3 Years of Rubric Research:
The Take Aways for Information Literacy Teaching, Learning, & Assessment

Megan Oakleaf, MLS, PhD
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moakleaf@syr.edu | www.meganoakleaf.info
RAILS
(Rubric Assessment of Information Literacy Skills)

Project Purpose
• Produce a suite of rubrics that can be used by librarians and faculty to assess information literacy outcomes.
• Help academic librarians and disciplinary faculty assess information literacy outcomes exhibited in "artifacts of student learning" including research papers, presentations, worksheets, portfolios, and reflective journals. Investigate an analytic rubric approach to information literacy assessment in higher education.
• Develop a transferable model for analyzing rubric scores.
• Establish indicators of rater expertise in rubric scoring.
All this and more (~175 rubrics!) at: www.railsontrack.info
RAILS Research Project

• Learning outcomes were defined by AAC&U and ACRL and described using a rubric format.
• Librarians from each institution:
  – engaged in rigorous rubric training,
  – tailored information literacy rubrics to their individual campus contexts,
  – collected student learning artifacts for scoring, and
  – collaborated with colleagues as raters.
• Raters were normed and then scored student artifacts; raters also completed surveys about their rubric scoring experience.
• Rubric scores and rater surveys were subjected to statistical analysis, and tentative conclusions were drawn.
n=?

• Tested 10 rubrics at 9 campuses
  – Rubrics ranged from 3-10 criteria
• Included 110 raters (librarians & faculty)
• Assessed 1000 artifacts of student learning
• Analyzed everything, so tens of thousands of data points
Results

RAILS results:

• Revealed how well students in the study performed on a number of information literacy outcomes.

• Yielded interrater reliability data that revealed the degree to which librarians and faculty can build consensus on assessments of information literacy learning.

• Provided insight into best practices for developing information literacy rubrics, norming raters, overcoming assessment barriers, and selecting statistical analysis approaches.
RAILS...
The Take Aways
Student/Rater: Average Rater Scores by Criteria

Inter-rater reliability

These graphs show the average performance level each rater assigned all students for each RAALS rubric criteria, showing the variation among raters when each graph is compared. There is a chart for each rater.

10A: Average Rater Scores by Criteria

10B: Average Rater Scores by Criteria

Student 71: Defines Research Topic/Thesis Statement

Student 72: Defines Research Topic/Thesis Statement

Student 73: Defines Research Topic/Thesis Statement
Take Away #1

Rubric **advantages** commonly cited in the literature are true.

So are many **disadvantages**.
Advantage: Authenticity

For Real
Advantage: Process

\[ a \cdot b = \frac{a^b + 1}{a - 1} \]
# Performance Assessments

- research journals
- reflective writing
- “think alouds”
- self or peer evaluations
- research drafts or papers
- open-ended question responses
- works cited pages
- annotated bibliographies
- speeches
- multimedia presentations
- posters
- exhibits

- group projects
- performances
- portfolios
- library assignments
- worksheets
- concept maps
- citation maps
- tutorial responses
- role plays
- lab reports
- blogs
- wikis

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Advantage: Detailed Results Data (both qual & quant)
Advantage:
Shared Standards, Agreed-Upon Values
Advantage:
Ownership, Communication
Disadvantage: Poor Writing

- Too vague
- Too specific
- Too long
- Inconsistency across performance levels
- Lacking differentiation btw performance levels
- Emphasizing quantity not quality
- Overly negative tone at lower levels
Disadvantage: Time
Individual Barriers to Using Rubrics: No Time, No Assessment Structures
Colleague Barriers:

No Time, No Rewards, No Structure

No Familiarity with Rubrics/Assessment
Yeah, well...
Take Away #2

“I know an information literate student when I see one” does not equal “I can articulate what information literacy skills look like in artifacts of student work.”
What We Hope For:
Interrater Reliability
What Actually Happens: Rater will be Raters
Take Away #3

Norming is essential for establishing shared understanding of the rubric and achieving greater inter-rater reliability.
Norm, norm, norm...
Rater Agreement/Disagreement

**Student 37: Determines Key Concept**

**Student 9: Applies Evaluative Criteria - Authority**
Raters’ Average Score on a Specific Criterion

**Authority**

- 10A
- 10B
- 10C
- 10D
- 10E
- 10F
- 10G
- 10H
- 10J
- 10K
- 10L
How to Norm

The Official (and Unofficial) Rules for Norming Rubrics Successfully
Claire Holmes, Megan Oakleaf *
Syracuse University, 326 Hinds Hall, Syracuse, NY 13244, USA

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to examine student work, the rubric and the raters must go through a “norming” process. The norming process is usually lengthy and often complex; consequently, it benefits from the guidance of a facilitator. Librarians who know how to facilitate the norming process can approach rubric assessment of information literacy skills with confidence.

