

MATH TRACKS



Michiana Math Track

Program Evaluation

Year 4 Results

2009-2010 School Year

Kindergarten Assessment 1 (Orange Assessment)

Only students who completed both pre and post tests were included in the analysis. There were 123 KG students in the control group and 233 in Michiana Math Tracks (MMT) schools who completed both assessments. Initial group means at the beginning of the year were statistically different based on treatment and control groupings, $F(1, 355) = 28.2, p < .001$. The control group students scored about 4 points higher than MMT students on the KG1 pretest. At yearend MMT students demonstrate a statistically significant increase in achievement compared to the control group, $F(1,357) = 66.8, p < .000$. The MMT group scored 3 point higher on average than the control group. The average gain was approximately 7 points more for MMT students. This assessment has a total score of 26 point. The results of an Analysis of Covariance (ANCOVA) using September scores as a covariate, yearend test scores as the dependent variable, and the Michiana Math Tracks intervention as the independent variable suggest that this intervention did have an impact on student success on the year end assessment. The effect size (ES) calculations indicate that approximately 23% of the variance in final assessment could be attributed to the MMT program. However, the ability of the student was also a significant factor in students' achievement. Based on the effect size calculation 14% of the variance in math achievement could be attributed to students' previous or natural ability and effort as measured by the pretest.

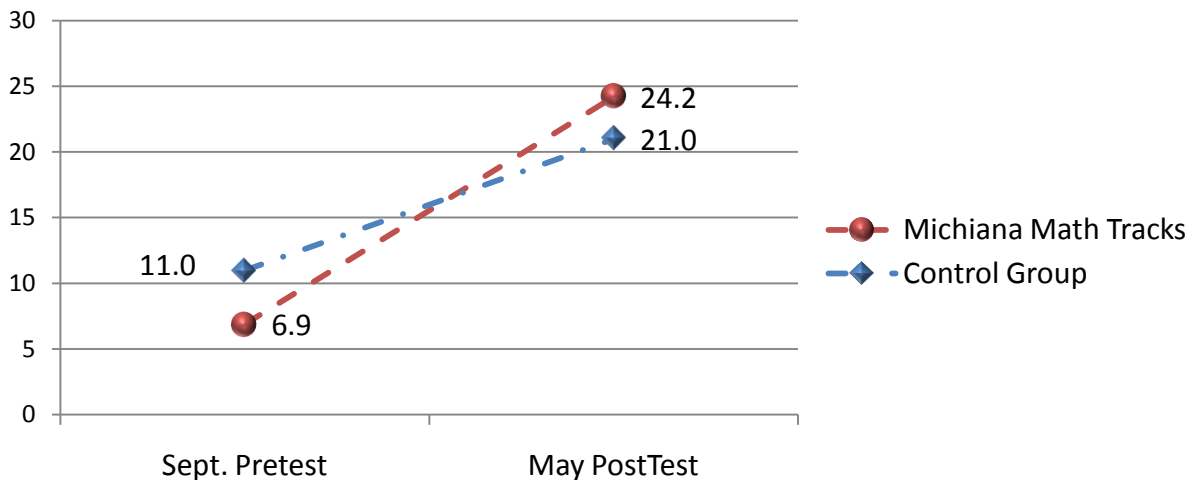


Figure 1. Kindergarten Achievement by Group for Kindergarten Assessment 1

Kindergarten Assessment 2 (Purple A and B)

Group means for assessment 2A gains were statistically different based on comparison grouping, $F(1, 353) = 155.2, p < .000, ES = .31$. MMT students made significant gains on this assessment compared to students in the control group.

