



Office of Academic Planning and Assessment

A Report of the Course Embedded

Contemporary Moral Issues Pretest to Posttest Assessment

PHIL 2306

2021-2022

Description of Contemporary Moral Issues Pretest to Posttest Assessment

Each fall and spring semester, a locally developed pretest to posttest assessment is administered within sections of PHIL 2306: Contemporary Moral Issues. The instrument consists of 25 multiple choice questions and is administered to students enrolled in those courses at the start and end of each semester. Because the instrument was developed by faculty with expertise in teaching these concepts, it is assumed that the instrument has content-related validity (Banta & Palomba, 2015). Additionally, as this test was embedded within normal sections of PHIL 2306, the student scores represent authentic student work (Banta & Palomba, 2015; Kuh et al., 2015).

The student data presented within this report reflect student performance regarding the Texas Higher Education Coordinating Board's Core Learning Objectives of Social Responsibility and Personal Responsibility (THECB, 2022). The THECB (2022) defines these concepts as follows:

- Social Responsibility: intercultural competence, knowledge of civic responsibility, and the ability to engage effectively in regional, national, and global communities
- Personal Responsibility: ability to connect choices, actions, and consequences to ethical decision-making

These data should therefore be used in conjunction with other data to fully understand student knowledge and ability with regards to these Core Learning Objectives.

Methodology

A total of 153 students took the pretest, and a total of 48 students took the posttest for all sections of PHIL 2306: Contemporary Moral Issues for the 2021-2022 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 32 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. The decision was made to not disaggregate face-to-face and online student data, as only six of the 32 students were enrolled in an online course.

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 were within the limits of normality of +/-3 (Onwuegbuzie & Daniel, 2002). Therefore, a parametric dependent samples *t*-test was used to analyze the student performance data. 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

Test Version	Standardized Skewness Coefficient	Standardized Kurtosis Coefficient
Pretest	-0.74	-1.07
Posttest	-1.68	0.84

Results

A parametric dependent samples *t*-test revealed a statistically significant difference between the pre- to posttest scores for students enrolled in all sections of PHIL 2306: Contemporary Moral Issues for the 2021-2022 academic year, $t(31) = -3.39, p < .002$. This difference represented a small effect size (Cohen's *d*) of 0.44 (Cohen, 1988). The average student score increased from 61.38% to 69.38%, for an increase of 8.00%. This equated to an average increase of 2.00 questions answered correctly from pre- to posttest. Readers are directed to Table 2 for a breakdown of these results.

Table 2

Descriptive Statistics for Student Pre- and Posttest Scores on Course-Embedded Test in PHIL 2306: Contemporary Moral Issues for 2021-2022

Test Version	<i>M</i>	<i>SD</i>	<i>M %</i>	<i>SD %</i>
Pretest Scores	15.34	4.75	61.38	18.00
Posttest Scores	17.34	4.41	69.38	17.65

Note. The number of students was 32.

Additional important information regarding student performance can also be gained through an item analysis of student pre- and posttest performance on individual test questions. This item analysis revealed that students scored statistically significantly higher on 4 of the 25 test questions (Questions 7, 9, 12, and 24) from pre- to posttest. Readers are directed to Table 3 for a complete breakdown of item analysis data for face-to-face students.

Table 3*Percentage of Students Correctly Answering Pre- and Posttest Questions for 2021-2022*

	Pretest %	Posttest %	Mean Difference	<i>p</i>	Cohen's <i>d</i>
Question 1	56	63	7	0.625	
Question 2	75	91	16	0.057	
Question 3	66	53	(13)	0.255	
Question 4	97	94	(3)	0.572	
Question 5	59	72	13	0.103	
Question 6	88	69	(19)	0.056	
Question 7	22	50	28	0.002**	0.60
Question 8	22	38	16	0.231	
Question 9	38	75	37	<.001***	0.79
Question 10	25	34	9	0.325	
Question 11	75	66	(9)	0.374	
Question 12	34	81	47	<.001***	1.06
Question 13	31	53	22	0.070	
Question 14	75	81	6	0.572	
Question 15	84	88	4	0.712	
Question 16	53	59	6	0.536	
Question 17	59	59	0	1.000	
Question 18	78	75	(3)	0.712	
Question 19	63	69	6	0.601	
Question 20	75	81	6	0.536	
Question 21	78	59	(19)	0.056	
Question 22	91	88	(3)	0.712	
Question 23	75	88	13	0.161	
Question 24	47	72	25	0.009**	0.52
Question 25	69	78	9	0.325	

Note. $n = 32$. (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

- 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. (2022). *Texas Core Curriculum*.
<https://www.highered.texas.gov/institutional-resources-programs/public-universities-health-related-institutions/transfer-resources/texas-core-curriculum-tcc/>