Sam Houston State University

Office of Assessment

Academic Affairs

A Report of the Course-Embedded American Government Assessment

POLS 2305

Fall 2024

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, 2025). The THECB (2025) 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 163 students took the pretest, and a total of 57 students took the posttest for all sections of POLS 2305: American Government for the fall 2024 semester; 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 57 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 fall 2024

Student Population	Standardized Skewness Coefficient	Standardized Kurtosis Coefficient
Face-to-Face Students		
Pretest	-0.25	0.30
Posttest	-0.92	-0.36
Online Students		
Pretest	0.00	-0.70
Posttest	0.00	-0.58
All Students		
Pretest	-0.12	-0.22
Posttest	-0.64	-0.60

Results

A parametric dependent samples *t*-test revealed a statistically significant difference at $p \leq$ .001 between students' pre- to posttest scores for students enrolled in face-to-face sections of POLS 2305: American Government for the fall 2024 semester, $t(36) = -3.63$, $p < .001$. This difference represented a moderate effect size (Cohen's *d*) of 0.73 (Cohen, 1988). The average student score increased from 50.54% to 65.14%, for an increase of 14.60%. This equated to an average increase of 1.46 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 fall 2024 (Face-to-Face)

Test Version	n	M	SD	M %	SD %
Pretest Scores	37	5.05	2.04	50.54	20.41
Posttest Scores	37	6.51	1.97	65.14	19.67

A parametric dependent samples *t*-test revealed a statistically significant difference at $p \leq$ .001 level between students' pre- to posttest scores for students enrolled in online sections of POLS 2305: American Government for the fall 2024 semester, $t(19) = -3.83$, $p = .001$. This difference represented a large effect size (Cohen's *d*) of 0.94 (Cohen, 1988). The average student score increased from 44.00% to 60.50%, for an increase of 16.50%. This equated to an average increase of 1.65 questions 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 fall 2024 (Online)

Test Version	n	M	SD	M %	SD %
Pretest Scores	20	4.40	1.93	44.00	19.30
Posttest Scores	20	6.05	1.57	60.50	15.72

A parametric dependent samples *t*-test revealed a statistically significant difference at *p* ≤ .001 between students' pre- to posttest scores for all students enrolled in sections of POLS 2305: American Government for the fall 2024 semester, $t(56) = -5.10$, $p < .001$. This difference represented a large effect size (Cohen's *d*) of 0.80 (Cohen, 1988). The average student score increased from 48.25% to 63.51%, for an increase of 15.26%. This equated to an average increase of 1.53 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 fall 2024 (All students)

Test Version	*n*	*M*	*SD*	*M %*	*SD %*
Pretest Scores	57	4.82	2.01	48.25	20.10
Posttest Scores	57	6.35	1.84	63.51	18.37

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 on Question 1 ($p ≤ .001$), Question 3 ($p ≤ .001$), and Question 9 ($p ≤ 0.05$) from pre- to posttest. The effect size was large for Questions 1 and 3, and moderate for Question 9 (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 fall 2024

	Pretest %	Posttest %	Mean Difference	*p*	Cohen's *d*
Question 1	27	65	38	<.001***	0.81
Question 2	57	73	16		
Question 3	8	51	43	<.001***	1.05
Question 4	97	89	(8)		
Question 5	78	84	6		
Question 6	8	22	14		
Question 7	68	70	2		
Question 8	38	51	13		
Question 9	41	68	27	0.016*	0.56
Question 10	84	78	(6)		

Note. $n = 37$. (Decrease in score from pretest to posttest); * significant at $p ≤ 0.05$; ** significant at $p ≤ 0.01$; *** significant at $p ≤ .001$. 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 revealed that students in online sections scored statistically significantly higher on Question 1 ($p ≤ 0.01$), Question 5 ($p ≤ 0.05$), and Question 7 ($p ≤ 0.01$) from pre- to posttest. The effect size was large for Questions 1 and 7, and small for Question 5 (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 6.

Table 6
Percentage of Online Students Correctly Answering Pre- and Posttest Questions for fall 2024

	Pretest %	Posttest %	Mean Difference	p	Cohen's d
Question 1	25	75	50	0.002**	1.13
Question 2	60	55	(5)		
Question 3	5	10	5		
Question 4	80	95	15		
Question 5	65	85	20	0.042*	0.46
Question 6	25	25	0		
Question 7	40	80	40	0.002**	0.87
Question 8	20	35	15		
Question 9	40	55	15		
Question 10	80	90	10		

Note. $n = 20$. (Decrease in score from pretest to posttest); * significant at $p \leq 0.05$; ** significant at $p \leq 0.01$; *** significant at $p \leq .001$. 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 Question 1 ($p \leq .001$), Question 3 ($p \leq .001$), Question 7 ($p \leq 0.05$), and Question 9 ($p \leq 0.01$) from pre- to posttest. The effect size was large for Question 1, moderate for Question 3, and small for Questions 7 and 9 (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 fall 2024

	Pretest %	Posttest %	Mean Difference	p	Cohen's d
Question 1	26	68	42	<.001***	0.92
Question 2	58	67	9		
Question 3	7	37	30	<.001***	0.77
Question 4	91	91	0		
Question 5	74	84	10		
Question 6	14	23	9		
Question 7	58	74	16	0.038*	0.34
Question 8	32	46	14		
Question 9	40	63	23	0.008**	0.47
Question 10	82	82	0		

Note. $n = 57$. * Significant at $p \leq 0.05$; ** significant at $p \leq 0.01$; *** significant at $p \leq .001$. 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

Banta, T. W., & Palomba, C. A. (2015). *Assessment essentials: Planning, implementing, and improving assessment in higher education* (2nd ed.). Jossey-Bass.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.)*.* Lawrence Erlbaum.

Kuh, G. D., Ikenberry, S. O., Jankowski, N. A., Cain, T. R., Ewell, P. T., Hutchings, P., Kinzie, J. (2015). *Using evidence of student learning to improve higher education*. Jossey-Bass.

Onwuegbuzie, A. J., & Daniel, L. G. (2002). Uses and misuses of the correlation coefficient. *Research in the Schools, 9*(1)*,* 73-90.

Texas Higher Education Coordinating Board. (2025). *Texas Core Curriculum*. https://www.highered.texas.gov/institutional-resources-programs/public-universities-health-related-institutions/transfer-resources/texas-core-curriculum-tcc/