated with lower Algebra test scores as was being an 8th grade student. Of the demographic subgroups, only being an English Language Learner was associated with higher scores.

The next group of predictors represented interactions of iPrep Math enrollment with grade and with each of the demographic subgroups, to determine whether iPrep Math enrollment had differential effects by grade or subgroup. Only the iPrep Math by Grade interaction was significant, paralleling the differential effect of iPrep Math by Grade found in the previous analysis.

Table 16 **Predictors of Algebra EOC Test Performance for iPrep Math and Non-iPrep Math Students**						
Predictor	**Beta**	***t***	**Sig.**	**R^2 Change**	***F* Change**	**Sig. *F* Chg.**
FCAT Math Score 2013	**.644**	**69.655**	**<.0001**	**.415**	**4851.889**	**<.0001**
Main Effects				**.048**	**68.030**	**<.0001**
IPrep Math Enrollment	-.104	-11.592	<.0001			
Grade (7, 8)	-.123	-13.660	<.0001			
Male	-.127	-14.286	<.0001			
Black	-.083	-3.677	<.0001			
Hispanic	-.079	-3.056	.002			
White	-.040	-2.080	.038			
ED (Economically disadvantaged)	-.048	-5.002	<.0001			
ELL (English language learner)	.033	3.734	<.0001			
SWD (Students with disability)	-.017	-1.908	.056			
Interactions				**.004**	**5.622**	**<.0001**
iPrep x Grade	-.834	-5.720	<.0001			
iPrep x Male	.016	1.142	.253			
iPrep x Black	-.039	-1.421	.155			
iPrep x Hispanic	-.029	-.604	.546			
iPrep x White	-.034	-1.690	.091			
iPrep x ED	.001	.078	.938			
iPrep x ELL	-.007	-.764	.445			
IPrep x SWD	.005	.504	.615			

The next analysis in this set was a cross-tabulation of students passing (Level 3 or above) the Algebra EOC test by grade and iPrep Math enrollment. These results are presented in Figure 5 and Table 17. Paralleling the analysis of variance and regression results, there was no significant difference between iPrep Math and non-iPrep Math students in the 7th grade, but a significantly higher percentage of non-iPrep Math students passed the test, compared to those enrolled in iPrep Math.

Figure 5
Percent of iPrep Math and non-iPrep Math Students with Achievement Level 3 or Higher on the 2014 Algebra EOC Test by Grade

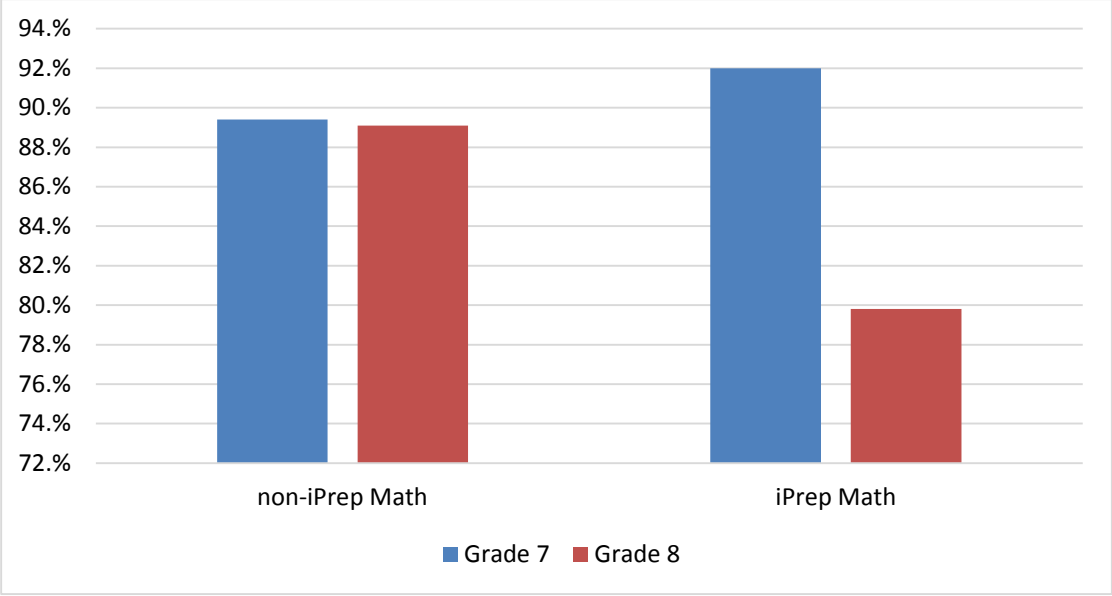


Table 17
Percent of iPrep Math and Non-iPrep Math Students with Achievement Level 3 or Higher on the 2014 EOC Algebra Test

	Non-iPrep		iPrep		
	N	**%**	**N**	**%**	**Chi Sq.**
Grade 7	1303	89.4%	543	91.7%	2.48
Grade 8	3452	89.2%	965	79.8%	71.10*

*p <.0001

Finally, an equivalent analysis was performed for students scoring at level 4 and 5, as the grant specified the percentage of students scoring at level 4 and above as an index of college preparedness. Figure 6 depicts the percentage of iPrep Math versus non-iPrep Math students scoring at levels 4 and 5. The data for students overall and for each subgroup are presented in Table 18. The findings paralleled those for student pass rates. There were no differences between iPrep and non-iPrep students in Grade 7 but, in Grade 8, fewer iPrep Math students scored at Level 4 and above compared to non-iPrep Math students.

Figure 6
EOC Algebra Exam Percent at Level 4 and Above by Grade

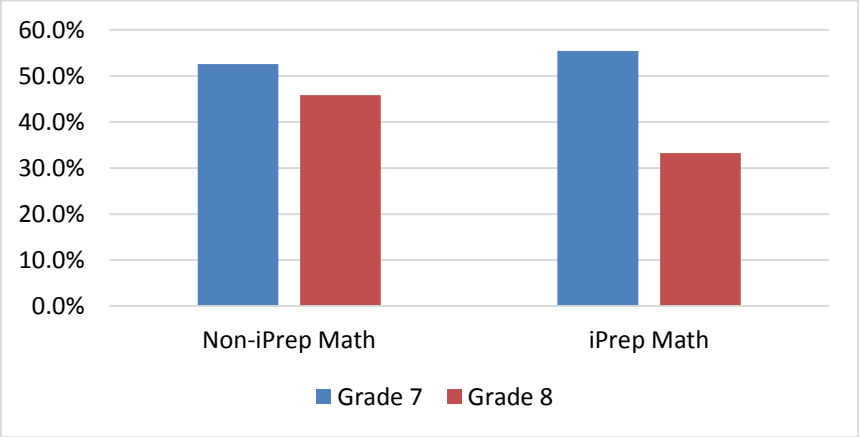


Table 18
2014 Algebra EOC Exam: Percent Scoring at Level 4 and Above

	Non-iPrep Math		iPrep Math		
	N	**Percent**	**N**	**Percent**	**Chi-Square**
Total	2555	47.7%	741	40.6%	27.14*
Grade					
7	767	52.6%	338	55.4%	1.4
8	1788	45.9%	403	33.2%	60.3*
Gender					
Female	1410	51.8%	376	42.7%	21.81*
Male	1145	43.5%	365	38.7%	6.41
Ethnicity					
Black	299	33.9%	80	26.4%	5.88
Hispanic	1746	47.0%	566	42.7%	6.98
White	423	67.1%	68	46.3%	22.35*
Other	87	67.4%	27	55.1%	2.5
Economically disadvantaged	1498	41.2%	476	35.6%	12.59*
English language learners	78	40.6%	13	40.6%	0
Students with disabilities	62	40.5%	19	32.8%	1.07

*p <.0001

D. Utilization of Carnegie MATHia Software

a. Skills Encountered and Mastered by iPrep Math Students [Performance Measure (E)(3)(i)]

Indicators of Carnegie MATHia progress selected for analysis were the number of skills encountered by the student and the percentage of these skills that were mastered by the student. These measures reflect the extent of student's utilization of the MATHia program and the student's mastery of the skills taught through the program, respectively. Figure 7 depicts the average total number of skills mastered by the iPrep Math students, by grade. Figure 8 depicts the average percent of skills mastered by grade by the Prep Math students. Table 19 presents data for the Total Skills and Percent Mastered indices for the total group of iPrep Math students and for each grade and demographic subgroup.

As indicated in Figure 7 and Table 19, 6th grade iPrep Math students encountered the highest average number of Carnegie MATHia skills (391.25). Seventh grade students encountered a slightly smaller average number of skills (328.98). The average number of skills encountered by 8th graders was considerably lower (194.01).

The average percent of Carnegie MATHia skills mastered by iPrep Math students was large, with 6th graders mastering 95.04% and 7th graders mastering 94.53%, while 8th graders mastered 91.8% (Figure 8, Table 19). Thus, while 8th graders only encountered an average of 194.01 skills, they mastered the great majority (91.8%) of these skills.

Figure 7
Average Number of Carnegie MATHia Skills Mastered by Grade

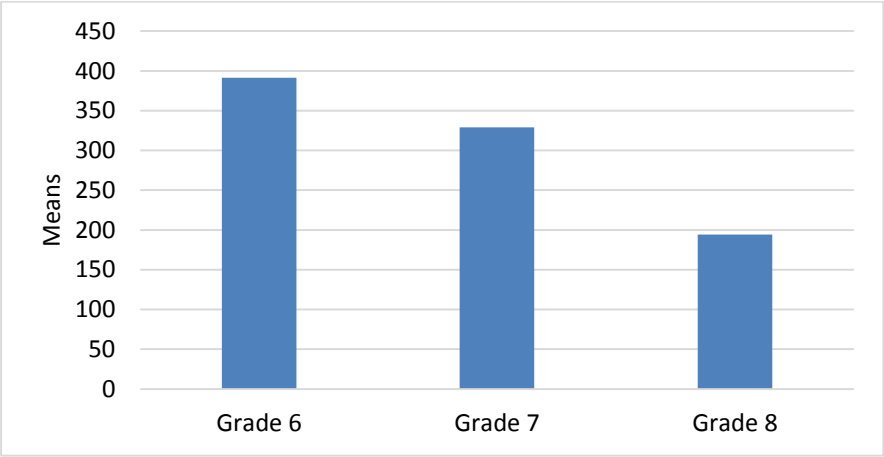
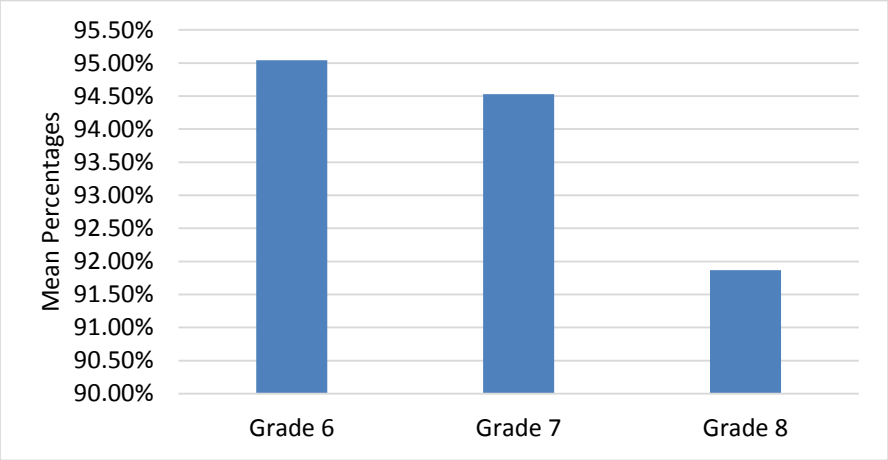


Figure 8
Percent of Carnegie MATHia Skills Mastered by Grade



An examination of the performance of different subgroups indicates some variation by gender and ethnicity (Table 18). Females (325.95) encountered more Carnegie MATHia skills than males (308.54) but males (94.34%) mastered slightly more of these skills than females (93.83%).

