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From Anecdotes to Data: Leveraging Our Assessment Toolkit to Determine How a New Curriculum Measures Up

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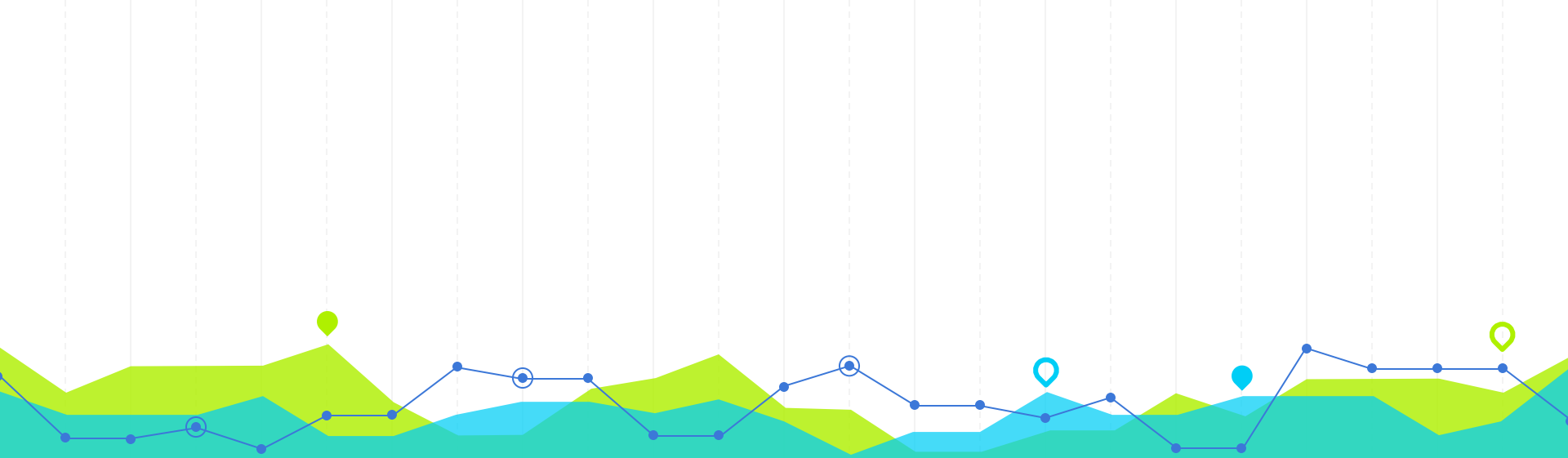
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From anecdotes to data:

Leveraging our assessment toolkit to determine how a new curriculum measures up

Utah State University



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Reference & Instruction Librarian



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Web Services Librarian



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First-Year Experience Librarian



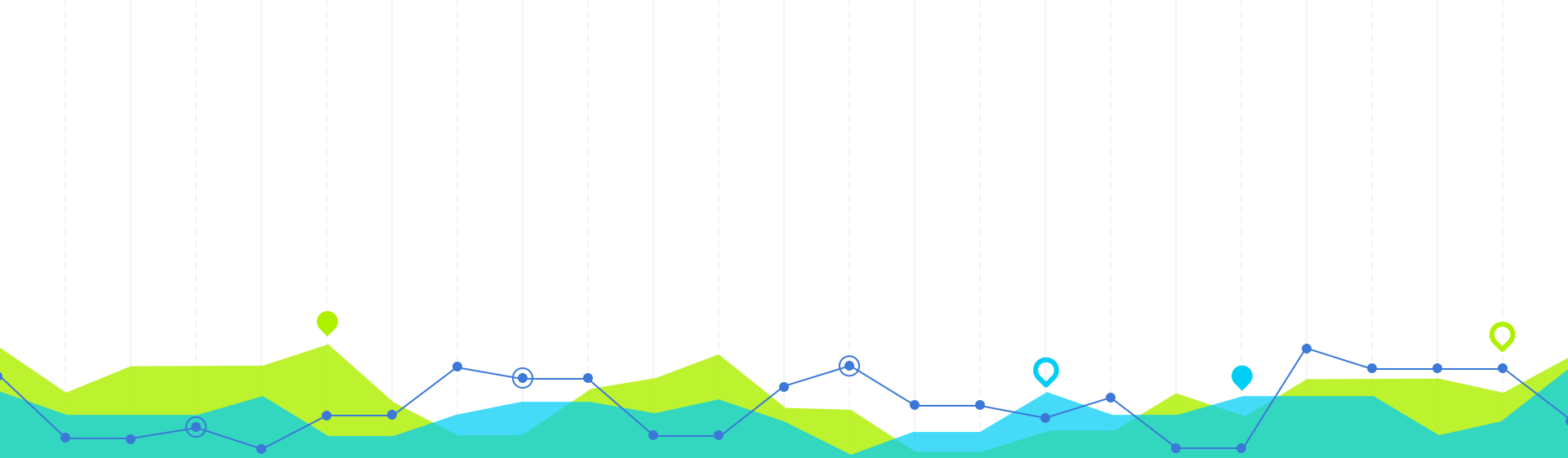
Deanna Allred

Lecturer in English Department



Presentation Overview

- Project background
- ENGL 2010 and library integration
- Case studies and lessons
- Assessment methods
- Analysis and results
- Advice and takeaways



