

American Heritage Educational Foundation, Inc.
Student Performance Results of
America's Heritage: An Adventure in Liberty
Submitted by:
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Executive Summary

The study compared performance of students on the Texas Assessment of Academic Skills (TAAS) for eighth grade social studies of teachers who used the curriculum *America's Heritage: An Adventure in Liberty* by the America Heritage Education Foundation, Inc. (AHEF). The student measures were on eight factors of social studies knowledge. There was a statistically significant difference for the experimental group on objective Historical Concepts and Information on the Texas Assessment of Academic Skills (TAAS). This is consistent with the goals of the American Heritage Education Foundation curriculum. The curriculum is designed to be supplemental in nature. This finding demonstrates the value for teachers in using the curriculum to increase student performance as measured on the TAAS. This test measures American history objectives taught by schools round the nation. There is no indication that use of the lessons lowered student performance or introduced elements that were not assessed on the TAAS.

Curriculum concepts measured:

The TAAS is designed to measure eight concepts of American History. These concepts are:

1. Civic Values and Responsibilities
2. Economic Influences on U. S. History
3. Political influences on U.S. History
4. Geographic influences on U.S. History
5. Historical concepts and information
6. Sociological and cultural influences on U.S. History
7. Interpret social studies data
8. Critical thinking skills

These concepts are measured using multiple choice responses and interpretation of short readings. The test is administered in a standardized fashion to all Texas public school students enrolled in grade eight each year. The participating District had made a concerted effort with all teachers responsible for grade eight social studies instruction to address all of the TAAS concepts. The experimental group of teachers participated in the district directed training and additional training provided by the Foundation.

Population:

There were 742 students, 10 teachers, and over 30 classes involved in this study. Table 1 displays a breakdown of this population by demographic variable including grade level, ethnicity, and gender. In addition, percentage statistics were available on special education, at risk, and retained. Seventy-seven percent of study participants were in grade 8 followed by 14% in grade 6 and 9% in grade 7. Study participants were predominantly Hispanic (86%) followed by African-American (7%), White (6%), and Asian (1%). There was a relatively even split by gender with 52% of participants being female and 48% male. Slightly over 9% of the study members qualified as special education students, about 11% of the students were retained, and nearly 50% (49.7%) were considered to be at risk.

Table 1
Demographics of Population

Grade Level			Ethnicity			Gender		
	No.	Percent		No.	Percent		No.	Percent
6	107	14%	Asian	10	1%	Male	355	48%
7	65	9%	African-American	51	7%	Female	387	52%
8	570	77%	Hispanic	638	86%			
			White	43	6%			

Sample:

The research design for this study required a control group and a treatment group. Students from classrooms with teachers who participated in the American Heritage program were considered to be in the treatment group and all other students in this study were in the control group. The final sample size of the treatment group was 470 students while the final sample size number of the control group was 272. Table 2 displays a demographic comparison between the treatment group and the control group. The demographics of the two groups match fairly closely. Seventy-seven percent of the treatment group are 8th graders compared to seventy-six percent of the control group. There is a difference in grade level for other members of the two groups. All remaining members of the treatment group (23%) were in the 6th grade; whereas, all remaining members of the control group (24%) were in the 7th grade. On ethnicity, the two groups were highly similar. While 86% of the treatment group was Hispanic, 85% of the control group was Hispanic. The two groups matched closely for other ethnic groups. On gender, 51% of the treatment group was female compared to 53% of the control group. While 10% of the treatment group was considered special education students, seven percent of the control group was classified as special education. Twelve percent of the treatment group was classified as retained compared to 10% of the control group. Almost half (49%) of the treatment group was at risk compared to 51% of the control group.

Table 2
Demographic Comparison between the Treatment and Control Groups

	Treatment	Control
Grade Level	77% 8 th grade 23% 6 th grade	76% 8 th grade 24% 7 th grade
Ethnicity	86% Hispanic 7% African-American 5% White	85% Hispanic 7% African-American 7% White
Gender	51% female	53% female
Special Education	10%	7%
Retained	12%	10%
At Risk	49%	51%

Variables:

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

Several dependent variables were explored including Total Social Studies Score, Social Studies Score 1, Social Studies Score 2, Social Studies Score 3, Social Studies Score 4, Social Studies Score 5, Social Studies Score 6, Social Studies Score 7, and Social Studies Score 8. 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"> 1. Group 2. Ethnicity 3. Gender 	<ol style="list-style-type: none"> 1. Total Social Studies Score 2. Social Studies Score 1 3. Social Studies Score 2 4. Social Studies Score 3 5. Social Studies Score 4 6. Social Studies Score 5 7. Social Studies Score 6 8. Social Studies Score 7 9. Social Studies Score 8

Results:

t tests for independent samples were used to analyze social studies scores by group and by gender. A two-way analysis of variance was used to determine if there was any interaction between group and gender on social studies scores. Several one-way analysis of variances were used to determine if there were any significant differences in social studies scores by ethnicity.

1.) Analysis by Group:

Nine 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 eight social studies sub scores. The results are displayed in Table 4. Although the sample mean for treatment group was higher than the sample mean for the control group on 7 of the 9 tests, there were significant differences on only two of the tests. There was no significant difference between the treatment group and the control group on the social studies raw score. On social studies score 1, the mean score for the control group was significantly higher than that of the treatment group. However, on social studies score 5, the mean for the treatment group was significantly higher than the mean of the control group.