White students (438.89) encountered far more skills than Black (245.00) or Hispanic (331.26) students. While the overwhelming majority of the skills encountered were mastered, there was some variation, with White students mastering 96.30% of the skills they encountered and Black students mastering 93.43% of the skills encountered. Hispanic students mastered 94.08% of the skills encountered.

The data presented in Table 19 indicates similar average numbers of MATHia skills encountered by economically disadvantaged students (ED) (298.56), English language learners (ELL) (278.18), students with disabilities (SWD) (245.88), and students in ETO schools (280.88). More than 91% of the skills encountered by students in each of these subgroups were mastered.

Table 19 Carnegie MATHia Program Utilization and Mastery						
	Mean	**Std. Dev.**	**N**	**Mean**	**Std. Dev.**	**N**
All Students	317.26	297.56	9882	94.08%	7.91	9882
Grade						
6	391.25	370.06	3021	95.04%	7.29	3021
7	328.98	267.08	4609	94.53%	7.03	4609
8	194.01	189.95	2252	91.87%	9.78	2252
Gender						
Female	325.95	300.40	4949	93.83%	7.81	4949
Male	308.54	294.45	4933	94.34%	8.00	4933
Ethnicity						
Black	245.00	204.94	2717	93.43%	8.17	2717
Hispanic	331.26	313.49	6366	94.08%	7.98	6366
White	438.89	322.17	645	96.30%	5.89	645
Other	503.82	498.82	154	96.41%	5.15	154
Economically disadvantaged (ED)	298.56	288.81	8037	93.69%	8.05	8037
English language learners (ELL)	278.18	279.18	1230	90.83%	10.79	1230
Students with disabilities (SWD)	245.88	228.61	542	91.48%	11.62	542
ETO School	280.88	273.533	3806	92.85%	8.81	3806

E. MATHia Progress and Student Efficacy as Predictors of FCAT Math and Algebra End-of-Course (EOC) Performance for iPrep Math Students

This section includes the results of analyses aimed at determining the extent to which two key components of the iPrep Math program were associated with performance on the 2014 FCAT Math and Algebra End-of-Course (EOC) exams. These two components were the students' progress with the Carnegie Mathia software program and students' self-reports of their academic and math self-efficacy obtained through the Student Learning Surveys conducted in the fall and spring of the 2013-2014 school year.

Descriptive statistics for the student efficacy measures were presented in an earlier section of this report (See Figures 7 and 8, and Table 19). Correlations of the Carnegie MATHia and the efficacy measures with the FCAT MATH and Algebra End-of-Course test scores are included in Table 20. The results of multiple regression analyses including the efficacy and MATHia progress indices as predictors of 2014 FCAT Math and Algebra EOC test scores are presented in Tables 20 and 21.

In the regression analyses the 2013 FCAT performance scores and the fall student efficacy measures were entered first, followed by grade, and the demographic subgroup indicators. An ETO school indicator was included in these analyses to explore the possibility that differences in implementation of the iPrep Math curriculum in ETO versus non-ETO schools might be related to student outcomes. In the final steps of the analyses, the Carnegie MATHia progress measures, and the spring student efficacy measures were entered.

Table 20
Correlations of Efficacy, Carnegie Progress, FCAT Math, and Algebra EOC Measures

	SE F2013	**ME F2013**	**SE S2014**	**ME S2014**	**Total Skills**	**% Skills**	**FCAT 2013**	**FCAT 2014**	**Algebra EOC 14**
Self-Efficacy Fall 2013	--	.40**	.49**	.31**	.16**	.18**	.23**	.22**	.24**
Math Efficacy Fall 2013		--	.26**	.37**	.03	.04**	.08**	.01	.20**
Self-Efficacy Spring 2014	.		--	.47**	.19**	.14**	.18**	.26**	.38**
Math Efficacy Spring 2014				--	.08**	.06**	.11**	.09**	.27**
Total Skills	.				--	.24**	.23**	.36**	.45**
Percent Skills Mastered	.					--	.32**	.40**	.26**
FCAT Math Score 2013	.						--	.76**	.63**
FCAT Math Score 2014	.							--	.72**
EOC Algebra Score 2014	.							.	--

**p <.01

As in the comparison group analyses, the best predictors of 2014 FCAT Math and Algebra EOC test performance were the 2013 FCAT Math scores. Grade and the demographic variables accounted for an additional small but significant amount of variance. Grade level was associated with higher FCAT Math scores (as is typical for FCAT results), but lower Algebra EOC test scores. (Table 21).

With regard to demographic characteristics, for the analysis of 2014 FCAT scores, students who were male, Black, Hispanic, economically disadvantaged, English language learners (ELL), and/or attending ETO schools scored lower. The Carnegie MATHia progress indicators related positively to increases in FCAT Math performance over the 2013 scores, accounting for a relatively small but significant amount of variance in the scores. Academic efficacy accounted for an additional small but significant increase in FCAT Math scores. (Table 21).

Table 21 Predictors of FCAT 2014 Math Scores for iPrep Math Students						
Predictor	**Beta**	***t***	**Sig.**	**R^2 Change**	***F* Change**	**Sig. *F* Chg.**
Previous FCAT/Efficacy Scores				**0.58**	**1938.89**	**<.0001**
FCAT Math Score 2013	0.76	73.32	000			
Academic Efficacy Fall 2013	0.02	1.61	.108			
Math Efficacy Fall 2013	-0.03	-2.44	.015			
Grade/Demographics				**0.04**	**43.70**	**<.0001**
Grade	0.16	15.47	.000			
Gender (Male)	-0.04	-3.84	.000			
Black	-0.08	-2.47	.013			
Hispanic	-0.07	-2.01	.045			
White	0.00	-0.07	.941			
Economic disadvantage	-0.07	-6.78	.000			
English language learner	-0.05	-4.64	.000			
Students with disability	0.00	-0.30	.765			
ETO School	-0.02	-2.09	.037			
Carnegie MATHia Progress				**0.02**	**135.34**	**<.0001**
Total Skills Encountered	0.10	9.55	.000			
Percent Skills Mastered	0.13	12.25	.000			
Efficacy Scores Spring 2014				**0.01**	**71.73**	**<.0001**
Academic Efficacy	0.13	11.03	.000			
Math Efficacy	0.00	0.08	.934			

In the analysis of Algebra EOC test scores (Table 22), grade level was inversely related to performance, as already observed in the comparison analyses. Male gender and economic disadvantage were also associated with lower scores. As for the preceding analysis of FCAT Math performance, the Carnegie MATHia progress indicators and academic efficacy were related significantly to better performance on the Algebra End-of-Course (EOC) exam.

Table 22
Predictors of Algebra 2014 EOC Scores for iPrep Math Students

Predictor	Beta	*t*	Sig.	R^2 Change	*F* Change	Sig. *F* Chg.
Previous FCAT/Efficacy Scores				**0.36**	**178.59**	**<.0001**
FCAT Math Score 2013	0.56	21.06	.000			
Academic Efficacy Fall 2013	0.10	3.48	.001			
Math Efficacy Fall 2013	0.03	1.12	.261			
Grade/Demographics				**0.06**	**10.41**	**<.0001**
Grade	-0.17	-6.04	.000			
Gender (Male)	-0.09	-3.68	.000			
Black	-0.14	-2.53	.012			
Hispanic	-0.11	-1.80	.072			
White	-0.08	-1.80	.071			
Economic disadvantaged	-0.06	-2.26	.024			
English language learner	0.04	1.48	.140			
Students with disability	-0.02	-0.62	.536			
ETO School	0.05	1.63	.103			
Carnegie MATHia Progress				**0.06**	**52.07**	**<.0001**
Total Skills Encountered	0.25	8.93	.000			
Percent Skills Mastered	0.08	3.03	.002			
Efficacy Scores Spring 2014				**0.03**	**27.83**	**<.0001**
Academic Efficacy	0.23	7.26	.000			
Math Efficacy	-0.03	-1.10	.271			

In sum, these analyses (Tables 20-22) indicate that student progress with the Carnegie MATHia software was related to better performance on both the FCAT Math and Algebra EOC tests. In these analyses, increases in student academic self-efficacy were also associated with higher FCAT Math and Algebra EOC scores. Although the magnitude of these effects was relatively small, they suggest that enhancing efficacy and student use of appropriate technology are worthwhile goals of the program, as proposed in the RTT-D grant.

Section 5. Absenteeism and Suspension

The RTT-D grant specified evaluation of the incidence of absenteeism and suspensions for iPrep Math and non-iPrep Math students. The relationship between enrollment in the iPrep Math program and absenteeism and suspensions for this initial operational 2013-2014 year were examined. Miami-Dade County Public schools provided files which consisted of cumulative days absent and counts of suspensions. The researchers identified the iPrep Math students who had been enrolled in iPrep Math courses for the entire year and comparison group participants. As noted earlier in this report, 11,419 students were initially enrolled in iPrep Math and 32,733 students were in the comparison classes. By the fourth quarter, 9,919 of the original iPrep Math participants were still enrolled in iPrep Math courses. An additional 195 students were placed in iPrep Math classes between the first and fourth quarters and 893 of the original iPrep Math students were no longer enrolled in iPrep Math classes. Of the original students in the comparison courses, 30,206 were still enrolled in comparable non-iPrep Math courses at the end of the year. The external evaluation team will continue to maintain a record of student attrition and addition over the duration of the project, so that students can be identified who participated for one, two, or three years.

A. Absenteeism Among iPrep Math Students [Performance Measure (E)(3)(g)]

iPrep Math students' absence record for 2013-2014 is presented in Table 23. Results are also reported for the grant-specified subgroups (Gender, Ethnicity [Black, White, Hispanic, Other], economically disadvantaged (ED) students, English language learners (ELL), and students with disability (SWD).

As indicated in Table 23, the average number of days absent was 3.2 for the iPrep Math students. The highest average numbers of days absent among the subgroups was experienced by the English language learners (ELL) (3.75) and the students with disability (3.74). The lowest averages were experienced by Other students (1.98) and White students (2.38).

Table 23 Days Absent during 2013-2014: iPrep Math Students			
	Mean	**Std. Dev.**	**N**
Total	3.20	3.81	9919
Grade			
6	2.87	3.66	3081
7	3.32	3.83	4524
8	3.40	3.94	2314
Gender			
Female	3.12	3.74	4953
Male	3.28	3.88	4956
Ethnicity			
Black	3.56	4.18	2684
Hispanic	3.16	3.72	6412
White	2.38	2.91	663
Other	1.98	3.18	160
ED	3.45	3.99	8033
ELL	3.75	4.27	1223
SWD	3.74	4.16	527

The target noted in Performance Measure (E)(3)(g) is 2% absenteeism reflecting achievement of a 98% average attendance by Year 5. The Miami-Dade County Public Schools (M-DCPS) office of Assessment, Research & Data Analysis has prepared an overview of the quarterly attendance for iPrep Math students which is being shared with the iPrep project office.

