

Emerging Ethical Dilemmas in Science and Technology

Our technology is advancing at such a rapid pace that things that were unimaginable only a few years ago, are quickly becoming a reality. Editing the genes of babies? Check. Social credit scores? Check. AI? Check. Fake videos? Check. Are we ready for them? Have we developed the ethical and legal framework to guide our decision-making processes to prevent devastating or unwanted consequences in the future?

The goals of this exercise are two-fold:

1. To practice having hard conversations. Issues of ethics tend to bring out the best and worst in us. Discussing issues of an ethical nature is a great opportunity to practice having hard conversations, listening to different points of view and keeping our minds open to change.
2. To become aware of the technology that is coming at us that we may not quite be prepared for.

Being aware and educated is imperative. In this module, we are going to explore ethical issues at the interface of technology and society, learn a little bit, talk a little bit and listen a lot.

Despite intense ethical debates among experts, few meaningful laws have been passed to address the ethics of our rapidly changing scientific abilities. Those that have passed have primarily focused on preventing federal funding (FDA, NSF, NIH) for certain types of science. However, as science and technology become increasingly privatized, these laws have limited reach.

The goal of this ethics module is to explore the dynamics and societal consequences of our scientific/technological innovation. Working in groups of 8 students, each group will choose a topic that interests them from Notre Dame's Reilly Center *Emerging Ethical Issues in Science and Technology* (links located at the bottom of this document). You can go back 3 years. No two groups can do the same topic and its first-come-first-served. ***In the google spreadsheet for this assignment, you will enter 1) the names of members of your group 2) the topic of your choice and 3) choose an available date and choose a role for each member from the pull-down menu.***

https://docs.google.com/spreadsheets/d/1uLmtCckZKHUuxqtEVuhiM53Uw-4bGgy-AZ5_E7inwhA/edit?usp=sharing

There are two parts to this assignment: Short introduction and group discussions. This assignment is worth 50 points for your presentations. Everyone should have a job and contribute to either the presentation or the questions and everyone to the background research. *Your group will submit a google doc as part of the assignment.* Grades are determined by 1) presentation, 2) how well you create and moderate discussion. This should not take a lot of time with 8 partners, but everyone is expected to contribute and you are graded individually on your work. Lack of participation will have grade consequences. You are also graded on your participation in group discussions.

In addition, you receive participation points for attending class and being a contributing member of your group discussion. There are 6 discussions worth 10 points each. Everyone will get to drop 1, for a total of 50 points. Because the presentations are short, any one missing more than 5 minutes of class will not receive credits for that day because you will have missed the background information you need to contribute in an informed way to the discussion. Anyone not participating in discussions during breakout sessions will not receive points.

Introduction

You and your group-mates will prepare a short presentation that includes an introduction to your topic and that highlights the ethical issues, benefits and potential consequences (ie. Pros and cons). This should be between 8-10 minutes. Be sure to give your classmates enough background that they can really think about the implications of your topic and start to figure out where they stand on it. This is informal and conversational and you can use presentation software or not.

Discussion

Your group will prepare a set of discussion questions (5-7) that you will append to your presentation. The class will then split into groups of 5-6. One member of your group will moderate each group discussion. Moderators will practice their communication skills by making sure everyone contributes to the conversation, answering clarifying questions, and preventing lags.

The goal of this exercise is to:

- Help your classmates identify what the major ideas and issues are
- Reach to understand the potential implications
- Discuss any limits or legislation that should be applied to the technology
- Explore where each student personally stands on the issue
- Listen to different points of view
- Practice contributing to polarizing discussions on complicated issues

Roles:

1. Background research and creation of major points for each section (designate lead, but everyone contributes)
2. Presentation of Introduction/overview (one person)
3. Presentation of Pros (one person)
4. Presentation of Cons (one person)
5. Design Discussion questions (3 people).
6. Moderator to lead class discussion at the end.

Timing:

1. Presentation 10 ish minutes
2. Small group discussion 20 minutes
3. Large group discussion 15 minutes

The moderators in both small and large group discussions are available to lead the discussion and clarify any issues that may come up and to promote conversation.

Writing a good discussion question is harder than it might seem. Questions should be open-ended and have more nuance than "what do you think about X?". Below are a couple of resources that may help you understand the motivation and how to design a good discussion exercise.

<https://www.lavc.edu/profdev/library/docs/promotethink.aspx>Links to an external site.

<https://towardsdatascience.com/7-short-term-ai-ethics-questions-32791956a6ad>Links to an external site.

The timeline is as follows:

Everyone must sign up for a date by the end of class on October 27th and enter it into the spreadsheet -Deadline for choosing your topic, individual roles and entering them into the google spreadsheet is Friday, Nov 3rd.

https://docs.google.com/spreadsheets/d/1uLmtCckZKHUuxqtEVuhiM53Uw-4bGgy-AZ5_E7inwhA/edit?usp=sharing

Group 1 Topic: Tues, Nov. 10th

Group 2 Topic: Thurs, Nov 12th

Group 3 Topic: Tues, Nov 17nd

Group 4 Topic: Thurs, Nov. 19th

Group 5 topic: Tues Nov 24th

Group 6 topic: Tuesday Dec 1st

Reilly Center Top 10 Emerging Ethical Dilemmas

Previous years are listed under the menu "Previous lists". You may choose any topic from 2017, 2018, or 2019. In some cases, topics from lists earlier than these may be appropriate and I am open to considering them.

<http://reillytop10.com/>Links to an external site.

Printable guidelines [here](#)

