

COMBATING DIGITAL POLARIZATION: TEACHING UNDERGRADUATES WEB LITERACY USING “FOUR MOVES AND A HABIT”

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INTRODUCTION

At the dawn of the new millennium, around the time today's college freshmen were born, only 400 million people worldwide used the Internet. Today, that number has swollen some 900% to roughly 3.5 billion users globally (“How,” 2018). In fact, the physical connectivity of the Internet and the many digital affordances it provides—to most people, this means grazing the web, emailing, and using social media—have become such ubiquitous features of life in advanced capitalist societies that the term “post-digital” has lately been coined in an attempt to describe the utterly mundane fact of our digital existence. As Berry (2014) writes about the post-digital humanities, “Today we live in computational abundance whereby our everyday lives and the environment that surrounds us are suffused with digital technologies” (p. 22).

If the digital seems mundane to us, then imagine how it must feel to those incoming students of ours who were born into a society already rife with this digital abundance. However, too often we mistake our students' surface familiarity with the web and its many uses as evidence of their ability to navigate within it and evaluate information in a productive and informed way. Our digital intervention, described in this brief essay, attempts to both defamiliarize the facticity of the digital and teach students how to harness the power of the web to become more skilled and sophisticated readers of digital texts.

IU KOKOMO OVERVIEW

Indiana University Kokomo is a public, four-year university in Kokomo, Indiana, a city of approximately 50,000 people located an hour north of Indianapolis in a region where the economy has historically depended on agriculture and automobile manufacturing. Because of the region's economic base as well as cultural factors, many incoming students are

first-generation college students, a population that typically requires extra support with information literacy and other essential literacy skills (Pascarella, Pierson, Wolniak, & Terenzine, 2004). In an internal survey conducted a few years ago, over 25% of the first-year students surveyed reported that they had not previously received any library or information/media literacy instruction before attending IU Kokomo.

DIGI WHAT?

The Digital Polarization Initiative (DigiPo) is sponsored by the American Democracy Project (ADP), a project of the American Association of State Colleges & Universities (AASCU) in partnership with *The New York Times*. The goal of the ADP “is to produce college and university graduates who are equipped with the knowledge, skills, attitudes and experiences they need to be informed, engaged members of their communities” (AASCU, 2019). The world of digital information has proven to be challenging for many citizens who lack the skills and knowledge to usefully separate fact from fiction. As a result, the web and social media are as likely to misinform as to inform. This is an issue with which librarians have been concerned for many years, of course, and the DigiPo Initiative presents a timely, important opportunity for the library to collaborate with faculty across campus.

Led by the inaugural ADP Civic Fellow, Michael Caulfield, Director of Blended and Networked Learning at Washington State University Vancouver, with invaluable project support provided by Tracy Tachiera of Washington State University Vancouver, the focus of DigiPo is educating college students to develop the knowledge and skills necessary to recognize false or misleading information they encounter online and, ultimately, to mitigate digital polarization by

sharing their knowledge and intervening when they see misinformation and disinformation. The initiative also seeks to help college students use this newfound literacy to improve civic discourse by making positive interventions in their online environments. George Mehaffy, Vice President for Academic Leadership and Change at AASCU, invited eleven campuses to participate in the Digital Polarization Initiative; ultimately, eight campuses piloted the initiative.

NATIONAL INITIATIVE

To prepare faculty at these campuses to teach the DigiPo curriculum, the campus co-leaders attended workshops and participating faculty members received online training for teaching web literacies. The webinars also provided theoretical background about the various ways in which disinformation, misinformation, and the personalization of the web are pulling us apart. The DigiPo coordinators provided ongoing faculty development via regular video conferences that covered topics such as emerging research on civic online reasoning, digital polarization, and information pollution.

Core materials for teaching online civic literacy skills were developed by Mr. Caulfield who prescribed a two-week, four-class module for everyone to incorporate in their “full implementation” courses. Additional materials were developed by individual campuses and everyone was encouraged to share lesson plans, exercises, and other materials via Canvas. This approach proved beneficial because while Mr. Caulfield provided a framework for the curriculum, there was also an allowance for customization and individualization; indeed, local faculty on the various campuses were encouraged to be creative.