B. Comparison of Absenteeism Among iPrep Math and Non-iPrep Math Students Enrolled in Comparable Courses

Differences in absence rates for iPrep Math versus Non-iPrep Math students were assessed with an analysis of variance on the number of days absent for each group of students by grade. The results can be seen in Figure 9 and Table 24. iPrep Math students had significantly fewer absences overall, with significant differences by grade in Grades 6 and 8. Note, however, that 2013 absence rates were not obtained for this analysis. Consequently whether there were differences between these groups prior to implementation of iPrep Math is not known.

Grant-required subgroup data are also presented in Table 24. Females and males enrolled in iPrep Math had fewer absences, but the effect was stronger for males. By ethnicity, Black and Hispanic students enrolled in iPrep Math had fewer absences than Black and Hispanic Non-iPrep Math students. Absence rates were also lower for iPrep Math enrolled ED and SWD students.

Figure 9
Average Days of Absence during 2013-2014 for iPrep Math and Non-iPrep Math Students by Grade

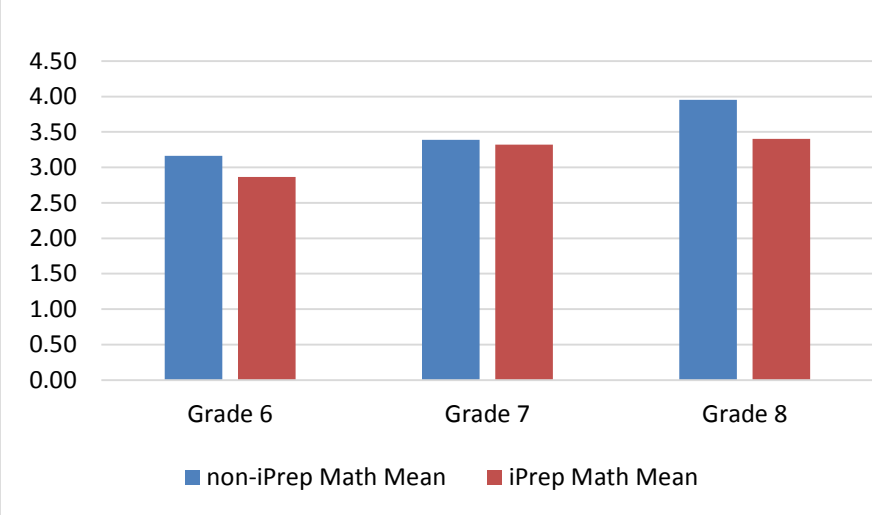


Table 24
2014 Days Absent for iPrep Math and Non-iPrep Math Students

	Group						Effects	
	Non-iPrep Math			iPrep Math			iPrep	iP x Grade
	Mean	Std. Dev.	N	Mean	Std. Dev.	N	*F*	
Total	3.52	4.28	30206	3.20	3.81	9919	38.44*	8.05*
Grade								
6	3.17	3.88	10048	2.87	3.66	3081	14.34*	
7	3.39	4.13	9405	3.32	3.83	4524	0.89	
8	3.95	4.71	10753	3.40	3.94	2314	27.78*	
Gender								
Female	3.29	4.01	14507	3.12	3.74	4953	7.03*	
Male	3.72	4.51	15699	3.28	3.88	4956	39.46*	
Ethnicity								
Black	4.01	4.86	6574	3.56	4.18	2684	18.01*	
Hispanic	3.48	4.16	20844	3.16	3.72	6412	30.05*	
White	2.76	3.62	2288	2.38	2.91	663	6.29	
Other	1.89	2.57	500	1.98	3.18	160	0.11	
ED	3.80	4.45	24012	3.45	3.99	8033	38.82*	
ELL	4.01	4.44	5843	3.75	4.27	1223	3.51	
SWD	4.74	5.57	3684	3.74	4.16	527	15.52*	

*p <.009 or less

C. Incidence of Suspension Among iPrep Math Students [Performance Measure (E)(3)(h)]

The target noted in Performance Measure (E)(3)(h) is a 5% decrease in the suspension rate each year of the iPrep program. An initial examination of the suspensions rates for 2013-2014 is provided in this report.

Frequencies of student suspension in Miami-Dade County Public Schools (M-DCPS) are generally skewed, with only one or two instances for most of those receiving suspensions and higher rates for relatively few students. Therefore, to create a variable suitable for analysis, the frequencies of indoor and outdoor suspension were first summed and each student was assigned a code of 0 for no suspensions or 1 for one or more suspensions.

The results for iPrep Math students, presented in Table 25, indicate an overall suspension rate for iPrep Math students of 13.6%. The subgroup results indicate higher suspension rates for 6th graders (14.7%) than 8th graders (12.15) and higher suspension rates for male students (17.1%) than female students (10.2%). Black students had higher rates (23.0%) than both Hispanic (10.0%) and White students (8.4%).

The suspensions rate for economically disadvantaged (ED) students was 18.5%. The rate for English language learners (ELL) (13.5%) and students with disabilities (SWD) (13.4%) were similar.

Table 25
Percent of Indoor and Outdoor Suspensions for iPrep Math Students

Total	13.6%
Grade	
6	14.7%
7	13.7%
8	12.1%
Gender	
Female	10.2%
Male	17.1%
Ethnicity	
Black	23.0%
Hispanic	10.0%
White	8.4%
Other	8.1%
Economically disadvantaged (ED)	18.5%
English language learners (ELL)	13.5%
Students with disabilities (SWD)	13.4%

D. Comparison of Suspension Rates for iPrep Math and Non-iPrep Math Students Enrolled in Comparable Courses

As noted above, the frequencies of student suspension in Miami-Dade County Public School (M-DCPS) are generally skewed, with only one or two instances for most of those receiving suspensions and higher rates for relatively few students. Therefore, a variable was developed for analysis by assigning each student a code of 0 for no suspensions and 1 for one or more suspensions. A cross-tabulation was then performed for the percentage of iPrep Math versus non-iPrep Math students who had been suspended at least once during the 2013-2014 school year.

The results are presented in Figure 10 and Table 26. Suspension rates were generally higher for non-iPrep Math than iPrep Math students, with significant differences between iPrep Math and non-iPrep Math students in Grades 7 and 8. The data analysis also indicated higher suspension rates for non-iPrep Math students in the Black, Hispanic, economically disadvantaged (ED), and students with disabilities (SWD) subgroups. However, as is the case when examining absence rates, whether there were pre-existing differences in suspension rates for the iPrep Math and comparison students is unknown.

Figure 10
2013-2014 Suspension Rates for iPrep Math and Non-iPrep Math Students by Grade

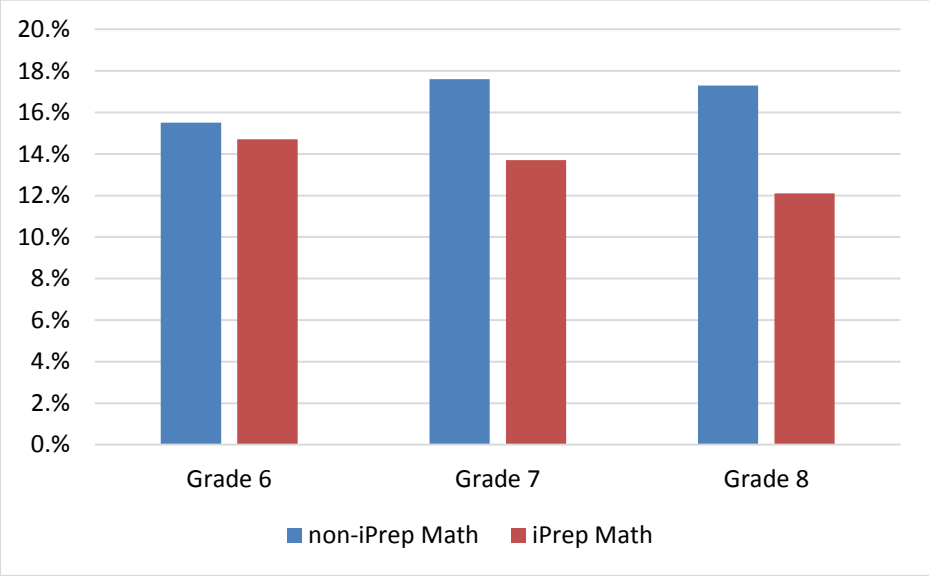


Table 26
Percent of Indoor and Outdoor Suspensions for iPrep Math and Non-iPrep Math Students

	Non-iPrep Math	iPrep Math	Chi Sq.
Total	16.8%	13.6%	50.51*
Grade			
6	15.5%	14.7%	1.12
7	17.6%	13.7%	29.21*
8	17.3%	12.1%	34.85*
Gender			
Female	11.3%	10.2%	4.53
Male	21.7%	17.1%	43.37*
Ethnicity			
Black	28.6%	23.0%	27.62*
Hispanic	13.8%	10.0%	54.68*
White	10.0%	8.4%	1.01
Other	8.7%	8.1%	0.04
Economically disadvantaged	18.5%	15,8%	30.82*
English language learners	16.7%	13.5%	8.17
Students with disabilities	15.2%	13.4%	23.8*

*p <.0001

Section 6: Principal Survey

As part of the external evaluation of the iPrep Math program, various stakeholders have provided their perceptions of the program. An important stakeholder group is the principals of the middle schools where the iPrep Math program operates.

An online survey of all the principals was conducted between May 12th and May 28th of 2014. The goal of the survey was to provide some information about how the principals implemented the design of iPrep Math classes and selected student participants, the principals' understanding of and experience with the iPrep Math model and class operations, and their level of satisfaction with various components of iPrep Math. Principals were also given the opportunity to share any comments regarding the program in an open ended item.

The online survey was developed and conducted via Surveygold. A link to the survey was distributed to principals by email from the external evaluators. The survey was completed by all 49 middle school principals who had iPrep Math classes.

iPrep Math Program Class Design

Numbers of Teachers per iPrep Classes

As principals were given some flexibility in determining the make-up of iPrep Classes, they were asked several questions about these classes. The iPrep Math program was designed to have 2 ½ teachers in each class. Principals were asked ("How many iPrep Math teachers do you currently have in your iPrep classroom?") to indicate whether they had 2, 2 ½ or 3 teachers in the iPrep Math class.

Principals reported some variation in the numbers of teachers in their iPrep Math classrooms. Table 27 displays the distribution of teachers in the 49 middle schools. The majority did report having 2 ½ teachers, but some had 3 teachers and about a fifth had only 2 teachers.

Table 27
Number and Percent of Principals Reporting 2, 2 ½ or 3 Teachers in iPrep Classrooms

2 Teachers		2 ½ Teachers		3 Teachers	
N	**%**	**N**	**%**	**N**	**%**
11	22.4%	25	51.0%	13	26.5%

Grade Levels Included in iPrep Classes

Principals were able to select the grade and skill (FCAT) levels to include in iPrep Math classes at their schools. Thus, we asked about grade and FCAT Levels of students assigned to iPrep Math classes at their schools. We also asked whether or not iPrep Math classes had multiple grades within the class or were they single grade classrooms.

The first analysis looked at the distribution of grades in schools with multi-level grade classrooms and schools with single grade classrooms. Principals were asked to indicate all grade levels served at their schools in iPrep Math ("What grade levels are in iPrep Math?") and whether they had Multi-grade classrooms or not ("Do you have multiple grades in individual iPrep Math classes?").

Table 28 examines this question. As can be seen in this table, slightly more schools had single grade classrooms, regardless of how many grades participated in iPrep. Two principals reported serving only 7th grade students, while 27 served all three grades and 19 served two grades. One principal served 6th and 7th graders but did not indicate whether or not they were in multi-grade classrooms.

