

Brief Summary

Evaluation Results from Broward County

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This year we examined children's summer reading loss in three different conditions and the potential to ameliorate these losses through book distributions that reach families where they are. Two of the schools were in high poverty areas close to the vending machines; two high poverty schools, not as near to the machines; and two more affluent schools, which served as a means to examine children's activities throughout the summer and their reading performance.

Broward County represented a different context for our work this year. For one, we experimented with placing a vending machine in close proximity to a library. Two, the context was broader, representing a large and well-populated county, rather than the more tightly woven neighborhoods in the past. Third, our goal was to examine how children in the early grades might benefit from the book distributions. And finally, our data was collected by the school district, with conditions (storm) that were difficult to control.

The Sample

Demographics for Treatment Groups:

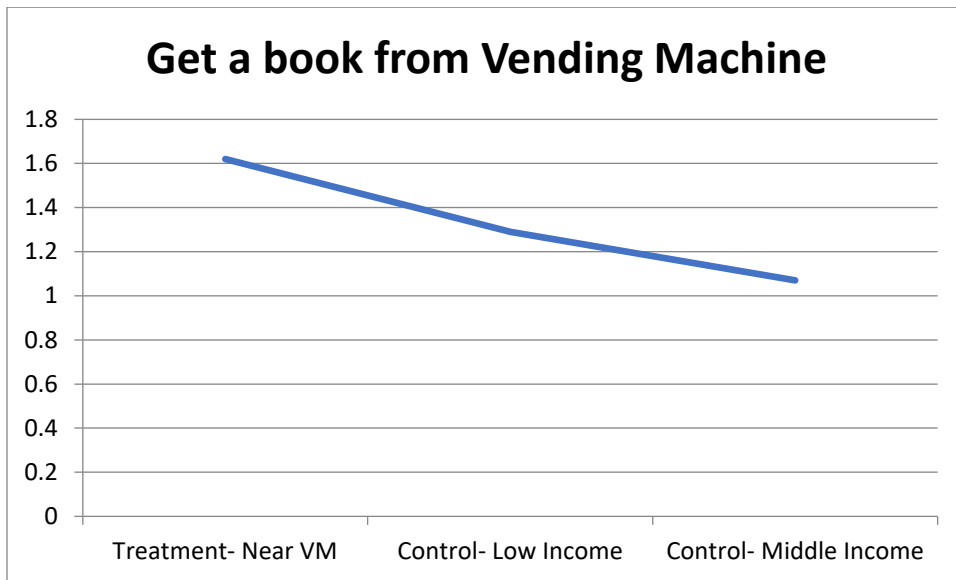
| | | Treatment- Low Income | Control- Low Income | Control- Middle Income |
|---------------|-----------------|--------------------------|------------------------|---------------------------|
| Grade | 1 st | 81 | 46 | 70 |
| | 2 nd | 78 | 60 | 67 |
| Gender | Male | 81 | 63 | 67 |
| | Female | 78 | 43 | 70 |
| Race | White | 5 | 0 | 48 |
| | Black | 154 | 73 | 15 |
| | Hispanic | 0 | 31 | 56 |
| | Asian | 0 | 0 | 14 |
| | Multiethnic | 0 | 2 | 4 |

Treatment group represented two schools that were closest to the vending machine; Control, low-income, outside of the immediate area; Control, middle-income, also outside of the area; used to compare the advantages one might have from a middle-income neighborhood.

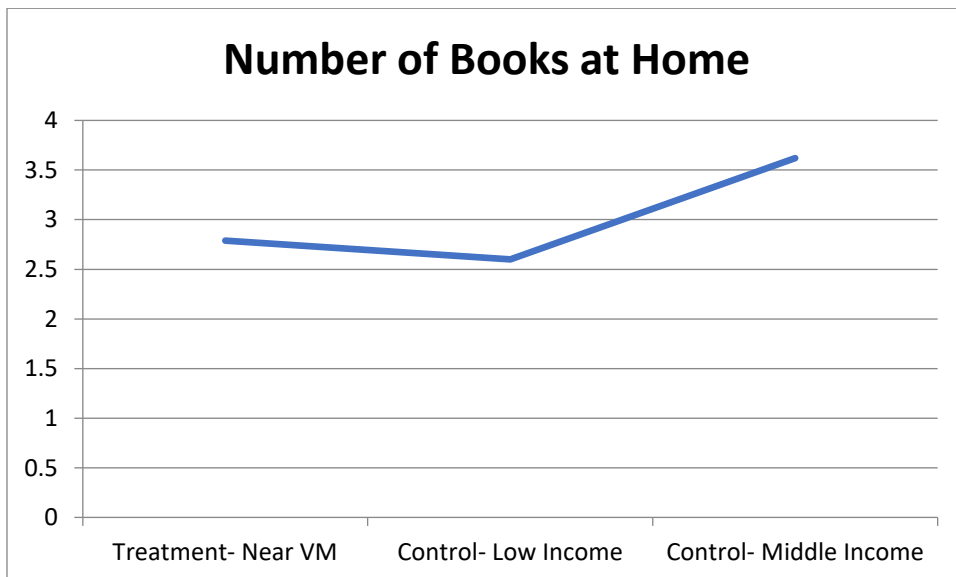
Question 1: Are vending machines reaching the audiences they were designed to reach?

