



ECONOMICS IN ONE VIRUS: CHAPTER 9

Why couldn't I get a COVID-19 test in February and March 2020?

GRADE LEVEL: 6-8 (INTERMEDIATE)

TIME ESTIMATE: 60-90 MINUTES

Lesson Overview

Students will participate in a warm-up in which they experience regulatory impacts on their creative work. After exploring important vocabulary, students will simulate restrictions on creative activity. Students will read about the impact of regulation on the availability of COVID-19 tests. Finally, students will apply their knowledge of regulatory costs and benefits of deregulation to a policy.



Objectives

- Students will be able to explain the effect of regulation on innovation and entrepreneurship.
- Students will be able to evaluate regulations.

Vocabulary

- Deregulation
- Innovation
- Entrepreneurship
- Regulation

Materials

- Warm-Up Hypothetical Part 1
- Signs for the wall that read “Speed” and “Accuracy”
- Warm-Up Hypothetical Part 2
- Vocabulary preview
- Vocabulary slips of paper
- Regulatory Reading 1
- Regulatory Reading 2
- Deregulation Exit Ticket

Prework

Students should have an understanding of cost–benefit analysis, but it is not entirely necessary. Place a sign that reads “Speed” on one side of the room. Place a sign that reads “Accuracy” on the opposite side of the room.

Warm-Up

- Distribute Warm-Up Hypothetical Part 1
 - Tell students that you want them to draw whatever they think of when they think of school. Encourage them to be creative, and tell them there are no restrictions on what they draw.
 - Limit their drawing activity to three minutes.
 - Allow a few students to share out. Feign shock at some of the things that students were willing to write or draw.
 - Tell students that you don’t want to see those drawings anymore.
- Distribute Warm-Up Hypothetical Part 2
 - Tell students that you are going to try again and that this time you are concerned about making sure that their work is appropriate to display in the hallways for parents, other teachers, and administrators to see.
 - Tell them that this time they are allowed to draw only positive things.

- Tell them that this time they are not allowed to write any words.
- Limit their drawing activity to three minutes.
- Have a few students share out.
- Discuss with students the differences in their creative processes for the two different times that they drew.
 - How did they feel about the limitations on their work?
 - Was one round more difficult than the other in terms of coming up with ideas?
 - Why might governments make rules that limit creativity?

Lesson Activities

• Vocabulary preview

- Talk through examples with students and allow them to copy yours or to come up with their own. They may not have the background knowledge to generate their own.
 - Deregulation
 - i. The removal of regulations or restrictions, especially in a particular industry
 - ii. Give an example of deregulation.
 - a. Deregulation in the banking industry allowed banks to lend money to more people than they would have under the previous regulations.
 - b. Deregulation of the telecommunications industry drove down prices for long-distance telephone services.
 - Entrepreneurship
 - i. The process of discovering new ways of managing, organizing, or combining resources or of developing new products or services in the pursuit of profit within markets
 - ii. Give an example of entrepreneurship.
 - a. J. Robert Oppenheimer helped develop nuclear technology.
 - b. Ruth Handler created a doll named after her daughter Barbara, and that doll is incredibly popular.
 - Innovation
 - i. The process of devising a new idea, product, or way of doing things
 - ii. Give an example of an innovation.
 - a. Android phones were the first to use swipe to make typing faster.
 - b. Problems with mini-USB charging cables led to the development of USB-C cables.
 - c. Most new cars now come with backup cameras to prevent accidents in parking lots.
 - Regulation

