**Date: September 30, 2019**

**To: Professor James Solomon, Director of Academic Assessment**

**Professor Tim Black, Chair of Department of Philosophy**

**Professor Jackie Stallcup, Interim Dean of the College of Humanities**

**From: Associate Professor Julie Yoo, Department Liaison**

**RE: Assessment Report**

*Introduction*

In an email sent to myself on 12/4/18 (attached), Professor Solomon urged the importance of giving “[a]n assessment of student learning in PHIL 200 [“Critical Thinking”], using the relevant GE Basic Skills SLOs… .” Professor Solomon continues, “[this assessment] is needed by the university to get a better picture of student learning in the critical thinking portion of the GE Basic Skills section.”[[1]](#footnote-1) I present this report to serve this need.

The skills of critical thinking are among the five Fundamental Learning Competencies (FLC) constituting institution-wide learning competencies at CSUN. PHIL 200 satisfies a Basic Skills GE requirement (A3). It is also a required course for the Philosophy Major or Minor (unless a student replaces PHIL 200 with the more advanced logic course, PHIL 230). The assessment of PHIL 200 is not only important for its centrality in serving the academic mission of the university, its assessment is especially pressing given its high DFW rate in the College of Humanities:

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| **AY or Semester** | **DFW Rate** | **Number of Students** |
| Fall 2018  2017 – 2018 AY  2016 – 2017 AY  2015 – 2016 AY  2014 – 2015 AY | 27%  19%  21%  20%  17% | 190  597  661  786  902 |

(from the most current CSU Student Success Dashboard)

*Methodology to Assess PHIL 200 Spring 2019: “Questionnaire A” and “Questionnaire B”*

As stated in the course description, PHIL 200 introduces students “to the concepts essential to the identification, analysis and evaluation of arguments, with attention to deduction, induction and common fallacies.” To reflect these goals, I formulated a questionnaire consisting of ten questions (both questionnaire are attached). The questions gave students the opportunity to show their capacity to:

* determine the presence or absence of an argument (questions 1, 2, and 3)
* analyze and evaluate arguments
* valid or invalid arguments (question 4 and 5)[[2]](#footnote-2)
* inductively strong or weak arguments (question 6)
* sound or unsound arguments (question 7)[[3]](#footnote-3)
* identify informal fallacies (question 8, 9, and 10)

Each question presents a self-contained scenario of two interlocutors engaged in a debate. At the end of each scenario, students are prompted to evaluate how effectively the interlocutor conveys his or her argument. The prompts are intentionally open-ended, not multiple choice. No technical terms such as “valid” or “invalid,” etc. appear in the questionnaire, leaving it up to the student to apply these concepts as they see fit.

To gauge how well students understood the concepts central to PHIL 200, I asked instructors to administer the questionnaire in the final week of the semester (Questionnaire B). To establish a baseline, I asked the instructors to give a similar questionnaire prior to any instruction during the first week (Questionnaire A). Instructors encouraged students to fill out both questionnaires on a volunteer basis. The students were informed that they would not be graded on their performance. I also made it clear to the instructors that *their* performance was not being evaluated; only the performance of the students as a group.

*Results*

I received a total of 112 replies to Questionnaire A, thanks to the participation of 5 instructors. As for Questionnaire B, I only received 47 replies, supplied by 3 instructors. The relatively low rate of participation for Questionnaire B, I’m guessing, is attributable to fatigue on the part of the student and the fact that instructors have a lot of ground to cover in the final week of the semester. A detailed breakdown of the results is given below.

Responses to each prompt were “graded” according to the following scale:

N = no understanding: the student has no mastery of the relevant concept

S = some understanding: the student has some awareness of the relevant concept

A = aced it: the student has full mastery of the relevant concept

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| **Skills Tested** | **Q A** | | | **Q B** | | |
| Q1: distinguish between argument v non-argument  (interlocutor does NOT give an argument) | A  83% |  | N  17% | A  88% |  | N  12% |
| Q2: distinguish between argument v non-argument  (interlocutor DOES give an argument) | A  94% |  | N  6% | A  97% |  | N  3% |
| Q3: distinguish between argument v non-argument  (interlocutor DOES give an argument) | A  94% |  | N  6% | A  98% |  | N  2% |
| Q4: identify invalid argument, specifically  deductive fallacy, *denying the antecedent* | A  0% | S  27% | N  73% | A  6% | S  31% | N  63% |
| Q5: identify valid argument, specifically deductive  argument form, *modus ponens* | A  0% | S  12% | N  88% | A  6% | S  18% | N  76% |
| Q6: identify inductive argument, asking how it  could be made even *stronger* | A  18% | S  46% | N  36% | A  32% | S  57% | N  15% |
| Q7: distinguish between *validity* and *soundness*  (valid argument with true or untrue premises) | A  0% | S  36% | N  64% | A  8% | S  35% | N  57% |
| Q8: identify informal fallacy of  *hasty generalization* | A  23% | S  65% | N  13% | A  48% | S  33% | N  19% |
| Q9: identify informal fallacy of  *appeal to popularity* | A  12% | S  44% | N  44% | A  52% | S  32% | N  26% |
| Q10: identify informal fallacy of  *circular reasoning* | A  4% | S  22% | N  74% | A  52% | S  40% | N  8% |

