Using Problem-Based Learning and Assessment in Library Orientations

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Background

• Instruction program successfully embedded at the freshmen-level: 1300 students/year reached

• Orientation Seminar (OS) classes chosen for the Amazing Library Race
  o Classes consist of students new to university life
  o Often students’ first contact with the library
Problem-Based Learning

- Knowledge is acquired through exploration and problem-solving
- Activities strive to integrate new knowledge with existing knowledge
- Problem-based learning places students at the forefront of their learning process; contrasts with traditional passive learning techniques
The Amazing Library Race

Development and Implementation
Learning Outcomes

- Provide general information about collections and services

- Foster connections between:
  - Students and library faculty
  - Students and their peers (increase retention)

- Increase the library's social media presence

- Have fun! An alternative to lecture-based instruction
Development of the ALR

- Adapted from Katherine O'Clair’s “Amazing Library Race”
- Covers online research, circulation department, media center, and reference desk
- Exciting, competitive, interactive, informative
Rules of the Game

1. Assemble students in teams of 3-4

2. Make sure one person per group has smartphone or iPad

3. Distribute answer sheets and direct each team to create a name

4. Each leg of the race has its own envelope with tasks

5. Each task must be completed correctly before proceeding

6. Distribute prizes for winning team
1. Look in the library catalog for any books written by Jay-Z. Write down the call number of the book.

2. What is an LIU Academic Libraries of Brooklyn (ALB) card, and what can you do with it? Name four places you can use this card.

3. This is an MLA citation for an academic journal article. Identify the article title, journal title, and author:

Leg 2: Circulation

1. Complete this mysterious library Mad Lib about textbooks on reserve.

Reserve books cannot leave the ____________ (number) floor. You will need to have your ____________ (noun) in order to check out a Reserve book. Checking out library books is very ____________ (adjective).

(Hint: see Circulation Desk)
2. Make your way to the 5th floor Circulation department. Locate a book near this call number: **DT 61**, in the stacks. Write down the title of your chosen book.

Using the blank sheet of paper on the back of your answer sheet, draw a picture of what you think the cover of the book should look like based upon its title.

Bring this picture to the instruction lab to proceed to the next leg of the race.
Leg 2: Circulation

Drawing paper

Drawing paper

The Socratic Presence
A study of the Source

Luis C. Navia
1. Make your way to the Media Center, on the 5th floor. At the service desk, you will find a DVD case waiting.

Using the available props, recreate this DVD cover, and take a photo.

Return to the instruction lab with the photo to proceed to the next leg of the race.
Leg 3: Media Center
Leg 3: Media Center
1. Write a haiku about how and where you could go in the library to print documents. Haiku structure: A poem with three lines; 5 syllables in the first line, 7 syllables in the second line, 5 syllables in the third line.

2. Make your way to the Reference Desk on the 3rd floor, and ask the librarian on duty for *The Encyclopedia of Animated Cartoons*. Look up “Mr. T” in the index. In the show of the same name, who does the voice of “Miss Bisby”? 
Leg 4: Reference Desk
Assessing the Amazing Library Race

Research and Results
Student Learning Artifacts

Front page of the ALR student answer sheet:

1. Student names
2. Team Name
3. Answers for leg #1 (Internet research)
Benefits of Information Literacy Rubrics

• Objective approach to grading
  ○ All students measured by same standards
  ○ Reduce individual variations among multiple graders

• Students receive direct feedback and can use rubrics to assess their progress (Oakleaf, 2009)

• Instructors collaboratively define student learning benchmarks

• Self-evaluation skills learned from rubric use can be applied to professional practice (Van Helvoort, 2011)
Norming Background

- Norming: “process of ensuring that raters understand the rubric in a similar manner” (Reddy, 2011)
- Important part of conducting group research
- Lack of agreement among raters compromises reliability and validity
- Benefits of norming (Holmes & Oakleaf, n.d.)
  - Increases inter-rater reliability
  - Stimulates productive instruction conversations
  - Increases assessment skills and boosts confidence
Norming Process

