

1-6-2017

Gamifying a First Year Biology Lab Library Session


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Recommended Citation

Rose-Wiles, Lisa and Amour, Veronica, "Gamifying a First Year Biology Lab Library Session" (2017). *Praxis Presentations*. 9.
<https://scholarship.shu.edu/praxis-presentations/9>

Gamifying a First Year Biology Lab Library Session

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18th annual VALE / NJ ACRL / NJLA CUS Users' Conference,
January 6, 2017, Rutgers University, Piscataway, NJ.

The Backstory ...

Three years “embedded librarian” in the labs of a first year “reading & writing infused” Biology Course (spring 2014-2016) included:

- 30-45 minute library skills session in 3-18 lab sections
- Additional resources on BlackBoard and Course [Libguides](#)
- Grading referencing component in 3-5 formal lab reports
- Developing and grading library exercises and annotated bibliography assignments
- Students self assessment of library skills pre-test and post-test
- Analyzing results (and other feedback)

Results: the good ones

- Average 25% improvement in grades for lab report references from first to last lab report.
- Dramatic drop in use of inappropriate sources (Googling!) and increase in use of scholarly articles
- Students' evaluation of their library skills improved 5-38%
- Two thirds thought library sessions were helpful
- TA's thought lab reports were 'much better' than previous classes and many higher level courses

Acknowledging that students may simply improve on their own or with practice; but noting that I tend to "grade harder" in subsequent assignments, especially in terms of citation errors.

Results: the not so good

- Use of online resources (tracked by BlackBoard or libguide views) was generally low after the week following the library presentation.
- Small but increasing percentage of students chose not to do library assignments or include references in their lab reports
- In spring 2016, fewer than half of students who responded thought library session was helpful.
- Open ended comments on surveys and informal feedback
 - Writing lab reports and finding references is too much for Freshmen
 - library “stuff” is extra / unnecessary work (they still don’t get it!)
 - Students want more interactive library sessions

It seems students are increasingly making strategic choices to “blow off” assignments that are worth only a few points and spend time on more “valuable” assignments.

Many see online resources as “extra work” and will not read them unless there is a grade attached

In spring 2016, 22% of students failed to submit at least one lab report

Changes in fall 2016

- The formal lab reports were eliminated
- Library exercises eliminated and online materials reduced
- Librarian focused on two annotated bibliographies (for student presentations)
- Library presentations focused more on research process
- Emphasized Lonergan's Generalized Empirical Method as framework
- More questions and less presentation during library session
- **Integrated gamification in the library session**

BIOLOGY 1212 LIBRARY RESEARCH PRESENTATION

Dr. Lisa Rose-Wiles
Science Librarian
Seton Hall University
Fall 2016



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Here (in part) is the presentation ...

Researching your topic

Google – Surface fishing



By Walton LaVonda, U.S. Fish and Wildlife Service
[Public domain], via Wikimedia Commons

Library Resources – Dive Deep



By Derek Keats from Johannesburg, South Africa [CC BY 2.0
(<http://creativecommons.org/licenses/by/2.0>)], via
Wikimedia Commons

You may have already done a Google search on your topic, but for your Recitation you will need to delve below the surface into the scientific literature, which means using the scholarly resources provided by your library. [analogy: you can see the surface of the ocean from onboard the ship but to experience and understand what's going on you need to put on your scuba gear, dive down and spend time in the underwater world).

Our Research Framework: Bernard Lonergan's Generalized Empirical Method (GEM)

- Experience (be Attentive)
- Understanding (be Intelligent)
- Judging (be Reasonable)
- Acting (Be Responsible)



I know you have already seen this, but it is an important framework for all coursework (and life) so I will reinforce it here ...

EXPERIENCE <> be ATTENTIVE



The first step is to find information sources that will help you to research your topic and answer or refine your questions.

.... Reading your sources [= EXPERIENCE] will probably lead to additional questions and may even change your original questions – but that's fine. That's how research is supposed to work.

Aim to compile 6-10 sources that look interesting in a folder (I will show you how to do that).

UNDERSTANDING <> be INTELLIGENT

So far you've probably just looked at the abstracts of the articles you have chosen, but for your recitation you need a deeper understanding of the material you will be presenting. So dive in to the full text, read the discussion and/or conclusion, note interesting points and look for tables or figures that you can use to illustrate your presentation.



JUDGING <> be REASONABLE



Now you need to evaluate the sources you have gathered.

Which will work best for your recitation?

- Which are the **most relevant** to your questions??
- Are your sources **authentic**?
- Is the information up to date?

Did you include at least 3 peer-reviewed sources? (we'll talk about that shortly).

ACTING < > be RESPONSIBLE

Now that you have chosen your sources, you will cite them in an **annotated bibliography** (due next week).

You are **responsible** for following the guidelines, presenting and citing your sources correctly -- making ethical use of information.



Ethical use of information includes acknowledging and citing your sources as well as not plagiarizing.

What's an annotated bibliography?

