Background

Our department conducts a department-wide assessment of student learning outcomes with our Biology 121 course each semester. This course was chosen because it serves more students than any other course offered in our department. It is also considered the “gateway” course because Biology 121 is the prerequisite for our 200 level courses, and it is required by many of the Health Science programs offered by Malcolm X College (MXC). Lastly, Biology 121 is an accepted transfer course for many colleges and universities.

Biology 121 covers cellular and molecular biology. The specific topics covered include:
1. Introduction to Biology
2. The Chemical Basis of Life
3. General Features of Cells
4. Membrane Structure and Transport
5. Enzymes and Metabolism
6. Cellular Respiration
7. Photosynthesis
8. Nucleic Acid Replication
9. Gene Expression at the Molecular Level
10. Gene Regulation
11. Mutation, DNA Repair, and Cancer
12. Eukaryotic Chromosomes
13. Mitosis & Meiosis
14. Simple and Complex Patterns of Inheritance
15. Biotechnology

Method

We used a pre/post-test in a multiple choice format to determine if the Student Learning Outcomes (SLOs) are being met. The pre-test was given on the first day of class and the post-test was given on the last day of class. The test consist of 25 questions with 5 questions per SLO.

The SLOs that were assessed:

Upon completion of Biology 121 the students should be able to:
1. Define and identify key scientific inquiry components when reviewing a scientific study;
2. Identify key properties associated with all living organisms;
3. Classify biological molecules by structure and/or function;
4. Discuss the role that energy plays in living organisms;
5. Perform genetic problems using principles of simple and complex inheritance patterns

The data will be used to determine whether or not the students are able to perform the skills listed in the student learning outcomes. Since we will be giving a pre- and post-test, our hope
is that the post-test scores will be higher than the pre-test for the students as a group and for each section of the course. The pre- and post-assessment will also be used to determine if there are particular SLOs that seem to be problematic for students. The overall goal is to determine how well the students are doing and identify areas where the students are not achieving what we would like them to achieve. When those areas are identified we can begin to investigate alternative teaching strategies that would be beneficial to the students.

Results from Spring 2011

<table>
<thead>
<tr>
<th>Test</th>
<th>Percentage</th>
<th>Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-Test</td>
<td>38%</td>
<td>Average (360)</td>
</tr>
<tr>
<td>Post-Test</td>
<td>41%</td>
<td>Average (273)</td>
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</tbody>
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