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### Media Exploration for Science Information: A Collaboration between a Librarian and a Biologist

I am an accidental educator who, in 1995, thought that she would use her six years of teaching in fulfillment of a scholarship as a way to support herself while going to law school. Twenty-eight years later I am still in education, albeit in a different role and with a few more degrees, all of which serve me well as the librarian/project manager hired in November 2022 to create a working library for a neglected population in a school in desperate need of renewal.

### Campus Dynamics

The high school serves a diverse urban community of approximately 2,100 low-income students, the majority of which are Hispanic and whose home language is Spanish. The facility is 50 years old, in the middle of a refurbishing of safety equipment, and will undergo a rebranding in the 2024-2025 school year. Moreover, the faculty and staff have a larger-than-average contingency, in my experience, of alumni which provides a unique challenge for collaboration within and between departments. In addition to the faculty factions, the school's recent history has been plagued with problems.

The historical issues encompass administrative, academic, and behavioral. Academically, the campus is situated near the bottom of the district most likely due to a combination of factors: lack of site-based leadership; high turn over of support administration (one colleague having outlasted 8 administrators in her four years on site) which has led to a lack of consistent expectations for both students and faculty; and a neglected library which has, since the turn of the century, only seen one librarian which has helped foster a lack of academic

exploration in the very place it should be flourishing—the library. In response to this pervasive view of the library and, by extension, the librarian, I approached the entire last year with the goal of assessing the needs, academic and otherwise, of faculty and then students and then the larger community. In so doing, I have managed to create strong collegial relationships with some faculty and, with their endorsement, have been accepted by others.

### Working with Faculty

In order to help forge relationships with faculty, I presented myself as a person who is new to the library position, but who believes that her role is one of supporting them, not only in the reimagining of the physical library, but also in the curating of a library collection that facilitates their students' academic achievement. One example of my support for faculty is in the creation of a zSpace computer lab in the library at their request. In short, last November our Automotive instructor mentioned wanting the resource, in March zSpace catered a lunch presentation for all faculty (18 attended from 6 disciplines), and, with the approval of the principal and at the behest of the faculty, I began designing a zSpace laboratory for 40 students to be housed in the library; the rest of the library is designed to hold what will be our 10,000 volume collection and seat 68 additional students. On a smaller scale, the Cheer Coach lamented that she had need of a HD camera to tape her team in lowlight situations so that they could review their performances and improve; further, she stated that although there was equipment on campus, it was dominated exclusively by football and the boys' coaches. I told her that I would see what I could do and this season she has the best camera on campus for such lighting. In addition to garnering good will through championing their purchase requests, I also respect my colleagues' time by only emailing what is most necessary and by being realistic about what I can accomplish for them and transparent about how those things are accomplished. Thus, when in need of a faculty member to assist me on this assignment, my difficulty was not in finding a partner, but in deciding who I might be able to help the most.

Because I have tended to gravitate towards science departments in my pedagogical collaborations, and because the biology department will be utilizing the new zSpace facility in the spring, I have partnered with Mrs. Sandelson [not her real name], a 9th grade biology teacher. Mrs. Sandelson has over 20 years of secondary science teaching experience with a speciality in DNA studies. Her classes average 40 students and she currently teaches two subjects with three preparations: Biology, Biology Honors, and Science Fundamentals, the latter course in order to assist a first year teacher and keep him in the profession and, subsequently, in the department.

Our collaboration should serve to advance students academically practically since there will be two teachers in the room to facilitate the lesson which will allow for more individualized assistance. Additionally, our personalities are such that we will be able to demonstrate how to work together respectfully to achieve a common goal: student learning. We should be able to enhance the other's subject's standard just by pulling on our individual academic and pedagogical strengths. While we have only briefly collaborated so far (our conversation consisting of me asking what content she might be at in three weeks and her laughing, then my suggesting we reinforce that day's graphing lesson through our collaboration and her responding that that would be great and they should be somewhere in the genetic markers realm and to catch her next week), I have no doubt that the coming fortnight will enable us to refine our lesson to help students better understand the principles of genetic mutation while introducing them to the practice of critiquing their resources.

