



# Normalized Scores:

COMPARING ASSESSMENT RESULTS

ACROSS DIFFERENT RUBRICS

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# How did this come about?

## Choose all that apply:

- Professor:** I want to go beyond counting how many students achieved the benchmark to actually measuring how well my students are achieving the learning outcome.
- Department Chair:** My instructors use different rubrics to assess different sections of the same course, so we can't group assessments across sections and disciplines.
- SLO Coordinator:** I want to create "roll-up" PLO and ILO assessments, but the rubrics for the supporting SLOs are not comparable with each other.



# Average vs. Normalized

- ▶ “70% achieved acceptable or above” does not tell you **how well students mastered the learning outcome** or whether changes in pedagogy helped improve student learning. Normalized scores can.
- ▶ What if you updated your rubric categories since the last assessment? Normalized scores can help you **compare your new assessment results to previous ones**.
- ▶ **Average rubric scores** can be used to compare different sections, courses, disciplines, etc., but only if the rubric scales are the same. Normalized scores can help if they are different!



# Sample Rubrics

4 actual LA Mission College rubrics: max, min & acceptable scores

|  |  |   |  |  |
|--|--|---|--|--|
| <b>Exemplary</b><br>4.00 pts.  | <b>Above Acceptable</b><br>3.00 pts.   | <b>Acceptable</b><br>2.00 pts.  | <b>Unacceptable</b><br>1.00 pts.   | <b>No Paper/or does not apply.</b><br>0.00 pts.  |
| <b>Exemplary</b><br>Demonstrates engagement with the topic, recognizing multiple dimensions and/or perspectives with elaboration and depth; offers considerable insight.                           | <b>Above Acceptable</b><br>Demonstrates engagement with the topic, recognizing multiple dimensions and/or perspectives; offers some insight.                                   | <b>Acceptable</b><br>Shows some engagement with the topic without elaboration; offers basic observations but rarely original insight. | <b>Unacceptable</b><br>Shows minimal engagement with the topic, failing to recognize multiple dimensions/ perspectives; lacking even basic observations.       | <b>No Paper/or does not apply.</b><br>No engagement with the topic.  |
| <b>Exemplary</b><br>10.00 pts.   | <b>Acceptable</b><br>7.00 pts.   |   | <b>Unsatisfactory</b><br>5.00 pts.   | <b>Unacceptable</b><br>3.00 pts.   |
| <b>Exemplary</b><br>Contains thorough background information and clearly states the purpose of the lab report and what the results will show.  | <b>Acceptable</b><br>Contains minimal but appropriate background information and clearly states the purpose of the lab report and what the results will show.                  |   | <b>Unsatisfactory</b><br>Contains insufficient background information and does not clearly state the purpose of the lab report and what the results will show. | <b>Unacceptable</b><br>Contains little to no background information and does not address the purpose of the lab report and what the results will show. |
| <b>Exemplary</b><br>3.00 pts.  | <b>Acceptable</b><br>2.00 pts.   |   | <b>Unacceptable</b><br>1.00 pts.   |  |
| <b>Exemplary</b><br>Strong thesis statement.<br>Excellent topic and transitional sentences.<br>Clear Conclusion that Advances the thesis statement.  | <b>Acceptable</b><br>Good thesis statement.<br>Acceptable topic and transitional sentences.<br>Acceptable conclusion that Advances the thesis statement.                       |   | <b>Unacceptable</b><br>Weak thesis statement.<br>Poor topic and transitional sentences.<br>Conclusion is weak and does not advance the thesis statement.       |  |
| <b>Exemplary (5)</b><br>5.00 pts.  | <b>Strong (4)</b><br>4.00 pts.   | <b>Satisfactory (3)</b><br>3.00 pts.  | <b>Needs Help (2)</b><br>2.00 pts.   | <b>Not Acceptable (1)</b><br>1.00 pts.   |
| <b>Exemplary (5)</b><br>- Rules of grammar, usage, and punctuation are followed; spelling is correct.<br>- Language is clear and precise; sentences display consistently strong, varied structure. | <b>Strong (4)</b><br>- Rules of grammar, usage, and punctuation are followed with minor errors that do not detract from the readability of the work.<br>- Spelling is correct. | <b>Satisfactory (3)</b><br>- Assignment contains few grammatical, punctuation and spelling errors.                                    | <b>Needs Help (2)</b><br>- Assignment contains numerous grammatical, punctuation, and spelling errors.   | <b>Not Acceptable (1)</b><br>-Assignment lacks clarity, unable to understand what is being communicated.   |





# What are **normalized scores**?

- ▶ If we use **common reference points** for all rubrics, we can easily compare assessments across different sections regardless of the rubric used. We just need a common *scale (maximum & minimum score)* and a common *acceptable score*.
- ▶ LAMC created a **scale from +1 to -1**, with the **acceptable score set to zero**. In other words, it will be a positive number if the score is acceptable or above, and a negative number if it's not. The bigger the number, the better the score and vice versa.
- ▶ We call these new rubric scores "**normalized scores**."



