CRITICAL THINKING: EMOTIONS VERSUS FACTS

3RS LEARNING SCENARIO

Author(s)

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Summary

This learning scenario aims at stimulating students to think critically about animal welfare in science. This critical thinking is induced by organizing a debate on animal welfare in the format of Play Decide, Socrates Seminar or Debate. A public website has been created to be consulted by teachers and guide them in the preparation and organization of the debate.

Key elements

Key elements	Suggestions
Subject	3Rs, debate, animal welfare, sustainability, critical thinking
Topic	Critical thinking - Debate on acknowledging emotions and facts
Age of students	15-18 years
Preparation time	1h, reading of website https://sites.google.com/labonderwijs.be/3rs/introduction
Teaching time	150 min - 250 min (depending on the amount of optional assignments that are selected from the lesson plan). According to the feedback received during the implementation of the learning scenario during the testing period from teachers, up to two additional lessons (45' each) might be needed in order to implement the learning scenario.
20 min	Warming up: Kahoot
30 min	• Optional: retrieving answers on kahoot questions
30 min	What makes an animal adorable/cute
30 min	Optional: resources + presenting to peers
90 min	Option A: PlayDecide Game
50 min	Option B: Preparing the Debate
50 min	The Actual Debate
50 min	Option C: Preparing the Socratic Seminar
50 min	The Actual Seminar
30 min	Closing question: "Time for action"

Key elements	Suggestions
10 min	Evaluation
Online teaching material	https://sites.google.com/labonderwijs.be/3rs/introduction https://create.kahoot.it/share/90a7ca5c-e0c6-41da-a36d-9079d7bde15b
Offline teaching material	Paper, pen, in case of selecting the PlayDecide assignment: placemats etc., printable on https://playdecide.eu/, in case of selecting the Kahoot: some smartphones/tablets/ computers and a beamer.
Resources used	Tech Insider, The science of cuteness, YouTube, 26 Dec. 2015, https://www.youtube.com/watch?v=MqX2IzzVAcU Ecsite, PlayDecide, 2018, Retrieved from *https://playdecide.eu* *Deborah Lamer, Introduction to the Debate, YouTube, 17 Mar. 2015, https://www.youtube.com/watch?v=WB3vEzu6gUo&t=35s,* LimaIndiaAlfaMike, STeP Structure of Debate, 25 Apr. 2016, *https://www.youtube.com/watch?v=juuiZPQ1ZWk&feature=youtu.be* Directive 2010/63/EU of the European Parliament and of the Council of 22 September 2010 on the protection of animals used for scientific purposes, *OJ L 276, 20.10.2010, p. 33-79, Retrieved from* https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32010L0063 Alternatives to animal testing, PETA, n.d., Retrieved from https://www.peta.org/issues/animals-used-for-experimentation/alternatives-animal-testing/ Facts and figures on animal testing, Cruelty free international, n.d., https://www.crueltyfreeinternational.org/why-we-do-it/facts-and-figures-animal-testing How many animals are used in experiments around the world?, the Lush Prize, n.d., https://lushprize.org/many-animals-used-experiments-around-world/ Animal Testing In China: Required For Foreign Cosmetics Companies, Suzana Rose, 11 Apr. 2019, Retrieved from https://www.crueltyfreekitty.com/cruelty-free-101/animal-testing-china/ Animals used for scientific purposes, n.d., Retrieved from https://ec.europa.eu/environment/chemicals/lab_animals/related_topics_en.htm Animals in research, n.d., Retrieved from https://www.beep.ac.uk/content/361.0.html

Key elements	Suggestions
	Gaia's 6 priorities for the end of animal testing in Belgium, 29 Jun 2015, Retrieved from https://www.gaia.be/en/news/gaias-6-priorities-end-animal-testing-belgium Good and bad arguments, n.d., Patrick Girard, Retrieved from www.futurelearn.com 15 logical fallacies you should know before getting into a debate, David Ferrer, n.d., Retrieved from https://thebestschools.org/magazine/15-logical-fallacies-know/ Pro and Con animal testing, ProCon.org, 5/9/2019, Retrieved from https://animal-testing.procon.org Letting go (en getting students to do the talking), Tricia Ebarvia, 1/12/2015, Retrieved from https://triciaebarvia.org/2015/12/01/letting-go-and-getting-students-to-do-the-talking/ Socratic Seminars: Making Meaningful Dialogue., Heather Clayton Kwit, 2013, **Making the Common Core Come Alive!** Volume II, Issue IV. 2013. Available at www. justaskpublications.com. Reproduced with permission of Just ASK Publications & Professional Development Backchannel Chat, LearnWeaver Pty Ltd, n.d., Retrieved from http://backchannelchat.com/Three Rs, CCAC, n.d., https://3rs.ccac.ca Good vs Bad arguments, Shy Obligar, 15/03/2014, Retrieved from https://prezi.com/gpiq5lwqz-oj/good-vs-bad-arguments/ Playdecide, BIK Youth, 16/08/2012, Retrieved form https://youtu.be/_pi97Akz5zw How To Do The Socratic Method, TeachLikeThis, 22/10/2013, Retrieved from https://youtu.be/_CPLu3qCbSU