At the national level the DigiPo coordinator developed a common pre- and post-test assessment to be administered in all classes that committed to full implementation of the DigiPo curriculum. Participating campuses engaged in online discussion throughout the year to share their progress, successes and failures, and to seek advice from each other and from the initiative coordinators.

CAMPUS PLANNING

Invitations to participate in the DigiPo initiative were sent to the Provost on each campus who were then tasked with designating a campus coordinator. Campus leaders were not necessarily librarians although each campus included librarians in the local implementation. Dr. Cook and Ms. Boruff-Jones co-lead the initiative on the IU Kokomo campus. They invited Ms. He and Dr. Bradley to form a steering committee to advance the initiative and, subsequently, the steering committee identified faculty, staff, and students interested in participating in this work at IU Kokomo.

Coordinating the faculty training was an important aspect of the campus planning. The logistics of keeping everyone on track and getting people to attend the training webinars, for example, proved challenging. While

group attendance for the webinars was preferred in order to provide the opportunity for participants to discuss and ask questions in real time, many of the faculty attended from their offices or, more commonly, watched the recorded session later. The campus co-leaders were diligent in keeping everyone aware of the training webinars and up-to-date with instructional materials.

Regardless of the logistical challenges, a small, but enthusiastic, group of faculty agreed to try this curriculum, in whole or in part, in the fall of 2018. All faculty were committed to the primary expectations for teaching the DigiPo curriculum:

- learn how to equip college students with the skills they need to sort fact from fiction on the web;
- help students identify and understand the potentially polarizing effects of social media, and how they might mitigate those effects; and
- encourage students to make positive interventions in the online information environments they inhabit.

FOUR MOVES AND A HABIT

Caulfield (2017) refers to his book *Web literacy for student fact-checkers* as an “instruction manual” for reading on today’s internet, and it achieves this lofty goal by providing students with four simple “moves” (and a habit) that they should work through whenever they are reading, researching, or exploring the web’s “unique terrain.” When they encounter a provocative claim or headline, the “Four Moves and a Habit” heuristic first directs students to check for previous work on the topic or story and gives them a set of tools and tricks for doing so. As the following bullet points suggest, students should always check for previous reporting on a story or event by checking, for example, Google News to see what mainstream, reputable outlets are reporting. Sometimes a seemingly outrageous claim will turn out to be mostly true, usually with a key caveat, or a student may find that no one else has written on the story (or non-story) and therefore can be nearly 100% assured that this is a genuine example of “fake news” or *disinformation*.

Check for Previous Work

- ✓ News Coverage: Google News
- ✓ Trusted online sites or sources:
Education/Government Websites
- ✓ Reputable Fact-Checking Sites:
 - Factcheck.org
 - NPR Fact-Check
 - PolitiFact
 - Snopes
 - *Washington Post* Fact Checker

Go Upstream to the Source

Students are then directed to use the source article’s internal links and reverse image searches to try to “go upstream” back to the origin of the story. Here’s an example of

a post with a short caption that is clearly intended to provoke an emotional response.

Figure 1: Bulldogs

Caption: been clearing out craigslist in my area. It's rightfully illegal to own pitbulls in Ontario so when I drop them off at the pound they'll take care of the rest.



Is this for real? How can you use the first two moves to find out the veracity or truthfulness of this picture and this caption?

Read Laterally

Much like the previous two moves, reading laterally means checking the reputation of an organization or publication by seeing what other sources on the web have to say about its credibility. Both Wikipedia.org and Google News are incredibly useful shortcuts for quickly determining some basic facts about a particular organization or journal/newspaper in just a few clicks of the mouse.

Whereas much traditional instruction in information literacy has instructed students to dig deeper into a text to determine its veracity, this move explicitly instructs students to leave the initial source behind—if only temporarily—while they go off on a lateral fact-checking excursion, essentially training them to use to the power of the web to determine whether a given site, source, or organization is worth further attention, time, or energy. If students can learn to use lateral reading as a quick and easy way to determine whether or not a site is reputable, they can then save valuable time by ignoring suspicious sites rather than digging in.

Here's an example:

Figure 2: Arsonist Falcons

LIFE 5 January 2018

Arsonist falcons suggest birds discovered fire before humans did



Ausscape International Pty Ltd/Alamy Stock Photo

This is the headline of a recent article from *New Scientist*.