# Comparing assessments over time

**ART 201 - Drawing I SLO:** Students create drawings from observation with full values showing the illusion of three-dimensional space.

Spring 2012 Assessment

Average Rubric Score: 3.3

| Exemplary<br>(4 pts.)                        | Above Acceptable<br>(3 pts.) | Acceptable<br>(2 pts.) | Unacceptable<br>(1 pts.)                     | Not Applicable<br>(0 pts.) |
|--|------------------------------|------------------------|--|----------------------------|
| % Students Scoring Acceptable or Above: 78 % |                              |                        | Rubric Score: 83 %<br>Normalized Score: 0.50 |                            |

Spring 2015 Assessment

Average Rubric Score: 2.5

| Exemplary<br>(3 pts.)                         | Acceptable<br>(2 pts.) | Unacceptable<br>(1 pts.)                     |
|---|------------------------|--|
| % Students Scoring Acceptable or Above: 100 % |                        | Rubric Score: 84 %<br>Normalized Score: 0.69 |

Spring 2018 Assessment

Average Rubric Score: 5.4

| Exemplary<br>(6 pts.)                         | Good/Above Acceptable<br>(5 pts.) | Acceptable<br>(4 pts.) | Unacceptable<br>(3 pts.)                     | N/A<br>(0 pts.) |
|---|-----------------------------------|------------------------|--|-----------------|
| % Students Scoring Acceptable or Above: 100 % |                                   |                        | Rubric Score: 90 %<br>Normalized Score: 0.70 |                 |

# More Ways to Use Normalized Scores



- ▶ **Example 1: ILO assessments.** Comparison of normalized scores across math sections and courses in the campus-wide problem-solving ILO assessment showed that students enrolled in Statistics did not perform as well as students in other math classes, including “lower level” ones.
- ▶ **Example 2: Where are our equity gaps?** Comparing normalized scores in the Global Awareness ILO assessment helped identify disproportionately impacted groups.
- ▶ **Follow up with campus-wide “deep discussions.”**

# Example from an ILO assessment



**Global Awareness ILO:** *Students will demonstrate global perspectives by generating theoretical and pragmatic approaches to global problems within a disciplinary or professional context. They will develop responsibility toward the global environment in others.*

| <b>Discipline</b> | <b>Average Normalized Score</b> |
|-------------------|---------------------------------|
| Business          | 0.32                            |
| Geography         | 0.42                            |
| Health            | 0.32                            |
| History           | -0.07                           |
| Political Science | 0.72                            |
| Psychology        | 0.49                            |
| Spanish           | 0.54                            |
| <b>OVERALL</b>    | <b>0.41</b>                     |



# Doesn't eLumen already do this?



- ▶ eLumen compares assessment results based on the proportion of students in each of 3 categories: *Exceeds/Meets/Does not meet* the benchmark.
- ▶ It does not tell you how well the students in each section scored or whether that score is improving over time. You need normalized scores for that.
- ▶ Example: 100% of students in two sections may be meeting the benchmark, but if the normalized scores for the two sections are 0.11 and 0.76, which class shows better mastery of the learning outcome?

# Example 1: Which class did better?

| Exemplary<br>4.00 pts.  | Above Acceptable<br>3.00 pts.   | Acceptable<br>2.00 pts.  | Unacceptable<br>1.00 pts.   | No Paper/or does not apply.<br>0.00 pts.                                       |
|---|---|--|---|--|
| <p><b>Exemplary</b></p> <p>Demonstrates engagement with the topic, recognizing multiple dimensions and/or perspectives with elaboration and depth; offers considerable insight.</p> | <p><b>Above Acceptable</b></p> <p>Demonstrates engagement with the topic, recognizing multiple dimensions and/or perspectives; offers some insight.</p> | <p><b>Acceptable</b></p> <p>Shows some engagement with the topic without elaboration; offers basic observations but rarely original insight.</p> | <p><b>Unacceptable</b></p> <p>Shows minimal engagement with the topic, failing to recognize multiple dimensions/ perspectives; lacking even basic observations.</p> | <p><b>No Paper/or does not apply.</b></p> <p>No engagement with the topic.</p> |

Minimum: 0

Maximum: 4

Acceptable: 2

Hypothetical Average Rubric Score: 2.6 (65%)

| Exemplary (5)<br>5.00 pts.   | Strong (4)<br>4.00 pts.  | Satisfactory (3)<br>3.00 pts.  | Needs Help (2)<br>2.00 pts.  | Not Acceptable (1)<br>1.00 pts.   |
|--|--|--|--|---|
| <p><b>Exemplary (5)</b></p> <ul style="list-style-type: none"> <li>- Rules of grammar, usage, and punctuation are followed; spelling is correct.</li> <li>- Language is clear and precise; sentences display consistently strong, varied structure.</li> </ul> | <p><b>Strong (4)</b></p> <ul style="list-style-type: none"> <li>- Rules of grammar, usage, and punctuation are followed with minor errors that do not detract from the readability of the work.</li> <li>- Spelling is correct.</li> </ul> | <p><b>Satisfactory (3)</b></p> <ul style="list-style-type: none"> <li>- Assignment contains few grammatical, punctuation and spelling errors.</li> </ul> | <p><b>Needs Help (2)</b></p> <ul style="list-style-type: none"> <li>- Assignment contains numerous grammatical, punctuation, and spelling errors.</li> </ul> | <p><b>Not Acceptable (1)</b></p> <ul style="list-style-type: none"> <li>- Assignment lacks clarity, unable to understand what is being communicated.</li> </ul> |