Is JetBlue reaching its target audience. Did children in the treatment group near the vending machine get books from the vending machine more often than children in the control groups?

→ Yes, children in the treatment group were the most likely to visit the vending machine, followed by the low-income controls. The middle-income control group was the least likely to get books from the vending machine.



→ Children in the low-income groups (both treatment and control) had fewer children's books in the home than those in the middle-income group



This graph indicates that low-income children are likely to have between 11-20 books in the home whereas middle-income children have over 35 or more.

2. What characteristics are associated with visiting the vending machines?

→ Overall, children who visited the vending machine more frequently also 1) visited the public library more often, 2) reported getting more books over the summer, and 3) took part in more activities over the summer.

→ Vending machine attendance was positively associated with learning gains in comprehension for second graders (see second grade table below)

| Correlations with Vending Machine Attendance and... | Pearson Correlation | Significance Level | Sample Size |
|---|---------------------|--------------------|-------------|
| Visiting Public Library | .14 | $p < .05$ | 210 |
| Getting Books over the Summer | .18 | $p < .05$ | 197 |
| Number of Activities during Summer | .14 | $p < .05$ | 217 |

→ When looking only at first graders, children who visited the vending machine more frequently also 1) reported getting more books over the summer, 2) felt more positive about spending free time reading, 3) read with a family member more often, and 4) visited the public library more often

| FOR FIRST GRADERS ONLY | | | |
|---|---------------------|--------------------|-------------|
| Correlations with Vending Machine Attendance and... | Pearson Correlation | Significance Level | Sample Size |
| Getting Books over the Summer | .24 | $p < .05$ | 78 |
| Feelings about reading during free time | .21 | $p < .10$ | 62 |
| Reading with a Family Member | .20 | $p < .05$ | 79 |
| Visiting Public Library | .23 | $p < .05$ | 87 |

→ When looking only at second graders, children who visited the vending machine more frequently also 1) reported getting more books over the summer, 2) had higher gains in comprehension standardized scores, 3) were more likely to read for fun, and 4) participated in more summer activities.

| FOR SECOND GRADERS ONLY | | | |
|---|---------------------|--------------------|-------------|
| Correlations with Vending Machine Attendance and... | Pearson Correlation | Significance Level | Sample Size |
| Getting Books over the Summer | .16 | $p < .05$ | 119 |
| Comprehension Score Gains | .15 | $p < .10$ | 125 |
| Reading for Fun | .26 | $p < .05$ | 124 |

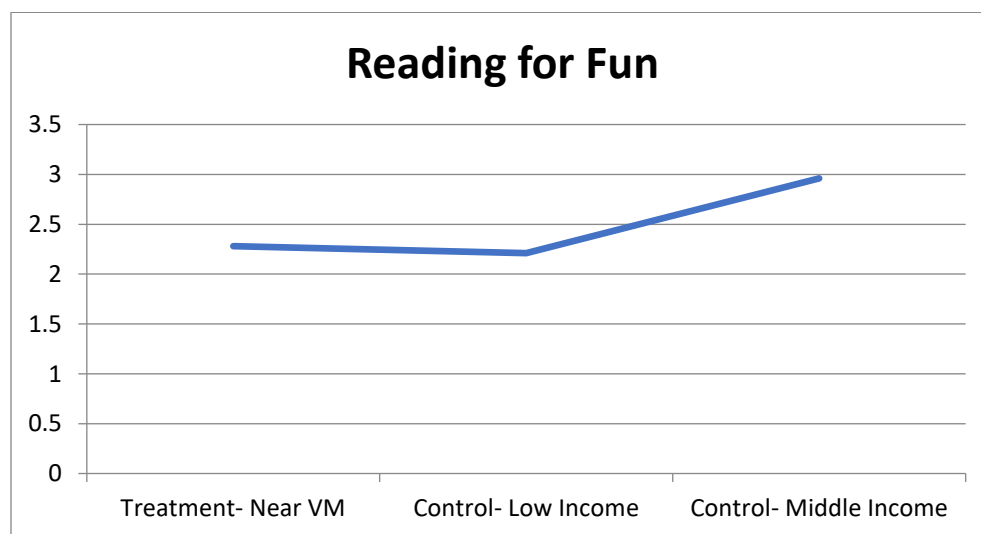
| | | | |
|------------------------------------|-----|-----------|-----|
| Number of Summer Activities | .17 | $p < .05$ | 128 |
|------------------------------------|-----|-----------|-----|

→ Furthermore, for second graders, comprehension gains were positively associated with getting a book at the vending machine, visiting the public library, and the number of non-reading activities children took part in over the summer.