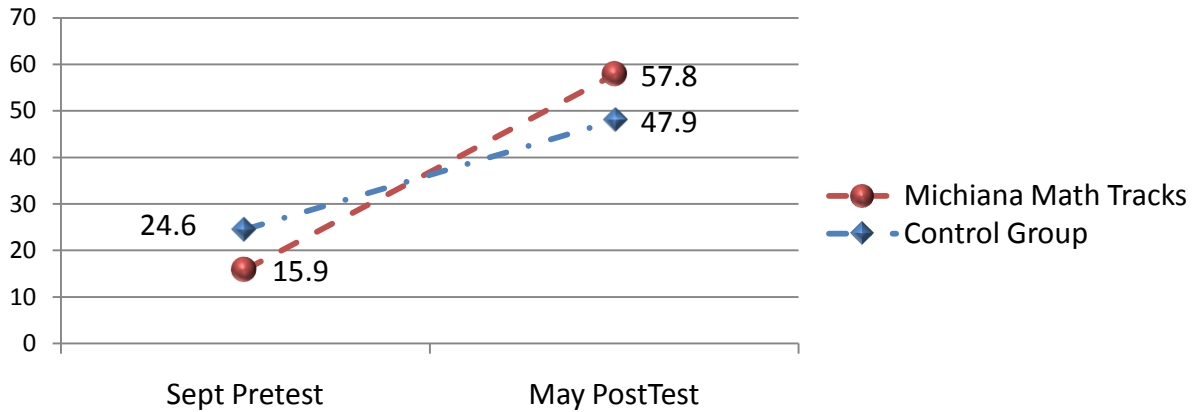


Figure 2. Kindergarten Achievement by Group for Kindergarten Assessment 2A

Group means for assessment 2A gains were statistically different based on comparison grouping, $F(1, 353) = 192.5, p < .000, ES = .35$. MMT students made significant gains on this assessment compared to students in the control group.

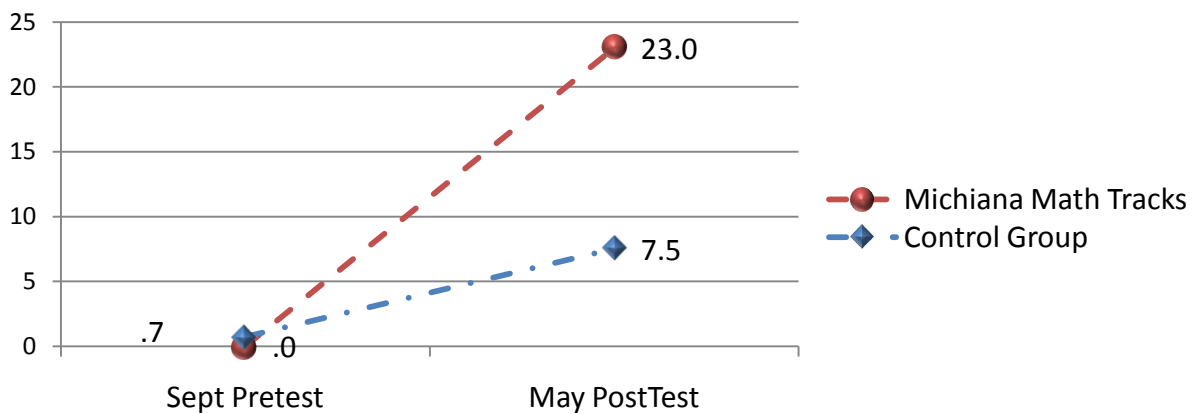


Figure 3. Kindergarten Achievement by Group for Kindergarten Assessment 2B

Group means for assessment 2 combined were statistically different based on comparison grouping in September, $F(1, 354) = 31.3, p < .000$. Control group students performed about 9 points better than MMT students at the beginning of the year. By yearend MMT students demonstrate a statistically significant increase in achievement when compared to students in the control group, $F(1, 357) = 180.5, p < .000$. The MMT students mean on the final was 25 points higher. The averages gain for MMT students was approximately 35 point more that students in the control group. The results of an ANCOVA suggest that the MMT intervention did have an impact on student success on the year end assessment. The effect size (ES) calculations indicate that 52% of the variance in final assessment could be attributed to the MMT program. However, the ability of the student was also a significant contributing factor in students' achievement. Based on the effect size calculation about 33% of the variance in math achievement could be attributed to students' previous or natural ability and effort.