Table 28
Number of Principals Reporting Grades Served in Multi-Grade or Single Grade Classrooms

	Multiple Grades in Classrooms		
Grades Served	**Yes**	**No**	**Total**
6, 7, 8	15	12	27
6, 7*	3	7	11*
6, 8	1	0	1
7, 8	4	4	8
7	0	2	2
Total	23	25	49

*One principal reporting a 6th and 7th grade service pattern did not respond to the multiple grade class question.

FCAT Levels Included in iPrep Math Classes

The next design issue was the distribution of FCAT achievement levels in iPrep Math classrooms across the schools. The iPrep Math model was conceived as serving all student achievement levels, but principals had the flexibility to modify this as they saw fit to best serve their students. Principals were asked to indicate all FCAT Levels served in iPrep Math at their school. ("What FCAT Levels are in the current iPrep Math classrooms?")

Table 29 displays the FCAT Levels reported across the 49 schools. The first column indicates all of the FCAT Level patterns included in iPrep Math at each school, as reported by the principal. The second column indicates the number of schools with each FCAT Level pattern. As can be seen in Table 29, 3 principals reported that iPrep Math was serving the lowest FCAT Levels (1 and 2) at their schools, while 6 principals reported iPrep Math serving the highest iPrep Levels (3, 4, and 5) at their schools. Thirty-nine principals, a majority, reported that iPrep Math served 4 or more FCAT Levels.

Table 29 FCAT Levels Included iPrep Math Classrooms	
FCAT Levels Included in iPrep Math Classes	**Number of Schools with Each FCAT Level Pattern Reported by Principals**
1, 2, 3, 4, 5	17
1,2,3,4	2
1,2,3	8
1,2	3
2,3,4,5	10
2,3,4	1
2,3	2
3,4,5	6
Total	49

Principals' Understanding and Experience with iPrep Math

On the Understanding and Experience part of the Principal Survey, principals were asked to indicate the extent to which they agreed or disagreed with 12 statements reflecting various aspects of their understanding, expectations, and experience regarding the iPrep Math program in their schools. Some items overlapped those included on the Teacher and Student Surveys administered prior to the April, 2014 Formative Report. Other items were exclusive to the principals.

The response choices and the numerical values assigned to them were *Strongly Disagree* (1), *Somewhat Disagree* (2), *Somewhat Agree* (3), and *Strongly Agree* (4). Table 30 on the next page presents the frequency counts (N) and percentages for the principals' responses to each statement. The last column of the table presents the average response (mean value) for the item. Higher mean values indicate greater agreement with the statement.

As can be seen in Table 30, there were several items that elicited high levels of agreement. These were items for which mean values exceeded 3.00 and 80% or more principals agreed (somewhat or strongly) with the item. Specifically, 82% agreed that students are more engaged in iPrep Math, 94% agreed that technology-based activities are essential to meeting learning objectives, 92% agreed that students learn a great deal working in groups, 80% agreed that Carnegie administrative reports are useful, 82% agreed that personalized learning enables students to work at their own pace and still accomplish learning objectives, 92% agreed that the iPrep Math Implementation Fidelity Rubric (IFR) helps them to observe how well teachers are following the program, and 96% agreed that the teacher's role in iPrep Math is to facilitate learning.

Other items yielded lower levels of agreement. Only 71% of principals agreed that having multiple teachers with large classes works well at their schools, only 58% agreed that student behavior is easier to manage in the iPrep classroom, 48% agreed that students moving around

and talking with each other is distracting, 31% agreed that students are expected to remain in their seats and raise their hands if they want to talk in class, and only 63% expected iPrep Math students to perform better on EOC and FCAT Math tests.

This pattern of responses by principals is comparable to those elicited from teachers in focus groups and on the Teacher Understanding and Experience Survey (as detailed in the Evaluation Team's April, 2014 formative report). Both principals and teachers agreed that iPrep Math students are more engaged, that technology-based activities are essential, that collaborative and personalized learning are positive aspects of the program, and that the teacher is a facilitator. Both principals and teachers were less positive about large class sizes, student behavior management, and distractions caused by student movement and conversation. (Similar responses were also obtained from student surveys and focus groups). Principals and teachers were also comparable in their expectations regarding the performance of iPrep Math students on EOC and FCAT tests, with over a third of principals and teachers disagreeing that they expected better performance as a result of student involvement in iPrep Math.

Table 30
Principals' Responses to Understanding and Experience Items

	Strongly Disagree		Somewhat Disagree		Somewhat Agree		Strongly Agree		
	N	%	N	%	N	%	N	%	Mean
Students are more engaged in learning in iPrep Math classes than in other classes.	2	4.1%	7	14.3%	26	53.1%	14	28.6%	3.06
The iPrep Math model of having multiple teachers with large classes works well at my school.	2	4.2%	12	25.0%	21	43.8%	13	27.1%	2.94
It is easier to manage student behavior in the iPrep classroom than in non-iPrep Math classrooms.	5	10.4%	15	31.3%	17	35.4%	11	22.9%	2.71
Technology-based math activities are essential to helping students accomplish the learning objectives in their iPrep classes.	0	0.0%	3	6.1%	26	53.1%	20	40.8%	3.35
iPrep Math students learn a great deal by working together in groups	1	2.0%	3	6.1%	26	53.1%	19	38.8%	3.29
The Carnegie Learning administrative reports are useful in keeping track of student progress in iPrep Math classes.	4	8.2%	6	12.2%	23	46.9%	16	32.7%	3.04
"Personalized Learning" enables students to work at their own pace and still accomplish their learning objectives.	1	2.0%	8	16.3%	20	40.8%	20	40.8%	3.20
When students move around in the iPrep Math classroom and talk with one another, it creates a distraction that interferes with students' learning math.	4	8.3%	21	43.8%	17	35.4%	6	12.5%	2.52
The iPrep Math Implementation Fidelity Rubric (IFR) helps me to observe how well teachers are following the iPrep Math program model.	0	0.0%	4	8.2%	29	59.2%	16	32.7%	3.24
Students are expected to remain in their seats and raise their hands if they want to talk during iPrep Math classes.	15	30.6%	19	38.8%	14	28.6%	1	2.0%	2.02
The teacher's role in iPrep Math is that of a facilitator.	0	0.0%	2	4.2%	24	50.0%	22	45.8%	3.42
I expect the iPrep Math students to perform better on EOC and FCAT Math tests than students at my school who are not in iPrep Math.	6	12.2%	12	24.5%	21	42.9%	10	20.4%	2.71

Principals' Satisfaction with iPrep Math

In the last part of the survey, principals were asked to indicate how satisfied they are with various aspects of the iPrep Math program in their schools. The response choices and the numerical values assigned to them were *Very Dissatisfied* (1), *Somewhat Dissatisfied* (2), *Somewhat Satisfied* (3), and *Very Satisfied* (4). Table 31 presents the frequency counts (N) and percentages for the principals' responses to each item. The last column of the table presents the average response (mean value) for the item. Higher mean values indicate greater satisfaction with the program aspect referenced in the item.

Table 31
Principals' Responses to Program Satisfaction Items

	Very Dissatisfied		Somewhat Dissatisfied		Somewhat Satisfied		Very Satisfied		
	N	%	N	%	N	%	N	%	Mean
Overall, what would you say is your level of satisfaction with the iPrep program?	2	4.2%	5	10.4%	20	41.7%	21	43.8%	3.25
The FCAT level of students in the iPrep Math program.	0	0.0%	13	27.1%	21	43.8%	14	29.2%	3.02
The math subjects that are taught in iPrep	0	0.0%	4	8.2%	24	49.0%	21	42.9%	3.35
The class size of the iPrep Math classes.	4	8.3%	10	20.8%	22	45.8%	12	25.0%	2.88
The grade level of students in the iPrep Math classes.	1	2.0%	9	18.4%	20	40.8%	19	38.8%	3.16
The number of teachers in each iPrep Math class.	0	0.0%	5	10.2%	19	38.8%	25	51.0%	3.41
The amount of counseling available to the iPrep Math students this year.	3	6.1%	19	38.8%	16	32.7%	11	22.4%	2.71
The level of understanding of iPrep Math by the parents/guardians of students in the program.	3	6.1%	13	26.5%	25	51.0%	8	16.3%	2.78
The support that your teachers have received from the iPrep Math Facilitators.	1	2.0%	2	4.1%	14	28.6%	32	65.3%	3.57
The support that your teachers have received from the Student Services Support Specialists.	2	4.1%	12	24.5%	19	38.8%	16	32.7%	3.00

Several items elicited high levels of satisfaction, indicated by mean values exceeding 3.00 and 80% or more principals responding that they are somewhat or very satisfied. On the first item assessing overall satisfaction, 85% expressed satisfaction with the iPrep Math program. On the remaining items, tapping specific aspects of the program, 92% were satisfied with the math subjects taught in iPrep, 80% were satisfied with the grade levels of students in their iPrep m=Math classes, 90% were satisfied with the number of teachers, and 94% were satisfied with the support given to their teachers by the iPrep Math facilitators.

Other aspects of the program yielded lower levels of satisfaction. Specifically, 73% were satisfied with the FCAT levels of students in their iPrep Math classes, 71% were satisfied with the size of the classes, 67% were satisfied with parent/guardian understanding of the program, 71% were satisfied with the support teachers received from Student Services Support Specialists, and only 55% were satisfied with the amount of counseling available to iPrep Math students.

Principal Comments

In general, principals expressed positive views of the program with the expectation that it will improve over time. Some principals reserved judgment in anticipation of test results and others expressed comments heard elsewhere regarding class size issues and the difficulty students may be having working independently. All of the principals' comments are reported below.

> *"As the iPrep program becomes a part of our school's culture, it will grow in its effectiveness."*
>
> *"The data indicates that our school logged more students with more hours implementing Carnegie Learning software than any other school. Our students and teachers are top notch. I will be interested to see if our EOC pass rates increase or decrease. Our school paid for a third teacher, with supplement, to ensure continuity of our math program this year (for a total of 3.5 teachers), but it will not be possible next year. I need budgetary flexibility for another supplement rather than a counselor as the mandated two common planning periods is not feasible within our specialized schedule. We need continued flexibility with both scheduling and curriculum implementation to ensure iPrep Math is successful in our school."*
>
> *"… difficulty in maintaining enrollment."*
>
> *"it's a great program. I would love to expand on it and instead of one room, dedicate a section of the building. This is what 21st Cenetury education should look like."*
>
> *"I believe this is an initiative that will be highly effective if the right students are chosen to participate with experienced teachers. It's on the triial and error basis this first year."*
>
> *"I have found that the key to success in our iPrep Math program has been selecting the right teachers for the position."*

"I reserve comments until I see the data from the FCAT. This may necessitate an adjustment to the Master Schedule."

"iPrep has worked extremely well with our 6th grade group. Our 7th and 8th graders have also experienced success, but were not as receptive as our 6th graders. The Algebra I students fought us every step of the way. Many of them wanted a more structured environment."

"iPrEP is a solid addition to our overall mathematics program. Year two should be improved based on everyone's understanding of how to implement the program."

"It was a difficult beginning at first but it improved as the students and teachers adjusted to the new setting. I strongly believe that it will only improve for next year."

"Math is not a subject that lends itself to independent work study. I feel students in iPrep this year have greatly fallen behind."

"Students are not selecting to be in iPrep. The model would be better with 5 sections, smaller classes with maybe 50 per class."

"The iPrep program has been very successful at __ Middle School. The students enjoy using technology and being able to work independently, at their own pace. With professional development, guidance and assistance from the district, our teachers were able to make a smooth transition from the traditional classroom setting to the iPrep format."