- Is the magazine/journal a credible one?
- Are there any other news items on this story by other media?
- Are there any reputable, mainstream sources cited in the article?

Circle Back

The final move is really a continuation of the first three: students are taught how to “circle back” and simply start the process over again if the first three moves don't lead to a satisfactory answer. This final move has the added advantage of “modeling” for students the complexity of the web and the social nature of information.

A Habit

Aside from the four moves, students are also taught how to keep their emotions in check as they are reading and researching on the web; this involves developing the “habit” of recognizing when a piece of online information elicits a strong emotional response. This doesn't mean setting aside their feelings about important issues or positions, but simply becoming more mindful of their own emotional investments—whether rage, anger, vindication, or even humor—long enough to critically and dispassionately determine the veracity of a given site or story.

IMPLEMENTATION

In the fall of 2018, IU Kokomo faculty introduced the DigiPo modules in several first-year courses, including Freshman Learning Community, Freshman Seminar in Sciences and Mathematics, Student Success Seminar, First-

Year Writing, Political Science classes, and the KEY Summer Institute, an orientation program for new students. Two writing classes adopted the full implementation. Those class instructors delivered four standard DigiPo modules over two weeks asked students to take the assessment pre- and post- tests. The rest of the classes and seminars employed partial implementation, which means the instructors were free to take any part of the DigiPo curriculum for incorporation into their classes.

ACTIVITIES

The online information verification videos and other DigiPo curriculum materials provided by national coordinators were very helpful for planning class activities. The following two blogs offered examples and prompts for class exercises.

- Four moves blog: <https://fourmoves.blog>
- Michael Caufield's blog: <https://hapgood.us>

We designed hands-on activities based on those instructional materials. When we were teaching students about the different types of questionable information, we asked them to work with news items to determine what is disinformation and what is misinformation and explain how they identify which one was which.

Ms. He gamified the activities with interactive technology using Kahoot. For one political science class, the DigiPo session started with a Kahoot survey called Fake News Detector. Ms. He presented news items to students and asked them to evaluate the news items based on their intuition. At the end of the class, after students were introduced to the Four Moves and a Habit method, they took another survey to which they applied the information verification skills they had just learned. Ms. He observed that students scored higher than they did in the first survey. More importantly, this exercise raised the awareness among students about applying online verification skills purposefully when evaluating information as our first reaction is not always correct.

We organized group activities in the DigiPo sessions. For example, we asked students to work as a group to find a questionable article in social media or online that they have seen recently and use the four moves to determine its validity.

CONTEMPORIZING OUR EFFORTS

The DigiPo experience led Ms. He to review and revise the IU Kokomo Library's approach to teaching information evaluation in the tiered information literacy program. In the foundational undergraduate courses, the traditional web evaluation method, which teaches students to apply five criteria (e.g., authority, currency, relevance, accuracy, and objectivity), has been employed for years. The IU Kokomo Library believes the four moves fact-checking techniques strengthens and enhances the traditional information evaluation strategy and the DigiPo practice is now routinely included in the information literacy curriculum.

ASSESSMENT

The pre- and post-test assessment questions and rubric were designed by the national DigiPo coordinator. Students in the two first-year writing classes completed the assessments designed to measure their ability to verify, contextualize, and reason about information they find online. It is important to note that the assessment was not a matched pre- and post-test. There are two versions of the tests, A and B (Appendix A and B). Students who took the A version as the pre-test were given the B version as the post-test and vice versa. The assessment results were analyzed by a team, who were not DigiPo participants, using a rubric for consistency.

Assessment Question Categories

The assessment questions fall in four categories: photographic evidence; sourcing evidence; clickbait science and medical disinformation; and fake news. Students were asked to choose the trustworthiness of each image or news item and provide justification for their choices.