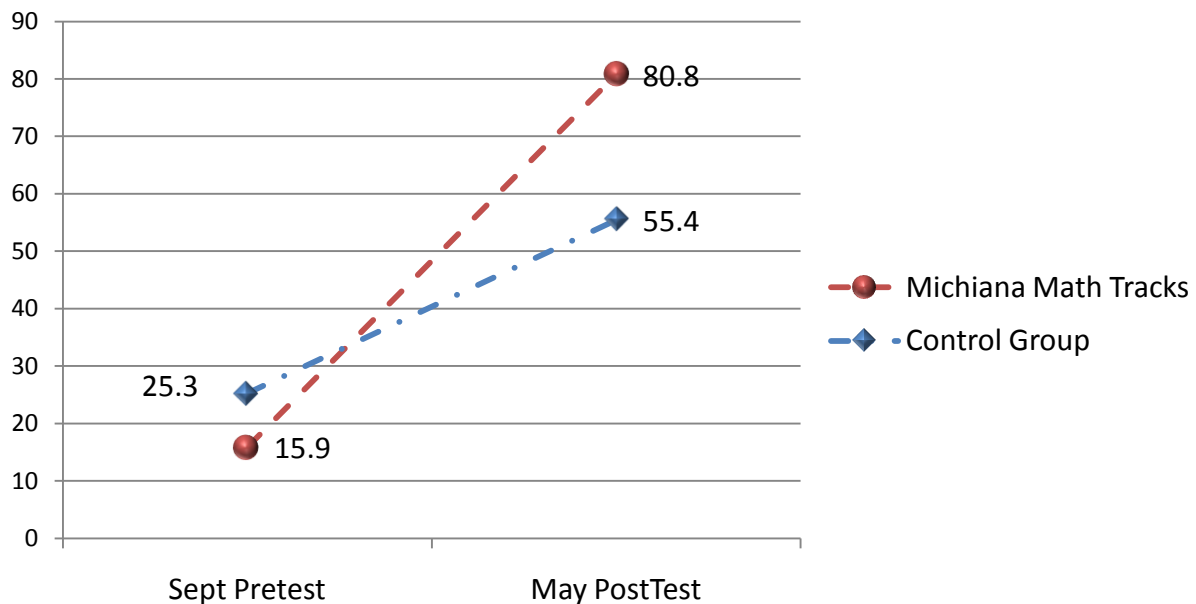


Figure 4. Kindergarten Achievement by Group for Kindergarten Assessment 2 Combined

First Grade Assessment

Overall the group means for first grade students were statistically different at the beginning of the year. In September, control group students performed better than MMT students, $F(1, 351) = 33.9, p < .000$. Average scores on the pretest were about 10 point higher for students in the control group. However, by yearend MMT students did significantly better than control group students, $F(1,351) = 61.2, p < .000$. Average scores on the final were 20 point higher on average for MMT students. The averages gain for MMT students was approximately 29 point more than students in the control group. The results of an ANCOVA suggest that this intervention had a significant impact on student success as measured by this assessment. The effect size (ES) calculations indicate that approximately 41% of the variance in final assessment could be attributed to the MMT program. The ability of the students again was a significant factor in students' achievement. Based on the effect size calculation 47% of the variance in math achievement could be attributed to students' previous or natural ability and effort.

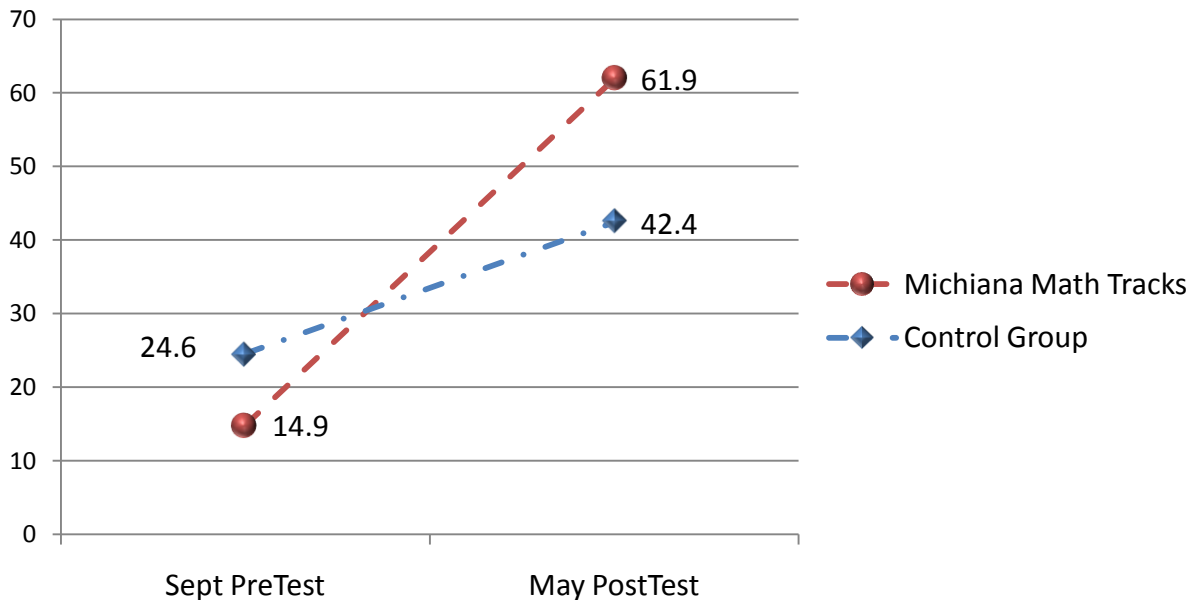


Figure 5. First Grade Achievement by Group

Average Gain Comparison by Assessment and School

Looking at the average gains by treatment group, MMT students consistently made greater gains compared to control group students. Gains for Kindergarten Assessment 1 were approximately 7 points greater than control group students indicating a significant difference, $F(1, 355) = 102.4, p < .000$. Kindergarten Assessment 2 was also statistically significant and represents an average difference in gain of 35 points, $F(1, 355) = 222.1, p < .000$. The gains on the first grade assessment were also statistically different, $F(1, 351) = 252.9, p < .000$. MMT students showed an average gain of about 30 points more than students in the control group.