In general, students came into PHIL 200 already having solid intuitions about what counts as an argument, versus a mere description; this is shown by the results for questions 1, 2 and 3. Many also had good instincts when it came to sensing what could make an inductive argument stronger, as shown by the results for questions 6 and 8. But they did not have skills that enabled them to evaluate deductive arguments, still less apply the technical terms for analyzing them. It is no surprise, then, that they are were not able to distinguish between deduction and induction, a fundamental concept for PHIL 200. This is to be expected, since the distinction, while intuitive, is only recognized with the help of explicit instruction.

A key question of interest in the assessment of PHIL is how well students are able to recognize instances of deduction, as opposed to induction, and are capable of separating considerations pertaining to their structure, as opposed to the mere informational accuracy of premises (please see footnotes 2 and 3).

The overall performance on Questionnaire B did not indicate that a majority of students had a solid grasp of deduction versus induction. While students were also more forthcoming and confident in the way they approached their answers to the prompts, a majority still missed opportunities to apply the relevant terms, or when applying them, applied them incorrectly. The missed opportunities were most apparent with questions concerning deduction (questions 4, 5, and 7). Overall, there was only modest improvement when it comes to mastery of the concepts concerning deduction (validity, invalidity, soundness, unsoundness). There was greater improvement with the identification of informal fallacies (questions 8, 9, and 10).

*Future Assessment*

I have a short term and long term goal for future assessment. In the short term, I plan to administer Questionnaire B for Fall 2019. Once the results have been tabulated, I will assemble with my Department Chair, Tim Black, and Department Associate Chair, and former Assessment Liaison, Christina Meshelski, to assess whether, with the larger sample size, students completing PHIL 200 are as underinformed about the differences between deduction and induction as the most recent batch of Questionnaire B samples seems to indicate. If they are, we will propose a plan for more effective instruction of these concepts.

A long term assessment goal for PHIL 200 is designing a questionnaire that goes beyond the assessment of a student’s ability to handle deduction, induction, and the identification of informal fallacies. While important, these skills are not the only things central to critical thinking. There is also the ability to construct arguments of one’s own, to reconstruct an argument given “in the wild” (newspaper editorials, blog posts, long essays, verbal exchanges in real time), in addition to being able to evaluate the cogency of theoretical and practical explanations, handle questions requiring quantitative literacy, and perhaps most importantly, recognize personal psychological weaknesses that interfere with unbiased judgment of new information. Critical thinking is as much a cultivated attitude of maintaining solid mental hygiene as it is an intellectual feat of mastering technical concepts. A different questionnaire that can hit on some of these other desirable skills may be of interest to the full assessment of PHIL 200.

1. The course title for PHIL 200 is “Critical Thinking.” It is the same as the label for the set of eponymous skills, which also goes by “critical reasoning” or “critical analysis.” When referring to the skills, I shall use lower case letters; upper case will be used for the course title. [↑](#footnote-ref-1)
2. There are two types of arguments: deductive and inductive. Students need to understand the difference between deduction and induction because they serve different argumentative purposes.

   The purpose of a deductive argument is to show that the conclusion is fully contained, or implicit in, the premises. That is, its purpose is to demonstrate that if one is committed to the premises, then one is also thereby committed to the conclusion. It can also be used to demonstrate that the conclusion is fully guaranteed by the premises. Good deductive arguments are *valid*; the ones that don’t guarantee the conclusion are *invalid*.

   The purpose of an inductive argument, on the other hand, is to show that the premises lend a measure of probability to the conclusion. Its purpose is not to show that the conclusion is guaranteed by the premises, as is the case with deductive arguments, but rather to shore up sufficient data points to render probable the truth of the conclusion. The ones that supply lots of relevant data points are *strong*; the ones that don’t are *weak*. Unlike validity, which is a binary affair, inductive strength comes in degrees. [↑](#footnote-ref-2)
3. Deductive and inductive arguments are evaluated in terms of two separate considerations. One is the truth or accuracy of the premises. The other is their structure – validity and invalidity, in the case of deduction, and strength or weakness, in the case of induction. Deductive arguments that are both valid and have true premises are *sound*; ones lacking one of both of these virtues are *unsound*. Inductive arguments that are both strong and have true premises are *cogent*; ones that lack one or both of these virtues are *uncogent*. [↑](#footnote-ref-3)