“Ethical Dilemmas in Antibiotic Treatment” (Abstract)

Grade/Subject
HS / Science

Ideas, Values:
Adaptation, Cause & Effect, Ethics, Resistance, Rights

Pre-Seminar Content

Launch Activity:
(It is assumed students have some background knowledge on antibiotics and harmful bacterial infections.)
Students should jot down a definition for the Greater Good. Then participants should go to one of four corners in the room (Strongly Agree, Agree, Strongly Disagree, Disagree) based on their response to this statement: The greater good should be considered over individual rights in decision making when it comes to issues of societal health and well being. Participants do a quick turn-and-talk (standing) as to why they feel the way they do. Then one person reports out, representing each group.

Inspectional Read:
Distribute the text and ask participants to anticipate what they expect this reading to be like. How is it organized? Is it similar and different to other texts they know? Students are to label the sentences 1-9.
Background Information:
Participants should be aware of the basics of how antibiotics work. Background information can be found on the following website: http://health.howstuffworks.com/medicine/medication/question88.htm
This article can be distributed and deconstructed as necessary as part of pre-seminar content preparation.

Vocabulary:
Provide (or mine participants for) definitions for Context/Rare Words: antibiotic, empirical, autonomy, temporal discount rate, pre-eminence, plight.

Analytical Read:
(Post directions.) Have participants mark words and points of interest (!) as well as puzzlement (?), limiting these to three each. Participants should also consider independently how the text is organized and whether they can “chunk” the text into two or thee categories. Students should also underline the author’s claim. Lastly, have participants create a scientific and text-minded question they may be able to ask in seminar today.

Pre-Seminar Process
Define and state purpose for Paideia Seminar.
Describe the responsibilities of facilitator and participants.
Have participants set a Personal Goal.
Agree on a Group Goal.
Seminar Questions

Opening (Identify main ideas from the text): 

- What big ideas or values are embodied in this text? (Round-robin response - facilitator records on white board or butcher paper)
- Other than your own offering, explain where you see a big idea or value we noted (inferred or explicitly) within the text?

Core (Analyze textual details): 

- What part of the text is most controversial? What makes it controversial?
- Based on this text, what needed advances in antibiotic research do you think are needed? What might be a next step for scientists? Explain.
- What is being said in sentence 6: “Using a temporal discount rate…”?
- What questions does this text raise for the patient-doctor, the patient, and/or the scientist? Use the text to support your response.

Closing (Personalize and apply the ideas): 

- Is the text more about science or rights? How are these connected—here in the text and beyond?

Post-Seminar Process

- Have participants do a written self-assessment of their personal participation goal.
- Do a group assessment of the social and intellectual goals of seminar.
- Note reminders for next seminar.
Students are asked to revisit the opening question and activity and ponder further what the text is really about.

**Writing Task:**

After studying the “Ethical Dilemmas in Antibiotic Treatment” text, write a short letter to place in a time capsule, explaining the dilemma. Include whether or not you agree with the claim of the abstract. Lastly, share what your hopes are in terms of advances in understanding and treating bacterial infections and antibiotic treatments for future generations. (Argumentation/Analysis)

**Brainstorm:**

Students should refer to their definition of the Greater Good from the Launch Activity, the notes they made in the Analytical Read, as well as the class discussion to begin to unpack the challenges associated with antibiotic treatment.

**Structure the Writing:**

Allot a few minutes for all to revisit the text, draft an outline for their writing, and refine their thinking. Have students use an organizational template as needed.

**First Draft:**

Challenge all to draft their letters by writing the paragraphs defined by their outlines.

**Collaborative Revision:**

Have participants work in pairs to read their first drafts aloud to each other with emphasis on reader as creator and editor. The reader should make a special note to
signify to the listener the paraphrased understanding of the dilemma and the hope for the future. The listener says back one point heard clearly and asks one question for clarification. Roles are then switched. Give time for full revisions resulting in a second draft.

🌟 Edit:

Once the second draft is complete, have participants work in groups of three or four and this time take turns reading each other’s second drafts slowly and silently, marking spelling or grammar errors they find, with a limit of 5 per page. (Have dictionaries and grammar handbooks available for reference.) Take this opportunity to clarify/reteach any specific grammar strategies you have identified your students may need. Give time for full revisions and editing, resulting in a third and final draft.

🌟 Publish:

Publish (either virtually or on paper) the final copies of the resulting time capsule letters in a collection to be shared via the class web site and as exemplary pieces of writing for future students.

This Paideia Lesson Plan was created by:

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“Ethical dilemmas in antibiotic treatment”
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Abstract

Patients with moderate to severe infections are given less than maximum empirical antibiotic treatment in order to reduce the rise in resistance. This practice involves two ethical dilemmas: whether the danger to a present patient should be increased (even if by a small degree) to benefit future, unidentified patients; and whether this should be done without the consent of the patient, disregarding the patient’s autonomy. We argue that future patients have a right to come to no harm. Future patients being unidentified, practitioners of medicine have a duty to protect their rights and weigh them against the rights of the present patient. A decision on the collective (guidelines, decision support systems) is a convenient way to do that. Using a temporal discount rate to show that the life of present patients has pre-eminence, to some degree, over future patients does not solve the immediacy of the plight facing a present, identified patient with a very severe infection. We think there are good grounds to take into less account considerations of future resistance for such a patient, or in a formal analysis, to make the ratio of benefits to the present versus future patients dependent on the severity of disease of the present patient. None of these solve the problem of patients’ autonomy. We see no other way but to argue that the right of future patients to come to less harm outweighs the right of the present patient to share in decisions on antibiotic treatment.