"There have been some challenges this year, but the overall concept and model has tremendous potential. Most of the challenges have been because the model was so new to everyone -- including the teachers. In spite of the challenges I believe the students will perform better on FCAT than their non-iPrep peers."

"Using three teachers in the iPrep classroom would be great if they were all fulltime teachers. Teachers who are certified do not want only a part-time job. As a result we lost an excellent part-time teacher who really wants to teach mathematics because she took another job in private industry. I would like to see flexibility for excellent teachers who have demonstrated success with student achievement to add their proven strategies and techniques to the delivery of the curriculum."

"With a small population of students, having the iPprep teacher receive 2 planning periods causes a problem with my master schedule. I also am at odds regarding which type of student should participate in iPrep. I think there should be more opportunity for explicit instruction, students require and request that frequently."

Section 7: Site Visits, May, 2014 [Performance Measure (E)(3)(e/f)]

Site visits were conducted to 12 randomly selected schools during the 2013-2014 school year. These site visits were designed, in part, to address the question of treatment fidelity by offering a snapshot of the varied ways in which implementation of iPrep Math had occurred since it was introduced in M-DCPS in August 2013.

In May 2014, two external evaluators visited three of the 12 randomly selected focal middle schools, spending one day at each school. These three site visits were the last of the 12 randomly selected focus middle schools that were to be visited during the 2013-2014 school year. Site visits to the other nine randomly selected schools were conducted in November 2013, February 2014, and March 2014.

In order to insure confidentiality, the staff and students were told by the External Evaluation Team that the data gathered during each site visit would be presented, in reports, as grouped data. Comments quoted in reports would not indicate the name or that of their school.

A total of nine iPrep Math classes (two block schedule classes and seven non-block schedule classes) were observed in the three schools visited in May 2014. The iPrep Math Implementation Fidelity Rubric (IFR) was utilized to structure class observations.

The classrooms observed varied in their shape, with one classroom considerably narrower than the others. The use of the physical space in all of the classrooms was flexible. The site visitors observed that the physical space and resources were used differently. In some classes, some learning hubs were empty. In others, all learning hubs were used.

In some classes, students were assigned to sit in a specific location, based on data obtained from Carnegie reports, District Interim results, and/or other student assessments. In some classes, students could sit with their friends. In some of the classes observed, students worked in small groups on PBLs while in others students worked individually for the majority of the class session.

In all of the nine classes observed, there was evidence of planned and established routines and procedures that students were to follow in the classroom. In several classes, the teacher posted a section of the iModule on the SMART Boards and/or reviewed what the class should focus on that day. The whitewalls in the classes observed were used primarily to indicate assignments for that day, or were blank. During the class sessions observed, there was variation in the use of the small, mobile whiteboards with some teachers and some students using these tools.

Despite the presence of prescribed routines and procedures, in some classrooms, many students were not consistently engaged. There was considerable teacher monitoring and prodding, in an effort to keep individual students and groups of students on task. Students seemed to be distracted, talking to each other about non-math issues. Some students did not move forward on the work on their computer screen for long periods of time, neither seeking help from other students, nor asking the teacher for assistance.

In all classrooms, one or more teachers moved around the classroom, in an effort to assist students. In some situations students appeared to be unable to organize their time and attend to the assigned class work. For example, a teacher would ask a student to get their pencil and other materials needed for an assignment and would ask the student what steps they would need to follow to complete their assignment.

On occasion, teacher-led workshops were observed. Sometimes the workshop had been planned ahead of time by the teacher; they did not seem to be spontaneous. At other times, small groups of two or more were formed by a teacher and spontaneous workshops were conducted on content that students did not understand.

The site visitors observed that a connection between lesson objectives and prior knowledge or standards was displayed in iModules; sometimes these connections were stated verbally to the class by the teacher.

The academic activities observed varied in terms of the extent to which students worked collaboratively, or discussed math concepts, homework, or online assignments. In some classes, students did talk within the members of their group or with neighboring students about their math work. When students were working on PBLs there was considerable dialogue about the exercise among students.

The complexity of the instruction provided through teacher facilitation varied. In some instances, the questions posed by teachers and the conversations in which students engaged encouraged higher order thinking. In others, this was not case with conversations focusing on obtaining an answer to a math problem. These conversations did not incorporate the use of questions, prompts, and probes that encouraged higher order thinking and did not integrate diverse methods and tools for arriving at an understanding of a math concept and/or solving a math problem.

The use of real world situations as an instructional tool varied as well. While the online tools that students used, such as MATHia, included real-world connections, teacher-student discussions and teacher instruction did not always offer real world situations as a vehicle for understanding concepts or problem-solving. By contrast, the PBLs assigned students in many of the classes observed included real-world connections. (Sites, such as Amplify and foodnetwork.com, were used for PBLs.)

On-Site Interviews with the Principals

At each of the three middle schools visited, the Principal was interviewed using an open-ended set of questions. At the end of each site visit day, the evaluation team debriefed the Principal about the day's activities. The interviews were conducted with the Principal at two of the three schools visits. Both the Principal and the Assistant Principal were interviewed at one school because the Principal was relatively new to the school, and did not have extensive history about the iPrep Math program at the school.

Overall, the persons interviewed appeared to be satisfied with the implementation of the iPrep Math program at their middle schools. They demonstrated an awareness and appreciation of

many of the innovative aspects of the iPrep Math program, and were hopeful that student performance in math would be positively impacted.

The principals indicated that the decision regarding which students and grades/courses to include in iPrep Math varied, with student need, teacher expertise, and student enrollment limits in iPrep Math being considered.

The principals were mindful of the central role played by the teachers in the iPrep classroom. The teachers' expertise with classroom organization and management, their ability to work as a team, and their comfort with technology, and excitement about innovation were recognized as being pivotal.

The principals reported that they viewed the current year, to some extent, as a pilot year and that they were monitoring the data being generated about student performance on different measures of math achievement. This information will inform decisions about how to move forward in the next two years of the implementation of the iPrep Math program.

The questions posed to the three principals and one assistance principal, and their responses are as follows:

Question 1. There are a number of ways that principals set up the iPrep Math program, in terms of student selection, grade level included and so on. How did you set up your program?

> *"We have 8th grade and Levels 3, 4, and 5 for Algebra 1. Some were asked, some recommended, and some from letters sent to parents."*
>
> *"We were very cautious in placing students. We wanted to preserve Algebra and we did not want to use 8th graders as guinea pigs."*
>
> *"I followed the rules. You know the "New Principal Syndrome."*
>
> *"We were worried. We got a grade of D last year."*
>
> *"We didn't want too many preps [for teachers]. We used 6-7th grade students because if something does not work we can remedy it."*
>
> *"We selected 6th grade students [general math] inclusive of special education and gifted. We have a mixture of special education and gifted students at all levels. There's a mixture of all students in all classes. They all share."*
>
> *"It's important to emphasize that we are a traditional middle school. We have 100 students in the environmental magnet and 340 ESOL students in the school."*
>
> *"A teacher comes in at 7:30 to tutor students, and one hour after school for tutoring. The school pays [the teacher]."*

"We selected the more advanced, self-driven students; those with 3 or higher on FCAT. But, since I needed 240 kids in iPrep, I also included upper Level 2, the "bubble kids," in grades 6-7-8 in each block."

"Students applied for iPrep. Then some volunteered during the year. Some students left during the year, opening up spaces."

Question 2. How were the iPrep teachers selected?

"Only two volunteered. They are strong teachers and tech-savvy. They had no experience working together but had classrooms next to each other in the past."

"We asked teacher to apply."

"During training, one teacher dropped out."

"The department chair applied, and then withdrew after the summer institute."

"We knew the teachers were stellar. We had physical problems. The TV is still not working."

"The TV came in cracked and is still not up."

"For the selection of teachers, I opened it up, but only two were interested."

"Many teachers in school applied for iPrep."

Question 3. Have you had a chance to visit your school's iPrep Math class? If so, what was your impression of the class you observed? Have you personally used the Implementation Fidelity Rubric (IFR)/Classroom Observation rubric?

"*I am not aware of that rubric."*

"The class was high academically for teachers and students."

"It is tough teaching Common Core to students when the tests are FCAT."

"I enjoy seeing the kids searching for answers."

"Some kids do not have access to computers at home."

"The iPrep students are more stressed."

"I do use the rubric." [The principal produced a rubric that was being used. It was not the IFR. The principal felt that this rubric was similar to the IFR in many ways.]

"We have a goal each week; for example, "student engagement" one week, "lesson plan" another week."

"Every day gets a little better."

"I love it. The students are organized. They immediately start the lessons. If additional intervention is needed students work in small groups with the teachers."

"We are an ETO school. We are a D school. We have a math coach that works with the two teachers."

"I see kids work independently, searching for answers, rather than being given answers."

"Some kids initially resisted being in iPrep."

"The rubric is difficult to use. It is long. The purposes of our first visits were to see if everything is working."

"I use the rubric that is similar. I use the District's rubric."

"I don't care about Carnegie usage, the color code, as long as the kids are learning. I know that the kids and teachers are working at it. I haven't looked at it [Carnegie report]. I forward it to teachers."

Question 4. If iPrep were rolled out again, and with the benefit of hindsight, is there anything that you would want to be done differently?

".... contact parents early, before school starts. Our orientation was too late."

"Parents were encouraged to visit the classroom if they were unsure of iPrep."

"A few students were removed. Some were in iPrep by mistake because I did not have the FCAT Levels. The teachers caught the mistake."

"A handful was frantic. They don't have computers at home. They can come to the Media Center for computers. The Media Center is open early, but the bus doesn't come until 9:50."

"While it [iPrep] has to be open to all, only gifted and advanced kids are in iPrep."

"In this school the non-iPrep students did better than the iPrep on the Interims."

"We are 11 points away from being an F school."

"We started pulling kids out [of the iPrep classroom] for FCAT preparation. We rotated kids out in 30-minute intervals for FCAT tutoring."

"We did an orientation, in September. We should have had more lead time to get kids into the program, set up the technology, and, let parents know... be aware before school starts."

"You prepare all of these lessons and you can go only through half of what you prepared."

Question 5. Have you had any feedback about iPrep Math so far this year from your school's stakeholders (i.e., iPrep teachers, non-iPrep Math teachers, iPrep students, and parents of iPrep students?

Teachers and Staff

"The iPrep teachers are excited about the possibilities of iPrep but at the same time realistic about the types of students in their classes."

"One teacher tried to implement PBL [project based learning]. You need to be ready to let go of your students."

"Non-iPrep teachers are afraid iPrep will bring them [i.e., their school performance grade] down."

"The teachers had to water down the PBL [project based learning]. There are lots of deficient readers in iPrep this year."

"We know that because a child uses a cell phone does not mean they are tech-savvy."

"Teachers say they are getting students to buy into iPrep. Teachers complain about [lack of] motivation."

"The iPrep teachers feel very alone. The teachers attend our common planning but they have to have more of a best practices setup, with PLC's [Professional Learning Communities] during the summer and year long, like on early release days. The teachers want to have contact during the year. I contacted Lisette about this. Next year Lisette says she will set up PLCs. Maybe something can be set up for teachers on Edmodo too."

"Other [non-iPrep] teachers feel the iPrep teachers are trying to outshine them. [At the same time] we have a very traditional seasoned staff; they do not want to be iPrep teachers."

"The iPrep teachers enjoy it."

"The teachers are too tough; they need to lighten up."

"Teachers like the curriculum. The child can move on at their own pace. They can advance. Teachers don't have to water down for students in the class to move on."

"Non-iPrep teachers like it. They want all the classrooms to be like the iPrep class. The civics class will be taught in the iPrep room."

