COVID-19 and Media Literacy: Connections to Manitoba Biology Curriculum

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Connection to Curriculum

The pedagogical tool that follows is an activity for grade 11 biology students, that enables them to consider social media depictions of COVID-19, and the way these depictions are presented and/or misconstrued on social media platforms. This relates to Unit 5: Protection and Control, which includes exploration of the immune system. Specific Learning Outcome (SLO) B11-5-02 prompts exploration of the body's response to vaccines – a controversial topic in the COVID-19 era (Manitoba Education, 2010). Further, SLO B11-5-10 prompts exploration of personal lifestyle choices and subsequent impact on the function of protection and control systems (Manitoba Education, 2010). Both SLOs related back to general learning outcome (GLO) B3, relating to factors of lifestyle choices and health. All of these learning outcomes directly relate to this activity. Though social media can confer certain benefits, it also has the potential to be a source of rampant mis- and disinformation, as has been the case throughout the ongoing global pandemic. Therefore, this activity seeks to give students a chance to critically analyze information shared in relation to vaccination and the pandemic at-large, while exploring the codes contained within so they are equipped to think critically about scientific information they encounter in online spaces in the future.

SLO B11-5-02: Describe the body's response to allergens, vaccines, and viruses/bacteria.

SLO B11-5-10: Describe how personal lifestyle choices can influence the functioning of protection and/or control systems.

GLO B3: Identify the factors that affect health, and explain the relationships among personal habits, lifestyle choices, and human health, both individual and social.

Theories of Media Education

The fundamental goal of this activity is to motivate students to think critically and reflectively when encountering supposed scientific information online. It is especially important to highlight to students the need to consider *who* is sharing the content, and what their bias may be; information is never truly neutral, as all information is produced by an individual or groups of individuals who will carry their own bias (Kellner & Share, 2019). Additionally, as emphasized by Kellner & Share (2019), students ought to be learning how to search for differing perspectives and synthesizing findings from multiple sources; this is consistent with the work of Oreske & Conway (2010) as highlighted by Kellner & Share (2019), that students need to be taught to think critically about everything, even science, as science is a field that does not provide certainties.

By completing this activity, students will gain further understanding of the biases that exist behind all content, especially science content circulated online. Further, they will be able to see how scientific information shared online can be propagandized to advance a political agenda, and will learn how to reframe and reconsider this information in search of a less biased viewpoint. There is also connection to four key aspects of media literacy: representation, language, production, and audience (Buckingham, 2007). It is argued that these four pillars are important facets to consider, particularly when "applied specifically to the analysis of the World Wide Web" (Buckingham, 2007, p. 43). By considering the dissemination of scientific information via social media, students can explore themes of media literacy while also coming to understand how such media may influence society at-large.

COVID-19: Fact or Fiction?

Now that we understand the basics of our immune system – how and why it works – we're going to take a look at some of the real-world impacts of scientific misinformation and disinformation, as it relates to vaccines and the pandemic more broadly.

Your task:

1. Individually look at the provided screenshots* of tweets relating to coronavirus. Jot down your initial thoughts – who do you think is behind these tweets? Why would they be sharing this information? Is there any science behind these?

2. Find a partner, and compare your answers.

3. Consider the following concepts. Which are used in these tweets? How might they impact the viewer? *(Note: this isn't an exhaustive list! If you have other ideas, check with the teacher first)*

-Interpretation -Context -Target audience -Feelings and ideas	-Accuracy -Credibility -Omissions -Authority

4. After completing the above steps, answer the questions below to summarize your conversation with your partner and your overall understanding. Then, draft a "response tweet(s)" to share valid scientific information – remember, only 140 characters! *(If you want to make your tweet look realistic, check out https://www.tweetgen.com)*

Reflection Questions

- What were your initial thoughts when looking at these tweets? Your partner's?

- Which codes did you find were the most used? Why do you think this might be?

- After drafting your "response tweet": how hard was it to convey good scientific information in this format? Do you think Twitter is a good place to engage in scientific discussions?

COVID-19: Fact or Fiction? → *Sample student work*

Now that we understand the basics of our immune system – how and why it works – we're going to take a look and some of the real-world impacts of scientific misinformation and disinformation, as it relates to vaccines and the pandemic more broadly.

Your task:

1. Individually look at the provided screenshots* of tweets relating to coronavirus. Jot down your initial thoughts – who do you think is behind these tweets? Why would they be sharing this information? Is there any science behind these?

These tweets are a combination of those who are pro-vaccine and those who are anti-vaccine, using Twitter to share their stance with a wide audience. For those who are anti-vaccine, I think they are wanting to incite fear, and for those who are pro-vaccine, they're wanting to show that vaccines are safe, work, and are important to get to help with the pandemic response.