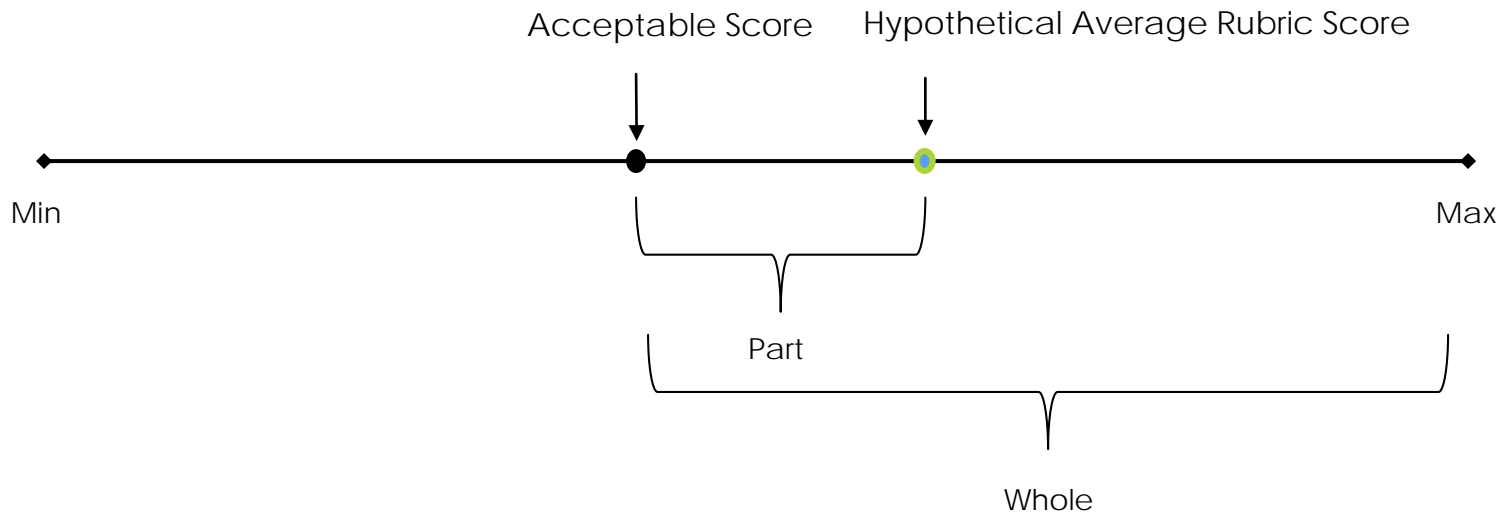
Minimum: 1

Maximum: 5

Acceptable: 3

Hypothetical Average Rubric Score: 3.25 (65%)

# Measuring "better"



Normalized Score:  $\frac{Part}{Whole}$

# Which class did better?

| Exemplary<br>4.00 pts.  | Above Acceptable<br>3.00 pts.   | Acceptable<br>2.00 pts.  | Unacceptable<br>1.00 pts.   | No Paper/or does not apply.<br>0.00 pts.                                       |
|---|---|--|---|--|
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Hypothetical Average Rubric Score: 3.25 (65%)

Class 2 Normalized Score:  $\frac{0.25}{2} = \mathbf{0.125} = 12.5\%$

Class 1 Normalized Score:  $\frac{0.6}{2} = \mathbf{0.3} = 30\%$



## Example 2: Which Class Did Better?

| Class I   |    |   |
|-----------|----|---|
| Student 1 | 74 | Acceptable Score: 70  |
| Student 2 | 72 | Rubric Score Average: 73  |
| Student 3 | 72 |   |
| Student 4 | 73 | Percentage of Students With an Acceptable Score or Higher: 100% |
| Student 5 | 74 | Normalized Score: $3/30 = 0.1$                                  |

| Class II  |    |   |
|-----------|----|---|
| Student 1 | 60 | Acceptable Score: 60  |
| Student 2 | 63 | Rubric Score Average: 68.2                                      |
| Student 3 | 72 |   |
| Student 4 | 72 | Percentage of Students With an Acceptable Score or Higher: 100% |
| Student 5 | 74 | Normalized Score: $8.2/40 = 0.2$                                |



# Contact



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THANK YOU!