"The non-iPrep teachers have been concerned that iPrep would drag the school grade down."

"The counselors are concerned about the 8th grade students who are moving into the 9th grade."

"Counselors were concerned about 8th grade Levels 1 and 2. They came out with failing grades at the first District Interims."

"The teachers will stay next year. They have learned to work together."

"Both teachers love it."

"Teachers like that kids are self-paced. They track how kids are doing and let them move ahead."

"Classroom management is important … because kids will damage hardware."

Students

"For some students, the issue is that they do not have a laptop or the internet at home. We have a checkout system for laptops."

"We have 120 laptops to check out."

"We got loaner laptops."

"Some students love it [iPrep]; some don't. Some say it is too much work, more than the traditional classes. They all like the teachers."

"Students do not complain. A handful say that the teachers are too strict."

"Some students complained in the first quarter. We told them to try it another quarter. We saw some students were still not making it. We conferenced with the teachers."

"The students initially thought iPrep was wonderful. Then reality set in. Afterwards, parents complained and students started complaining."

"They were initially excited. Then they said, 'I can't do it.' Then they focused. Students worked harder. Teachers tapered down the assignments."

"For the most part, the kids like it. Some say the teachers are too strict." They have to be strict. One has a bracelet on his ankle."

"We have a large immigrant population… a transient population. This is the first base when they get here [the U.S.]."

Parents

"The parents did not have an orientation. There was no feedback from parents. They do not question the program. In this community, parents take what we say as the word of God. We want to do it [have parent orientation] next year."

"Parents love it."

"We didn't have an orientation. We had a few parent complaints. They said "no" because of the fear of the unknown. Parents didn't understand, or didn't want to."

"There was no orientation for parents this year. There were few complaints. The few [complaints] tapered off as the year progressed. We would not take kids out of iPrep."

"We have an "Open Door" policy. They can come in and see. They liked it."

"It wasn't marketed properly."

"This is like Hotel California."

Question 6. You probably started thinking and maybe planning for the iPrep Math program next year, the second year of the 4-year program. From your experiences so far this year what changes, if any, are you thinking of making to the iPrep program next year?

"This year was a trial year."

"Three preps is too much. We will have one room for 8th grader, for 8th grade math and Algebra. 7th grade will be only for 7th grade math."

"Next year we might have high Level 3 6th grade and 7th grade students in iPrep. Level 1 and 2 will not be in iPrep."

"We will keep everything the same. We already had an orientation for 5th graders. We will have a summer orientation. We will use the same criteria in student selection as this year."

"We won't have 6th grade because of the problem of transition from elementary school. Adding iPrep [for 6th graders] furthers the problem."

"The 7th grade is doing really well. We might expand to 8th grade and include algebra with students who were in the [iPrep] program this year."

"We have to change because three preps is too much for teachers."

"We will be putting gifted and advanced in it. They are more academically ready."

"If asked, I would say that I'd like the entire school to be like iPrep."

"The teachers will stay the same. We talked about changing. Now they want to stay. They've learned to work together."

"Next year will be better. We talked to parents and kids. Applications started coming in for next year already.

"Next year, we will put Levels 2-5 students into iPrep."

"We have 6th and 7th graders. We think 6th grade is a huge transition so we won't have 6th graders next year. 7th graders are doing great this year."

"We don't have a counselor for iPrep, the school counselor does everything for the regular students and iPrep students."

On-Site Interviews with iPrep Math Teachers

At each of the three middle schools visited, the two full time iPrep Math teachers were individually interviewed, using an open-ended set of questions. The six teachers interviewed demonstrated that they were knowledgeable about the key components of the iPrep Math design. Most noted the benefits of following a block schedule if the iPrep Math model was to be effectively implemented.

In general, the teachers interviewed shared concerns about the selection of the students placed in iPrep. They noted that students varied in their ability to be successful in the iPrep Math classroom. For the most part, they noted that those students who were academically motivated and able to work independently, regardless of their FCAT Level, adapted more readily and progressed at a faster pace. Many of the teachers reported that, with diligent effort, by the middle of the academic year, many of the students who were challenged by the iPrep design did learn how to work more independently and adhered to the regimen established in the iPrep Math class. This was not universal, however.

The questions and the responses of the twelve iPrep Math teachers interviewed are as follows:

Question 1. Compared to your experience teaching math in previous years, do the students in your current classes seem to be gaining a math knowledge base and or skill sets at a faster pace the students were in the past?

- **To what do you attribute this? Do you attribute this to the iPrep Math program? If so what aspects of the iPrep contributed to this?**
- **I suspect that math has been a difficult subject area for some of your students. Has their involvement in iPrep Math changed their perception of, and attitudes towards math? If so, in what ways.**

"This is my first year teaching Level 1 and 2 students. In the past I taught advanced students."

"Our kids are keeping up and grasping the materials."

"The kids would be advanced if it were not for the glitch at the beginning. We are behind where we would have been."

"Some students changed for the worst; some students are getting confident in their abilities."

"Students who do the work will learn better than last year. They have more resources this year -- like the teachers, Carnegie, and Khan videos."

"Some students say they do well in math, compared to before."

"iPrep makes the kids accountable. They have to do it on their own. Math is more rigorous."

"We do PBL [project based learning]. It teaches skills through a project, and students see the use of the data. It gives the skills they learned greater meaning."

"PBL is the hardest part. We had to do the research for PBLs. We did unit pricing in a supermarket for 6th graders … ratio and proportion for 30 people to apply math and make it relevant. We went to foodnetwork.com"

"iPrep changed their self-efficacy. They feel they have mastered skills. They feel confident they can learn math."

"Here [in iPrep], they are learning math. Why? Because they are the owner of their learning. With PBL they get engaged"

"Our 8th grade students are above non-iPrep students; our 7th grade students are above non-iPrep students, but the 6th grade iPrep students are behind the non-iPrep in the school."

"The three of us work together. We do team teaching. We reflect, revise and revisit what we do."

"Our 7th graders … you hear them defending and discussing math, and talking about it."

"The 8th grade students, during the last quarter, finally felt successful. They finished the module that we thought would take them longer to do."

"Some Carnegie material is too hard. Students do not have the background material. So we had a workshop about it. Once we even skipped an island because the content was Common Core, not FCAT."

"We have a weekly plan. Monday and Tuesday are new modules, Wednesday is the workbook, Thursday is Gizmo and assessment, and Friday is assessment."

"Students find the workbook harder than their textbooks but it's more useful for them than just using the computers."

"The responsibility is more on students. There is more pressure [on them]. Some students have surprised me and done well. Very few have lost ground."

"When you look at a child's grades, you know that it's not just because of math that they did poorly."

"Students are more aware of their progress because of the Carnegie reports, the Carnegie data, and their MATHia scores. Carnegie makes them care more about their pretests because more problems might be assigned to them on an island [based on their pretests]."

Question 2. At this point in time would you make any changes or modifications to the iPrep Math program, to strengthen it?

"It's too early to tell. For us, it has been a good experience. I am confident our students will do well on their tests."

"I wish we were on the block schedule but 70% voted against it."

"It should not be open to everyone, should only be for students who are self-directed and motivated, not for students who have consistently failed math."

"I would change the kids who are placed into iPrep, to exclude language issue kids and behavior issue kids."

"We need a full-time third person and smaller classes."

"We have to keep out misbehaved students...and students struggling to learn the language."

"Team work is important. There is no division of labor for us [the teachers]."

"We want a block schedule. With the traditional schedule, there is too little time. Having one hour and 20 minutes would be better. We could then have a variety of activities taking place. IPrep is difficult in such a short period of time. There's no time to do PBLs."

"Sixty kids are too much."

"Sixty is too many students; 50 is better for three teachers."

"We need a smaller class size. With 60 talking at once, the noise level is a problem."

"Sixty students is too many; 45, or even 52, would be good."

"iPrep is a hard fit for Level 1 students, because of their reading."

"iPrep is not good for Level 1 readers. They have a problem with study skills and it's hard for them to research independently."

"We could use more professional development in Florida's Common Core standards."

"Carnegie in NOW making sense because of Common Core."

"The technical problems slowed us. We would have been ahead."

"Some SPED students have trouble with there being so many techniques and resources. It's too much auditory and visual too."

"For next year, leave 6th graders alone in a class. Leave EOC-bound Algebra students alone."

Question 3. How important do you believe is the self-paced learning aspect of the iPrep Math program? Why? Have you noticed any changes in students' ability to work independently and in a self-directed fashion since they have been involved in the iPrep Math program?

"The responsibility is more on them. They come in and know what to do. They have to be responsible. But for some, it's them against us."

"You have to be on them; monitor them to keep the on track. The students have developed the skills now. The workbook pages are very different from the past."

"Kids who were self-directed are more so. Some of those who were not, became self-directed, but, some became 'on task' or regressed. I would say about 1/3 have become more self-directed."

"We talk to them a lot. Keep up with them. Ask, 'where are you in iModule?'".

"They have a hard time putting their words on paper."

"They are embarrassed to raise their hand."

"They are more aware of their progress. Carnegie makes them more aware. We pull reports and tell them that we are grouping you based on your progress."

"Some Level 1s and 2s surprise you; a few are lost."

"A lot of Carnegie is beyond the FCAT Level."

"Parts of Carnegie are too deep. They are good for Common Core but not FCAT. We supplemented and workshopped, and skipped them forward."

"The workbook has new language."

"They are the owner of their learning."

"They are engaged in their projects."

"They are motivated to learn English because they want to do the work."

"They are more independent."

"Our workshops are successful. They answer questions more often than in a traditional class."

"They are more comfortable with iPrep now and feel good about math. They show off when they finish a unit, even if they aren't ahead."

"Getting into Carnegie was hard at first. We played the part of the student and tried to get in. We did not know that they didn't know how to get in. We assumed that they knew how to get in. then we taught them how to get in."

"We use Lanschool all the time. We use it to teach."

"Lanschool: we had it, and lost it."

"Teachers at this school do not have the technical ability to monitor each student's screen."

"Students do not do any better [than before]. Hard workers still work hard. I still have to set the pace for 60% of the students. But with the third period [class] I only have to be on top of 30%."

"The phobia about math changed I think. They are proud of what they have accomplished."

"My home room was in iPrep so those who did not have a computer at home can use the laptop in class."

"They have learned to work independently. "

"We want 6th graders next year, so they will be ready for the 7th and 8th grades."

"Students are not doing a better job that when we first started this year. The 6th graders were doing the worst. We could not get them to do anything. They did not know how to use software. Next year when we begin we will give a basic introduction to Carnegie."

"The 6th graders are noisy because of the many levels in the room."

"I have noticed that some will say, 'I can find the answer myself.'"

"We have expressed concern to the Principal about keeping the lowest level students in iPrep."

Question 4. Have you found any of the databases provided in the Carnegie Toolkit useful? How have you used these data?

"We do individual reports on the students every two weeks. Then they get their grade. I use the data provided by the reports."

"I use it to find out if students are on track, about twice a week."

"I print the reports every month, but they are not helpful to me in teaching and planning."

"I monitor students daily on my computer screen rather than with the summary Carnegie reports."

"Every two weeks we go to Carnegie to see if there's a problem."

"We don't group them. They group themselves. They move to work with friends, unless they chose to work alone. If they are not working well together, we move them."

"We use the rubric, looking at time on task, units completed, etc. We pull the reports on the students."

"We share the report information with them and give them a grade based on it."

"I monitor it. In the past week, it was interesting to see where some students got stuck. I have picked children for special attention based on the reports."

"I check reports twice a week."