Project Background

2018 Redesign

Redesign of three library lessons taught in our 2nd year English Composition course, ENGL 2010

Evaluating Lesson

Use of case-based problem-based learning (CBPBL) to teach students source evaluation skills

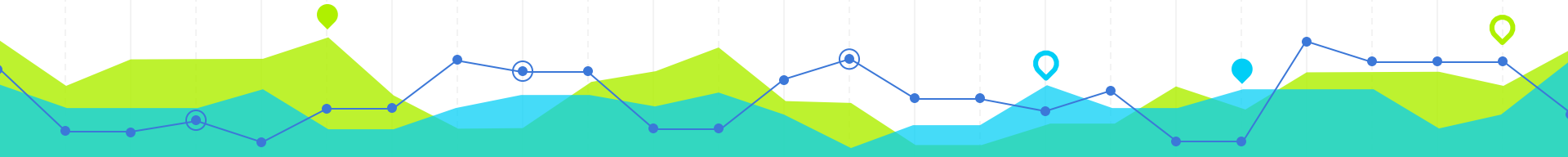
Positive Feedback

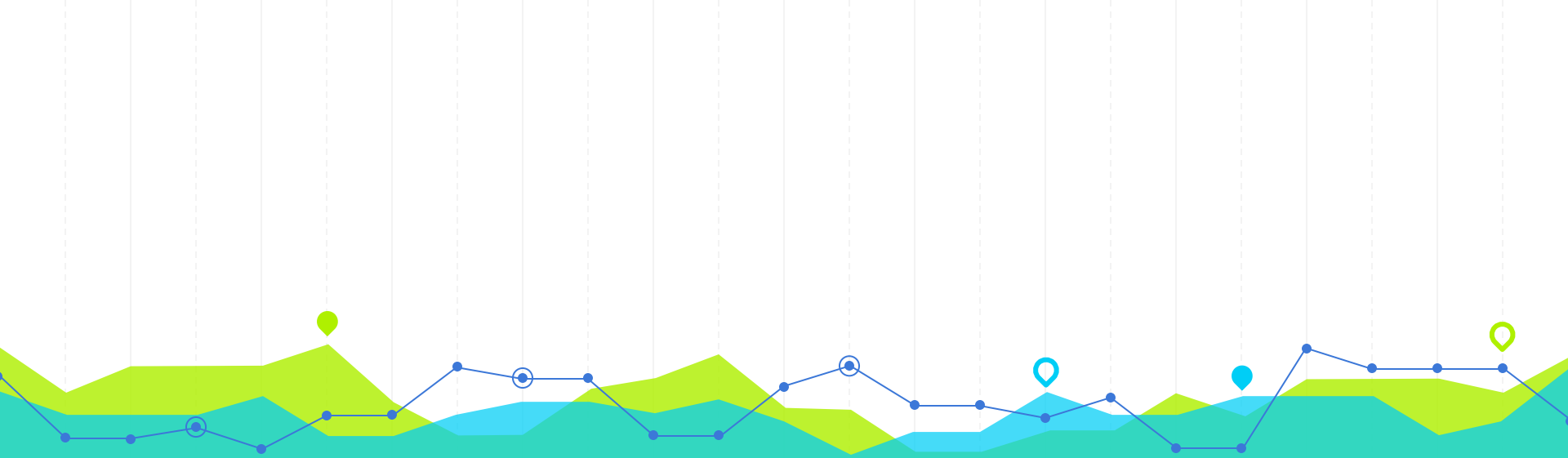
Librarians taught 78 sections of the lesson and anecdotally saw high levels of student engagement



Evaluating the Impact of CBPBL in the Library and Composition Classroom

- Integration beyond a single library session
- Combination of several assessment methods
- Use of a control group





ENGL 2010 & Library Collaboration

English Composition

Overall Goal

- Students develop foundational research and writing skills related to rhetorical argumentation

Library Integration

- 11 librarians and 2 teaching assistants partner with all ENGL 1010 and ENGL 2010 sections
- ENGL 1010
 - Librarians provide one-on-one consultations and online learning
- ENGL 2010
 - Face-to-face library instruction