- i. A rule or directive made and maintained by an authority
- ii. Give an example of regulation.
 - a. California passed new regulations about raising pigs.
 - b. According to regulations, all imported juices must be blended with Florida orange juice.
 - c. According to regulations, 10 percent of gasoline in the United States must be made up of corn ethanol.
- Have students write sentences using each word.
- Ask students to answer the question on the bottom of the page: Given your experience in the warm-up, how do you think regulation affects innovation?
 - Answers will vary.
 - Students should discuss limitations on innovation.
 - Students may say that regulations provide some guidance.
- **Regulatory Reading 1**
 - Distribute Regulatory Reading 1.
 - Have students read carefully and answer questions.
 - Read the excerpt from *Economics in One Virus*.
 - Following the emergency declaration, these labs had to go through a rigorous process of receiving Emergency Use Authorization for any tests they developed. These polymerase chain reaction (PCR) tests were well known, and labs would ordinarily have been able to use them without FDA approval, provided they were for noncommercial use. Yet the FDA explicitly introduced a higher hurdle than normal during the pandemic, because of the supposed higher risk associated with faulty testing.
 - i. According to the text, how did the Food and Drug Administration (FDA) make it more difficult for COVID-19 tests to enter the market?
 - a. It required an Emergency Use Authorization.
 - b. It established higher hurdles than the ones that existed for other tests.
 - ii. Discuss answers with students and try to support the idea that the FDA was right to keep consumers safe. This will set up the next section of the lesson.
 - These regulations meant labs ended up weighed down by the laborious and risk-averse Emergency Use Authorization process. Foreseeing the vast effort required, some decided against developing tests despite having the capacity to do so. The *Washington Post* reports that one academic clinic—the Mayo Clinic—had to put a third of its 15 rapid-response team members to work solely on the FDA's data and paperwork demands. A laboratory at the University of Washington ran into some absurd well-publicized regulatory difficulties because they had not burned copies of their application onto discs or mailed a hard copy to Washington, DC. While all these

labs were going through that bureaucratic process, they were not able to put their tests to use, and the virus was spreading across the United States unchecked.

- According to both excerpts, how did FDA regulations affect the development and use of COVID-19 tests? Provide evidence from the text.
 - i. It cost more.
 - ii. It was slower.
 - iii. It allowed the virus to spread.
- Try to get students to balance the idea that the FDA was trying to save lives. Ask them to think about balancing those ideas against the costs and delays.

• Simulation

- Put students in groups of 4–5. Grouping here is flexible. It is a creative activity.
- Tell them that they are going to design the inventions using an improvisation game.
- The teams are going to create “machines” using their own movements and noises. One student begins the creation by making a noise and a motion. The second student must make a different noise and motion that adds to the noise and motion of the first student. Some teams insist that the players touch one another, but you can modify that game so that this is not necessary. A third student joins the “machine” by making yet another noise and another motion. This continues until all members of the team are actively involved in making noises and motions.
- After a couple of teams have completed their machines, tell the students that you are worried that some of them are going to get hurt and that they are making offensive noises. Change the rules so that the remaining groups can only make noises beginning with B and can only move backwards and forwards and not side-to-side. You can add “inspection” by making students get approval from you for their noises and motions before they join the scene.
- When all teams have completed their machines, lead a class discussion about how the regulations affected their machines.
 - How did they feel about the limitations?
 - How did the regulations affect the creative process?
 - How did the regulations affect how long it took to come up with ideas?

• Regulatory Reading 2

- Distribute Regulatory Reading 2.
- Review information from Regulatory Reading 1 and ask students to predict the effect of FDA regulations on the development of COVID-19 tests.
- Read the excerpt from *Economics in One Virus*.
 - In setting the high sensitivity bar, the FDA was, in fact, putting insufficient weight on the two massive advantages of rapid testing that, combined, dwarf any sensitivity

problem. First, given they are cheaper, the strip tests could be undertaken more frequently across a wider population for a given testing budget, meaning they would be more likely to identify asymptomatic cases at the time the person is actually infectious than if we relied on people seeking out a PCR test only when they suspected that they might be infected.

Second, because the strip test results are provided rapidly (in 15 to 20 minutes, sometimes at home, compared to one to three days for PCR tests at best), potentially infectious people can isolate themselves immediately and notify those they have been in contact with sooner. These advantages minimize the window of transmission between people becoming infectious and ultimately isolating—the time the person would likely be out spreading the disease.

- Have students answer: How did FDA regulations affect the spread of the virus? Provide evidence from the text.
 - They made the virus spread more.
 - They kept people from isolating appropriately.
 - They made people go out to get tests when they were sick instead of testing frequently.
- Have students answer: How is FDA regulation of the development of COVID-19 tests similar to or different from the simulation in the warm-up of with the machine improvisation game?
 - The regulations made things harder.
 - The regulations slowed things down.
- Discuss student answers.
- **Deregulation Exit Ticket**
 - Tell students that COVID-19 also led to some deregulation of certain markets. Have students read the deregulation reading and complete the graphic organizer.
 - Reading:
 - But plenty of the waivers were related to granting more flexibility for the operation of businesses and their services too. The Department of Transportation provided regulatory relief to truckers in terms of working hours for transporting emergency good and services, for example. The Environmental Protection Agency eased enforcement of environmental obligations. The Alcohol and Tobacco Tax and Trade Bureau waived revenue laws to allow distilleries to produce hand sanitizer for sale. State governments waived regulations restricting restaurants from offering delivery and takeout of alcohol. Restrictions on single-use plastic bags were lifted. Certain localities delayed increasing their minimum wage.
 - Choose one example from the text that should remain deregulated. Why?

