

American Heritage Education Foundation, Inc.  
**2003 Student Performance Results, Grade 8**  
***of America's Heritage: An Adventure in Liberty***

Submitted by

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## **Introduction**

This document contains the results of the evaluation of the 2003 American Heritage Education Foundation's eighth grade curriculum study. Specifically, the research question for the study was to determine the impact of the American Heritage Education Foundation Curriculum on student performance on the eighth grade TAKS exam. In answering this question, an attempt was made to determine the impact as measured by changes in student knowledge as measured on an assessment of student learning. The measure of student performance was The Texas Assessment of Academic Skills that was developed to evaluate understanding of the concepts and themes of American History from 1700 to 1856. A sample of 1044 Houston Independent School District eighth graders was taken from several middle schools as participants in the study. Included in this report are a detailed description of the sample, the treatment and control groups, the variables, and the results of the study.

## **Sample**

A total of 1044 students were selected from six middle schools in HISD as study participants. Forty-two percent of the participants were African-American and fifty-eight percent were Hispanic. In the original sample, there was a total of forty-three white students, but over seventy percent of these were in the treatment group. Given the small total number of white students compared to the numbers of African-Americans and Hispanics in the study along with the fact that a disproportionate number of them were in the treatment group, it was determined that including them in this study would confound the results. Therefore, the white students were eliminated as participants. In addition, there was a total of seven Asian students originally selected for the study. It was determined that because this number is so small, the effect of this ethnic group could not be significantly measured in the results; and the Asian students were also eliminated as potential study participants. The resulting sample contained a nearly equal split of males and females with fifty-two percent of the participants being female students and forty-eight percent males. Table 1 contains a demographic breakdown of the study participants by ethnicity and by gender.

Table 1  
Demographics of Study Participants

| <i>Ethnicity</i> |        |         | <i>Gender</i> |        |         |
|------------------|--------|---------|---------------|--------|---------|
|                  | Number | Percent |               | Number | Percent |
| African-American | 442    | 42%     | Male          | 505    | 48%     |
| Hispanic         | 602    | 58%     | Female        | 539    | 52%     |

### Treatment and Control Groups

The treatment group was selected from students at three of the middle schools: Hamilton Middle School, Hogg Middle School, and Marshall Middle School. Students in the treatment group were exposed to the American Heritage materials prior to taking the TAKS test. The control group was selected from students at three different middle schools: Attucks Middle School, Dowling Middle School, and Fonville Middle School. Students in the control group were not exposed to the American Heritage materials prior to taking the TAKS test.

The treatment group contained 442 students while the control group contained 602 students. Shown in Table 2 is a demographic comparison of each group by gender and ethnicity. Note that the treatment group is heavily Hispanic; whereas, over sixty percent of the control group is African-American. The treatment and control groups have quite comparable breakdowns by gender with each group containing nearly equal percentages of males and females.

Table 2  
Demographic Comparison between the Treatment Group and the Control Group

|                  | <i>Treatment Group</i> |     | <i>Control Group</i> |     |
|------------------|------------------------|-----|----------------------|-----|
| <i>Ethnicity</i> | African-American       | 10% | African-American     | 63% |
|                  | Hispanic               | 90% | Hispanic             | 37% |
| <i>Gender</i>    | Male                   | 50% | Male                 | 47% |
|                  | Female                 | 50% | Female               | 53% |

## Variables

The main independent variable in this study was **group** which contained the classification levels of *control* and *treatment*. Other independent variables explored were **ethnicity** and **gender**. **Ethnicity** contained the classification levels of *Hispanic* and *African-American*. **Gender** was broken down into the two levels of *male* and *female*.

Several dependent variables were explored including **Social Studies Raw Score**, **Social Studies Score 1**, **Social Studies Score 2**, **Social Studies Score 3**, **Social Studies Score 4**, and **Social Studies Score 5**. Table 3 contains a summary of the independent and dependent variables.

Table 3  
Variables Used in Study

| Variables   |   |
|---|---|
| Independent Variables   | Dependent Variables   |
| <ol style="list-style-type: none"> <li>1. Group</li> <li>2. Ethnicity</li> <li>3. Gender</li> </ol> | <ol style="list-style-type: none"> <li>1. Social Studies Raw Score</li> <li>2. Social Studies Score 1</li> <li>3. Social Studies Score 2</li> <li>4. Social Studies Score 3</li> <li>5. Social Studies Score 4</li> </ol> |

## Results

*t* tests for independent samples were used to analyze social studies scores by group, by ethnicity, and by gender.

### 1.) Analysis by Group:

Six *t* tests were used to determine if there was a significant difference in the control group and the treatment group on the social studies raw score and on each of the five social studies sub scores. The results are displayed in Table 4. While the mean scores of the treatment group were higher than those of the control group for the social studies raw score and three of the five subtest scores, none of the *t* tests were significant. Therefore, the conclusion for analysis by group is that group did not make any difference. There were no significant differences on any of the tests between the treatment group and the control group.

Table 4  
*t* Test Results of Social Studies Scores by Group

|                          | Mean of Treatment Group | Mean of Control Group | <i>t</i> score | <i>p</i> -value |
|--------------------------|-------------------------|-----------------------|----------------|-----------------|
| Social Studies Raw Score | 25.7                    | 25.59                 | 0.10           | .921            |
| Social Studies Score 1   | 6.48                    | 6.62                  | -0.68          | .496            |
| Social Studies Score 2   | 3.35                    | 3.23                  | 1.11           | .265            |
| Social Studies Score 3   | 4.93                    | 4.77                  | 1.16           | .248            |
| Social Studies Score 4   | 6.20                    | 6.38                  | -.093          | .351            |
| Social Studies Score 5   | 4.69                    | 4.59                  | 0.75           | .452            |

## 2.) Analysis by Ethnicity

Six *t* tests were used to determine if there was a significant difference between African-American students and Hispanic students on the social studies raw score and on each of the five social studies sub scores. The results are displayed in Table 5. While there was no significant difference between the mean scores of African-American students and Hispanic students on the social studies raw score, there were significant differences on two of the sub tests. On social studies score 1, African-American students scored significantly higher than Hispanic students ( $t = 2.13$ ,  $p$ -value = .034). In addition, on social studies score 4, African-American students scored significantly higher than Hispanic students ( $t = 2.51$ ,  $p$ -value = .012).