ENGL 2010 Library Lessons

Evaluating Sources

**Investigating a
Topic**

Synthesis

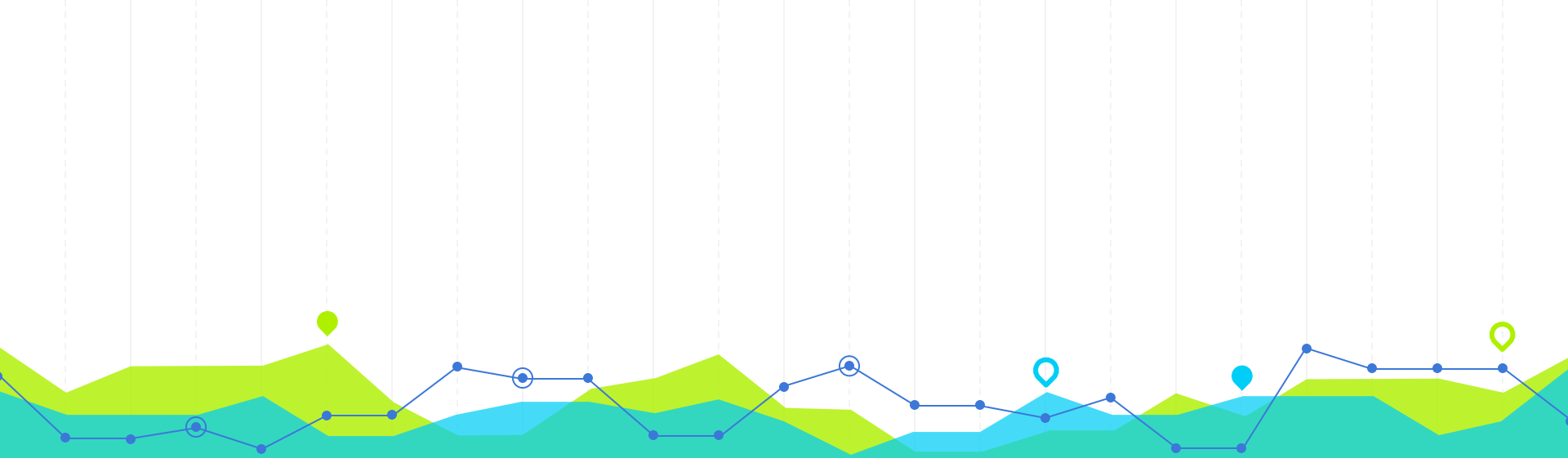


ENGL 2010 Students

- Typically freshman and sophomores
- Typically homogeneous in age and race/ethnicity
- Diverse majors

ENGL 2010 is a university general education requirement and the last writing class for many students.





Case Study-Based Curriculum



OLIVER

Maloney, Catherine, et al. "Feline Reactions to Bearded Men." Improbable Research. www.improbable.com/airchives/classical/cat/cat.html.

PURPOSE

Hey! I am doing research for a business pitch to potential investors. I am dreaming of opening my own barber shop/cat cafe called Kitty Kuts. I found this fantastic study where researchers analyzed how cats react to bearded individuals to use in my presentation. Is this the article that is going to make my investors purr?



MCKENZIE

Haberstroh, Tom. "Who's the NBA's GOAT? LeBron May Have Already Answered the Question." Bleacher Report, 31 May 2018. bleacherreport.com/articles/2778733-whos-the-nbas-goat-lebron-may-have-already-answered-the-question.

PURPOSE

I am writing a persuasive research paper for my college English course, and we were told to choose a topic that we feel passionate about. There's nothing I am more passionate about than proving that LeBron James is a better athlete than Michael Jordan. He's just better no matter how you slice it! I found this great article that drives my point home, but I am worried it's not good enough for college level research. Do you think I can use this one or should I dive back into those stuffy scholarly journals?



ERIC

Morel, Chantel M., et al. "Cost-Effectiveness of Long-Lasting Insecticide-Treated Hammocks in Preventing Malaria in South-Central Vietnam." Plos ONE, vol. 8, no. 3, Mar. 2013, doi:10.1371/journal.pone.0058205.

PURPOSE

What is this world coming to? A citywide ban on hammocks in public spaces has been put into effect. As president of my hammocking club, I am devastated as our entire way of life is being ripped away from us! Along with my fellow hammocking enthusiasts, I will be addressing the city council. I found a scientific article that proves that hammocks have health benefits. Is this the article that will make Logan city reverse the ban?

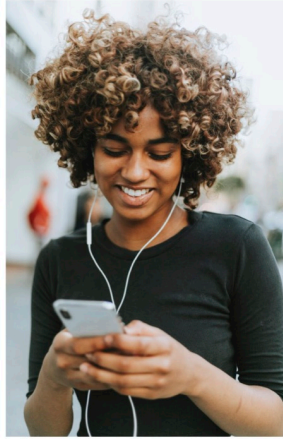


TAYLOR

Editorial Board. "3-D-printed guns put carnage a click away." The Washington Post, July 28 2018.
https://www.washingtonpost.com/opinions/3-d-printed-guns-put-carnage-a-click-away/2018/07/28/3b254a18-91cb-11e8-b769-e3fff17f0689_story.html?arc404=true.

PURPOSE

I just learned that people can just print their own guns, and there are no regulations on this at all. I'm so charged up I'm emailing my senator immediately to get this under control! I found this article that really shows the danger this could pose to society. Is this a good article to include in my email and spur my senator into action?



BRIE

Sadeghi, Habib. "Could There Possibly Be a Link Between Underwire Bras and Breast Cancer??" Goop, 19 Dec. 2017.
[goop.com/wellness/health/could-there-possibly-be-a-link-between-underwire-bras-and-breast-cancer/.](https://goop.com/wellness/health/could-there-possibly-be-a-link-between-underwire-bras-and-breast-cancer/)


PURPOSE

I don't mean to scare you, but yesterday I stumbled upon this terrifying article. It was written by an actual doctor and basically says that bras cause cancer! I have so many girlfriends on social media and you know they just put one of those Victoria Secrets in at the mall. I feel like I have an obligation as a woman to share this with as many people as possible. It could save lives! Should I hit that share button and pass this important health information along?