IMAGINE...
Take Away #4

Almost everyone likes norming, and many people are surprised by how much they like it.
Take Away #5

If we want to make high-stakes decisions about student lives, we must investigate, not assume, interrater reliability.
### Most Important Results Report

**2010-13 Rubrics**

More rubrics available at: [http://railsontrack.info/rubrics.aspx](http://railsontrack.info/rubrics.aspx)

Megan Oakleaf, MLS, PhD | meganoakleaf.info | moakleaf@syr.edu

#### Access the Needed Information - Institution #1

<table>
<thead>
<tr>
<th>Determine Key Concepts</th>
<th>Advanced</th>
<th>Developing</th>
<th>Beginning</th>
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</thead>
<tbody>
<tr>
<td><strong>% Students (n=100)</strong></td>
<td><strong>44%</strong></td>
<td><strong>50%</strong></td>
<td><strong>6%</strong></td>
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<tr>
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<td></td>
<td>All Raters</td>
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<td>.2764</td>
<td>.3556</td>
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<tr>
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<td><strong>62%</strong></td>
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<td><strong>Faculty Only</strong></td>
<td><strong>All Raters</strong></td>
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<tr>
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Interrater Reliability Measures

### Pearson Correlation

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<tr>
<th>Pearson r</th>
<th>Strength of Correlation</th>
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<tbody>
<tr>
<td>.9 to 1</td>
<td>Very High</td>
</tr>
<tr>
<td>.7 to .9</td>
<td>High</td>
</tr>
<tr>
<td>.5 to .7</td>
<td>Moderate</td>
</tr>
<tr>
<td>.3 to .5</td>
<td>Low</td>
</tr>
<tr>
<td>.0 to .3</td>
<td>Little</td>
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### Cohen’s Kappa

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<thead>
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<th>Kappa Statistic</th>
<th>Strength of Agreement</th>
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<tbody>
<tr>
<td>0.81-1.00</td>
<td>Almost Perfect</td>
</tr>
<tr>
<td>0.61-0.80</td>
<td>Substantial</td>
</tr>
<tr>
<td>0.41-0.60</td>
<td>Moderate</td>
</tr>
<tr>
<td>0.21-0.40</td>
<td>Fair</td>
</tr>
<tr>
<td>0.00-0.20</td>
<td>Slight</td>
</tr>
<tr>
<td>&lt;0.00</td>
<td>Poor</td>
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### Krippendorff’s Alpha

<table>
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<th>Action</th>
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<tr>
<td>$\alpha \geq .800$</td>
<td>Accept</td>
</tr>
<tr>
<td>$0.800 &gt; \alpha \geq 0.667$</td>
<td>Tentative</td>
</tr>
<tr>
<td>$\alpha &lt; 0.667$</td>
<td>Discard</td>
</tr>
</tbody>
</table>
What to Do?
Analyze, Reflect, Weed, Improve

The Unexamined Life is Not Worth Living
~ Socrates ~

The Unexamined Rubric is Not Worth Using?
~ Megan ~
Take Away #6

Analytical rubrics appear to be more effective when assessing student artifacts than holistic rubrics.
Take Away #7

Specific, precise, explicit, detailed performance descriptions are crucial to achieve interrater reliability.
Take Away #8

Raters appear to be more confident about their ratings when student artifacts are concrete, focused, and shorter in length.
Specific is good.

But so specific that you’ve written an answer key?
No longer a rubric.
Take Away #9

There is no “magic bullet” rater.

The best raters “believe in” outcomes, value constructed consensus (or can “disagree and commit”), negotiate meaning across disciplines, develop shared vocabulary, etc.
Take Away #10

The process of writing and rating with rubrics results in improvements in teaching, assessment, collaboration, etc.
Take Away #10

The process of writing and rating with rubrics results in improvements in teaching, assessment, collaboration, etc.

EVEN IF THE “RESULTS” AREN’T GOOD!
After RAILS left the building...
I will be a good teacher.
Rubric assessment “changed the way I teach...[the teaching] session has more structure, and the students seem much more engaged.”
Rubric assessment “was an empowering act for me. It will strengthen my teaching...because I now understand what the students really are not getting. This rubric creation and rating experience has facilitated valuable reflection on my teaching practice and I hope to weave what I now understand into my teaching the next time around.”
Improved Assessment
Rubric assessment “has enabled us to put systems and procedures in place that we will draw on for all subsequent assessment efforts!”
Improved Collaboration
Among Faculty
With Students
Across Institutions...

including
Student Affairs Professionals
Librarians
Administrators
Institutional Researchers
Campus Committees
And ultimately...
Improved Learning from Loop Closing

"You can never learn less, you can only learn more."

- R. Buckminster Fuller
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