



Office of Assessment
SAM HOUSTON STATE UNIVERSITY

A Report of the Course-Embedded American Government Assessment

POLS 2305

Fall 2022-Spring 2023

Description of the Course-Embedded American Government Assessment

Beginning in fall 2022, a new locally developed pretest to posttest was administered within sections of POLS 2305: American Government. The instrument consisted of 10 multiple-choice questions and was administered at the beginning and at the end of the fall and spring semesters. The instrument was developed by the faculty of the Department of Political Science for use as part of their ongoing programmatic assessment as well as for Core Learning assessment. As the instrument was locally developed by faculty from the Department of Political Science, it is assumed that the instrument has content-related validity (Banta & Palomba, 2015). Additionally, as this test was embedded within the POLS 2305: American Government courses, the student scores represent authentic student work (Banta & Palomba, 2015; Kuh et al., 2015). However, as the instrument is not for a grade within the course, it represents a low-stakes assessment of student learning.

The student data presented within this report reflect student performance regarding the Texas Higher Education Coordinating Board's Core Learning Objective of Social Responsibility (THECB, 2023). The THECB (2023) defines Social Responsibility as "intercultural competence, knowledge of civic responsibility, and the ability to engage effectively in regional, national, and global communities." Data from this assessment align with the "knowledge of civic responsibility" element of the broader concept of Social Responsibility.

Methodology

A total of 265 students took the pretest, and a total of 63 students took the posttest for all sections of POLS 2305: American Government for the 2022-2023 academic year; however, not all student test scores were used for analysis. To determine whether student performance increased from pretest to posttest, a dependent samples *t*-test was used for analysis. Student identification numbers were collected along with student scores to identify each student's score on both the pretest and posttest. A total of 46 students could be identified as taking both the pre- and posttests. All statistical analysis was therefore conducted on only those students for whom both pre- and posttest scores could be identified.

Prior to conducting inferential statistics to determine whether differences were present between the students' pre- to posttest scores, checks were conducted to determine the extent to which these data were normally distributed. All four of the standardized skewness and kurtosis coefficients (i.e., the skewness and kurtosis values divided by their standard error) were within the range of normality of +/-3 (Onwuegbuzie & Daniel, 2002) for the face-to-face, online, and combined student populations. Therefore, a parametric dependent samples *t*-test was used to analyze the student performance data for the combined populations. A complete breakdown of the standardized skewness and kurtosis coefficients is in Table 1.

Table 1

Standardized Skewness and Kurtosis Values for Student Pre- and Posttest Scores for 2022-2023

Student Population	Standardized Skewness Coefficient	Standardized Kurtosis Coefficient
Face-to-Face Students		
Pretest	-0.50	0.12
Posttest	-0.26	0.21
Online Students		
Pretest	-0.88	-0.57
Posttest	-0.61	-0.92
All Students		
Pretest	-0.49	-0.03
Posttest	-0.54	0.18

Results

A parametric dependent samples *t*-test revealed a statistically significant difference at the $p \leq .01$ level between students' pre- to posttest scores for students enrolled in face-to-face sections of POLS 2305: American Government for the 2022-2023 academic year, $t(35) = -3.22$, $p = .003$. This difference represented a moderate effect size (Cohen's *d*) of 0.57 (Cohen, 1988). The average student score increased from 50.56% to 61.39%, for an increase of 10.83%. This equated to an average increase of 1.08 questions answered correctly from pre- to posttest. Readers are directed to Table 2 for the descriptive statistics for student pre- and posttest scores.

Table 2

Descriptive Statistics for Student Pre- and Posttest Scores on Course-Embedded Test in POLS 2305: American Government for 2022-2023 (Face-to-Face)

Test Version	<i>n</i>	<i>M</i>	<i>SD</i>	<i>M</i> %	<i>SD</i> %
Pretest Scores	36	5.06	2.01	50.56	20.13
Posttest Scores	36	6.14	1.74	61.39	17.43

A parametric dependent samples *t*-test did not reveal a statistically significant difference between students' pre- to posttest scores for students enrolled in online sections of POLS 2305: American Government for the 2022-2023 academic year, $t(9) = -1.21$, $p = .26$. The average student score increased from 44.00% to 54.00%, for an increase of 10.00%. This equated to an average increase of 1 question answered correctly from pre- to posttest. Readers are directed to Table 3 for the descriptive statistics for student pre- and posttest scores.

Table 3

Descriptive Statistics for Student Pre- and Posttest Scores on Course-Embedded Test in POLS 2305: American Government for 2022-2023 (Online)

Test Version	<i>n</i>	<i>M</i>	<i>SD</i>	<i>M</i> %	<i>SD</i> %
Pretest Scores	10	4.40	1.84	44.00	18.38
Posttest Scores	10	5.40	2.55	54.00	25.47

A parametric dependent samples *t*-test revealed a statistically significant difference at the $p \leq .001$ level between students' pre- to posttest scores for all students enrolled in sections of POLS 2305: American Government for the 2022-2023 academic year, $t(45) = -3.39$, $p = .001$. This difference represented a moderate effect size (Cohen's *d*) of 0.55 (Cohen, 1988). The average student score increased from 49.13% to 59.78%, for an increase of 10.65%. This equated to an average increase of 1.07 questions answered correctly from pre- to posttest. Readers are directed to Table 4 for the descriptive statistics for student pre- and posttest scores.