Lesson 1: Evaluating Sources

Pedagogy: Adapted Mike Caulfield's SIFT Model into "Evaluation Wheel"

Lesson Plan:


- 1. Pre-work:** Read Case study and source
 - 2. Think/Pair/Share:** "How do you decide if information is credible and useful?"
 - 3. Lecture:** Introduce concept of evaluation and wheel
 - 4. Case-study Activity:** Use wheel to evaluate case study source and complete worksheet/reflection
 - 5. Report-out:** Groups present their findings to the class
- 



Lesson 2: Investigating a Topic

Pedagogy: Eboo Patel’s “Observation-Question-Conversation” Model


Lesson Plan:

- 1. Pre-work:** Complete Academic Search Ultimate tutorial and watch video “Choosing Keywords”
 - 2. Lecture:** Topic exploration and alternative viewpoints
 - 3. Mind-mapping demo:** “Vaping should be banned.”
 - 4. Case-study Activity:** Search for sub-topics and identify two relevant sources
 - 5. Peer-review:** Groups trade worksheets and suggest other subtopics/gaps
- 

Lesson 3: Synthesizing Sources

Pedagogy: Synthesis as organizing idea using “Synthesis Matrix”

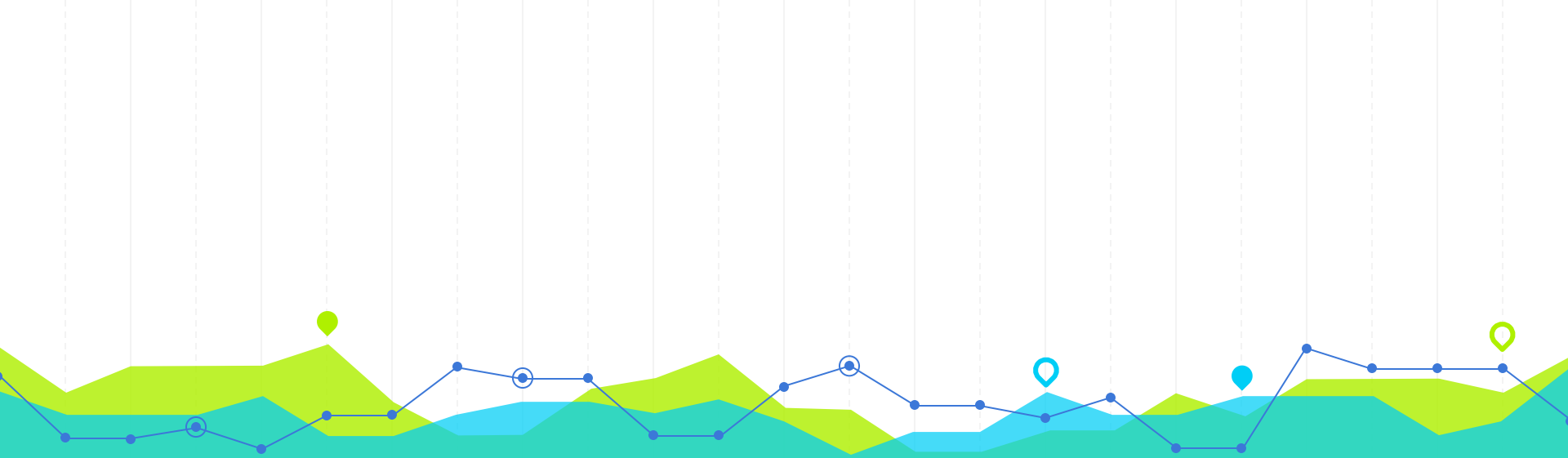
Lesson Plan:

- 1. Pre-work:** Read and highlight key ideas from sources in Lesson 2
 - 2. Discussion:** “What is synthesis?”
 - 3. Case-study Activity:** Using sources, incorporate ideas into partially-completed matrix
 - 4. Paragraph Writing:** Groups write a synthesizing paragraph from matrix
 - 5. Peer-review:** Groups trade paragraphs and suggest ways to improve information synthesis
- 

I	Source 1 Breastcancer.org	Source 2 Odebiyi	Source 3 Gunter	Source 4	Source 5	Brie's Thoughts
<p>Main Idea 1</p> <p>Possible dangers of wearing bras</p>	<p>- Scientific study did not find a link between bras and breast cancer (para. 3)</p> <p>- Being overweight does increase risk of breast cancer, and overweight women are more likely to wear bras. (para. 3)</p>	<p>- 70% of women wear the wrong bra (p. 428)</p> <p>- Wrong sized bras have been reported to contribute to the development of musculoskeletal problems. (p. 428)</p>	<p>- Critical of Goop author: Falsely presents research from a 1991 study as showing a link between bras and cancer (para. 2)</p>			<p>There are some risks to wearing the wrong size, but no link to breast cancer</p>
<p>Main Idea 2</p> <p>Rise of complementary alternative medicine</p>			<p>- Goop author suggests research that doesn't show link is biased in favor of bra industry (para. 9)</p> <p>- Author cites Schacter, an MD in complementary medicine, who cites his own manual to back up claims</p>			
<p>Main Idea 3</p> <p>Dangers of health misinformation</p>	<p>- False claims that underwire bras are dangerous are spreading widely online (para. 2)</p>		<p>-Goop author cites debunked book whose authors have no background in cancer research (para. 2, 5)</p> <p>- Promotes unproven claim of toxin buildup or EMF radiation could be cause (para. 8, 10)</p>			<p>It seems like the Goop article is designed to make people scared -why?</p>
<p>Main Idea 4</p>						
<p>Main Idea 5</p>						

Questions?