Table 4
t Test Results of Social Studies Scores by Group

	Mean of Treatment Group	Mean of Control Group	t score	p-value
Social Studies Raw Score	25.28	25.09	0.32	.750
Social Studies Score 1	3.21	3.55	-3.14	.002**
Social Studies Score 2	3.41	3.33	0.72	.472
Social Studies Score 3	2.92	2.88	0.39	.694
Social Studies Score 4	2.81	2.66	1.33	.185
Social Studies Score 5	3.67	3.35	2.83	.005**
Social Studies Score 6	3.15	3.32	-1.55	.121
Social Studies Score 7	3.33	3.32	0.13	.898
Social Studies Score 8	2.77	2.67	0.83	.404

**Denotes significant at $\alpha = .01$ level

2.) Analysis by Gender:

While the main focus of this study was to determine if there was a significant difference in social studies scores by group, t tests were also used to explore any differences by gender in an effort to control for gender. Shown below in table 5 are the results of this analysis. The only significant difference between boys and girls was for Social Studies Score 6 where the difference was significant at $\alpha = .05$. For that measure, girls scored higher than boys. In all other cases (other eight tests), there were no differences between boys and girls.

Table 5
t Test Results of Social Studies Scores by Gender

	Mean for Boys	Mean for Girls	t score	p-value
Social Studies Raw Score	25.16	25.25	-0.14	.889
Social Studies Score 1	3.41	3.27	1.26	.207
Social Studies Score 2	3.39	3.37	0.18	.857
Social Studies Score 3	2.84	2.97	-1.12	.263
Social Studies Score 4	2.87	2.65	1.87	.062
Social Studies Score 5	3.57	3.54	0.27	.786
Social Studies Score 6	3.06	3.34	-2.50	.013*
Social Studies Score 7	3.36	3.30	0.70	.482
Social Studies Score 8	2.66	2.80	-1.26	.209

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

3.) Analysis by Group and Gender:

A general linear model was used to run a two-way analysis of variance with group and gender as the two independent variables and testing for interaction. There was significant interaction ($\alpha = .05$) between group and gender for only one dependent variable, social studies score 7. This significant interaction confounds the results for the group and gender analysis of social studies score 7. However, there were no significant effects found for either of these variables on social studies score 7 anyway. All other F tests in these two-way ANOVAs confirmed the findings found using the t test and presented in tables 4 and 5.

4.) Analysis by Ethnicity:

A one-way analysis of variance was used to test to determine if there were any significant differences between ethnic groups on the social studies scores. At $\alpha = .01$, there was a significant difference in ethnic groups for all nine dependent variables (social studies scores). For eight of the variables, Asian students generated the highest mean score, followed by Whites, African-Americans, and Hispanics respectively. For the variable, social studies score 7, Whites scored higher than Asians. The reader must be cautioned that ethnicities were quite unequally represented in the study with over 86% of the participants being Hispanic and only 1% of the participants Asian.

5.) Analysis by Group, Gender, and Ethnicity:

A general linear model was used to run a 3-way analysis of variance in an effort to study the three independent variables of group, gender, and ethnicity simultaneously along with their interactions. All three possible two-way interactions were examined. The only significant interaction was between group and gender on social studies score 7 discussed in a section above. Ethnicity did not react significantly with group or gender in any analysis.

6.) Analysis by Group Using Reading Score as a Covariate:

A t test was conducted to determine if there was a significant difference in reading raw scores between the treatment group and the control group. A t score of 7.76 was obtained for this test with a p-value of 0.000. There is a significant difference in reading raw scores at $\alpha = .001$. Students in the two groups have different reading raw scores. The mean reading raw score for the control group was 38.74. The mean reading raw score for the treatment group was 33.10. Thus, it can be concluded that students in the treatment group have significantly lower reading raw scores than do students in the control group. Is this a problem in this study? Do the lower reading raw scores effect the outcome of this study?

In order to test these questions and control for the possibility that students with lower reading scores might reside more heavily in one of the groups (treatment vs. control) than in the other, a one-way analysis of covariance was run using the general linear model on each of the nine dependent variables (social studies scores). The independent variable was examined in groups with its two classifications (control and treatment). The covariate was reading raw score. The results are displayed in Table 6.

Table 6
Analysis of Covariance:
Group is Independent Variable and Reading Raw Score is Covariate

Dependent Variable	F value	p-value
Social Studies Raw Score	0.04	.851
Social Studies Score 1	14.35	.000**
Social Studies Score 2	0.15	.702
Social Studies Score 3	0.02	.892
Social Studies Score 4	1.21	.271
Social Studies Score 5	7.89	.005**
Social Studies Score 6	4.73	.030*
Social Studies Score 7	0.03	.869
Social Studies Score 8	0.33	.566

**denotes significant at $\alpha = .01$

*denotes significant at $\alpha = .05$

Table 6 shows that with the covariate in the model, there are significant differences in the treatment and control groups on three dependent variables, social studies score 1, social studies score 5, and social studies score 6. For social studies score 5, the mean score for the treatment group is higher than the mean score for the control group. For social studies score 1 and social studies score 6, the mean score for the control group is higher than the mean score for the treatment group. These results are not much different than those obtained using the t test for the difference in two independent samples without covariate and presented in Table 4. The covariate model causes a further reduction in the p-value obtained on social studies score 1 and results in a significant difference in the two groups on social studies score 6 that was not found without the covariate. Generally, the inclusion of the covariate, reading raw score, did little to change the initial outcome of this study displayed in Table 4.