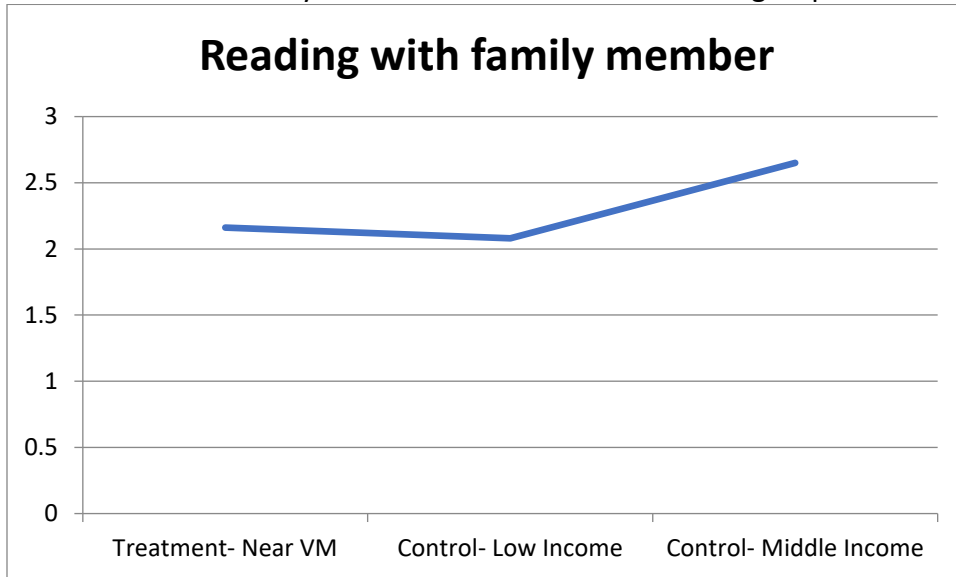
| FOR SECOND GRADERS ONLY | | | |
|---|----------------------------|---------------------------|--------------------|
| Correlations with Comprehension Gains and... | Pearson Correlation | Significance Level | Sample Size |
| Getting Books at Vending Machine | .15 | $p < .10$ | 125 |
| Visiting Public Library | .19 | $p < .05$ | 121 |
| Number of Summer Activities | .22 | $p < .05$ | 107 |

3. What are the reading habits of young children in these groups?

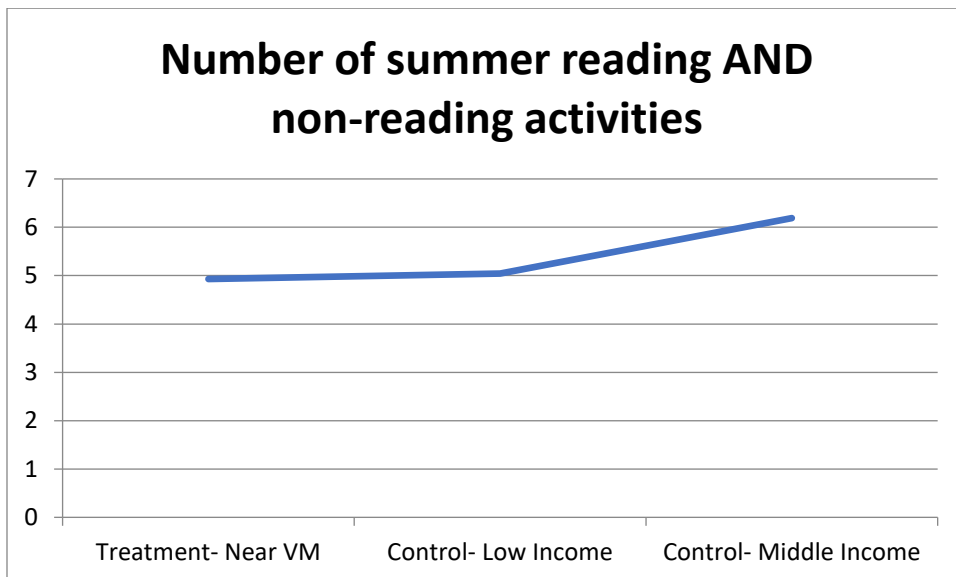
→ Children in the low-income groups (both treatment and control) were less likely to read books at home for fun than those in the middle income group



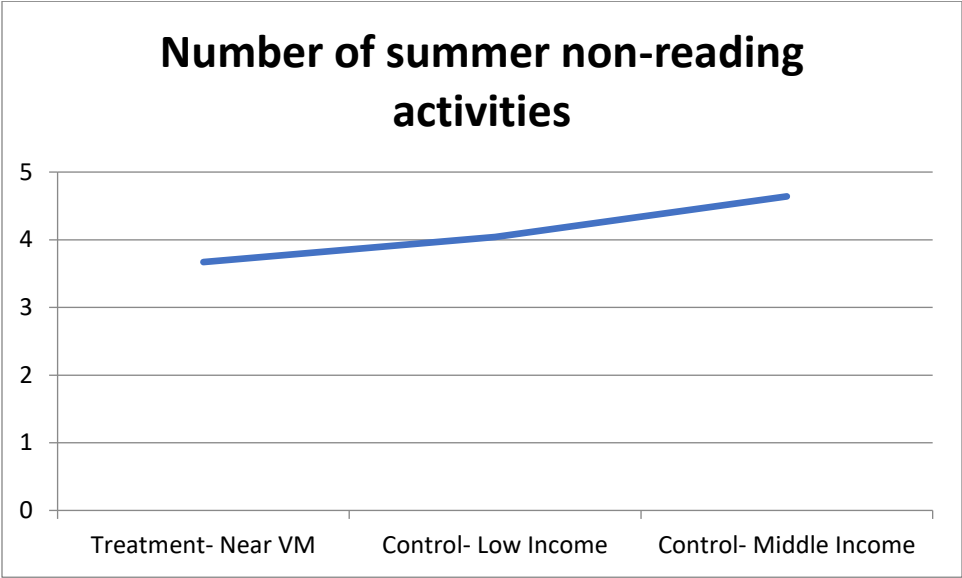
→ Children in the low income groups (both treatment and control) were less likely to read with someone in their family than those in the middle income group