Assessment Methods

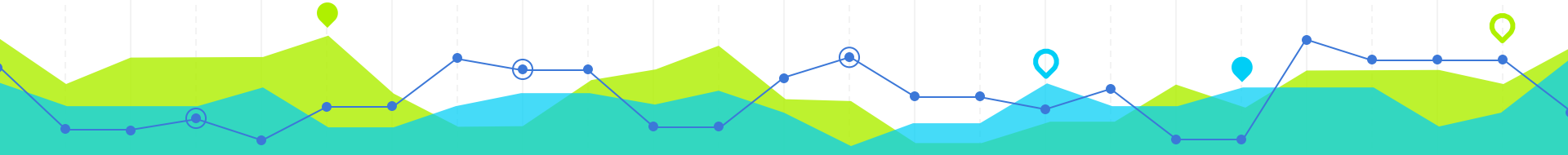
Research Questions

- How do our three library lessons **impact students' confidence and abilities** when evaluating information, conducting research, and synthesizing their research in a meaningful way?
- What **research skills do students struggle with** and how can we better address these skills in our library instruction?
- How **effective is CBPBL in engaging** ENGL 2010 students in learning information literacy skills?



Research Design

- Assessments of PBL in library instruction (Wenger, 2014)
- Mixed methods means rich data
- 4 methods
 - Classroom observations
 - Instructor reflections
 - Student reflection papers
 - Pretest/posttest survey



Classroom Observations

Date: Section: Name:

Classroom observation template

Section 1: Ethnographic

Use the following chart to document observations about instructor and student activity during the lesson. Include key points raised in large group discussions. *[Sample content in italics, reflecting the "Evaluating Sources" lesson.]*

Time or lesson section	What co-instructors are doing	What students are doing	Observer comments
<i>Introduction</i>		Looking engaged, paying attention to Katie	
<i>Individual/Pair reflection</i>		Writing, staring off in contemplation	
<i>Large group discussion</i>		<i>[Capture major points here]</i>	
<i>Small group work with case studies</i>	<i>[Comment on balance between facilitation and instruction]</i>	<i>[Provide brief observations about all case studies]</i>	
<i>Report out/Presentations</i>	<i>[Comment on how co-instructors respond to student discoveries]</i>	<i>[Capture major takeaways and audience response]</i>	
<i>Etc.</i>			

Instructor Reflections

Date:

Section:

Name:

Instructor reflection template

Overall observations about student engagement

Score level of engagement while in case study groups: 1 2 3 4 5

1 (1=no one, 3 = half, 5= everyone)

Score level of engagement for the remaining portions of class: 1 2 3 4 5

Comments:

Highlights of effective moments

Comments:

Challenges, surprises, or areas for improvement

Comments:

Any other comments

Comments:

Student Reflections

Weekly Takeaway Assignment Description

Upload your top 3 takeaways for the week for 10 points. What three ideas from class discussion, class readings, or connections from class to your broader life made the most impact on you this week? Write a paragraph for each takeaway explaining what you learned and why it impacts you.

Desired Learning Outcomes:

- This assignment provides a space for you to reflect on your week in class.
- This assignment provides another place for participation in discussions or readings.
- Ask Deanna questions you may need for clarification.

Requirements:

- MLA Format
- 250 word minimum
- Thoughtful reflection on your work this week in class

Pretest/Post-test Survey

5-point Likert scale of agreement

- I am confident in my abilities to use library resources.
- I am confident in my abilities to tell if information is credible.
- I am confident in my abilities to find appropriate information for a specific topic.
- I am confident in my abilities to meaningfully combine my research into a cohesive paper.
- I think the library sessions for this class will be useful for me. Why or why not?

Short answer

- What do you struggle with most when searching for information online?
- List 3 strategies for evaluating the credibility or relevance of information.
- You're writing a paper on the impact of technology on children. But when you search the words technology and children in the library database Academic Search Ultimate, you get 61,000 results! What are some ways you can narrow this down?
- Which paragraph is a better example of synthesis? Why?

