Office of Academic Planning and Assessment

A Report of the Course Embedded

PHIL 2306: Contemporary Moral Issues Pretest to Posttest Assessment

2020-2021

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 and assessing 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, 2021). The THECB (2021) 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 142 students took the pretest, and a total of 44 students took the posttest for all sections of PHIL 2306: Contemporary Moral Issues for the 2020-2021 academic year; however,

not all student test scores were used for analysis. To determine whether student performance

increased from pretest to posttest, a paired samples *t*-test was used for analysis. Students'

SamIDs were collected along with student scores to identify each student's score on both the

pretest and posttest. Statistical analysis was only conducted on those PHIL 2306 students for

whom both pretest and posttest scores could be identified. Therefore, analysis was conducted on

a total of 30 students.

Results

Prior to conducting inferential statistics to determine whether differences were present

between the students' pretest to posttest scores, checks were conducted to determine the extent to

which these data were normally distributed. All four of the standardized coefficients were within

the range of normality of +/-3 (Onwuegbuzie & Daniel, 2002). Readers are directed to Table 1

for a breakdown of these results.

Table 1

Standardized Skewness and Kurtosis Values for Student Pretest and Posttest Scores

Test Version	Standardized Skewness Coefficient	Standardized Kurtosis Coefficient
Pretest	-2.19	1.23
Posttest	-2.49	0.84

Because all four standardized coefficients were normally distributed, parametric paired

samples *t*-tests were used for all statistical analysis. This analysis revealed a statistically

significant difference at the $p < .005$ level between the pretest to posttest scores for students

enrolled in PHIL 2306: Contemporary Moral Issues for the 2020-2021 academic year, $t(29) = -3.058$, $p \leq .005$. This difference represented a moderate effect size (Cohen's *d*) of 0.53. The

average student score increased from 57.20% to 66.27%, for an increase of 9.07% from pretest to

posttest. This equated to an average increase of 2.27 questions answered correctly from pretest to posttest. Readers are directed to Table 2 for a breakdown of these results.

Table 2

Descriptive Statistics for Student Pretest and Posttest Scores on Course-Embedded Test in PHIL 2306: Contemporary Moral Issues for 2020-2021

Test Version	n	M	SD	$M\%$	$SD\%$
Pretest Scores	30	14.30	3.67	57.20	14.72
Posttest Scores	30	16.57	4.85	66.27	19.39

Additional information can be gained through a disaggregated or item analysis of student performance on individual test questions. This item analysis revealed that students scored statistically significantly higher at the $p \leq 0.001$ level on the posttest for Questions 5, 12, and 24 and statistically significantly higher at the $p \leq 0.01$ level for Questions 7 and 21. The effect sizes for Questions 5 and 12 were high, while the effect size for Question 24 was moderate (Cohen, 1988). The effect sizes for Questions 7 and 21 were also moderate. The results for a complete breakdown of item analysis are presented in Table 3.

Table 3

Percentage of Students Correctly Answering Pre and Posttest Questions for 2020-2021

	Pretest	Posttest	Mean Difference	p	Cohen's d
Question 1	50.00%	53.33%	3.33%	.769	0.55
Question 2	90.00%	90.00%	0.00%	1.000	0.00
Question 3	53.33%	40.00%	(13.33%)	.103	0.37
Question 4	80.00%	93.33%	13.33%	.103	0.38
Question 5	40.00%	80.00%	40.00%	.001***	0.88
Question 6	90.00%	70.00%	(20.00%)	.031	0.51
Question 7	20.00%	50.00%	30.00%	.005**	0.65
Question 8	30.00%	36.67%	6.67%	.601	0.15
Question 9	50.00%	50.00%	0.00%	1.000	0.00
Question 10	23.33%	23.33%	0.00%	1.000	00.00
Question 11	66.67%	70.00%	3.33%	.787	0.06
Question 12	23.33%	66.67%	43.34%	.001***	0.97
Question 13	50.00%	40.00%	(10.00%)	.448	0.20
Question 14	56.67%	60.00%	3.33%	.745	0.06
Question 15	80.00%	86.67%	6.67%	.423	0.18
Question 16	36.67%	56.67%	20.00%	.083	0.40

Question 17	46.67%	53.33%	6.66%	.573	0.12
Question 18	80.00%	80.00%	0.00%	1.000	0.00
Question 19	63.33%	63.33%	0.00%	1.000	0.00
Question 20	76.67%	80.00%	3.33%	.745	0.07
Question 21	50.00%	80.00%	30.00%	.005**	0.65
Question 22	73.33%	83.33%	10.00%	.184	0.24
Question 23	90.00%	93.33%	3.33%	.573	0.11
Question 24	36.67%	73.33%	36.66%	.000***	0.76
Question 25	73.33%	83.33%	10.00%	.264	0.24

Note. $n = 30$. (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 indicate a small effect size, 0.50-0.79 indicate a moderate effect size, and 0.80 and higher indicate a large effect size (Cohen, 1988).

Discussion

It should be noted that this assessment was given to all students enrolled in all sections of PHIL 2306, regardless of teaching and learning modality. A total of 422 students (203 face-to-face/hybrid and 219 fully online) received an invitation via Qualtrics to complete the pretest during the first week of class, and 399 students (186 face-to-face/hybrid and 213 fully online) received an invitation to complete the posttest near the end of the semester prior to finals. Out of the 30 students who completed both the pretest and posttest, 19 were fully online students. Since the number of participants was so small during 2020-2021, the decision was made to aggregate the results rather than to disaggregate to show any differences between online and face-to-face students.

Prior to spring 2020 the pretests and posttests were given in class using a paper test and scantrons, but this meant that only the face-to-face students could take the test, leaving out the entire online student population. To capture these missing data, OAPA started a partnership with SHSU Online at the beginning of spring 2020 to move these types of assessments into Qualtrics, which prepared OAPA for the complete shift to online learning due to the COVID-19 pandemic.

After administering several pretests and posttests through Qualtrics, the low participation rates were apparent across all course sections. Rather than re-implement paper tests and

scantrons in 2021-2022, the plan is to be more targeted in how students are asked to take the tests. During 2020-2021, professors were asked to announce the test dates and to encourage students to participate, but class time to take the tests was not requested due to the hybrid learning environment. For 2021-2022, OAPA is requesting additional reminders from the chair to professors to pass along to their students, and for professors to allow time in face-to-face classes on specific days at the beginning and end of the semesters for their students to complete the tests in Qualtrics using their personal devices. It is expected that these measures, along with returning to traditional face-to-face learning, will positively affect participation rates.

References

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