



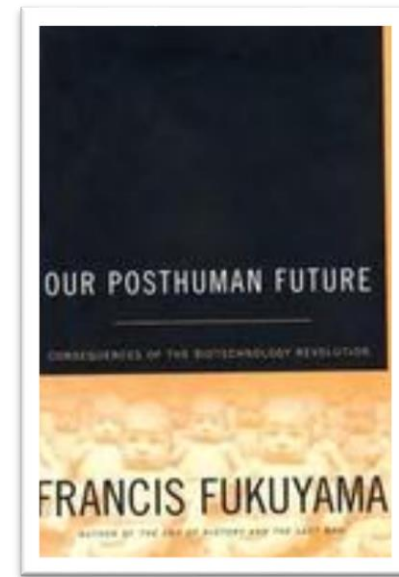
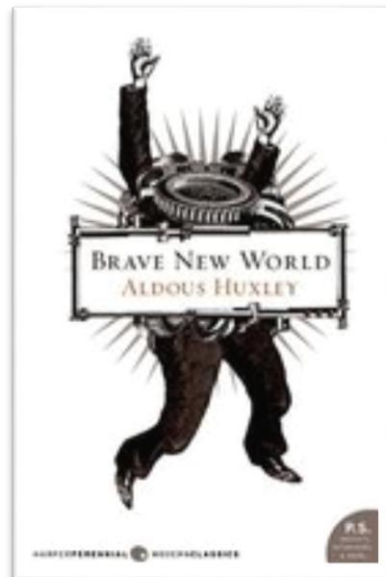
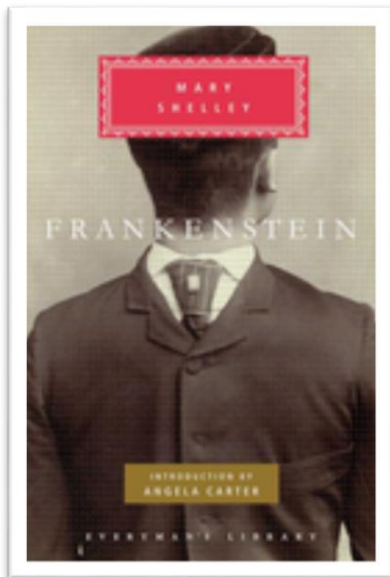
Teaching Biotechnology and Life Issues Through Literature

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THE BOOKS

1. Frankenstein by Mary Shelley
2. Brave New World by Aldous Huxley
3. Our Posthuman Future: Consequences of the Biotech Revolution by Francis Fukuyama



CLASS GOALS

1. **To understand the literary themes of the two novels.**
2. **To make connections between these novels and contemporary issues.**
3. **To understand the underlying moral and ethical considerations of contemporary biotechnology and medical/scientific experimentation**
4. To learn how to compose an effective argumentative essay
5. To learn how to synthesize the ideas of others into an effective research paper.

GUIDING QUESTIONS

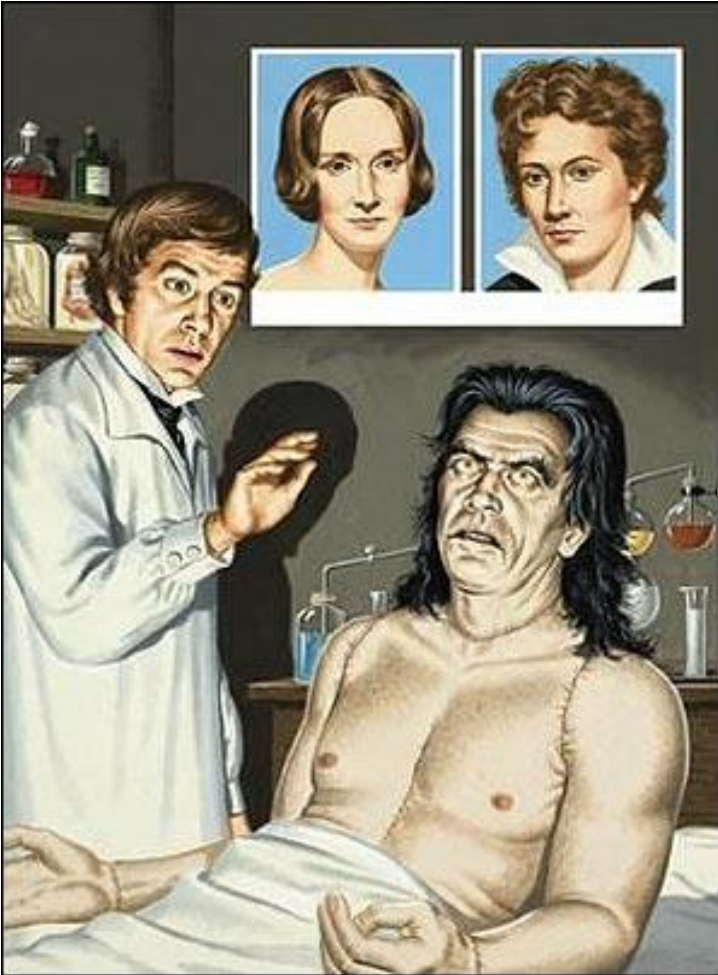
1. What is human dignity? What are human rights? What is personhood?
2. What is human nature? Do we have a right to manipulate human nature?
3. When does one begin to be and cease to be human?
4. When does a person *go beyond* being human? Or is it even possible?
5. What are the ramifications of today's biotechnology revolution?
6. What does contemporary and classic literature have to say about today's biotechnology revolution?
7. What can we learn from literature to help us live in the 21st century?