Post-test Survey

Additional post-test item

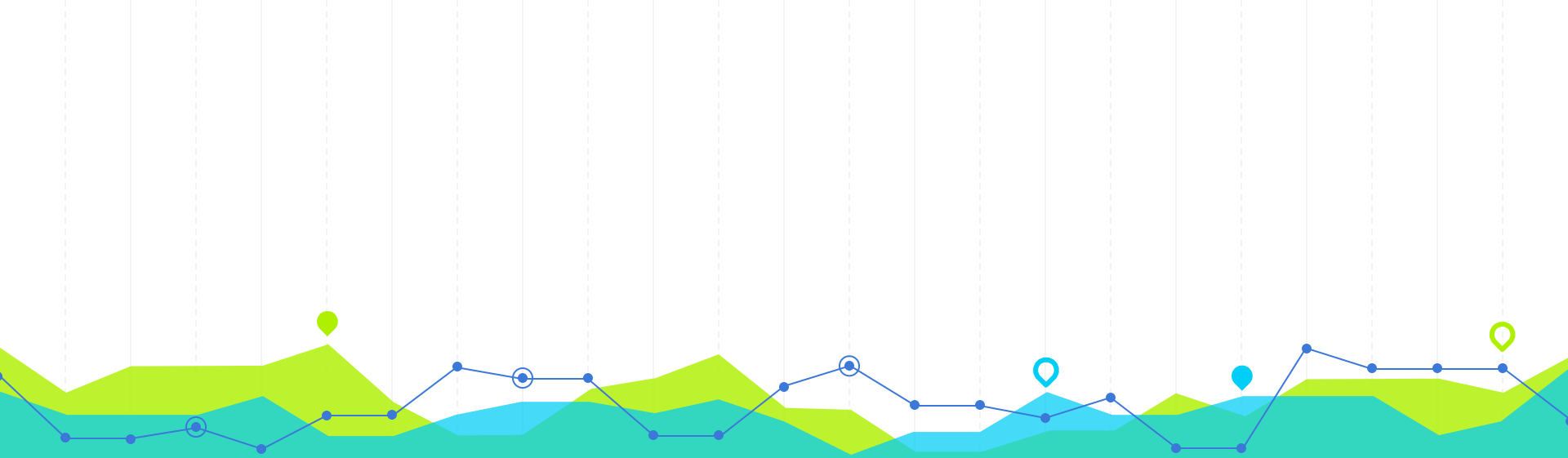
- I understand how to combine skills learned in each library session into a single research process.

For CBPBL sections only

- I liked using case studies to learn research skills.
 - Tell us more...
- My case study taught me skills I can use in my own research.
 - Tell us more...

Questions?

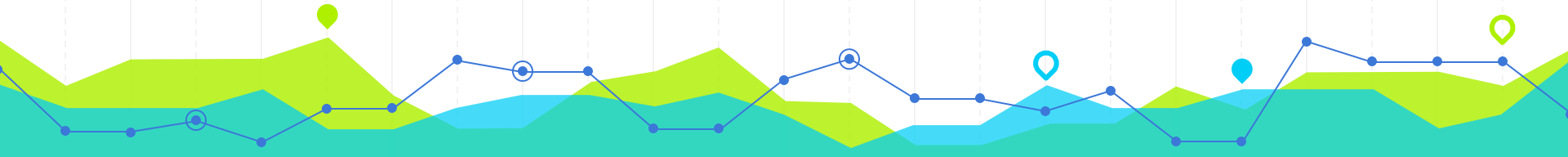




Results

Student Surveys

Quantitative and Qualitative



- Does the experiment group rate usefulness of library instruction higher than their control section peers?
 - No

- Is the experiment group's self-reported understanding of how to combine library session skills into an integrated research process higher than that of their control section peers?
 - No

- Does the experiment group's self-assessed confidence levels in these 4 areas of information literacy (ability to use library resources, assessing credibility, finding information, and synthesizing research) increase more than their control section peers?
 - No

How Did Students Feel about CBPBL?

	Mean	Median
I liked using case studies to learn research skills.	3.1	3
My case study taught me skills I can use in my own research.	3.9	4

Students who didn't like using the case studies...

“After continuing with [the case studies] for three weeks, it became somewhat annoying to have to go back to researching something that wasn't even actually real or had any value to me. I think it would be more beneficial to directly go through research on our own and find the learnings through that.”

“While I learned skills to be applied due to the case studies and working in groups it was harder to transfer the information learned into my own writing than if we were to just focus on our own writing from the first place.”

Students who did like using the case studies...

“Learning and using research skills for another person's idea helped me learn how to navigate academic search engines and how to find sources that I desired. The low-stress environment of the library, and the help of others made the idea of doing academic research much less intimidating and it actually was a fun experience.”

“Using a claim that was already provided for us and had some research done was a great way to get our minds thinking and understanding the skill we were supposed to be learning.”

Evaluating Sources

1. Author's Credibility
2. Reputation/Credibility of publication
3. Website URL (.edu, .gov, .org)
4. Bias in the author, article, or publication
5. Currency
6. Fact check that article's sources
7. Investigate claim through other sources
8. Relevancy to your own research question/argument
9. Title (Use of Emotion, Relevance)
10. Quality of writing
11. Source Type
12. Peer-reviewed
13. Using Library Database

Synthesis

1. Balanced conversation between author's voice and sources
2. Author's voice is dominant
3. Combining of ideas
4. Citing multiple sources
5. Correctly citing their sources
6. Good "flow", easy to read
7. Includes personal experience
8. Sources connect to the overall argument
9. Well organized
10. I don't know what synthesis is