On-Site Focus Groups with iPrep Math Students

One student focus group with iPrep Math students was conducted at each of the three schools, with a total of 28 students participating.

Most of the students were excited about the physical classroom (i.e. colors, physical arrangement of chairs and desks, mobility of chairs) and the technology that was available to them. Many, but not all, students were able to utilize the iPrep technology and software at home. Some did not have access to the Internet, or did not have a computer at home.

While most of the students appreciated the self pacing and independence of iPrep Math, others were still not sure if the iPrep Math program was for them, indicating a desire for more direct instruction by their teachers.

Many of the students felt that the amount of work given was excessive and that there was a short time frame with which to finish work. They felt that iPrep Math was too hard and preferred the amount and relative ease of the work they had to do in other classes.

The questions posed during the focus group meetings, and the responses provided by the participating students are as follows:

Question 1. First we would like you to compare your iPrep Math class with the other classes you are taking this year. How is the iPrep class different from your other classes?

"... laptop..."

"We have Internet."

"The room is bigger."

"There are more students in class."

"It's easier to learn."

"We get to sit in groups."

"…more space … "

"We get to use the computers almost all the time."

"You choose what you want to work on."

"You can go ahead."

[Note: Most of the students said they are doing better this year in math.]

Question 2. Is there anything that you did not like about your iPrep Math class?

"The videos are hard."

"Students talking in groups is distracting."

"…the Carnegie islands; they get harder and harder."

"It's too advanced…"

"Too much noise in class…"

"We use the computers too much. I like to write."

"The deadlines are hard to meet."

Question 3. Do you wish all your classes were like iPrep Math? Why or why not?

"Yes. Other classes should be like iPrep. "

"We learn more in iPrep."

"The teachers help us more. They go over it."

Question 4. Do students act differently in your iPrep Math class that they act in other classes? Is there more noise; is that a good or bad difference? Is there more talking; is that a good or bad difference? Is there moving in terms of students' talking and walking around the room; is that a good or bad difference? Do you enjoy using computers like MATHia to learn Math? What do you like? What don't you like?

"When teachers are in the other part of the room the students get on other websites."

"The teachers can't see what everyone is doing."

Question 5. Do you think you are learning more math in the iPrep class using computer programs like MATHia to learn math than in earlier class when you did not use MATHia?

"We take notes plus we get a lot of practice on the computer. Last year they gave us notes and then homework. It is better this year."

"Feels like you are independent."

Question 6. When you are having trouble learning something in your iPrep Math class what do you do? When you get stuck in a math problem what do you usually do to get unstuck? Did you ask classmates for help? Did you ask your teacher for help? If so what resources did he or she use? Does the teacher use a SMART Board to help you learn math? Did it help? Did the teacher ask you to get on Edmodo? What did you do with Edmodo?

"We ask the teacher. Sometimes we bring the teacher our laptop."

"Sometimes we ask other students for help."

Question 7. Has there been any time this year that you wished you were not in the iPrep Math class? Why? Did you try to get out of the class?

"Yes, I don't like MATHia …there are too many islands. "

"MATHia is too hard. The units are too long."

"The teachers don't explain enough."

"It's too much work."

"We work the whole day on one question."

"If you get one thing wrong, you get more work."

Question 8. What was the hardest things getting used to in your iPrep Math class? Is it still hard? (Why or why not?)

"It's less stressful than the beginning of the year."

"All the work."

"All the responsibility."

"Taking care of the laptop."

"Too little time to do work; it's too much work. "

".. learning by yourself... Carnegie... Khan Academy."

"I learn more when the teacher explains it."

Section 8: Summary

This report provided an in-depth review of the experiences of those involved in the iPrep Math program and the academic and non-academic outcomes that were targeted by this program. The findings of this evaluation are summarized below.

School Site Visits

The results of the last three site visits confirmed earlier impressions that most of the students were excited about the physical classroom (i.e. colors, physical arrangement of chairs and desks, mobility of chairs) and the technology that was available to them. Many, but not all, students were able to utilize the iPrep technology and software at home. Some did not have access to the Internet, or did not have a computer at home. While most of the students appreciated the self pacing and independence of iPrep Math, others were still not sure if the iPrep Math program was for them, indicating a desire for more direct instruction by their teachers.

In general, the teachers at the last three site visits shared concerns about the selection of the students placed in iPrep. They noted that students varied in their ability to be successful in the iPrep Math classroom. For the most part, they noted that those students who were academically motivated and able to work independently, regardless of their FCAT Level, adapted more readily and progressed at a faster pace. Many of the teachers reported that, with diligent effort, by the middle of the academic year, many of the students who were challenged by the iPrep design did learn how to work more independently and adhered to the regimen established in the iPrep Math class. This was not universal, however.

Overall, the principals interviewed at the three site visits appeared to be satisfied with the implementation of the iPrep Math program at their middle schools. They demonstrated an awareness and appreciation of many of the innovative aspects of the iPrep Math program, and were hopeful that student performance in math would be positively impacted. The principals indicated that the decision regarding which students and grades/courses to include in iPrep Math varied, with student need, teacher expertise, and student enrollment limits in iPrep Math being considered. The principals at the three middle schools were mindful of the central role played by the teachers in the iPrep classroom. The teachers' expertise with classroom organization and management, their ability to work as a team, and their comfort with technology, and excitement about innovation were recognized as being pivotal.

The principals reported that they viewed the current year, to some extent, as a pilot year and that they were monitoring the data being generated about student performance on different measures of math achievement. This information will inform decisions about how to move forward in the next two years of the implementation of the iPrep Math program.

Pre/Post "Middle Moves" Survey

The grant-specified goal of the project was to increase, by 10% over the fall baseline, students' "knowledge of and comfort with the procedures and requirements of middle school student "understanding of how middle school works and how to work effectively in middle school" is viewed as a "key factor in success in middle school." For the first set of items, assessing students' ability to identify key individuals and resources (Goal 1), the numbers and percentages of students who indicated that they knew of the relevant resources indicate that 3 of the 4 items assessing knowledge of resources evidenced positive change of at least 10%. These changes were statistically significant.

For the remaining items assessing Goals 2 through 5, two items reflected a positive change consistent with the curriculum goals. These were items under Goal 2, "I feel lost in my middle school because it's bigger than my elementary school" and "I worry about having so many more teachers in middle school than I had in elementary school." Both items met the criterion of 10% change in the desired direction. Students were significantly less likely to report feeling lost and less worried about having more teachers in the middle school

Pre-post differences on the remaining items were not in a goal-consistent direction. Students were less excited about being in middle school and less sure they could complete school work or meet teacher expectations. They were less likely to say they have to study harder, more worried that their grades will be worse, and less likely to say they have to take more notes in middle school. All items related to developing success strategies and consequences for failure to follow the rules changed in a goal-inconsistent direction, except the last item regarding need to control temper. It should be noted, however, that responses at both times were generally positive, with mean values between 3 (Somewhat Agree) and 4 (Strongly Agree) on items for which agreement indicated goal consistency (such as being excited about middle school), and mean values less than 3 on items for which disagreement indicated goal consistency (such as worry that grades will be worse). Since the survey was administered only to students in iPrep Math classes, there is no way to determine whether the "Middle Moves" curriculum was more or less effective for iPrep Math students than for those not in iPrep Math.

In sum, consistent with the aims of Goal 1, students were better able to identify key individuals and resources from the fall to the spring survey administrations. Some aspects of Goal 2 also evidenced positive change, in that students were less likely to feel lost and less worried about having more teachers in the spring. Changes on items reflecting aspects of the remaining goals were largely goal-inconsistent. It is possible that these changes might have been more negative in the absence of the "Middle Moves" curriculum. However, this possibility could not be addressed in the evaluation as there was no comparison group of students who did not receive the curriculum.

Pre/Post General Academic and Math Self-efficacy Survey

All of the mean scores were above 3 on the 4-point academic self-efficacy scale and above 3.8 on the 5-point perceived math ability scale, indicating relatively high self-efficacy and perceived ability. However, there was some reduction during the school year in students' self-ratings of

both general academic and math efficacy. The decline in general efficacy was consistent across subscales.

The results for the fall and spring surveys for the general academic self-efficacy scale and the math-specific self-efficacy scale for subgroups (ethnic groupings [Black, Hispanic, White, Other], economically disadvantaged [ED], English language learners [ELL], and students with disabilities [SWD were examined. In both fall and spring, all of the mean scores were above 3 on the 4-point academic self-efficacy scale and the 5-point math ability scale, indicating relatively high self-efficacy and perceived ability. However, significant general academic self-efficacy (total scale) *declines* were found for all subgroups. By contrast, significant math efficacy *declines* were only found for some subgroups (Hispanic students, economically disadvantaged [ED] students, and students with disabilities [SWD].

Academic Outcomes for iPrep Math and Non-iPrep Math Students

Examination of the numbers of iPrep Math participants and comparison participants indicates that 11,419 students were initially enrolled in iPrep Math and 32,733 students were in the comparison classes. By the fourth quarter, 9, 919 of the original iPrep Math participants were still enrolled in iPrep Math courses. An additional 195 students were placed in iPrep Math classes between the first and fourth quarters and 893 of the original iPrep Math students were no longer enrolled in iPrep Math classes. Of the original students in the comparison courses, 30,206 were still enrolled in comparable non-iPrep Math courses at the end of the year.

Some students self-selected iPrep Math, others were placed in iPrep Math classes. Some schools placed their highest performing students in iPrep Math, others their lowest performing students. Some schools limited iPrep Math to one grade while others had two to three grades in iPrep Math. Although variation across students and schools is accounted for to some extent by including 2013 test scores and demographics in the analyses, as students were not randomly assigned to the iPrep Math program, less confidence can be placed in the results than would be possible with a true experimental design

Students enrolled in iPrep Math were compared to students enrolled in equivalent courses on 2014 FCAT Math performance. Algebra EOC test performance, course content, effort, and conduct grades, absences and suspensions.

Briefly the results indicate that iPrep Math students performed better than comparison students on the FCAT Math measures (scores and proficiency levels) in both 2013 and 2014, but gains in performance were somewhat smaller than those for the comparison students. On the Algebra End-of-Course exam, there were no significant differences between groups in Grade 7, but iPrep Math students in Grade 8 had significantly lower scores and pass rates compared to non-iPrep Math students. iPrep Math students received somewhat lower course content grades, but higher effort grades, compared to non-iPrep Math students.

It was expected that iPrep Math students would demonstrate more involvement and sense of personal responsibility which would translate into better attendance and behavior. The present analyses indicate that iPrep students in fact had fewer absences and were less likely to be

suspended, but whether there were pre-existing absence and suspension rate differences between the iPrep Math and comparison group is unknown.

Student progress with the Carnegie MATHia software was related to better performance on both the FCAT Math and Algebra End-of-Course (EOC) tests. Increases in student academic self-efficacy were also associated with higher FCAT Math and Algebra End-of-Course (EOC) scores. Although the magnitude of these effects was relatively small, they suggest that enhancing efficacy and student use of appropriate technology are worthwhile goals of the program, as proposed in the RTT-D grant.

iPrep Math has not yet resulted in observable gains in FCAT performance, and 8th grade performance on the Algebra End-of-Course (EOC) exam was lower for iPrep Math students. This is a finding that would be important for program administrators to address. However, as this is the initial year of iPrep Math implementation, no definitive conclusions can be drawn about the effectiveness of the program. As a primary goal of the program is to innovate markedly new ways of teaching and learning, it will likely take additional time for teachers and students to adjust. Thus, it is not surprising that gains are not demonstrable at this point.