FRANKENSTEIN BY MARY SHELLEY



- Known as the first science fiction novel
- One of the first modern horror novels – monster icon
- One of the most famous Gothic novels – supernatural
- An enduring cautionary tale of science gone wrong.

THE MODERN PROMETHEUS



- **Prometheus**: Greek titan entrusted with the task of molding mankind out of clay. (Later punished for stealing fire from Zeus to assist his creation – eagle pecks his liver out daily)
- **Modern parable** that man should not attempt to play God, and should he try, his creations may turn upon him.

VICTOR FRANKENSTEIN



- Protagonist and eldest son of the Swiss Frankensteins
- Narrator of most of story
- Has thirst for knowledge and “soaring ambition” to leave his mark on human history.
- Discovers the “secret to life” while studying at Ingolstadt
- Decides to build a new race of men – better, faster, stronger

THE DAEMON (MONSTER)



- Hideous-looking creature created by Frankenstein
- Originally kind and sensitive, he wants nothing more than to be loved and accepted.
- Rejected by Victor and by everyone else
- Becomes embittered and embarks on revenge.
- Turns against his creator and destroys him and his family

CENTRAL THEMES



- **Cautionary Tale**: Man should not attempt to play God; and should he try, his creations will turn upon him.
- **Actions often have unintended consequences**: Blinded by visions of glory for themselves, both Frankenstein and Walton fail to consider the consequences of their actions

CONTEMPORARY CONNECTIONS



FUKUYAMA'S PRIMARY POINTS:

- The Christian tradition maintains that man is created in God's image, which is the source of human dignity.
- To use biotechnology to engage in what C.S. Lewis called "The Abolition of Man" is a violation of God's will.
- Religion is not the only grounds on which one could understand the meaning of being human.
- Human nature itself has a special role in defining what is right and wrong, just or unjust, important and unimportant.

CONTEMPORARY ISSUES



Modern scientific experimentation provides many parallels to Frankenstein. (Connections we'll later make to Brave New World.) Group research on various ways of manipulating the human person or human nature:



- Human Cloning
- Genetic Engineering
- Test-Tube Babies/Designer Babies
- Transhumanism & Posthumanism
- Selective Reduction Eugenics
- Animal-Human Hybrids (Chimeras)
- Embryonic Beauty Treatments
- Neuropharmacology

GROUP RESEARCH CRITERIA



- The written, oral, and visual parts address:
- **Definition:** Begin by defining exactly what your issue is, what is involved, and who is involved.
- **Rationale:** explain why researchers, scientists, doctors (or whoever else) are interested in pursuing this type of Promethean work. In other words, what do they hope to accomplish with their work/research.
- **Ethics:** Explain the ethical, moral, and legal issues that are involved with your issue. Include what the *Catechism of the Catholic Church* has to say about your issue – either specifically or in general when dealing with biotechnology or medical research.

GROUP RESEARCH CRITERIA



- **Pros and Cons**: Explain the benefits of your issue and the drawbacks.
- **Unintended Consequences**: What are some of unintended consequences that have occurred or some unintended consequences that could possibly occur due to work on this issue? (Real or imagined)
- **Your Issue in Literature**: How is your issue related to Frankenstein? Is it the subject of any novels, stories, or plays? Explain!
- **Your Stance**: After doing your research, what conclusions do you reach about the issue? Is it moral, ethical? Should it be legal? Illegal? Should it be regulated by the government? Should it be abandoned?
FORMATION OF A THESIS

BODIES... THE EXHIBITION



1. **Introduction to the “argumentative essay”**
2. Introduction to synthesizing ideas and research of others in support of your claim.
3. In-class (50 min) prompt: Should the Cincinnati Museum Center host “Bodies... the Exhibition”?