→ Children in the low income groups (both treatment and control) reported doing fewer activities (including reading activities such as visiting the public library and non-reading activities such as watching TV, playing sports, and riding a bike) than those in the middle income group

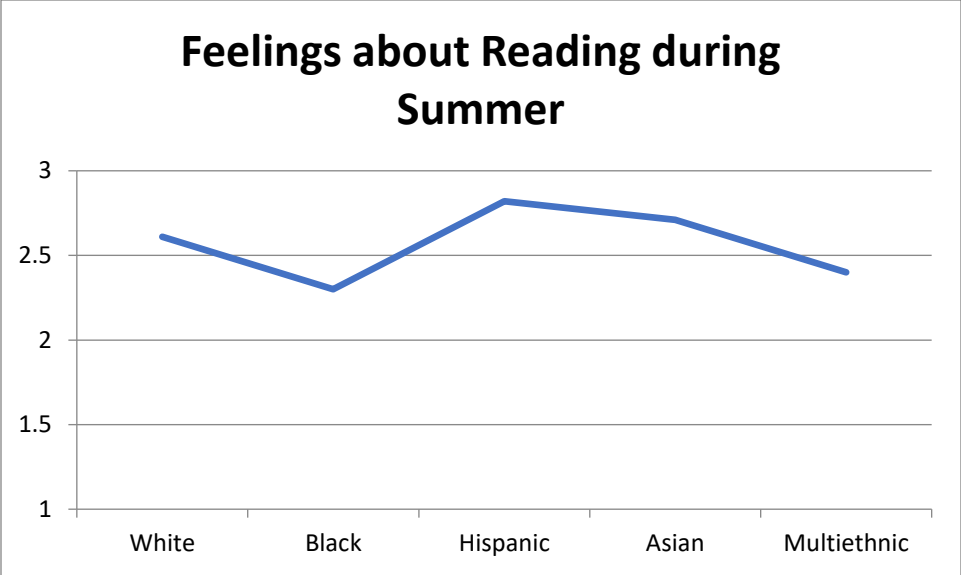


→ Children in the treatment group reported doing the fewest activities not related to reading, followed by those in the low income control group. Children in the middle income control group reported doing the greatest number of non-reading activities.

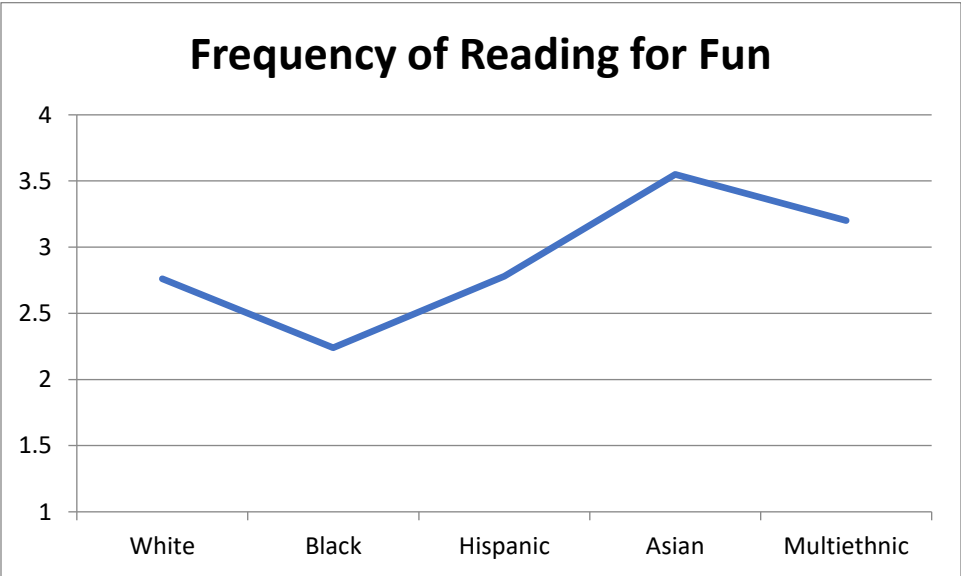


Were there any differences based on Ethnicity?

