



Data Science | 2017-2018 Assessment Report

UW-Extension Collaborative Program Assessment Report

Review and Summarize Status of Actions from Previous Assessment Report(s):

FROM PREVIOUS REPORT: The previous report recommended further refining assessments and establishing baselines. Academic directors have refined their program assessment plan and cycle and specific direct assessment activities, particularly in DS 730. DS 705 has recently undergone revision and the ambiguous 6th scenario may have been addressed there.

Piazza was used more widely as a discussion tool in the fall semester to address issues students reported in course evaluations on the usefulness of discussions. However, instructor engagement continues to be a theme.

Based on PM review of the course evaluation and faculty provided direct assessment data, key considerations for discussion might be:

- How recent revisions to 700 might have addressed struggles students consistently had with quizzes and assignments.
- Establishing guidelines for instructors with regard to expectations for instructor engagement and timeliness
- How overall course grades relate to the competencies measure in each class and what role these play in assessment.
- Has expanded use of piazza helped faculty more useful course discussions

Primary Assessment – Program Student Learning Outcomes (Direct Measures – % of students earning xx% or more on PSLO assignment) – included grades and direct assessment measures as per AD request.

Course & Semester	Competency / Outcome Targeted	Means of Evaluation / Evidence	Results				Recommended Actions for Discussion (Sources: PM and Faculty)
			Number Correct	Spring 2017 Frequency	Summer 2017 Frequency	Fall 2017 Frequency	
DS 705	Students will be able to choose and apply tools and	A matching problem requiring students to choose the correct statistical procedure was included on the final examination. 5 or more	0	0	0	1	Possible Improvements: The choice of procedure for the sixth scenario above is somewhat ambiguous and requires an unstated assumption. This should be cleaned up.

	methodologies to solve data science tasks.	correct was considered competent.	<table border="1" data-bbox="919 131 1522 699"> <tr><td>1</td><td>2</td><td>0</td><td>1</td></tr> <tr><td>2</td><td>2</td><td>0</td><td>2</td></tr> <tr><td>3</td><td>7</td><td>2</td><td>3</td></tr> <tr><td>4</td><td>7</td><td>2</td><td>6</td></tr> <tr><td>5</td><td>15</td><td>11</td><td>7</td></tr> <tr><td>6</td><td>17</td><td>13</td><td>12</td></tr> <tr><td>7</td><td>19</td><td>11</td><td>7</td></tr> <tr><td>Total Students</td><td>69</td><td>40</td><td>39</td></tr> <tr><td>Average Number Correct</td><td>5.3</td><td>5.6</td><td>5.0</td></tr> <tr><td>Percent Scoring 5 or above</td><td>74%</td><td>90%</td><td>67%</td></tr> </table> <p data-bbox="919 740 1522 773">In Fall 2017, 67% of students exhibited competency.</p>	1	2	0	1	2	2	0	2	3	7	2	3	4	7	2	6	5	15	11	7	6	17	13	12	7	19	11	7	Total Students	69	40	39	Average Number Correct	5.3	5.6	5.0	Percent Scoring 5 or above	74%	90%	67%	<p data-bbox="1549 172 1984 732">Instructor Comments: A matching scenario to procedures problem is a higher-order task than simply working computational problems and is usually quite challenging for students. It is disappointing that even a few students finish the course while being able to correctly match just 3 or fewer scenarios. While small versions of this matching problem, limited to just a few procedures, are given as formative assessments each week, <i>we should consider giving larger versions of this problems on the first two midterm exams.</i></p>
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DS 730	Students will be able to collect, clean and prepare data.	The final project is a large project that requires the students to solve many different data science tasks. In most of the problems throughout the entire semester, the task at hand was to answer a question based on the supplied data. However, on the final project, the students were asked to collect a large amount of data on a topic they were interested in. The data could have come from any source and therefore the cleanliness of the data was in question. The students had to ensure that all of the data was clean so they could run queries on it. Once the data	<p data-bbox="919 816 1522 951">Of the 47 students in the course who submitted a final project, 18 received a score of 90% or above and 27 received a score above 80%. The average score was around 79%.</p> <p data-bbox="919 992 1522 1057">As measured by the 80% mark, just over half of students exhibited competency.</p>	<p data-bbox="1549 816 1984 1162">Some students struggled to find an appropriately sized dataset. Others clearly spent little time on the problem and just asked basic questions about the dataset. In the future, I will suggest more places to find large datasets. I will also provide some kind of “precheck” to ensure the questions they are asking of the data is sufficiently hard.</p> <p data-bbox="1549 1203 1984 1511">PM: Discussion from the meeting indicated that students may actually be competent, but that there performance may not have indicated it in this case due to a lack of effort on this vs. other tasks in the final exam. Discussion also surrounded modifying the assessment so that it is more clear cut: either incorporating a</p>																																								

		was cleaned and in a good format, they had to ask and answer questions of that data.		task similar to the one in 705 or clarifying in some other way. AD / Instructor will send a revised / rubric activity to measure the competency.
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