BODIES... THE ESSAY



Display of 20 unidentified corpses
– dissected and posed – obtained
from China.

Sources:

1. Museum promo brochure: Pro!!!
2. Editorial: Con – Freak show!!!
3. Editorial: Con (Fr. Michael Seger) from “respect for the body” perspective
4. Enquirer editorial: Pro – from “It inspires debate”; therefore it is good.

BODIES... THE ISSUES (1)



Issues students should have considered:

1. Questionable background: Who are these people? How did they die? Why were they not given the dignity of burial?

2. Lack of Consent: The people didn't donate their bodies to science.

3. Human Rights Abuses: How do we know the Chinese aren't lying?

BODIES... THE ISSUES (2)



4. **Irreverence & Voyeurism:** Bodies being put on public display – not only naked, but with their skin peeled away

5. **Spiritual/Moral:** Do all people have a right to a decent burial or cremation, or only people who can be “identified” and “claimed”?

6. **Education:** Since the purpose of the exhibition is to educate, does that make it okay?

THE ARGUMENTATIVE ESSAY



Essay should take the form of the classical method of structuring an argument:

I. Introduction

- states claim

II. Background

III. Lines of Argument

- evidence in support

III. Opposing Views

- w/ Refutation

IV. Conclusion

SAMPLE THESIS STATEMENTS

- Although “Bodies” may be unethical, immoral, and an offense against human dignity as some critics claim, the exhibition should still be hosted by the Museum Center because of its unique educational value.
- The Museum Center should not be hosting “Bodies” because the exhibition is immoral in its treatment of human corpses and there are a number of much less controversial ways of educating the public about human anatomy and health.

FALLACIES FOLLOW-UP

Great opportunity to follow up with a study of fallacies – errors in argumentation, logic, and reasoning

EXAMPLE:

- **Critics who do not agree with the Bodies Exhibition should not go to the exhibit, and they should leave everyone else alone.**
- Same as: Women who don't believe in abortion shouldn't have an abortion, and they should leave other women alone.
- Same as: If you don't believe in slavery, then you don't have to own a slave, but you should leave everyone else alone to keep slaves if they like.

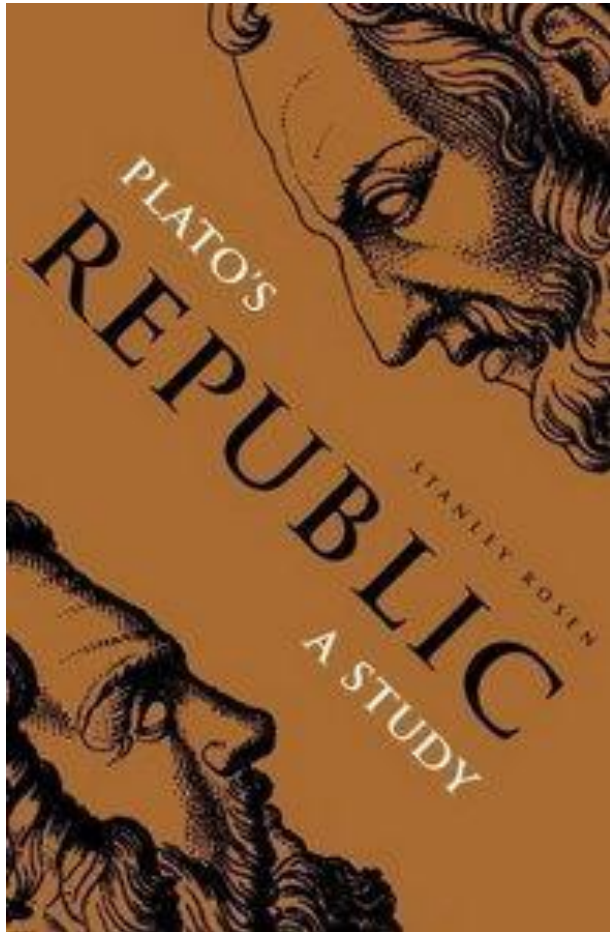
THE RESEARCH PAPER



Application of the Argumentative Essay to the Research Paper:

- Human Cloning
- Genetic Engineering
- Test-Tube Babies/Designer Babies
- Transhumanism & Posthumanism
- Selective Reduction Eugenics
- Animal-Human Hybrids (Chimeras)
- Embryonic Beauty Treatments
- Organ Harvesting

THE RESEARCH PAPER



- Informs audience of the issue and controversy
- Convinces them of your stance on that issue.
- Refutes opposing viewpoints
- **Your Stance**: After doing your research, what conclusions do you reach about the issue? Is it moral, ethical? Should it be legal? Illegal? Should it be regulated by the government? Should it be abandoned?