- Answers will vary but should identify one of the areas of deregulation and provide reasoning for that area to remain deregulated.

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Warm-Up Hypothetical Part 1

Directions: Use the space below to draw a picture of what you think of when you think about school. Include as many details as you can.



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Warm-Up Hypothetical Part 2

Directions: The drawings in Part 1 were maybe a little too descriptive. We like to display student work in the hallways, and some students drew or wrote some negative things. Students also wrote words on their drawings, some of which were offensive or misspelled. This time, draw what you think of when you think of school. You can only draw positive things, and you cannot use words.



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Vocabulary Preview

Directions: Read the definition of each vocabulary word and provide an example of each. Draw a picture or symbol to help you remember each definition.

| Word, Definition, and Example | Use the word in a sentence |
|--|----------------------------|
| <p>Deregulation: the removal of regulations or restrictions, especially in a particular industry</p> <p>Give an example of deregulation:</p> | |
| <p>Entrepreneurship: the process of discovering new ways of managing, organizing, or combining resources or of developing new products or services in the pursuit of profit within markets</p> <p>Give an example of entrepreneurship:</p> | |
| <p>Innovation: the process of devising a new idea, product, or way of doing things</p> <p>Give an example of an innovation:</p> | |
| <p>Regulation: a rule or directive made and maintained by an authority</p> <p>Give an example of market failure:</p> | |

- Given your experience with the warm-up, how do you think regulation affects innovation?

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Regulatory Reading 1

Following the emergency declaration, these labs had to go through a rigorous process of receiving Emergency Use Authorization for any tests they developed. These polymerase chain reaction (PCR) tests were well known, and labs would ordinarily have been able to use them without FDA approval, provided they were for noncommercial use. Yet the FDA explicitly introduced a higher hurdle than normal during the pandemic, because of the supposed higher risk associated with faulty testing.

—*Economics in One Virus*, p. 135

- According to the text, how did the FDA make it more difficult for COVID-19 tests to enter the market?

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Regulatory Reading 2

In setting the high sensitivity bar, the FDA was, in fact, putting insufficient weight on the two massive advantages of rapid testing that, combined, dwarf any sensitivity problem. First, given they are cheaper, the strip tests could be undertaken more frequently across a wider population for a given testing budget, meaning they would be more likely to identify asymptomatic cases at the time the person is actually infectious than if we relied on people seeking out a PCR test only when they suspected that they might be infected.

Second, because the strip test results are provided rapidly (in 15 to 20 minutes, sometimes at home, compared to one to three days for PCR tests at best), potentially infectious people can isolate themselves immediately and notify those they have been in contact with sooner. These advantages minimize the window of transmission between people becoming infectious and ultimately isolating—the time the person would likely be out spreading the disease.

—*Economics in One Virus*, p. 138-139

- How did FDA regulations affect the spread of the virus? Provide evidence from the text.

- How is FDA regulation of the development of COVID-19 tests similar to or different from the simulation in the warm-up or with the machine improvisation game?

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Deregulation Exit Ticket

But plenty of the waivers were related to granting more flexibility for the operation of businesses and their services too. The Department of Transportation provided regulatory relief to truckers in terms of working hours for transporting emergency good and services, for example. The Environmental Protection Agency eased enforcement of environmental obligations. The Alcohol and Tobacco Tax and Trade Bureau waived revenue laws to allow distilleries to produce hand sanitizer for sale. State governments waived regulations restricting restaurants from offering delivery and takeout of alcohol. Restrictions on single-use plastic bags were lifted. Certain localities delayed increasing their minimum wage.

—*Economics in One Virus*, p. 145

- Choose one example from the text that should remain deregulated. Why?