RESULTS

The three tables below illustrate the performance of IU Kokomo students on the pre- and post-tests. The blue bar represents pre-tests, the orange bar represents post-tests. Overall, IU Kokomo students improved in the post-test, but there are outliers in both test versions. For example, looking at the "Chemo" question in version A, students did much better on the pre-test. The example used for this assessment question is a medical news item about a study showing that a majority of breast cancer patients do not need chemotherapy. This is a credible news item that includes embedded links leading students to the original research articles. So, why did so many students find it to be low on the trustworthy scale? One student said "Chemotherapy is a common cure for cancer." Perhaps students who found this item trustworthy are relying on prior or "common" knowledge to make a judgement and not bothering to verify. Most likely these students did not go upstream to the find the original source and may have let their emotions lead them.

Table 1: IU Kokomo Overall Performance Fall 2018

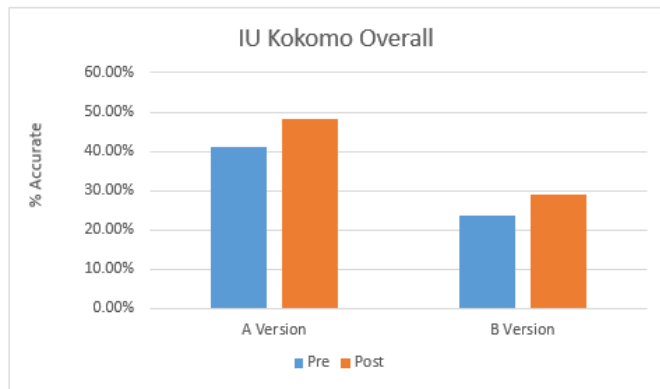


Table 2: IU Kokomo A Version Performance Fall 2018

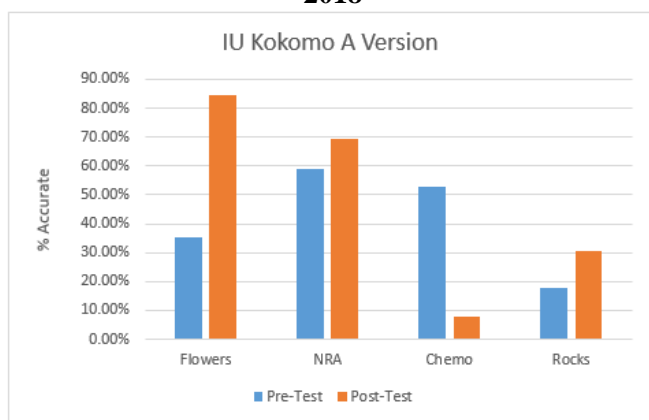
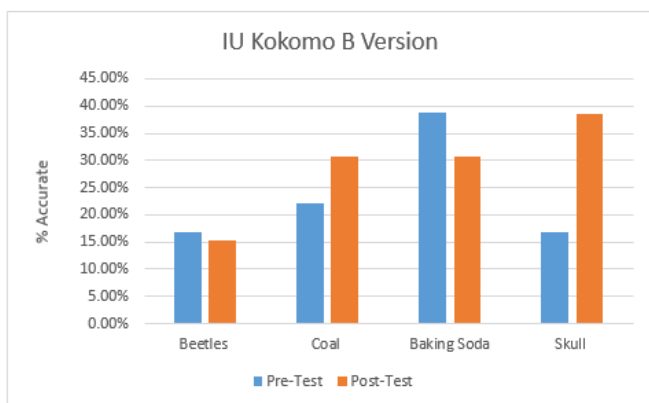


Table 3: IU Kokomo B Version Performance Fall 2018



The IU Kokomo DigiPo team is unsure as to what specific factors contributed to these outliers and the team’s current focus is looking closely at the qualitative assessment results, e.g., students’ own justifications. Future studies will use think-aloud protocols and other methods to gain a better understanding of students’ evaluation processes as they sift through information on the web. As next steps, the team will continue to incorporate full and partial DigiPo implementation into several classes and they are developing local assessment strategies to gather additional targeted qualitative data.