- “Annotated” means summarizing the key points from each of the sources that are relevant to your recitation *and briefly explaining why you chose them*. Refer to the example posted on BlackBoard and your library research guide.
- A minimum of three (preferably more) of your sources must be **peer-reviewed articles**. Your library has a wealth of peer-reviewed resources waiting to be discovered. (You can use additional sources, but you will need to **evaluate** them carefully).

Explaining: Don't just say “because it fits my topic” - be specific; e.g. this recent peer-reviewed article directly addresses the question of; this current article gives an overview of my topic and discusses previous research that has been done; this website has excellent photographs of XXX as well as current information that I will use in my recitation).

What are peer-reviewed articles?

- Research or review articles written by “scholars” – experts in their fields (usually have advanced university degree)
- Published in “peer reviewed **journals**” – where articles are submitted and thoroughly reviewed by other scholars before they are published
- Although not infallible, are considered **credible** (written and evaluated by people who know what they are talking about!) [Learn more ...](#)

And what are journals and databases?

Students please take out your laptops or phones and sign in to tophat – a question is coming your way

Live Library Research Demonstration

- Library Resources (tutorials, libguides, Ask a Librarian, Chat)
- SHUsearch (EBSCO Discovery Service)
- Advanced Search
- Limits (discipline, peer-reviewed, full-text, date, language)
- Creating account and saving results to folder
- Citing
- Individual Databases
- TOP HAT GAMES

So what's this gamification stuff?

- A librarian-instructional designer collaboration
- A way to engage students (especially Millennials)
- An easy way to assess students' understanding
- And see where they struggle (and you need to focus)
- Not your grandmother's library session – it can be a lot of fun!

Librarians and Instructional Designers: Collaboration and Innovation. Joe Eshleman, Richard Moniz, Karen Mann, and Kristen Eshleman. Chicago, IL: ALA Editions, 2016. Pp. 240. \$65.00 (paperback). ISBN 978-0-8389-1455-7.

Why collaborate with your Instructional Designer (ID) on digital learning?

- ID's balance teaching and learning methodologies with the integration of technology
- ID's develop relationships across all disciplines that allow us to help Professors think differently
- TopHat is an online presentation and student engagement application that allows instructors
 - take attendance,
 - poll students to gauge understanding, and
 - spark discussions.

Game time!

- Go to tophat.com on your laptop or smart phone.
- Enter our Join Code:

395197

Understanding source types

1. Durzyńska, J., & Goździcka-Józefiak, A. (2015). Viruses and cells intertwined since the dawn of evolution. *Virology Journal*, 12169. [doi:10.1186/s12985-015-0400-7](https://doi.org/10.1186/s12985-015-0400-7)
2. Terrifying Facts about Jellyfish and Why They're Taking Over. Retrieved August 16, 2016 from <http://www.care2.com/causes/12-terrifying-facts-about-jellyfish-and-why-theyre-taking-over.html>
3. Rosen, Meghan. (2016, July 9). Zika may be less risky in last trimester: study of moms infected late in pregnancy finds no birth defects. *Science News*, 190(1), 11.
4. Ealy, G., & Dehlinger, C. (2016). *Ebola: An emerging infectious disease case study*. Burlington, MA : Jones & Bartlett Learning.

Top Hat Question for each one.

Then return to slide and Top Hat question: which one could you NOT use on your annotated bibliography.

Why Not?

Identifying citation errors game

Anon. (2015). Deadly jellyfish. *Men's Health*, 30(3), 134-143.

Fang, S., Chang, I., & Yu, T. (n.d.). Analysis of Spatial Features of Coastal Oil Pollution Using Multivariate Methods. *Journal of Coastal Research*, 181(6): 1183-1192.

Korb, John James., Poulsen, M., Haofu, H., Cai, L., Boomsma, J. J., Guojie, Z., & Liebig, J. (2015). A genomic comparison of two termites with different social complexity. 61: 57-65. [doi:10.3389/fgene.2015.00009](https://doi.org/10.3389/fgene.2015.00009)

Singh, M.D. (2012). The behavioral ecology of black rats, *Rattus rattus*.

1. Missing author (Anon means “anonymous”, no one takes responsibility for authorship (a major error)
2. Missing date (“n.d” means no date) – a major error. Also Capitalized All Words in Title (minor error)
3. No journal title (major error). Includes author first names (minor error).
4. No place of publication or name of publisher (major error). *Rattus rattus* not italicized (minor error).

Outcomes

Question	answered	participation	% correct
Newspapers & Magazines	222	87%	78%
Books	234	92%	88%
Why peer-reviewed articles	232	91%	96%
Advanced search	186	73%	92%
Understanding source types - article	214	84%	92%
Source type - website	224	88%	94%
Source type - magazine	222	87%	77%
Source type - book	222	87%	82%
Evaluating Sources	121	48%	96%

Learning response

What did you learn in this session?	responses	percentage
A lot	95	53%
A little	66	37%
Nothing new	19	11%

This was at the end and we did not have time for it in all sections

Thank You!

Questions?