BRAVE NEW WORLD



GENRE: DYSTOPIA

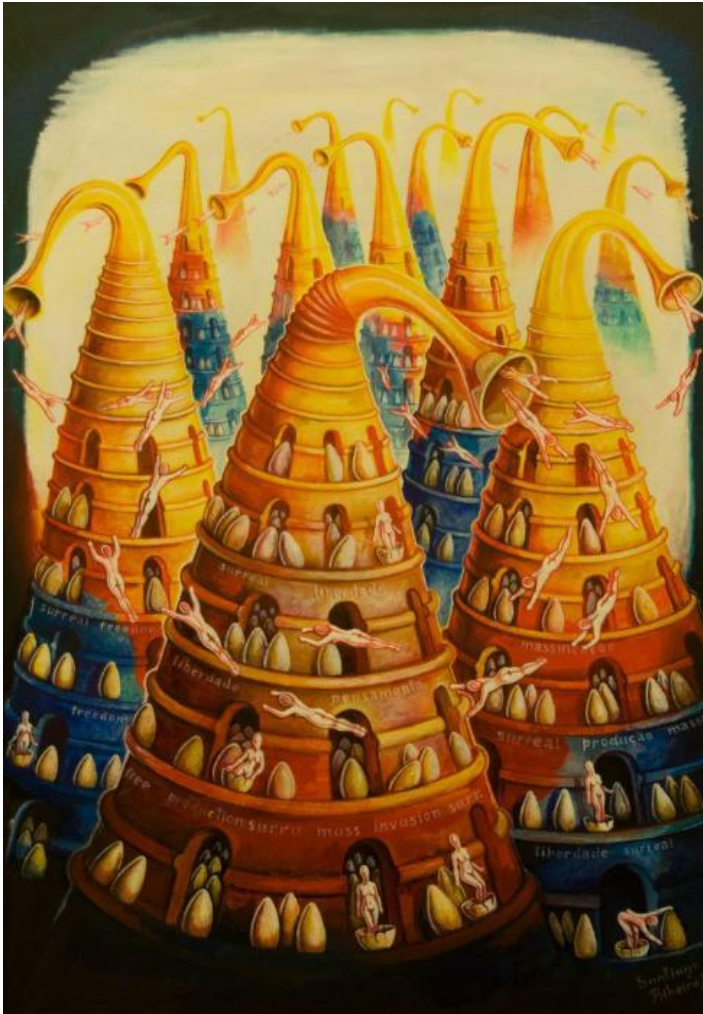


Utopia: an ideal society possessing a perfect social and political system

Dystopia: a society where the condition of life is extremely bad, as from deprivation, oppression, or terror

- Often futuristic
- Often under the guise of being a utopia
- Often totalitarian