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APPENDIX A: IU KOKOMO A VERSION ASSESSMENT QUESTIONS

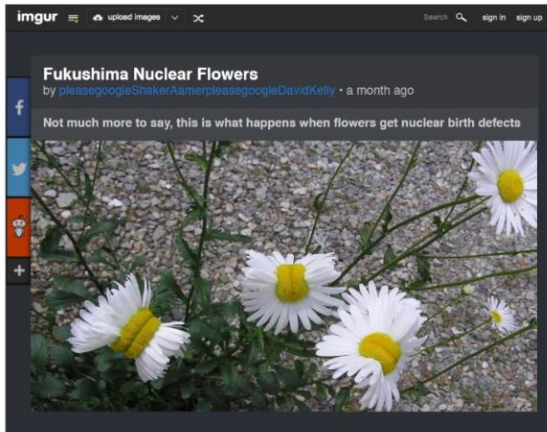
#1 Flowers

#2 NRA

Photographic Evidence

On March 11, 2011 there was a large nuclear disaster at the Fukushima Daiichi Nuclear Power Plant in Japan. This image was posted on Imgur, a photo sharing website, in July 2015. The link to the post is here: <https://imgur.com/gallery/BZWWx>

Does this post provide strong evidence about the safety of conditions near the Fukushima Daiichi Power Plant?



What is your level of trust in this photo as evidence of the safety of radiation levels around Fukushima? *

- Very High
- High
- Moderate
- Low
- Very Low
- Unsure

Explain the major factors in deciding the level of trust you put on this photo as evidence: *

Your answer

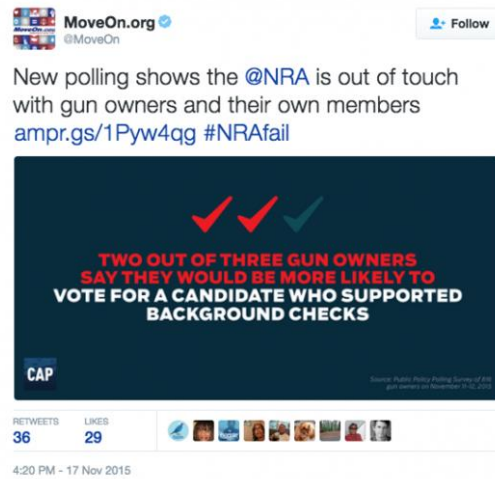
Sourcing Evidence

The following tweet appears in your Twitter feed:

<https://twitter.com/MoveOn/status/666772893846675456?lang=en>

It cites evidence that 2 out of 3 (66%) gun owners would be more likely to vote for a candidate that supported background checks.

Go to the tweet in another tab and answer the following questions.



What is your level of trust that this tweet accurately reflects the views of gun owners? *

- Very High
- High
- Moderate
- Low
- Very Low
- Unsure

Explain the major factors in deciding your level of trust: *

Your answer

#3 Chemo

#4 Rocks

Clickbait Science and Medical Disinformation

The following story is shared with you by a friend. It claims a new study shows that the majority of breast cancer patients do not need chemotherapy:

https://www.bionews.org.uk/page_136385

The screenshot shows a BioNews article from the University of Dundee. The article is dated 11 June 2018 and is written by Grace O'Regan. The headline reads: "Majority of breast cancer patients do not need chemotherapy". The article text states: "Chemotherapy is not necessary to treat the most common type of breast cancer in 69 percent of cases, a new study has shown. The study, published in The New England Journal of Medicine, found that the majority of patients scoring in the intermediate range on a genetic test for the likelihood of cancer recurrence do not benefit from chemotherapy. Lead author Dr. Joseph Sparano, associate director for clinical research at the Albert Einstein Cancer Centre in New York City, said: 'Our study shows that chemotherapy may be avoided in about 70 percent of these women when its use is guided by the test, thus limiting chemotherapy to the 30 percent of women we can predict will benefit from it.' The test, called the Oncotype Dx test, gives a score for each patient of between 0 and 100, which rates the likelihood of the return and spread of their cancer in the future. The higher the score, the greater the likelihood of recurrence."

What is your level of trust in this study? *

- Very High
- High
- Medium
- Low
- Very Low
- Unsure

Explain the major factors in deciding your level of trust: *

Your answer

Fake News

In the wake of the Parkland shooting, many school districts have taken steps to provide teachers ways to protect students. This article claims that a Pennsylvania school gave its teachers a bucket of rocks to throw at school shooters.