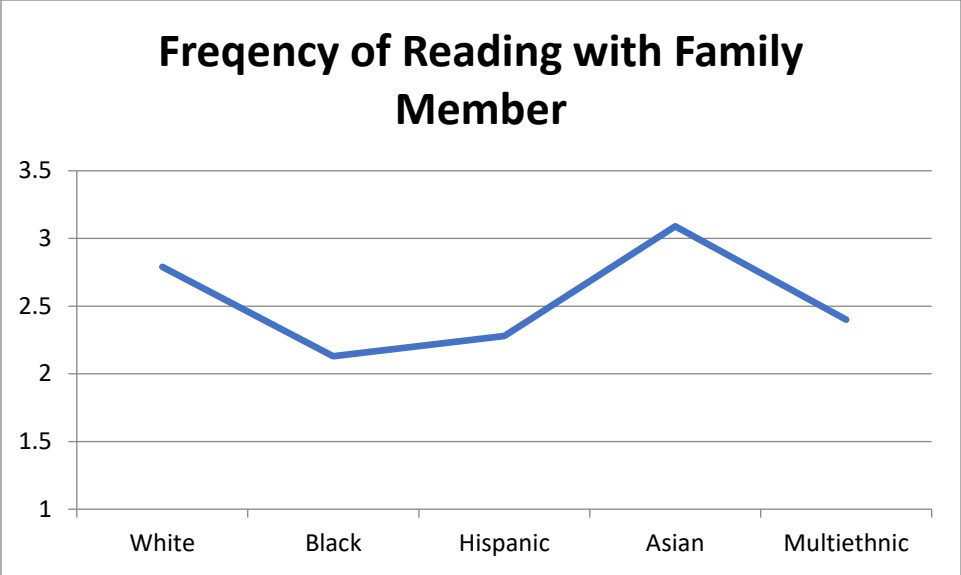
Yes. Overall, African-American and multiethnic children tended to have less positive feelings about reading during the summer. AA children also tended to have the lowest frequency of reading for fun, and participated in the fewest summer activities. AA, Hispanic, and multiethnic children were less likely than white and Asian children to read with someone in their family. On a more positive note, AA children were the most likely to get a book at the vending machine. Aligned with this, Black and multiethnic children reported getting the most books over the summer.



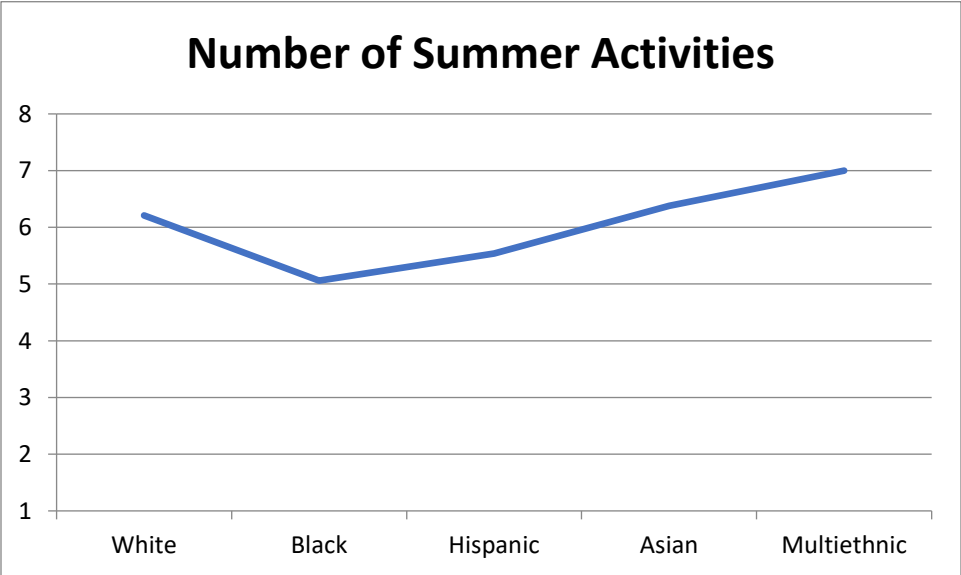
Black and multiethnic children reported less positive feelings about reading during summer compared to white, Hispanic, and Asian children.



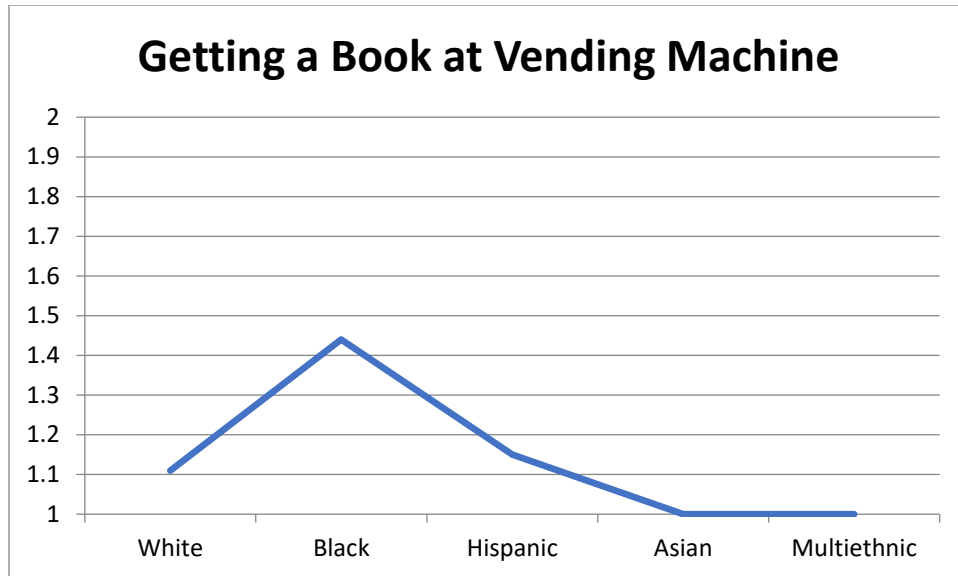
Black children reported reading for fun the least often, with Asian and Multiethnic children reading for fun the most frequently.



Black, Hispanic, and Multiethnic children read with someone in their family less frequently than Asian and White children.