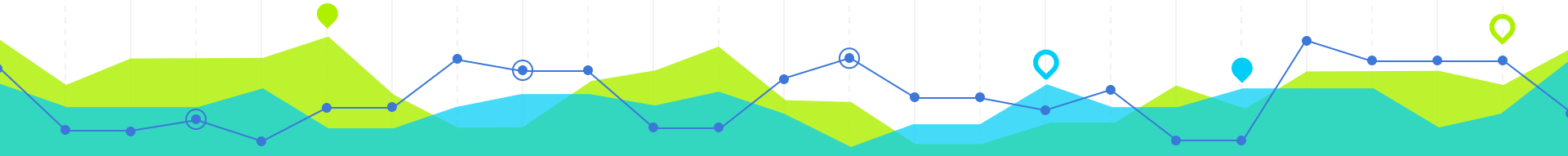
ENGL 2010 Student Baseline

Self Assessment	Mean	Median
I am confident in my abilities to use library resources.	3.1	3
I am confident in my abilities to tell if information is credible.	3.8	4
I am confident in my abilities to find appropriate information for a specific topic.	3.8	4
I am confident in my abilities to meaningfully combine my research into a cohesive paper.	3.7	4
I think the library sessions for this class will be useful for me.	4.1	4

Biggest Struggles

1. Finding relevant information
2. Finding credible information
3. Finding a “specific” piece of information
4. Finding and Reading Scholarly Articles
5. Sorting through/filtering too many search results
6. Getting Distracted by irrelevant sources
7. Selecting the right keywords
8. Choosing/Focusing my paper topic
9. Knowing when I have enough sources
10. Lack of motivation and time to conduct research
11. Hitting paywalls
12. Finding data and statistics
13. Navigating library databases

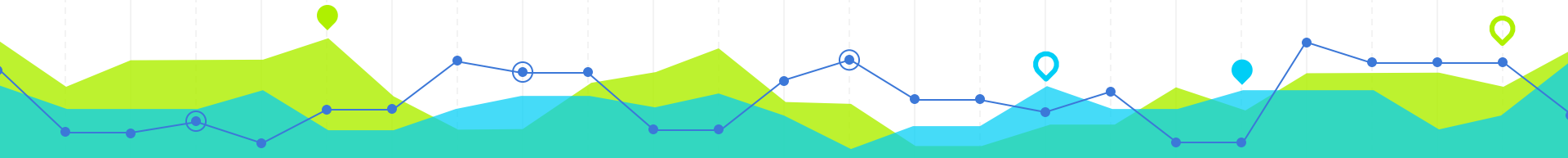
Student Papers



Student Paper Results

- We only had 8 students' papers to analyze. All except one student mentioned the library at least once.
- Students felt positively about the library, although some students were skeptical about continuing with last lesson.
- Specific benefits students mentioned often:
 - Taught me a new skill or perspective I didn't know I needed
 - Would be applicable beyond this course or educational setting

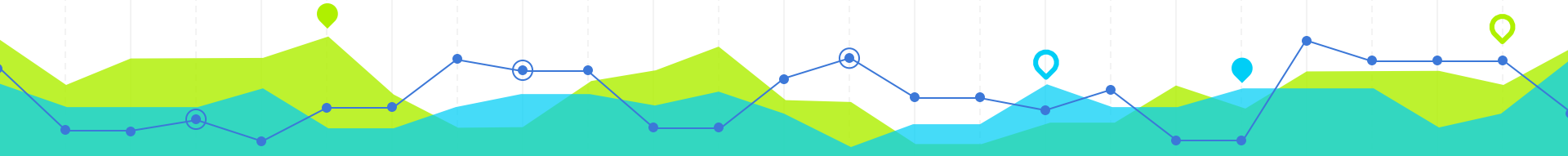
Reflections & Observations



Group Dynamics Matter

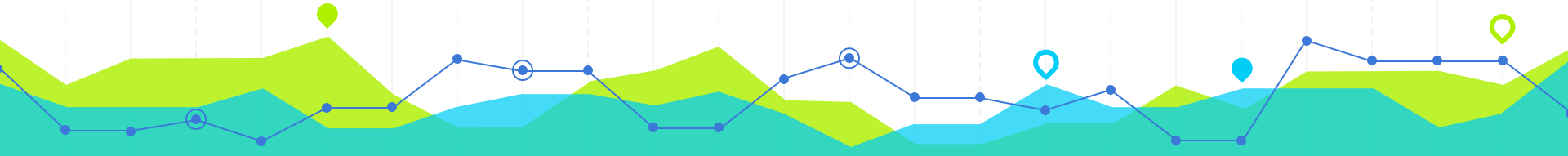
- Dominant personalities can have a negative impact
- Groups missing strong leaders are more hesitant
- Groups dynamics can evolve

Their familiarity and progression through the case studies within their consistent groups helped them feel more confident developing their research skills.



Strong Lessons w/ High Levels of Engagement

- We fit a lot of content into a short amount of time
- Students never appeared confused about instructions
- Higher levels of engagement were observed during the case study group work



Case Study Variations

- Oliver and Taylor are consistently strong
 - Oliver groups genuinely have fun
 - Taylor groups engage in meaningful discussion
- McKenzie and Eric are consistently weak
 - McKenzie group often lacks student interest
 - Eric's group may not be complex enough for all lessons
- Brie falls somewhere in the middle



Instructors and Librarians Bring Different Perspectives

Instructor/Librarian	Average Engagement Level
Deanna	4.4
Alex	4.3
Katie	3.7
Rachel	3.7

Resources

LOEX 2019 paper

Strand, K., & Wishkoski, R. (2019). Sink or swim? A case study approach to teaching information evaluation. *Proceedings of the 2019 LOEX Annual Conference*. https://digitalcommons.usu.edu/lib_pubs/293/

Selected articles about CBPBL in library instruction

Carder, L., Willingham, P., & Bibb, D. (2001). Case-based, problem-based learning: information literacy for the real world. *Research Strategies*, 18(3), 181–190.