1. Researchers collaboratively developed initial rubric
2. Researchers independently used rubric to score sample artifacts
3. Results were discussed and minor adjustments were made to rubric
4. Researchers scored artifacts using modified rubric
Inter-rater Reliability (IRR) Background

• IRR: reliability (consistency) of assessment scores among multiple raters (Moskal & Lydens, 2000)
  o Same raters should reach same scores
• Increases objectivity by reducing subjective biases
• Methods of calculating
  o Cohen’s kappa (2 raters)
  o Intraclass correlation coefficient (ICC)
    ▪ 3+ raters
    ▪ 6 forms
Inter-rater Reliability (IRR) Process

1. 2 researchers calculated IRR in SPSS separately
2. Used ICC
   a. Ordinal data (Wald et al., 2012)
   b. ICC (2,k) = Two-way random avg. measures with absolute agreement
3. Researchers compared scores
4. All 7 items scored high IRR (> .85)
   a. ICC scores range from 0 to 1
      i. .6-.9 = good (Laake, Benestad, & Olsen, 2007)
Statistic used to calculate IRR in SPSS for multiple raters
# Inter-rater Reliability (IRR) Results

<table>
<thead>
<tr>
<th>Item</th>
<th>Intraclass correlation coefficient (ICC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1</td>
<td>0.969</td>
</tr>
<tr>
<td>Q2</td>
<td>0.937</td>
</tr>
<tr>
<td>Q3</td>
<td>0.975</td>
</tr>
<tr>
<td>Q4</td>
<td>0.856</td>
</tr>
<tr>
<td>Q5</td>
<td>0.877</td>
</tr>
<tr>
<td>Q6</td>
<td>0.91</td>
</tr>
<tr>
<td>Q7</td>
<td>0.949</td>
</tr>
</tbody>
</table>
# Learning Comprehension Rubric

<table>
<thead>
<tr>
<th>Task</th>
<th>Below proficient (0)</th>
<th>Proficient (1)</th>
<th>Above proficient (2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Look in the library catalog for any books written by Jay-Z. Write down the call number of the book.</td>
<td>2+ errors in call number or left question blank.</td>
<td>One error in call number.</td>
<td>Correct call number.</td>
</tr>
<tr>
<td>2. What is an LLI Academic Libraries of Brooklyn (LLLI) card, and what can you do with it? Name four places you can use this card.</td>
<td>Both questions wrong or left question blank.</td>
<td>One of two questions correct.</td>
<td>Both questions correct.</td>
</tr>
<tr>
<td>3. This is an MLA citation for an academic journal article. Identify the article title, journal title, and author.</td>
<td>One component identified correctly or left question blank.</td>
<td>Two components identified correctly.</td>
<td>Three components identified correctly.</td>
</tr>
<tr>
<td>4. Complete this mysterious library Mad Lib about textbooks on reserve. Reserve books cannot leave the ________ (number) floor. You will need to have your _______ (noun) in order to check out a Reserve book. The Circulation desk ____ (adjective) people.</td>
<td>One space answered correctly or left question blank.</td>
<td>Two spaces answered correctly.</td>
<td>Three spaces answered correctly.</td>
</tr>
</tbody>
</table>

4 out of 7 total items assessed by the rubric shown here
Results: Learning Comprehension