POPULAR DYSTOPIAS

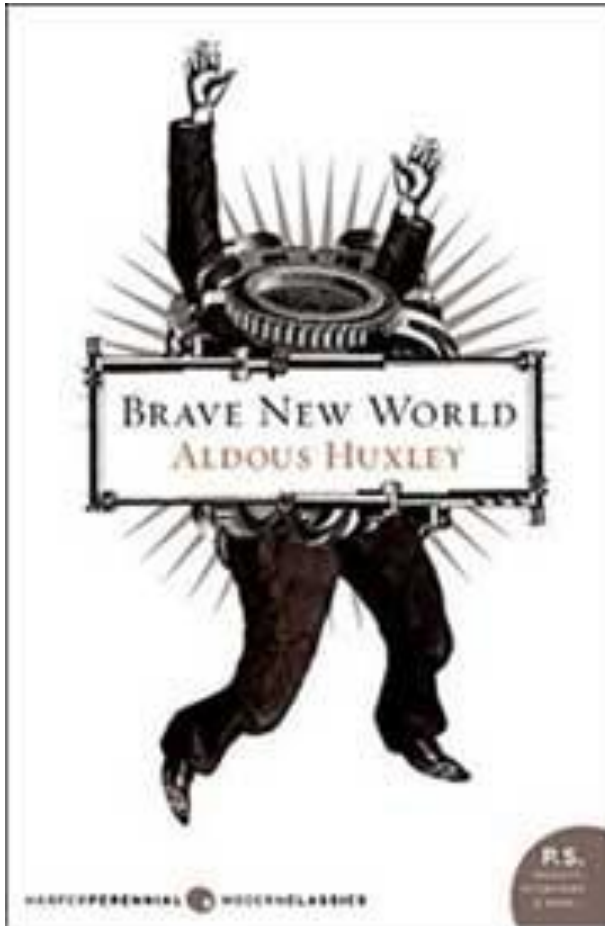


20th century popularity

Attempts to put utopian ideals into place resulted in real-life dystopias. Huxley provides a critique of:

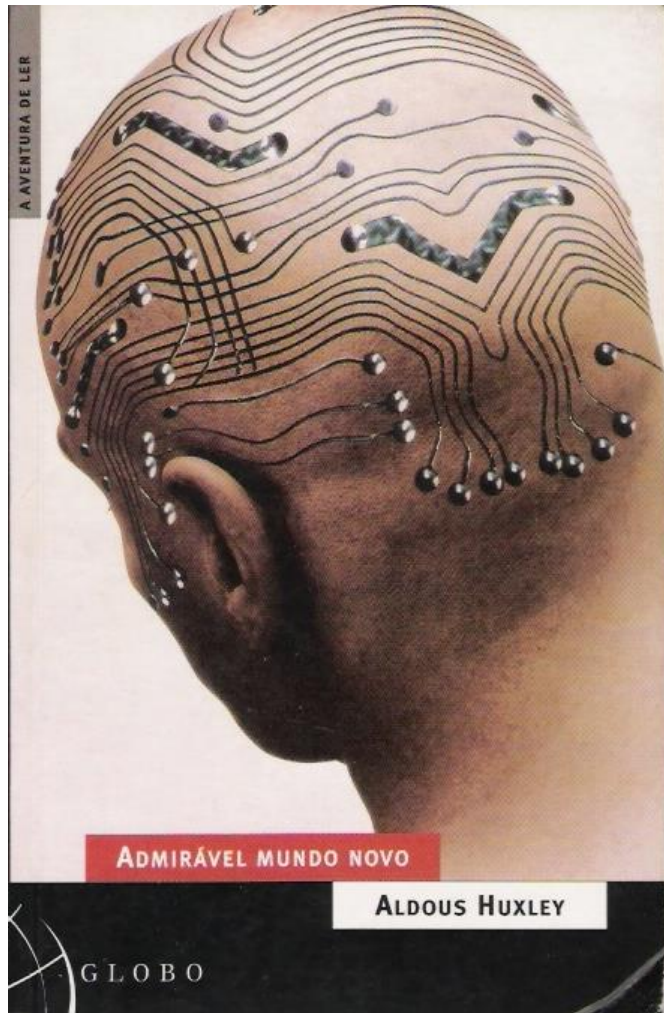
- Soviet Communism
- German Nazism
- Western Consumerism
- Modernism (break with history)
- Technological mass production

BRAVE NEW WORLD (1)



- Portrays a society that has been socially engineered for a mindless happiness.
- No need for a totalitarian state because everyone is so “amused” and entertained by sex and drugs.
- Technology drives the culture and takes away one’s humanity
- A critique of consumerism, technology worship, mass media hypnotism

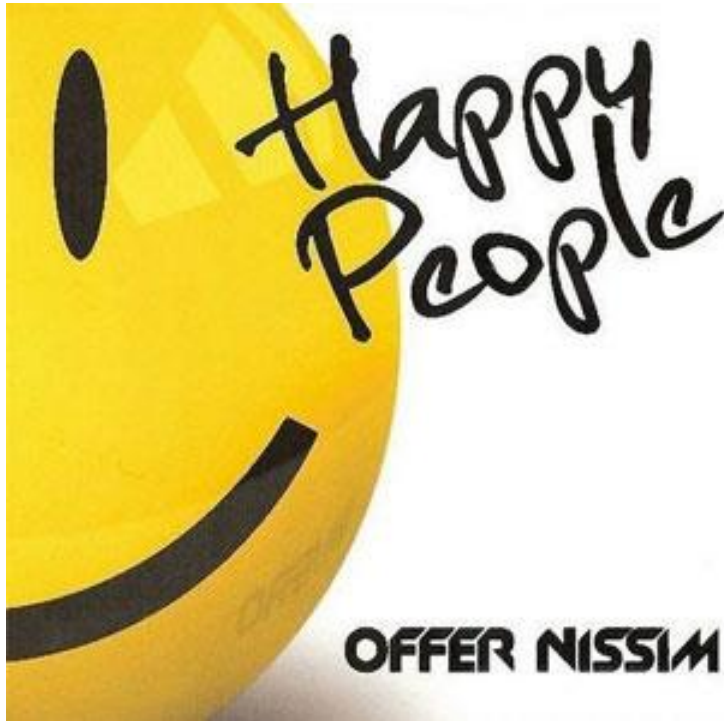
BRAVE NEW WORLD (2)