Black children reported participating in the fewest activities during the summer.

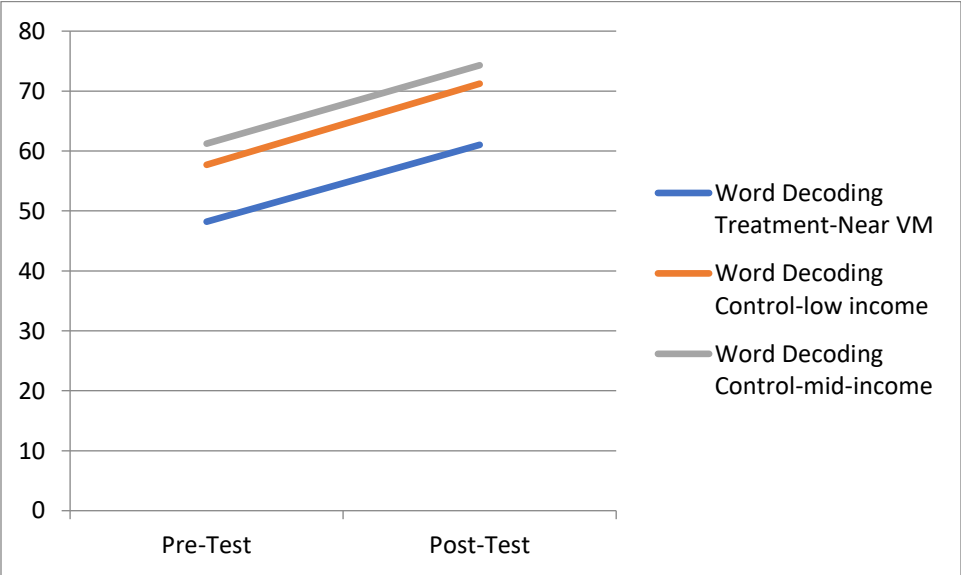
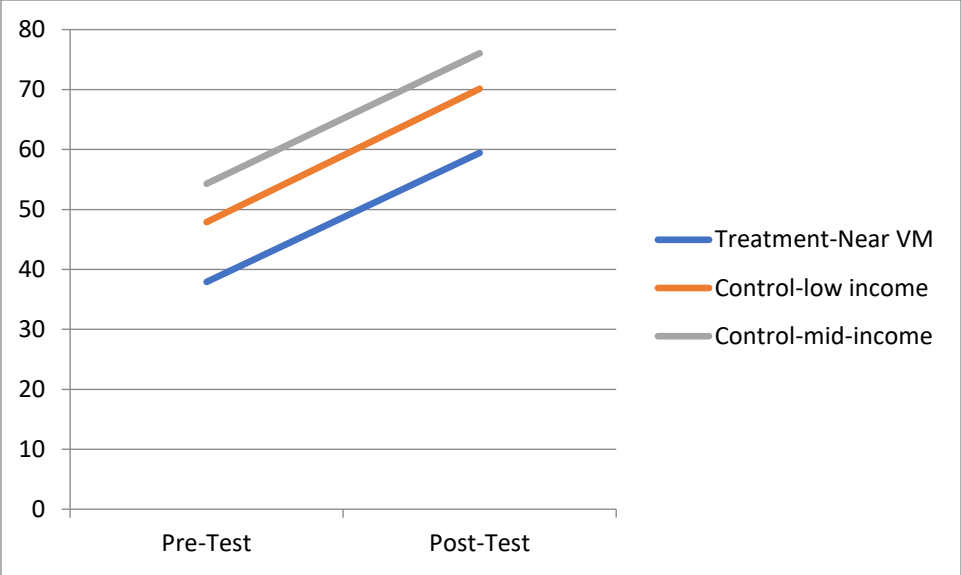


Black children were the most likely to visit the vending machines.

5. Overall, do children gain or lose reading skills over the summer?

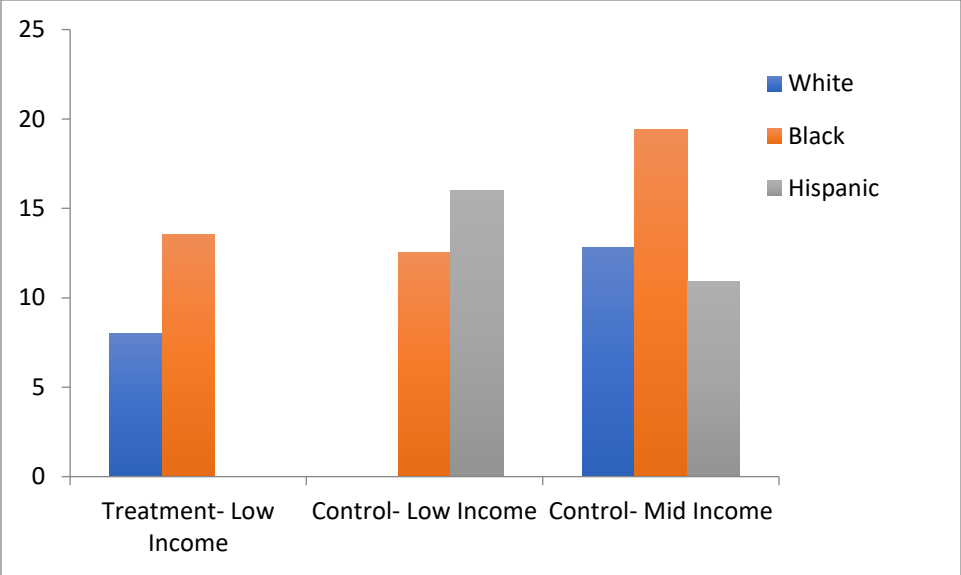
- Children improve over the summer for both word decoding and comprehension
- 1st graders show particularly enhanced growth in comprehension
- There were some initial differences in performance between treatment groups, but all children improved the same amount regardless of these differences. The gap in achievement wasn't closed, but it wasn't increased either over the summer.