Link: <http://www.newser.com/story/256977/school-district-arms-students-with-rocks.html>

The screenshot shows a Newsier article from March 24, 2018, by Neal Colgrass. The headline is "School District Arms Students With Rocks" and the sub-headline is "But official says it's only a 'last resort'". The article text states: "(NEWSER) - Active shooters in one Pennsylvania school district better watch out: the teachers and students are armed with rocks. David Helsel, superintendent of the Blue Mountain School District in Schuylkill County, raised the plan at a state House committee meeting on education last week, the Hill reports. 'If an armed intruder attempts to gain entrance to any of our classrooms, they will face a classroom full of students armed with rocks' he says. And..."

What is your level of trust this actually happened more or less as described? *

- Very High
- High
- Moderate
- Low
- Very Low
- Unsure

Explain the major factors in deciding your level of trust: *

Your answer

APPENDIX B: IU KOKOMO B VERSION ASSESSMENT QUESTIONS

#1 Beetles

Photographic Evidence

In 2015, the following post was widely circulated among dog owners with the following text:

"SOMEBODY ASKED ME TO PASS THIS ALONG Japanese Beetles can attach to the roof of your dog's mouth, and make him/HER become ill. Symptoms include excessive drooling. Check your dog's mouth and remove any insects."



What is your level of trust in this photo as evidence of a condition that can affect dogs? *

- Very High
- High
- Medium
- Low
- Very Low
- Unsure

Explain the major factors in deciding the level of trust you put in this photo as evidence: *

Your answer

#2 Coal

Sourcing Evidence

Follow the link below to open the video. If you are taking this assessment in a classroom, either wear headphones, or put the volume on low with captions on.

<https://www.youtube.com/watch?v=vqLb0DKFoel>

What is your level of trust in this video as a source of information about the pros and cons of coal? *

- Very High
- High
- Moderate
- Low
- Very Low
- Unsure

Explain the major factors in deciding your level of trust: *

Your answer

#3 Baking Soda

#4 Skull

Clickbait Science and Medical Disinformation

The following story is shared with you by a friend. It talks about an interesting alternative treatment for cancer pioneered by Tullio Simoncini:

<https://natureworksbest.com/dr-tullio-simoncini-sodium-bicarbonate-cancer-treatment/>

Baking Soda Cancer Treatment (Sodium Bicarbonate)
by Colleen Huber, NMD

Home > Baking Soda Cancer Treatment (Sodium Bicarbonate)

Does the Baking Soda Cancer Treatment aka (Sodium Bicarbonate) Work?

Colleen Huber, NMD

Dr. Tullio Simoncini is a medical doctor in Italy who has done more than anyone to explore the uses of the baking soda cancer treatment as an alternative cancer treatment. It is known that cancer creates and favors an acid environment and because of this, Dr. Simoncini and others have used sodium bicarbonate as an alkaline therapeutic agent.

The way that acidity seems to protect cancer is not fully understood. It seems that cytotoxic T-cells, which may attack cancer cells under normal conditions, are inactivated in an acid extracellular fluid.[1] Also, the type of acidity that cancer produces, i.e., lactic acid, stimulates vascular endothelial growth factor and angiogenesis.[2] This is like a highway project, which enables a tumor to build the blood vessels that it needs to bring the nutrients for it to survive. So the tumor creates an environment in which it can then exist comfortably.



Dr. Huber's intravenous nutrient cancer treatment

Baking Soda's Alkalinity Fights Cancer's Acidity

At a pH of about 10, sodium bicarbonate is an antidote to this acidity. It can be used

What is your level of trust in this treatment and its inventor? *

- Very High
- High
- Medium
- Low
- Very Low
- Unsure

Explain the major factors in deciding your level of trust: *

Your answer

Fake News

In Tucson, a group of veterans have claimed to find a suspected child-trafficking camp. Take a look at the following story.

Link: <https://bigleaguepolitics.com/breaking-childs-skull-found-at-alleged-sex-trafficking-bunker-in-tucson/>

UNCATEGORIZED

UPDATED: Child's Skull Found At Alleged Sex-Trafficking Bunker Area In Tucson

Published 2 weeks ago on Jun 7, 2018
By Haley Kennington



What is your level of trust that this actually happened more or less as presented here? *

- Very High
- High
- Moderate
- Low
- Very Low
- Unsure

Explain the major factors in deciding your level of trust: *

Your answer