2. Find a partner, and compare your answers.

My partner and I had similar answers. We talked about how those tweets that were anti-vaccine/anti-pandemic measures had a much darker tone to them, versus the pro-vaccine which felt more upbeat. Some of the anti-vaccine tweets were hard to follow, like the one claiming that mRNA is a software platform – it's obvious that good science isn't being referenced here.

3. Consider the following concepts. Which are used in these tweets? How might they impact the viewer? *(Note: this isn't an exhaustive list! If you have other ideas, check with the teacher first)*

-Interpretation -Context -Target audience -Feelings and ideas	-Accuracy -Credibility -Omissions -Authority

Several of these codes are present in these Tweets. First and foremost, it's obvious from these tweets (and seeing others previously online) that different people are capable of interpreting information differently, especially if they are not subject matter experts. The target audiences are also different – appealing to those who are either pro-vaccine or anti-vaccine, but never both. As described earlier, the anti-vaccine tweets seem to create more fear and uncertainty, versus the pro-vaccine tweets which generally feel more positive. I was inclined to believe that the "good science" tweets would come from scientists and doctors, and was surprised to find an anti-science tweet (about mRNA relating to software) from a doctor. Basically, I believe all these codes can come into play in different contexts.

4. After completing the above steps, answer the questions below to summarize your conversation with your partner and your overall understanding. Then, draft a "response tweet(s)" to share valid scientific information – remember, only 140 characters! *(If you want to make your tweet look realistic, check out https://www.tweetgen.com)*

Reflection Questions

- What were your initial thoughts when looking at these tweets? Your partners?

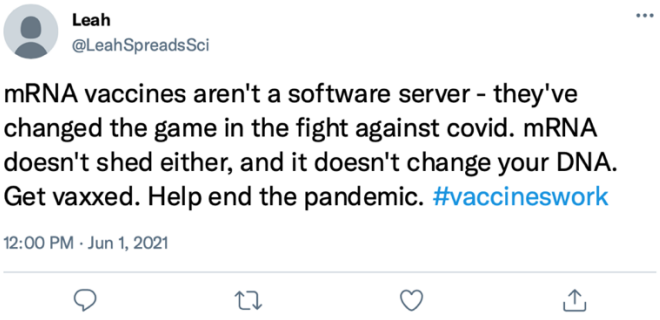
Personally, I felt automatically biased against the anti-vaccine tweets because of my own scientific understanding. That said, I felt that some of the dark colours and negative tones surrounding the anti-vaccine tweets could be impactful for people who might not know better.

- Which codes did you find were the most used? Why do you think this might be?

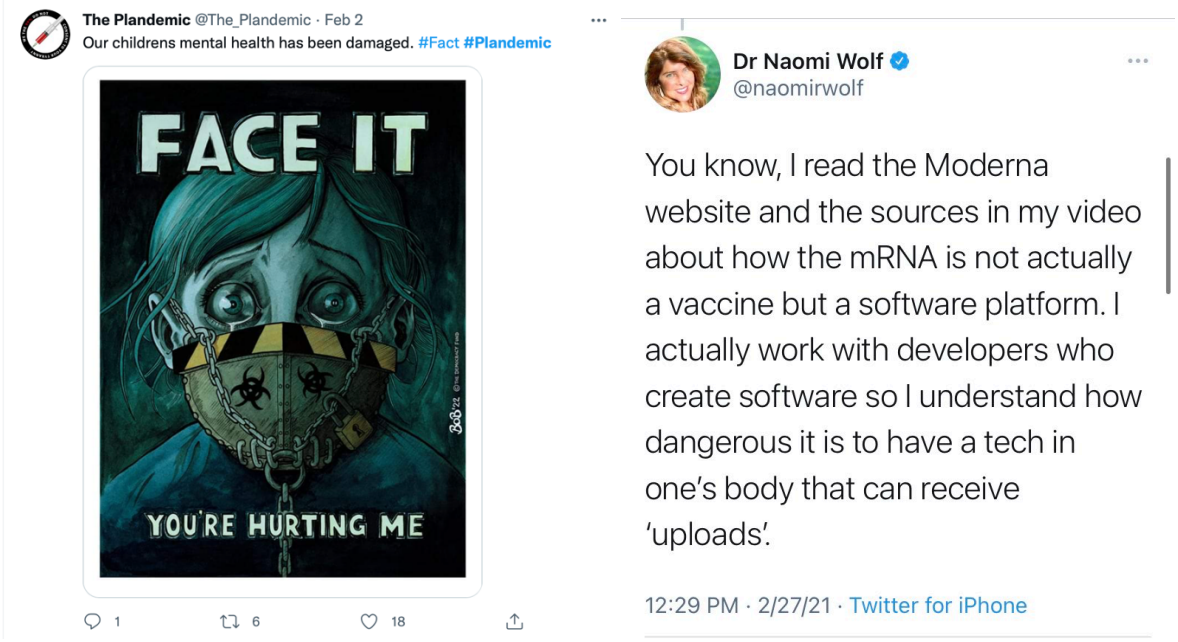
I felt that feelings and ideas, and appealing to different target audiences were the most used codes. While there were others present, I feel these connect most to Twitter, as people know the audience they want to appeal to, and will use emotion to achieve that goal.