Table 4

Descriptive Statistics for Student Pre- and Posttest Scores on Course-Embedded Test in POLS 2305: American Government for 2022-2023 (All students)

Test Version	<i>n</i>	<i>M</i>	<i>SD</i>	<i>M %</i>	<i>SD %</i>
Pretest Scores	46	4.91	1.98	49.13	19.76
Posttest Scores	46	5.98	1.94	59.78	19.38

Additional information regarding student performance can also be gained through a disaggregated or item analysis of student performance on individual test questions. This item analysis revealed that students in face-to-face sections scored statistically significantly higher ($p \leq .01$) on the posttest for Questions 1 and 3. The effect size for both questions was moderate (Cohen, 1988). Statistical significance was not present for the remaining questions. The results for a complete breakdown of item analysis data are presented in Table 5.

Table 5

Percentage of Face-to-Face Students Correctly Answering Pre- and Posttest Questions for 2022-2023

	Pretest %	Posttest %	Mean Difference	<i>p</i>	Cohen's <i>d</i>
Question 1	42	75	33	0.003**	0.70
Question 2	53	67	14	0.201	
Question 3	3	25	22	0.009**	0.66
Question 4	94	86	(8)	0.263	
Question 5	67	81	14	0.058	
Question 6	25	36	11	0.291	
Question 7	47	64	17	0.160	
Question 8	39	50	11	0.254	
Question 9	53	61	8	0.324	
Question 10	83	69	(14)	0.134	

Note. $n = 36$. (Decrease in score from pretest to posttest); * significant at $p \leq 0.05$; ** significant at $p \leq 0.01$; *** significant at $p \leq 0.001$. Cohen's *d* from 0.2–0.49 indicates a small effect size, 0.50–0.79 indicates a moderate effect size, and 0.80 and higher indicates a large effect size (Cohen, 1988).

An item analysis for students in online sections did not reveal a statistically significant difference for any of the questions from pre- to posttest. The results for a complete breakdown of item analysis data are presented in Table 6.

Table 6*Percentage of Online Students Correctly Answering Pre- and Posttest Questions for 2022-2023*

	Pretest %	Posttest %	Mean Difference	<i>p</i>	Cohen's <i>d</i>
Question 1	30	30	0	n/a	
Question 2	70	70	0	n/a	
Question 3	0	0	0	n/a	
Question 4	60	90	30	0.081	
Question 5	40	70	30	0.279	
Question 6	20	10	(10)	0.591	
Question 7	50	60	10	0.591	
Question 8	40	50	10	0.678	
Question 9	40	70	30	0.081	
Question 10	90	90	0	n/a	

Note. $n = 10$. (Decrease in score from pretest to posttest); * significant at $p \leq 0.05$; ** significant at $p \leq 0.01$; *** significant at $p \leq 0.001$. Cohen's *d* from 0.2–0.49 indicates a small effect size, 0.50–0.79 indicates a moderate effect size, and 0.80 and higher indicates a large effect size (Cohen, 1988).

An item analysis for students in all sections combined revealed that face-to-face and online students scored statistically significantly higher on Questions 1 and 3 ($p \leq 0.01$), as well as Question 5 ($p \leq 0.05$) from pre- to posttest. The effect size for Questions 1 and 3 was moderate, while the effect size for Question 5 was small (Cohen, 1988). Statistical significance was not present for the remaining questions. The results for a complete breakdown of item analysis data are presented in Table 7.

Table 7*Percentage of All Students Correctly Answering Pre- and Posttest Questions for 2022-2023*

	Pretest %	Posttest %	Mean Difference	<i>p</i>	Cohen's <i>d</i>
Question 1	39	65	26	0.009**	0.53
Question 2	57	67	10	0.256	
Question 3	2	20	18	0.010**	0.60
Question 4	87	87	0	n/a	
Question 5	61	78	17	0.031*	0.37
Question 6	24	30	6	0.473	
Question 7	48	63	15	0.128	
Question 8	39	50	11	0.229	
Question 9	50	63	13	0.083	
Question 10	85	74	(11)	0.133	

Note. $n = 46$. (Decrease in score from pretest to posttest); * significant at $p \leq 0.05$; ** significant at $p \leq 0.01$; *** significant at $p \leq 0.001$. Cohen's *d* from 0.2–0.49 indicates a small effect size, 0.50–0.79 indicates a moderate effect size, and 0.80 and higher indicates a large effect size (Cohen, 1988).

References

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