General Education Annual Course Assessment Form

Course Number/Title: Stat 95: Elementary Statistics  GE Area: B4

Results reported for AY 2014-15  # of sections 17  # of instructors 12

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Department Chair: Ron Rogers  College: CoSS

Instructions: Each year, the department will prepare a brief (two page maximum) report that documents the assessment of the course during the year. This report will be electronically submitted, by the department chair, to the Office of Undergraduate Studies, with an electronic copy to the home college by October 1 of the following academic year.

Part 1

To be completed by the course coordinator:

(1) What SLO(s) were assessed for the course during the AY?

SLO2: Mathematical concepts courses should prepare the student to demonstrate the ability to use mathematics to solve real life problems.

Other, specific to Area B4, SLO6: Focus on applications of mathematics to everyday life.

(2) What were the results of the assessment of this course? What were the lessons learned from the assessment?

Assessment was accomplished using two methods: (1) class-based; and (2) a standardized post-test exit exam given on the day of the Final Exam. The table below presents the results of each assessment method for SLOs 2 and 6. For the class-based assessment, instructors were asked to provide information about assignments given each semester that assessed SLOs 2 and 6, as well as student performance on those assessments. Instructors reported that they assessed these SLOs through quiz and exam questions throughout the semester. These exam items included some on statistical inference (e.g., sampling distributions, confidence intervals, hypothesis testing) that assessed SLO 2 and SLO 6. Instructors also measured SLOs through assignments. Examples included a homework assignment in which students were asked to describe the results of a fictitious scientific experiment. The primary goal of this assignment was for students to apply the statistical concepts they were learning to a scenario that they might encounter in a future college course or job. Another example was a writing assignment that assessed both SLOs by asking students to use their knowledge of mathematics to critique conclusions based on erroneous or misleading real-world data. Rubric scores were used to assess these SLOs.
<table>
<thead>
<tr>
<th>Assessment Method</th>
<th>Number of Students Assessed</th>
<th>Percent who mastered SLOs 2 and 6 at a high level</th>
<th>Percent who mastered SLOs 2 and 6 at an average level</th>
<th>Percent who mastered SLOs 2 and 6 at a low level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class-Based</td>
<td>365</td>
<td>50.14%</td>
<td>38.36%</td>
<td>11.51%</td>
</tr>
<tr>
<td>Post-Test</td>
<td>599*</td>
<td>17.70%</td>
<td>39.40%</td>
<td>42.90%</td>
</tr>
</tbody>
</table>

* The original assessment sample contained scores for 724 students. However, 104 (14.37%) Scantron forms were unable to be graded when the machine failed. After servicing the machine, it was discovered that our smaller Scantron forms are not compatible with the department’s machine, so the remaining ungraded forms were omitted. Additionally, one online version of the assessment contained a different item than the others. This affected one section of 21 students (2.9%) which were also excluded. All data is reported on the remaining sample of 599 students.

The post-test revealed that a sizable number of students mastered SLOs 2 and 6 at a low level. The post-test results suggest that many students have difficulty in connecting classroom concepts to real life problems. This conclusion was supported by instructor comments, described next.

Instructors reported a number of lessons learned from this assessment activity. Commonly, instructors reported areas in which students struggled. Concepts that students found challenging included: computing z-scores; solving proportions under the normal curve; interpreting the standard error of the mean; using statistical software; and, thinking critically about the use of statistics. Other instructors identified non-content challenges to student success. These included procrastination (i.e., assignments submitted later tended to be of lower quality) and problems with writing quality.

(3) What modifications to the course, or its assessment activities or schedule, are planned for the upcoming year? (If no modifications are planned, the course coordinator should indicate this.)

Our course assessment process will remain unchanged while we continue to review our assessment activities across the Psychology department. These may result in changes to our assessment process in the future. For individual instructors, several changes are anticipated to enhance student learning of challenging concepts. The most common change is to the writing assignments. Instructors planned to break longer assignments into smaller pieces, add more preparatory writing assignments, require student-generated examples, offer incentives to complete writing assignments before their due date, or require peer editing. One instructor planned to add more practice problems and examples for challenging questions and prepare a frequently asked questions document. Another would like to bring the class to a computer lab for some class meetings.
Part 2
To be completed by the department chair (with input from course coordinator as appropriate):

(4) Are all sections of the course still aligned with the area Goals, Student Learning Objectives (SLOs), Content, Support, and Assessment? If they are not, what actions are planned?

Sections are generally aligned with the GE criteria listed above. However, some improvement could be made in terms of instructors providing requested assessment data. To this end, course co-coordinators, Drs. David Schuster and Erin Woodhead, have systematically informed instructors of the GE requirements for the course. Greater effort needs to be taken to ensure that all syllabi are in compliance with GE and SJSU syllabus requirements.

As Chair, I will make efforts to inform all GE instructors that compliance with assessment procedures is essential to the teaching of the course. I, or the department assessment coordinator, will assist the stat 95 coordinators in evaluating syllabi and working on ways to put in place a system to ensure syllabi are in compliance.

(5) If this course is in a GE Area with a stated enrollment limit (Areas A1, A2, A3, C2, D1, R, S, V, & Z), please indicate how oral presentations will be evaluated with larger sections (Area A1), or how practice and revisions in writing will be addressed with larger sections, particularly how students are receiving thorough feedback on the writing which accounts for the minimum word count in this GE category (Areas A2, A3, C2, D1, R, S, V, & Z) and, for the writing intensive courses (A2, A3, and Z), documentation that the students are meeting the GE SLOs for writing.

n/a