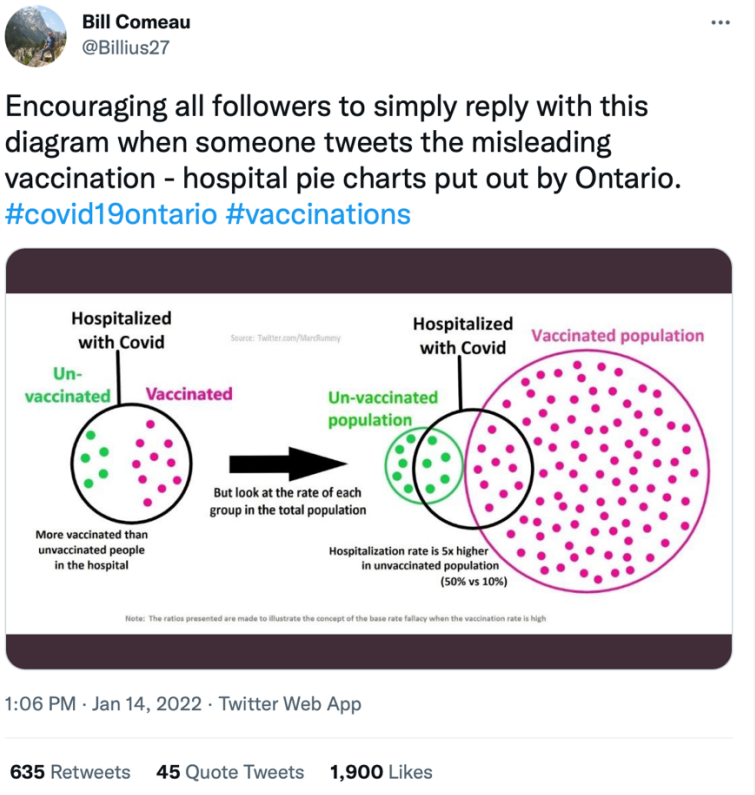
- After drafting your "response tweet": how hard was it to convey good scientific information in this format? Do you think Twitter is a good place to engage in scientific discussions?

My response tweet is below. It's hard fitting "science" in to such a short amount of space, and really mine wasn't anything more than promoting taglines we've seen recycled over and over. While I think it's good that science can have a wider reach, in that people may see tweets about science they might not otherwise see, I don't think scientific discussions belong on Twitter, due to the limited characters and lack of nuance.



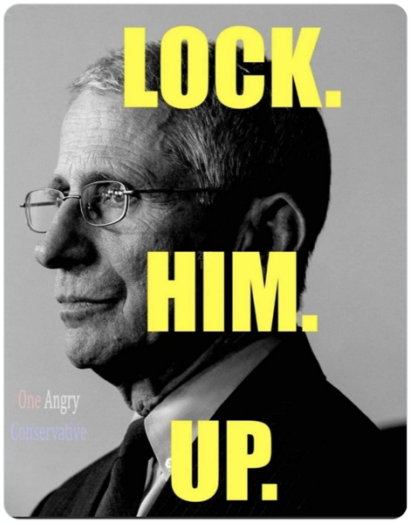
Appendix 1: Screenshots of Tweets for students *(in a classroom setting, these would be shared on the board)*





Pro Gezondheid En Anti QR Code @GezondheidEn · Jan 31

Without Informed Consent!
#Gainoffunction #FauciLiedMillionsDied #Fauci **#vaccinations**



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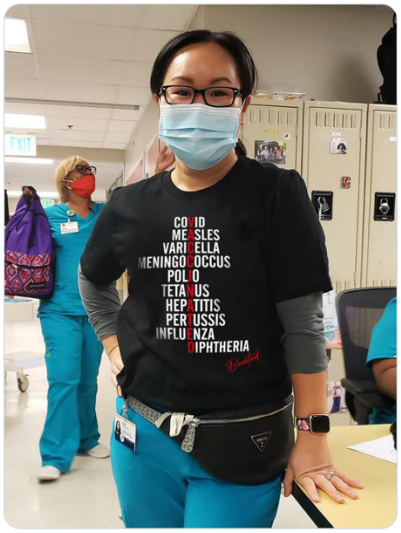
Travis Jacobson @TravIsScience · Jan 31

They're safe and effective! This list also is only a handful of the most dangerous diseases we have been able to tame or overcome. Get your **#Vaccinations** #COVID19Vaccine #VaccinesWork



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Justin Trudeau @JustinTrudeau
Officiel du gouvernement - Canada

Vaccines are safe, and save lives. Love this shirt, thanks @GinettePT! #VaccinesCauseAdults

7:26 PM · May 29, 2019

7.9K Reply Share

Read 331 replies

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