Table 5  
*t* Test Results of Social Studies Scores by Ethnicity

|                          | Mean of African-American Group | Mean of Hispanic Group | <i>t</i> score | <i>p</i> -value |
|--------------------------|--------------------------------|------------------------|----------------|-----------------|
| Social Studies Raw Score | 26.2                           | 25.2                   | 1.51           | .132            |
| Social Studies Score 1   | 6.82                           | 6.39                   | 2.13           | .034*           |
| Social Studies Score 2   | 3.23                           | 3.31                   | -0.73          | .468            |
| Social Studies Score 3   | 4.91                           | 4.79                   | 0.90           | .369            |
| Social Studies Score 4   | 6.60                           | 6.13                   | 2.51           | .012*           |
| Social Studies Score 5   | 4.68                           | 4.61                   | 0.59           | .558            |

\*Denotes significant at  $\alpha = .05$  level

### 3.) Analysis by Gender

Six *t* tests were used to determine if there was a significant difference between male students and female students on the social studies raw score and on each of the five social studies sub scores. The results are displayed in Table 6. There were no significant differences between boys and girls on any of the test scores. Gender does not appear to be a factor in determining differences in TAKS social studies scores.

Table 6  
*t* Test Results of Social Studies Scores by Gender

|                          | Mean of Males | Mean of Females | <i>t</i> score | <i>p</i> -value |
|--------------------------|---------------|-----------------|----------------|-----------------|
| Social Studies Raw Score | 25.7          | 25.53           | 0.25           | .803            |
| Social Studies Score 1   | 6.59          | 6.53            | 0.32           | .745            |
| Social Studies Score 2   | 3.33          | 3.23            | 0.95           | .342            |
| Social Studies Score 3   | 4.87          | 4.81            | 0.48           | .632            |
| Social Studies Score 4   | 6.30          | 6.32            | 0.10           | .921            |
| Social Studies Score 5   | 4.61          | 4.66            | 0.38           | .704            |

### 4.) Analysis by Group with the Effects of Ethnicity Removed

Since there were no significant differences between the treatment and the control group on any of the tests but there were significant differences by ethnicity, it was determined that perhaps ethnicity was confounding the study of group differences. In addition, the treatment group is 90% Hispanic while the control group is almost two-thirds African-American. Because of this, an analysis was done in which the treatment and the control groups were compared for African-Americans only and then another analysis was done in which the treatment and the control groups were compared for Hispanics only. Table 7 shows the results on the six tests comparing the control group to the treatment group for African-Americans only. Table 7 shows that there are no significant differences between the treatment group and the control group on any tests when examining African-Americans only.

Table 7  
*t* Test Results of Social Studies Scores by Group  
 (African-Americans Only)

|                          | Mean of Treatment Group | Mean of Control Group | <i>t</i> score | <i>p</i> -value |
|--------------------------|-------------------------|-----------------------|----------------|-----------------|
| Social Studies Raw Score | 27.10                   | 26.16                 | 0.35           | .726            |
| Social Studies Score 1   | 7.34                    | 6.77                  | 0.78           | .437            |
| Social Studies Score 2   | 3.47                    | 3.20                  | 0.76           | .451            |
| Social Studies Score 3   | 4.79                    | 4.93                  | -0.29          | .773            |
| Social Studies Score 4   | 6.76                    | 6.58                  | 0.26           | .794            |
| Social Studies Score 5   | 4.71                    | 4.68                  | 0.07           | .948            |

Table 8 shows the results on the six tests comparing the control group to the treatment group for Hispanics only. On one of the six tests, social studies score 3, the treatment group scored significantly higher than the control group when considering Hispanics only. On the other five tests, there were no significant differences between the treatment group and the control when considering Hispanics only.

Table 8  
*t* Test Results of Social Studies Scores by Group  
 (Hispanics Only)

|                          | Mean of Treatment Group | Mean of Control Group | <i>t</i> score | <i>p</i> -value |
|--------------------------|-------------------------|-----------------------|----------------|-----------------|
| Social Studies Raw Score | 25.5                    | 24.7                  | 0.90           | .370            |
| Social Studies Score 1   | 6.39                    | 6.39                  | 0.00           | .997            |
| Social Studies Score 2   | 3.34                    | 3.26                  | 0.54           | .589            |
| Social Studies Score 3   | 4.95                    | 4.53                  | 2.36           | .019*           |
| Social Studies Score 4   | 6.15                    | 6.09                  | 0.26           | .793            |
| Social Studies Score 5   | 4.69                    | 4.47                  | 1.35           | .177            |

\*Denotes significant at  $\alpha = .05$  level

## Summary

The main question posed in this study is: Is there a significant difference between the treatment group and the control group on any of these six tests? The answer is that there are no significant differences on any of the tests according to group. When examining African-Americans only, there are still no significant differences between the treatment group and the control group on any of the tests. However, when examining Hispanics only, the treatment group scored significantly higher than did the control group on social studies score 3. In none of the analyses were the control group scores significantly higher than those of the treatment group. There were no significant differences between male and female scores on any test.