- Human beings are treated like different model cars trundling off the Ford assembly line.
- Babies are bred in bottles for designated roles in society comparable
- **The family is seen as unnecessary and revolting.**

What Victor Frankenstein did with “natural science” the BNW government is doing with technology and biotech.

THE CASTE SYSTEM



Alpha, Beta, Gamma, Delta,
Epsilon

- Seeks to create maximum happiness for everyone.
- Achieved through conditioning. Everyone is happy to belong to his/her caste.
- The caste system is needed to cover every little part of processes that form the society, to make it one whole.
- Conditioning makes every single person feel happy and thus creates a more efficient society.

DESIGNER BABIES



- **Babies are not born and have no “live parents” – sex and procreation separated**
- **Women’s eggs (ova) are harvested for use in “fertilizing rooms”**
- **Babies are assembly line products developed to specs of caste in labs.**
- **They are all “decanted” in a Hatchery and Conditioning Centre.**



BNW COMMUNISM



- Each individual has no freedom or liberties due to being “predestined” and “conditioned”
- No choice of job, housing, transportation, social life
- Everyone has an “inescapable social destiny.”
- Children brought up in “State Conditioning Centers” instead of in families.



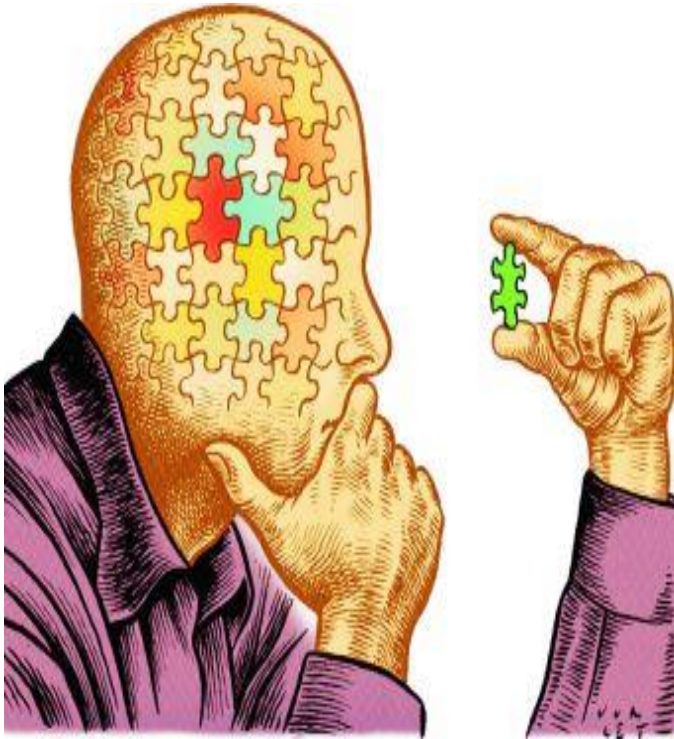
THE DYSTOPIAN IMAGINATION

The ultimate target of Huxley's dystopia was the idea of the good life as instant gratification of sensory desires.

- It means: “I get what I want when I want it.”
- When I am hungry I eat what I want.
- When I feel ill, I can instantly feel better through drugs.
- When I want something, I can buy it and get it NOW.



OVERALL RESULTS



Critical Thinking

1. **Students learn about literary themes that connect with contemporary concerns.**
2. **They learn about the failed utopia movements of the 20th century**
3. **They learn that the body and the human person should be respected**
4. **They learn that “playing God” leads to harmful unintended consequences.”**
5. **They learn HOW to research a topic, to formulate a strong claim, to synthesize material to support it.**