Diekema, A. R., Holliday, W., & Leary, H. (2011). Re-framing information literacy: Problem-based learning as informed learning. *Library & Information Science Research*, 33(4), 261–268. <https://doi.org/10.1016/j.lisr.2011.02.002>

Milczarski, V., & Maynard, A. (2015). Improving information literacy skills for psychology majors: The development of a case study technique. *College & Undergraduate Libraries*, 22(1), 35–44. <https://doi.org/10.1080/10691316.2015.1001242>

Wenger, K. (2014). Problem-based learning and information literacy: A natural partnership. *Pennsylvania Libraries: Research & Practice*, 2(2), 142–154. <https://doi.org/10.5195/palrap.2014.61>



Resources

Synthesis research at USU

Eastman, T., Lundstrom, K., Strand, K., Davis, E., & Martin, P. N. (2018). Closing the loop: Engaging in a sustainable and continuous cycle of authentic assessment to improve library instruction. *Communications in Information Literacy*, 12(2), 64-85.

<https://doi.org/10.15760/comminfolit.2018.12.2.2>

Lundstrom, K., Diekema, A. R., Leary, H., Haderlie, S., & Holliday, W. (2015). Teaching and learning information synthesis: An intervention and rubric based assessment. *Communications in Information Literacy*, 9(1), 60-82.

<https://doi.org/10.15760/comminfolit.2015.9.1.176>

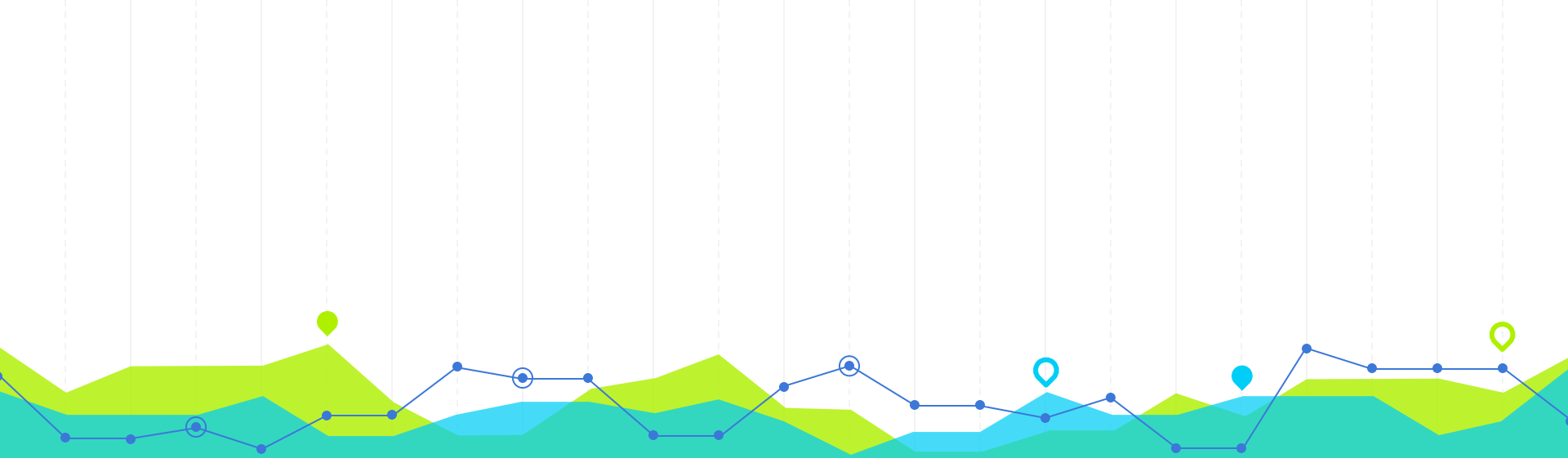
Mixed-methods research design

Doyle, L., Brady, A. M., & Byrne, G. (2016). An overview of mixed methods research–revisited. *Journal of Research in Nursing*, 21(8), 623-635. <https://doi.org/10.1177/1744987116674257> Reproduced in *SAGE Mixed Methods Research*, Vol. 1 (2019).

ENGL 2010 lessons at USU

<http://libguides.usu.edu/2010lessons>





Takeaways & Advice

Takeaways & Advice

- Assessment can connect to reflective practice
- Balance what you're asking of research partners and students (not assessment for assessment's sake)
- Collaboration (individually and programmatically) between English Comp instructors and librarians directly impacts students
- COVID-19 requires us, again, to be reflective and innovative in our pedagogy

Takeaways & Advice continued

- Observing library instruction, and partnership with course instructor, provides valuable perspective
- Students really do find value in library instruction, and we don't always give ourselves credit for delivering great lessons
- Take advantage of opportunities to learn more about your students
- Revisions and future integration

Questions?

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