Rumor Has It: How Exploring Research Engagement through Metrics Transforms Student Learning

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Introductions

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Engage in the Scholarly Conversation

Presenting at the 2019 The Innovative Library Classroom (TILC) Conference
Image by Brooke Taxakis
Traditional Library Instruction

- Generating keywords
- Using Boolean operators
- Searching databases
- Citing sources

Image by Lanie Eppers
Proposal

We propose that librarians can offer a more analytical and critical approach to their research instruction sessions by helping students, even undergraduates, interpret and decipher the meaning and context behind the metrics. And, this new approach can be directly linked to the ACRL Framework.
Today’s Outcomes

1. Describe their approach for planning active learning instructional experiences for students utilizing altmetrics

2. Engage participants in an active learning exercise on research outputs that can be adapted and replicated for instruction in undergraduate courses of any discipline

3. Prompt participants to plan a lesson for undergraduate students using altmetrics that they could employ at their home institutions
Agenda

1. Discuss how to plan active learning experiences using metrics
2. Practice activities using metrics
3. Plan an instruction session utilizing metrics that you can use at home institution/work environment
Part 1: How to plan active learning experiences using metrics
Theoretical framework behind this approach

Kolb’s Cycle of Experiential Learning

Image retrieved from http://www.mspguide.org/tool/experiential-learning-cycle
Syllabus for Library Instruction

Course Description:
This course is designed for students that are interested in conducting undergraduate research or in developing and practicing research methods. You can expect to work with students from a variety of majors across campus and learn interdisciplinary collaboration skills desired by employers and lab managers alike. Undergraduate research is often perceived to be most useful for those in STEM fields; however, this course will highlight the value of research skills and strategies used by those in arts, humanities, social sciences, engineering, and sciences. As a student enrolled in this course, you will be exposed to a community of practice where you will learn the process of designing and executing a research project of your own interests. This course is centered on the completion of a final group project (proposal and digital poster), which will aid in developing both your research and collaboration skills for future endeavors. After taking this course, you will have developed skills to execute research projects, learn more about on-campus opportunities, and practice professional skills like designing posters and presenting your research ideas. Additionally, this course counts as pointed towards the training category in the Undergraduate Research Excellence Program (UREP).

Learning Objectives:
By the end of this course, students will be able to:
1. Pose questions in relevant field of study and explore routes for novel inquiry
2. Identify common approaches for solving questions using scholarly resources
Student Assignment

Research Project Topic & Question

1. Identify and broadly explain their research topic
2. Generate a preliminary research question and hypothesis
Framework for Information Literacy for Higher Education

Frames

Authority Is Constructed and Contextual
Information Creation as a Process
Information Has Value
Research as Inquiry
Scholarship as Conversation
Searching as Strategic Exploration
Authority is Constructed and Contextual

Information resources reflect their creators’ expertise and credibility, and are evaluated based on the information need and the context in which the information will be used. Authority is constructed in that various communities may recognize different types of authority. It is contextual in that the information need may help to determine the level of authority required.
Scholarship as Conversation

Communities of scholars, researchers, or professionals engage in sustained discourse with new insights and discoveries occurring over time as a result of varied perspectives and interpretations.
Student Assignment

Research Project Topic & Question

1. Identify and broadly explain their research topic [Scholarship as Conversation]
2. Generate a preliminary research question and hypothesis
Research as Inquiry

Research is iterative and depends upon asking increasingly complex or new questions whose answers in turn develop additional questions or lines of inquiry in any field.
Student Assignment

Research Project Topic & Question

1. Identify and broadly explain their research topic [Scholarship as Conversation]
2. Generate a preliminary research question and hypothesis [Research as Inquiry]
Lesson Plan for Using Metrics

- Brainstorm potential topics
- Search Altmetric Explorer to locate the scholarly conversations surrounding potential topics
- Reflect on potential topics; select one
- Iterative searching and questioning
Brainstorming session
Search Altmetric Explorer to locate the scholarly conversations surrounding potential topics

Take the next 10 minutes to search Altmetrics for your topic

- Are there any news releases on it
- Skim through and see what you find
- Jot down 2-3 articles related to topic(s) that interest you
Discuss the search results with students

Attention breakdown

- Social media: 6,536 mentions
- News and blogs: 580 mentions
- Policy and patents: 6 mentions
- Other sources: 1 mention
- Academic sources: 0 mentions

Articles:
1. To Drive or Fly: Will Driverless Cars Significantly Disrupt Commercial Airline... Article in International Journal of Aviation, Aeronautics, and Aerospace, January 2018
2. The winners and losers in the race for driverless cars News story in The Conversation, August 2016
3. People Want Driverless Cars with Utilitarian Ethics, Unless They're a Passenger Article in IEEE Spectrum
4. Driverless cars: once they’re on the road, human drivers should be banned News story in The Conversation, June 2019
Reflect on potential topics; select one

Now that you’ve done a basic search on all of your topic ideas, which topic stood out to you? What is being said about it? Are there questions/thoughts you have that aren’t being discussed but should be?
Iterative searching and questioning
Keyword discussion

Search: driverless cars

Attention breakdown

- Social media: 6,536 mentions
- News and blogs: 580 mentions
- Policy and patents: 6 mentions
- Other sources: 1 mention
- Academic sources: 0 mentions

Search: autonomous vehicles

Attention breakdown

- Social media: 15,016 mentions
- News and blogs: 1,234 mentions
- Policy and patents: 839 mentions
- Other sources: 64 mentions
- Academic sources: 3 mentions
What do students leave with?

- Identified and explored the scholarly conversation
- Generated topics and questions that interest them
- Searched for “answers”
- Noted their own biases from the start
  - Intentional focus on looking for other voices
- Explored metrics and considered what the attention means
What are other activities you can do with students?

In-class examples:

● Practice evaluating sources and exploring research ethics
  ○ http://dx.doi.org/10.1056/nejmoa1200303

● Learn more about a seminal work
  ○ dx.doi.org/10.1126/science.1070821
Part 2: Practice activities using metrics
Source Cards Activity

- Divide into 4 groups
- Each group will receive 1 source card and 1 activity sheet
- Take 8 minutes to review the source card and complete the activity
- Each group will have 2 minutes to share with us what the activity was and what they found when completing it
Source 1: “Primary prevention of cardiovascular disease with a Mediterranean diet”
Source 2: “Self-Assembly at All Scales”
Source 3: “Global Risk of Deadly Heat”
Source 4: “The weirdest people in the world?”
Adapting for other contexts

You can adapt these activities when doing workshops and training for helping administrators, department heads, and other evaluators improve how they assess faculty and researchers.

For example, re-create source cards or activities to focus on authors / scholars and their outputs.
Part 3: Plan an instruction session utilizing metrics that you can use at home institution/work environment
Planning a Session Using Metrics

Using your home institution/work context, take the next few minutes to consider:

- An assignment that metrics tool and/or instruction might help students better understand/accomplish their work
  - What is that assignment? What do students need to do?
- Can any of today’s activities be used? If so, how?
- If not, are there other tools or activities that you may consider using after today, even if not mentioned.
Think-Pair-Share

Take the next few minutes to discuss your plans/ideas with the person next to you.

Created by Yu luck from Noun Project
Questions, Other Ideas?