Engaging Students in Scholarly Conversation

Doug Achterman
Gavilan College
September 2014
When academics argue
Ideas for Exploration

• What are the theoretical underpinnings for scholarship as a conversation?
• How is a scholarly conversation like other conversations?
• How is a scholarly conversation unlike other conversations?
• What are the codes and practices for discourse in your discipline?
• How might metacognition around our own processes inform our teaching and learning?
• What are some promising strategies for engaging students in a scholarly conversation?
What Else?
**Discourses:** Ways of combining and coordinating words, deeds, thoughts, values, bodies, objects, tools, and technologies, and other people...so as to enact and recognize specific socially situated identities and activities.

| Important ideas and information in the text (p.) | My thoughts, feelings, comments, questions: |
Disciplinary Literacy:
 discrete skills and specialized strategies needed for disciplinary learning

Intermediate literacy:
 comprehension strategies, building vocabulary, fluency

Basic literacy:
 alphabetic principles, print concepts, high frequency words, decoding

Shanahan & Shanahan, 2008
May develop concurrently.

Disciplinary Literacy:
- Discrete skills and specialized strategies needed for disciplinary learning

Intermediate Literacy:
- Comprehension strategies, building vocabulary, fluency

Basic Literacy:
- Alphabetic principles, print concepts, high frequency words, decoding
Talk to the Text (p.109 *Reading for Understanding*)

• Model first w/doc cam or overhead projector
• Review questions and reading strategies you want them to use
  – Predictions
  – Questions
  – Reactions
  – Connections to other things they’ve read/heard
• Make the invisible visible: Tell students

Good readers are in the habit of talking to the text *in their head*. This is a way to adopt this orientation.
Scholarly Conversation Occurs In

• Reading
• Writing
• Research/Inquiry
• Speaking
• ???
Back to the future: Controlling synthetic life science trade in DNA sequences

Gabrielle Samuel, Michael J. Selgelid, and Ian Kerridge

Abstract
In recent years there has been an enormous growth of interest in synthetic genomics and synthetic biology, which we collectively refer to as the synthetic life sciences. Rapid progress in this field has enabled the synthesis of biomolecules, whole genomes, and even simple life forms, raising hopes for the development of new bioproducts capable of addressing a wide range of ecological, technological, and biomedical challenges. However, the synthetic life sciences also pose a number of biosecurity and biosafety risks. Numerous regulatory options for the control of synthetic life sciences have been advanced. In this piece, the authors discuss one of those regulatory options: control of trade in DNA sequences. After reviewing the most commonly advanced proposals for regulation of the DNA sequence trade, they consider whether a clearinghouse for centralizing the oversight of all DNA sequence ordering would provide a better means of regulating the DNA sequence trade. They conclude that though a clearinghouse could potentially provide a promising means of regulation, the technology required for an effective clearinghouse is not currently available. Current policy making should be partly concerned with ensuring development of adequate technology for regulation in the future.

Keywords
biosecurity threats, clearinghouse, DNA sequence, regulation, synthetic biology, synthetic genomics, synthetic life sciences, trade

For relatively new technologies, synthetic genomics and synthetic biology—collectively known as synthetic life sciences—have received a great deal of public attention lately, mostly due to the extraordinary strides in their advancement. One recent example was the design of a living cell controlled by synthetic DNA. Developed in the 21st century, the synthetic life sciences encompass a number of distinct engineering strategies drawn from the interdisciplinary convergence of molecular genetics, chemistry, nanotechnology, and engineering.