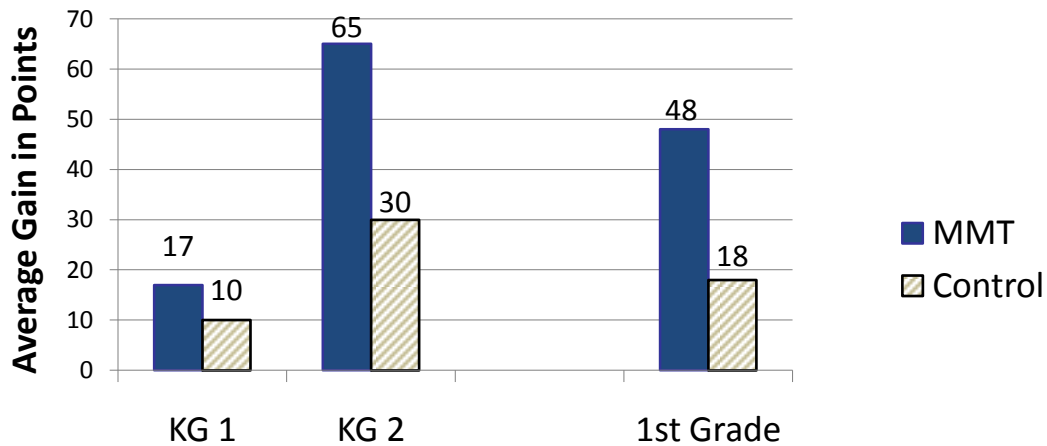


Figure 6. Average Gain in Achievement by Group and Assessment

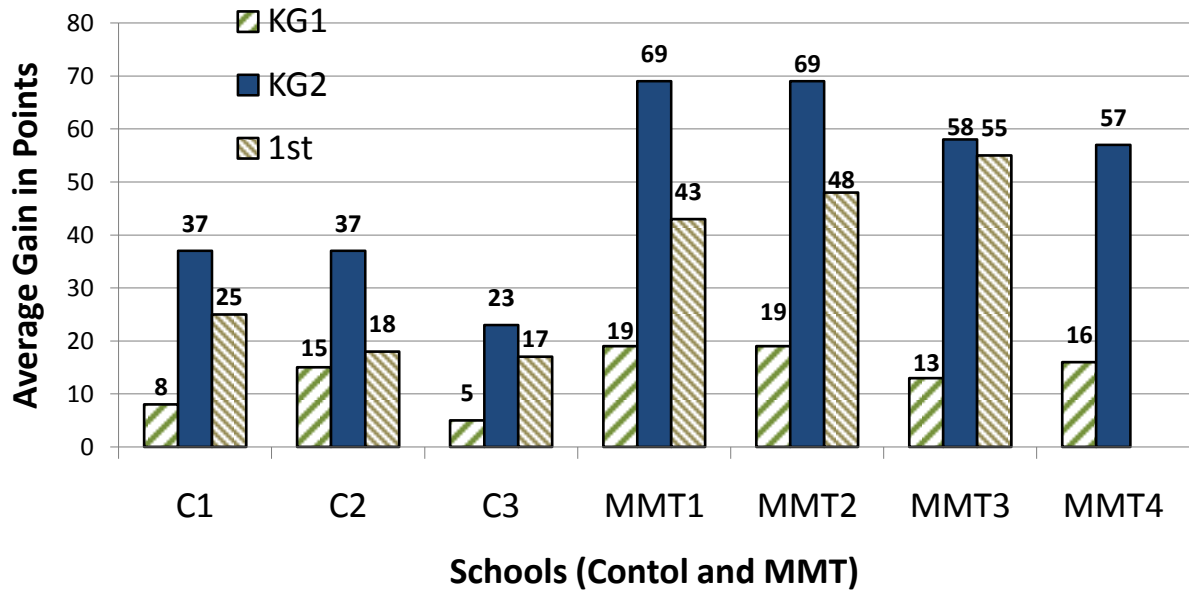


Figure 7. Average Gain in Achievement by School and Assessment