COMPREHENSION STANDARDIZED GAINS from PRE to POST TEST by TREATMENT GROUP

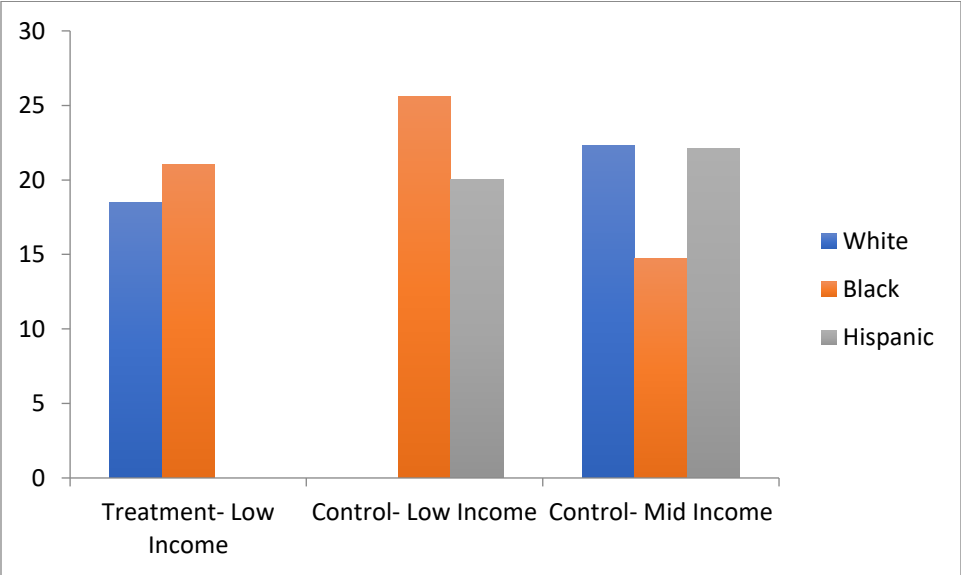


Word Decoding

All groups improved from pre to post test by very similar amounts



Word Decoding Gains



Comprehension Gains

6. What are the characteristics of the book selections?

Table 1: Total Number and Percentage of ‘Specialty’ Books Taken by Vending Machine Users

| | Books Based on TV/Movie | Multicultural Books | Bilingual Books |
|-----------------------------|--------------------------------|----------------------------|------------------------|
| Number of Books | 20187 | 23577 | 12467 |
| Percentage of Books* | 38% | 45% | 24% |

*Percentage of books as proportional to the total number of books taken from vending machines (52899 total books)

Table 2: Top 5 Bilingual Books Taken by Vending Machine Users

| Rank | Bilingual Book Title | Total Number of Times Book was Taken Out of VM | Age Range of Book | Based on a TV Show/Movie? |
|-------------|---|---|--------------------------|----------------------------------|
| 1 | Bedtime Explorers/ Exploradores a la hora de dormir | 1496 | 3-7 years old | Yes |
| 2 | A Friend at the Zoo/ Un amigo en el zoologico | 1481 | 3-7 years old | Yes |
| 3 | Dora Goes to School/ Dora Va a la Escuela | 1315 | 3-7 years old | Yes |
| 4 | Mi Amor Por Ti/My Love for You | 1104 | 1-3 years old | No |
| 5 | Diego | 1022 | 3-7 years old | No |

Table 3: Top 5 Multicultural Books Taken By Vending Machine Users

| Rank | Multicultural Book Title | Total Number of Times Book was Taken Out of VM | Age Range of Book | Based on TV Show/Movie? |
|-------------|---------------------------------|---|--------------------------|--------------------------------|
| 1 | Inside Out | 1692 | 2-7 years old | Yes |
| 2 | Roll of Thunder Hear My Cry | 1645 | 11 and up | No |
| 3 | Holes | 1546 | 10 and up | Yes |

| | | | | |
|---|---|------|---------------|-----|
| 4 | Bedtime Explorers/ Exploradores a la hora de dormir | 1496 | 3-7 years old | Yes |
| 5 | A Friend at the Zoo/ Un amigo en el zoológico | 1481 | 3-7 years old | Yes |

Librarian Quotes:

- *But I will tell you that the more commercial type books, the Dora books, those are always home runs. What were some of the other ... You have Elmo. Some of the board books that were kind of very appealing commercially, those were very popular.* (Jasmine Springer)
- *I do think that's kind of, the commercially inclined ones were good choices. Just because even though maybe they might not be intellectually what people might think is the best for kids, but still, when you're dealing with families or kids that are reluctant readers, you want to just get them started, on their way to reading. That means enjoying what they read.* (Jasmine Springer)