Because of the class size and the nature of the subject, students are already arranged in groups of four. One wall has an interactive display and two full white boards. Additionally, students have been trained on Canvas and are on one-to-one Chromebooks. The following lesson will utilize the class' existing arrangement and the ubiquitous technology.

## Best Biological Information Lesson Plan - Rough Draft

### Stage 1—Desired Results

#### Established Goals (AASL/Utah Common Core Library Media Standard + UCC Subject Standard):

- *NACS LSIL Foundational Standard 4.T.2. Identify possible sources of information. Students will use a range of resources and formats to find specific and in-depth information.*
- *NACSS HS Natural Selection and Evolution HS-LS4-1. Communicate scientific information that common ancestry and biological evolution are supported by multiple lines of empirical evidence.*

#### Understandings:

*Students will understand that . . .*

- Not all sources are credible.
- What we choose to site informs how our ideas are perceived.
- The study of biology is interesting.

#### Essential Questions:

- Who am I?
- What connects me to the universe?
- How do I know if I can trust the information I'm reading/watching/ingesting?

*Students will know (Learning Objectives) . . .*

- How to discern valid information from invalid information.
- Summarize a new aspect of biology.

*Students will be able to . . .*

- Explain why their chosen information is valid.
- Connect their information to their knowledge of biology.

### Stage 2—Assessment Evidence

#### Performance Tasks:

- Students, in groups, will post a link to and brief justification for the information they deem most scientifically valid on their Canvas discussion board.
- Students will be judged based on their ability to complete the post, their reasoning behind their group choice, and the clarity of their communication.

#### Other Evidence:

- Formative evidence will be gathered while listening to the students, in groups, haggle about whose information is most valid and should be used.
- Students will be asked to evaluate their classmates' posts and, after a class discussion, write a brief reflection of their own participation in the assignment.

### Stage 3—Learning Plan

## Learning Activities:

- Fist bump students on their way into the classroom.
- Opening activity on the board: Quick Write: How do you know if you can trust that what someone tells you is true?
- Brief discussion of QW and connection of it to trusting unknown sources of information.
- Show Calvin & Hobbes cartoon of Calvin revising his essay for Mrs. Wormwood and focusing on bigger lettering and a cooler logo instead of the substance of his paper.
- Guided practice of assessing video information on a biological point that looks good but we know is suspect. [This will require that I pin her down on what information they will have covered and that she provide her expert knowledge on the information. We will use a slick YouTube presentation on a relevant subject whose authority might not be the best versus an entertaining TED Talk on the same subject].
  - Direct them to discuss in their groups what they think. Bring their group assessment to the larger class.
  - Create a list of their findings - have them copy the list into their notes.
- Direct them to find a video on the biological topic of their choice that is relevant to their learnings. The goal is to find “the best” one.
  - Direct them to discuss in their groups what makes up a “best one.”
  - List their findings on the board - create a class definition of “best biological video.”
  - Curate, as a class, search terms - introducing the term Boolean Phrase and illustrating how it would work
- Have them work, individually, in pairs, or in group, on the finding solid sources of information. [This will be based on the class personality and be determined by my co-teacher.]
  - In addition to the notes on the board, students will be given a paper that lists and illustrates the assignment’s steps.
  - While students are searching, teachers will observe, clarify, encourage, and assist while collecting formative data. After the majority of students are settled on their video or a solid transition point arrives
- Students will be directed to tell their group mates what they found. Then, based on what they shared, students will decide which video they will watch and analyze together. Then they will assess.
- Finally, students will be directed to post their videos, as a group, to their Canvas Discussion Board.
- Homework will be for everyone to watch the other videos.
- Next class will be a revisit of this assignment with the discussion of which video, based on their class definition of what makes a “best biological video” (understanding “best” includes “most valid”).