Synthetic genomics is the chemical synthesis of DNA sequences. The synthesized sequences can already exist—for example, the chemical synthesis of genes naturally found in an organism—or it can involve the synthesis of novel DNA sequences—that is, the synthesis of a gene that incorporates a specific man-made alteration. Synthetic
Abstract
In recent years there has been an enormous growth of interest in synthetic genomics and synthetic biology, which we collectively refer to as the synthetic life sciences. Rapid progress in this field has enabled the synthesis of biomolecules, whole genomes, and even simple life forms, raising hopes for the development of new bioproducts capable of addressing a wide range of ecological, technological, and biomedical challenges. However, the synthetic life sciences also pose a number of biosecurity and biosafety risks. Numerous regulatory options for the control of synthetic life sciences have been advanced. In this piece, the authors discuss one of those regulatory options: control of trade in DNA sequences.
After reviewing the most commonly advanced proposals for regulation of the DNA sequence trade, they consider whether a clearinghouse for centralizing the oversight of all DNA sequence ordering would provide a better means of regulating the DNA sequence trade. They conclude that though a clearinghouse could potentially provide a promising means of regulation, the technology required for an effective clearinghouse is not currently available. Current policy making should be partly concerned with ensuring development of adequate technology for regulation in the future.
Talk it Over

• Share the notes you made with your partner.
• Listen to your partner’s comments.
• Add to your own notes.
• What questions, comments, observations did you share?
Synthetic genomics is the chemical synthesis of DNA sequences. The synthesized sequences can already exist--for example, the chemical synthesis of genes naturally found in an organism--or it can involve the synthesis of novel DNA sequence--that is, the synthesis of a gene that incorporates a specific man-made alteration. Synthetic biology, however, is both the design and construction of new biological parts, devices, and systems and the redesign of existing natural biological systems for useful purposes. Because the synthetic life sciences may enable the synthesis of biomolecules, whole genomes, and even simple life forms, these sciences have enormous potential, as they may logically be applied to any area of science or biomedicine that utilizes or works with genetic components, including pharmaceutical development, fuel production, detoxification of chemicals, genetic therapy, and environmental control.
The synthetic life sciences are not entirely benign, however, and they pose a dual-use dilemma: While they may be used for societal good, they may also be used by malicious individuals, like terrorists, to cause harm and incite panic. In particular, critics of the synthetic life sciences worry that this technology enables the synthesis of pathogenic agents that could be used as or in biological weapons, allowing would-be bioweaponeers to create biological weapons agents, such as Ebola or smallpox, which would otherwise be difficult to obtain. This kind of danger has been highlighted repeatedly: In 2002, a group of researchers at the State University of New York in Stony Brook produced the first synthetic virus upon artificially synthesizing a functional poliovirus (Cello et al., 2002); in 2005, researchers at the Mount Sinai School of Medicine in New York reconstructed the 1918 Spanish flu virus (Kaiser, 2005); and in 2008 they synthesized a bat virus (a SARS-like coronavirus), which closely resembles and is the likely progenitor of the human SARS epidemic (Becker et al., 2008).
They Say/I Say

Conventions in scholarly conversations across disciplines.
This is how the judge Walter Colton described what he called the first jury trial in California. It is how all the great historians of California who have noted the 1846 trial have described it, too. But much of that description is wrong and the rest is incomplete. (Indeed, it was not even the first jury trial.) The truth is far more interesting. On one hand, it is the story of an attempt to render justice in an occupied frontier in a time of war. On another, it is the story of a newly appointed officeholder’s endeavor to deal with the most controversial issue he faced while standing for election. Both are true.
Templates for participating in scholarly conversation

Introducing What an Author Says
• X acknowledges that ______________.
• X argues that ______________.
• X claims that ______________.
• X questions whether ______________.
• X suggests that ______________.

Introducing an Ongoing Debate

When it comes to the topic of __________, most of us will readily agree that __________. Where this agreement usually ends, however, is on the question of __________. While some are convinced that __________, others believe that __________.

Disagreeing, with Reasons (i.e., They are just wrong)
By focusing on ________________, X overlooks the deeper problem of ________________.
Summarizing

”Instead of summary, which is highly valued in academic writing and is promoted in composition textbooks, the students paraphrased, copied from, or patchwrote from individual sentences in their sources.”

Research: Finding Sources Vs. Building Understanding

What am I looking for? Vs. What do I need to learn about my topic?

Extensive Academic Reading

• Vertical Text Sets same content at a range of difficulty levels
• Horizontal text sets: extend or provide background around a core text

Your librarians can help you collect these around a topic/theme/unit
Final Thoughts

• How does “apprenticeship” change the model?