Average Learning Comprehension (1 = proficient)
# Observation Rubric

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Beginning</th>
<th>Developing</th>
<th>Exemplary</th>
<th>Data source</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student to student engagement (count # of students not engaged)</td>
<td>Less than 50% of students in the class collaborate on tasks</td>
<td>50-75% of students in class collaborate on tasks</td>
<td>75-100% of students in class collaborate on tasks</td>
<td>Observation during workshop</td>
<td></td>
</tr>
<tr>
<td>Student to library faculty engagement (count # of students verbally engaged)</td>
<td>Less than 20% of students in the class have interactions with library faculty</td>
<td>20-50% of students in class have interactions with library faculty</td>
<td>50-100% of students in class have interactions with library faculty</td>
<td>Observation during workshop</td>
<td></td>
</tr>
<tr>
<td>Student comprehension of workshop activities</td>
<td>Score of 0 to .5 on learning comprehension rubric</td>
<td>Score of .5 to 1.5 on learning comprehension rubric</td>
<td>Score of 1.5 to 2 on learning comprehension rubric</td>
<td>Student answer sheets</td>
<td></td>
</tr>
<tr>
<td>Student engagement with library social networks</td>
<td>Less than 25% of groups send photos to post on library Facebook page</td>
<td>Twenty-five to 50% of student groups send photos to post on library Facebook page</td>
<td>Fifty to 100% of student groups send photos to post on library Facebook page</td>
<td>Media Center photos emailed to librarians</td>
<td># photos emailed:</td>
</tr>
<tr>
<td>Student engagement with library social networks</td>
<td>Library Facebook page connections show no increase</td>
<td>Library Facebook page connections increase by up to 50%</td>
<td>Library Facebook page connections increase by 50% or more</td>
<td>New connections made via social media</td>
<td></td>
</tr>
<tr>
<td>Workshop duration</td>
<td>Less than 50% of class correctly completes all tasks on time</td>
<td>Fifty to 75% of class correctly completes all tasks on time</td>
<td>Seventy-five to 100% of class correctly completes all tasks on time</td>
<td>Observation during workshop</td>
<td></td>
</tr>
</tbody>
</table>
Results: Observations

**Descriptive statistics for items assessed by the observation rubric**

<table>
<thead>
<tr>
<th></th>
<th># of groups in class</th>
<th># of students</th>
<th>Student to student engagement</th>
<th>Student to faculty engagement</th>
<th># of photos emailed</th>
<th>Workshop duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>68</td>
<td>227</td>
<td>N/A</td>
<td>N/A</td>
<td>15</td>
<td>N/A</td>
</tr>
<tr>
<td>Mean</td>
<td>4.5</td>
<td>15.1</td>
<td>1.8</td>
<td>1.6</td>
<td>1</td>
<td>1.9</td>
</tr>
<tr>
<td>Median</td>
<td>5</td>
<td>16</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Mode</td>
<td>5</td>
<td>16</td>
<td>2</td>
<td>2</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Std. dev</td>
<td>1.1</td>
<td>3.2</td>
<td>.41</td>
<td>.51</td>
<td>.93</td>
<td>.26</td>
</tr>
</tbody>
</table>
Results: Student Interactions
Results: Summary

• High student-to-student engagement
• High student-to-faculty engagement
• Average learning comprehension well above proficient for all activities
• Increased Facebook page activity (one photo per session contributed)
Conclusions

Challenges and Future Plans
Conclusions

• Students enter the classroom skeptical, leave enthused
• Professors request ALR
• Teaching is front-loaded, but enjoyable during class
• Assessment tools used by researchers demonstrate high levels of IRR
• Findings indicate high levels of student-to-student and student-to-faculty engagement, as well as high learning comprehension of workshop activities
• ALR can be translated to other academic institutions
  o LIU has served as a model for creation of at least 1 other ALR
Challenges

• Some students and/or faculty might prefer traditional instruction
• Controlling noise level
• Solo teaching
  o Solution: Recruit instructor or TA to help with directions
• Assessing social media component
Future Plans

• Train co-workers to teach the ALR
• Strategize ways to increase excitement and competition levels among participants
  o Theme music?
  o Countdown clock?
• Publish a scholarly article
• Coordinator of Instruction wants all Orientation Seminar classes to participate in fall of 2015
References


Thanks!

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