Observations in July Notes:

- *When I started reading the book Two Ninja Turtles, I read the whole page the first night. I started back over after I finished and back over again, and back over again.* – 3rd grade boy
- *This is great. I like that you have the Nelson Mandela book. I think it's very important for the kids to know. It's history.* – grandfather
- *I have six books. So far I've read two chapter books. I'm going to read Frederick Douglass next.* – young boy

Table 4: Top 10 Books for 1st time Vending Machine Users (number of books, age range, and TV/Movie)

Explanation of Table 4 and 5 Below:

The TOP 5 books taken out by 1st time users were all based on TV/Movies. Additionally, all were within the 0-8 year old age range. When examining within the TOP 10 books taken out by 1st time users: 6 were multicultural books (60%), 2 were bilingual books (20%) and 7 were based on TV Show/Movies (70%). The age range of books for first time users stayed primarily within the 0-8 year old range (80%); however, two books were 10 years and up (Holes and Roll of Thunder Hear My Cry...both of which were multicultural books).

In regards to the TOP 10 books taken by repeat users, 6 of the 10 titles were multicultural (60%), 2 were bilingual titles (20%), and 7 were based on TV/Movie (70%). While this is the same, it should be noted that 1st time users TOP 5 books were all TV/Movies, while repeat users TOP 1 and 2 were not TV/Movie and instead were multicultural (Roll of Thunder Hear My Cry and Barack Obama). All books, minus 2 (Roll of Thunder Hear My Cry and Holes) were for children 0-8 years old. Both Roll of Thunder and Holes were listed on 1st time and repeat users top ten books (and were the only ones outside of the 0-8 year old range).

Table 4: Top 10 Books for 1st time Vending Machine Users (number of books, age range, and TV/Movie)

| Rank | Book Title | Total Number of Times a 1 st Time User Took Book | Age Range of Book | Multicultural Book? | Bilingual Book? | Based on TV Show/Movie? |
|------|---|---|-------------------|---------------------|-----------------|-------------------------|
| 1 | Let's Play Dory | 802 | 3-7 years old | No | No | Yes |
| 2 | Inside Out | 718 | 2-7 years old | Yes | No | Yes |
| 3 | Dora Goes to School/ Dora Va a la Escuela | 689 | 3-7 years old | Yes | Yes | Yes |

| | | | | | | |
|----|--|-----|---------------------|-----|-----|-----|
| 4 | Elmos ABC | 686 | 3 months to 3 years | Yes | No | Yes |
| 5 | Bedtime Explorers/ Exploradores a la hora de dormir | 603 | 3-7 years old | Yes | Yes | Yes |
| 6 | I'll Teach My Dog A lot of Words | 583 | 2-3 years old | No | No | No |
| 7 | Roll of Thunder Hear My Cry | 580 | 11 years and up | Yes | No | No |
| 8 | Holes | 577 | 10 years and up | Yes | No | Yes |
| 9 | Frog Fight (Ninja Turtles) | 563 | 2-5 years old | No | No | Yes |
| 10 | The Pudgy Patacake Book | 556 | 4 and up | No | No | No |

*Books taken out by 1st time users made up 21,391 of the total books (52899) taken out of the vending machines.

Table 5: Top 10 Books for Repeat Vending Machine Users (number of books, age range, and TV/Movie)

| Rank | Book Title | Total Number of Times a Repeat User Took Book | Age Range of Book | Multicultural Book? | Bilingual Book? | Based on TV Show/Movie? |
|------|--|---|-------------------|---------------------|-----------------|-------------------------|
| 1 | Roll of Thunder Hear My Cry | 1065 | 11 years and up | Yes | No | No |
| 2 | Barack Obama Out of Many One | 989 | 5-8 years old | Yes | No | No |
| 3 | Inside Out | 974 | 2-7 years old | Yes | No | Yes |
| 4 | Holes | 969 | 10 years and up | Yes | No | Yes |
| 5 | Super Animals | 968 | 4-6 years old | No | No | Yes |
| 6 | A Friend at the Zoo/ Un amigo en el zoológico | 953 | 3-7 years old | Yes | Yes | Yes |
| 7 | The Night Before Kindergarten | 931 | 4-8 years old | No | No | No |
| 8 | Star Wars: The Empire Strikes Back | 903 | 2-5 years old | No | No | Yes |
| 9 | Bedtime Explorers/ Exploradores a la hora de dormir | 893 | 3-7 years old | Yes | Yes | Yes |
| 10 | Berenstain Bears Go Out for the Team | 861 | 3-7 years old | No | No | Yes |

Table 6: What was the number and percentage of books taken out by the users of the vending machine within each book age range?

| | 0-8 years old | 8-15 years old | 15 years and older |
|----------------------------|---------------|----------------|--------------------|
| Number of Books | 38623 | 10933 | 3343 |
| Percentage of Books | 73% | 21% | 6% |

*Percentage of books as proportional to the total number of books taken from vending machines (52899 total books)

Table 7: What was the number and percentage of books taken out by 1st time or repeat users?

| | 1st Time Users | Repeat Users |
|----------------------------|----------------------------------|---------------------|
| Number of Books | 21391 | 31508 |
| Percentage of Books | 40% | 60% |

*Percentage of books as proportional to the total number of books taken from vending machines (52899 total books)