Principal Survey

The survey was completed by all 49 middle school principals who had iPrep Math classes. Principals reported some variation in the numbers of teachers in their iPrep Math classrooms. The majority did report having 2 ½ teachers, but some had 3 teachers and about a fifth had only 2 teachers.

Slightly more schools had single grade classrooms, regardless of how many grades participated in iPrep Math overall in their school. Two principals reported serving only 7th grade students, while 27 served all three grades, and 19 served two grades. One principal served 6th and 7th graders but did not indicate whether or not they were in multi-grade classrooms. Three principals reported that iPrep Math was serving the lowest FCAT Levels (1 and 2) at their schools, while six principals reported iPrep Math serving the highest iPrep Math Levels (3, 4, and 5) at their schools. Thirty-nine principals, a majority, reported that iPrep Math served 4 or more FCAT Levels.

On the Understanding and Experience part of the Principal Survey, principals were asked to indicate the extent to which they agreed or disagreed with 12 statements reflecting various aspects of their understanding, expectations, and experience regarding the iPrep Math program in their schools. Some items overlapped those included on the Teacher and Student Surveys administered prior to the April, 2014 Formative Report. Other items were exclusive to the principals.

There were several items that elicited high levels of agreement. These were items for which mean values exceeded 3.00 and 80% or more principals agreed (somewhat or strongly) with the item. Specifically, 82% agreed that students are more engaged in iPrep Math, 94% agreed that technology-based activities are essential to meeting learning objectives, 92% agreed that students learn a great deal working in groups, 80% agreed that Carnegie administrative reports are useful,

82% agreed that personalized learning enables students to work at their own pace and still accomplish learning objectives, 92% agreed that the iPrep Math Implementation Fidelity Rubric (IFR) helps them to observe how well teachers are following the program, and 96% agreed that the teacher's role in iPrep Math is to facilitate learning.

Other items yielded lower levels of agreement. Only 71% of principals agreed that having multiple teachers with large classes works well at their schools, only 58% agreed that student behavior is easier to manage in the iPrep classroom, 48% agreed that students moving around and talking with each other is distracting, 31% agreed that students are expected to remain in their seats and raise their hands if they want to talk in class, and only 63% expected iPrep Math students to perform better on Algebra End-of-Course (EOC) and FCAT Math tests.

This pattern of responses by principals is comparable to those elicited from teachers in focus groups and on the Teacher Understanding and Experience Survey (as detailed in the Evaluation Team's April, 2014 formative report). Both principals and teachers agreed that iPrep Math students are more engaged, that technology-based activities are essential, that collaborative and personalized learning are positive aspects of the program, and that the teacher is a facilitator. Both principals and teachers were less positive about large class sizes, student behavior management, and distractions caused by student movement and conversation. (Similar responses were also obtained from student surveys and focus groups). Principals and teachers were also comparable in their expectations regarding the performance of iPrep Math students on the Algebra End-of-Course (EOC) and FCAT Math tests, with over a third of principals and teachers disagreeing that they expected better performance as a result of student involvement in iPrep Math.

Conclusions

As this is the initial year of implementation of iPrep Math it may be too early to reach definitive conclusions about the effectiveness of the program based on the data available for this and earlier reports to the District. It likely will take additional time for teachers and students to adjust to the new personalized learning environment and the Carnegie Learning's MATHia software program.

Implementing iPrep Math from the time the Race to the Top Grant was awarded in December 2012 and the time schools opened in the fall of 2013 was a massive undertaking for Miami-Dade County Public Schools. Early infrastructure problems and extensive changes to the way students and teachers approached learning made this first operational year a formidable challenge. It is clear from surveys and qualitative data that there are concerns about the class size of 60 students and it is unclear whether further experience with the model will ameliorate these concerns. As students, teachers, and school administrators undertake the second operational year following a year of experience with the model, we may see that returning students and teachers have adapted to this new learning environment. New students admitted to the iPrep Math program in 2014-2015 may face the same challenges and issues as the first cohort of students confronted in 2013-2014.

Attention, however, needs to be given to the question of the target audience for the iPrep Math program. There is a tendency in some schools for the iPrep program to become an enrichment

program for mid-to high performing students, rather than, as was initially designed, a program for those who are or are at risk of falling behind. The comments provided by teachers, principals, and students in surveys, as well as during interviews and focus groups contained in this and earlier reports provide a basis for the future direction of the program.

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About the Authors

Dr. Adela Beckerman received her Ph.D. from the State University of New York at Albany. She has been on the faculties of Florida International University, Nova Southeastern University, the University of Vermont, and Florida Memorial University, a Baptist-affiliated historically black university in Miami Gardens, Florida.

Dr. Beckerman has extensive experience working with the Miami-Dade County Public Schools as an external evaluator. She is currently an external evaluator of five 21st Century Community Learning Centers (21st CCLC) funded by the Florida Department of Education. She is also the external evaluators of the U.S. Department of Education Magnet Schools Assistance Program (MSAP) grant titled *STIRR (STEM: Increasing Rigor and Relevance),* initiated in fall 2013. *STIRR* is a federally-funded Magnet Schools Assistance Program (MSAP) is a three-year effort designed to introduce STEM programs (iTech and BioTech) in two high schools. The overarching goals of this effort are to offer academically rigorous curricula, reduce minority isolation, and educate students about STEM-related careers.

Previously, Dr. Beckerman served as the external evaluator for the 2007-2011 U.S. Department of Education Magnet Schools Assistance Program (MSAP) grant titled *CHOICES2* received by the Miami-Dade Public Schools. This federal grant aimed to reduce minority isolation and improve academic achievement as measured by the FCAT through innovative magnet school programming in underperforming schools. She also served as the external evaluator for a special research project-focusing on one of the *CHOICES2* schools in this grant. This "invitational priority" grant from the U.S. Department of Education was designed to assess the impact of object-based learning at this elementary school.

Dr. Beckerman also served as an external evaluator for another U.S. Department of Education Magnet Schools Assistance Program (MSAP) grant titled *ECHOES* received by Miami-Dade County Public Schools, which was also awarded in tandem with an "invitational priority" grant (2004-2007).

Earlier (2006-2007) Dr. Beckerman conducted an evaluation of a Miami-Dade School Board-funded tutoring program for students in foster care group homes. This study involved interviews with administrators involved in the oversight of the tutoring program, group home staff and the youth receiving services. The data collected addressed the structure of the tutoring services, the qualifications of the tutoring staff, and the level of satisfaction of the youth receiving services, as well as the frequency of the tutoring services that were offered.

Dr. Beckerman has been involved in evaluations of several federally-funded grants received by the Broward County Public Schools. One recent grant (2008-2009) focused on improving counseling services to students in four schools. This project provided staff professional development and character education lessons for students and their parents. The project also focused on the dissemination of best practices and improving linkages between parents and schools. Other grants for which she served as an external evaluator for Broward County Public

Schools were magnet school grants, a family-focused technology program grant, and the Marine Sciences Magnet Program in Fort Lauderdale.

Dr. Leonard Fontana and Dr. Beckerman have collaborated on numerous evaluation projects which involved varied qualitative, quantitative and mixed method research designs. They have experience developing and analyzing surveys, collecting and assessing primary and secondary data, conducting univariate and multivariate data analysis, and developing protocols for, and conducting interviews and focus groups. They have presented the research findings from numerous projects at professional conferences and published research articles in professional journals. For example, they presented the empirical results of the evaluation study of *ECHOES* with Ray Azcuy at the annual national conference of magnet school programs in Charlotte, North Carolina in April 2009. They are scheduled to present the empirical results of the evaluation study of *HeARTS & Minds* in May 2014 at the annual national conference of magnet school programs in Hartford, Connecticut.

Dr. Fontana received his Ph.D. from the State University of New York at Stony Brook. He has been on the faculties of San Diego State University, Adelphi University, and the State University of New York at Plattsburgh where he was the Chair of the Sociology Department. Until recently, he was on the faculty of Broward College (1990-2010).

Currently, Dr. Fontana is leading a group of researchers in evaluating a four-year Race-to-the-Top-District grant awarded to Miami-Dade County Public Schools. The funded project, titled iPrep Math, is a $30 million grant from the United States Department of Education designed to introduce an innovative approach to math education in all of the middle schools in the District.

Dr. Fontana is also the external evaluator for the Miami Dade County Public Schools' Arts in Education Model Development and Dissemination (AEMDD) grant awarded in 2010, which is being conducted at one elementary school. The title of the project is *HeARTS & Minds*. The evaluation design includes examining students' FCAT scores in Reading and Mathematics, as well as students' art skills and faculty's teaching and learning practices. As an external evaluator, Dr. Fontana provides assistance in the evaluation of professional development workshops and the development of rubrics assessing students' self-reflection about their art work (using Bloom's taxonomy) and templates for arts-integrated lesson plans. Dr. Fontana also conducts interviews and focus groups with students, teachers, and administrators at the project site. The evaluation of *HeARTS & Minds* involves the use of a quasi-experimental design. The statistical analysis conducted includes a comparison of changes in the FCAT scores and other empirical data such as attendance records of students in the "treatment" school and a comparison school.

Dr. Jerome Levitt received his Ph.D. in educational research from the University of Michigan. He has extensive experience in educational research and program evaluation. He has been a Research and Evaluation Specialist for the Bertha Abess Children's Center and an Adjunct Professor of Education in the Nova University Center for the Advancement of Education. Dr. Levitt worked for many years in the area of program evaluation and research for the Miami-Dade County Public Schools, serving as the Executive Director of the Office of Program Evaluation from 2009-2011. He is currently the Director of Advanced Research Consulting, specializing in educational and psychological research and evaluation.

Among his professional activities, Dr. Levitt was a Founding Member and Officer of an American Educational Research Association Special Interest Group on Evaluator of Federal Education Programs. He also served as President of the Florida Educational Research Association and as the M-DCPS Research Advisor to the Children's Trust.

Dr. Levitt has produced 40 evaluation reports for the Miami-Dade County Public Schools, He also has authored 14 published research articles and over 30 conference presentations in his areas of expertise.

Dr. Mary Levitt received her PhD in developmental psychology from Syracuse University. She has been a faculty member in the Psychology Department at Florida International University throughout her career and served as Department Chair from 2007-2012. She is currently professor emeritus at the university and Co-Director of Advanced Research Consulting.

Among her professional activities, Dr. Levitt has served on the editorial boards of major research journals and reviewed grant proposals for the National Science Foundation, the National Institute of Mental Health, and the Spencer Foundation for Educational Research. She has served on the steering committee of the Society for Research in Human Development.

Dr. Levitt has been engaged in research throughout her career. She has authored over 50 publications, 5 technical reports, and over 120 conference presentations in her area of expertise. She has directed 21 doctoral dissertations and 15 master's theses. She has received grants from the National Science Foundation and the W. T. Grant Foundation to fund her research.

Together, Dr. Mary Levitt and Dr. Jerome Levitt, have been co-principal investigators on two major research projects funded by the Spencer Foundation. The first of these projects was to study school adaptation and achievement in a multi-ethnic sample of M-DCPS students across the transition from elementary to middle school. The second project extended this research to study school adaptation and achievement in newly immigrant children and adolescents representing the principal populations of immigrant students entering M-DCPS schools.

Most recently, Drs. Mary and Jerome Levitt have received funding from the Russell Sage Foundation to produce a book including the results of their research on immigrant students. Through Advanced Research Consulting, the Levitts have worked in partnership with Drs. Adela Beckerman and Leonard Fontana in evaluating the M-DCPS multi-million dollar Race to the Top District Grant.