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Aim of the lesson

- Students can illustrate the relation between science and society on an ethical and philosophical base.
- Students can illustrate the importance of scientific research in a healthy lifestyle.
- Students can create answers on sustainability problems concerning animal welfare.
- Students can think critically about emotions vs facts in animals used in science.
- Students can formulate well-build arguments in a critical debate.

Trends

Project Based Learning, Peer Learning, Playful learning, visual search & learning, BYOD, Open Source Learning.

21st century skills

The lesson plan corresponds to the 21st century skills, since it is created in order to make students think critically about the use of animals in science. To achieve this critical thinking, communication among students is necessary, that is what a debate is all about. Collaboration is important as well, if students want to support their colleagues in formulating an answer. Finally, creativity is important, because the debate is set up as a roleplay, in which students get a certain point of view from which they have to debate.

Lesson Plan

Name of activity	Procedure	Time
1.	Warming up: Kahoot Use the questions from this link: https://create.kahoot.it/share/the-3rs-project-critical-thinking-debate-on-emotion-and-facts/669d0127-4c37-4dc2-9a7a-b59d125fa4ee	20 min
1.b	Optional: retrieving answers on Kahoot questions See website for optional instructions via this link: https://sites.google.com/labonderwijs.be/3rs/1-warming-up/optional-instruction	30 min
2.	What makes an animal adorable/cute? See website for the instructions: https://sites.google.com/labonderwijs.be/3rs/2-what-makes-an-animal-adorablecute	30 min
2. b	Optional: resources + presenting to peers See website for optional instructions: https://sites.google.com/labonderwijs.be/3rs/2-what-makes-an-animal-adorablecute/optional-instruction	30 min
3.	Discussion: Animal testing / Emotions vs. facts	

Name of activity	Procedure	Time
	See website for the instructions: https://sites.google.com/labonderwijs.be/3rs/3-discussion-animal-testing-emotions-or-facts	
3. a	Option A: PlayDecide Game See website for the instructions: https://sites.google.com/labonderwijs.be/3rs/3-discussion-animal-testing-emotions-or-facts/3a-playdecide-game	90 min
3. b	Option B: Preparing the Debate See website for the instructions: https://sites.google.com/labonderwijs.be/3rs/3-discussion-animal-testing-emotions-or-facts/3b-debate	50 min
	The Actual Debate See website for the instructions: https://sites.google.com/labonderwijs.be/3rs/3-discu ssion-animal-testing-emotions-or-facts/3b-debate#h.p_k78t3Wg6JNxm	50 min
	The Actual Seminar See website for the instructions: https://sites.google.com/labonderwijs.be/3rs/3-discussion-animal-testing-emotions-or-facts/3c-socratic-seminar#h.p_ufo54LXaN_3l	50 min
	Closing assignment: "Time for action" See website for the instructions: https://sites.google.com/labonderwijs.be/3rs/3-discussion-animal-testing-emotions-or-facts/3c-socratic-seminar#h.p_Wnkrvl-rOH9C	30 min
4.	Evaluation See website for the evaluation: https://sites.google.com/labonderwijs.be/3rs/evaluation	10 min

Assessment

Please see Annex 1.

Students' and teachers' feedback after the implementation of the Learning Scenario during the Pilot phase of the project

Student feedback

- This Learning Scenario has received mixed feedback when it comes to the level of difficulty, but very positive feedback on how students enjoyed the debate and the activities, prompting the teachers to use even more creative questions.
- Students emphasized on how this lesson made them think topics and issues they had never considered in the past and on the importance of science.

Teacher's remarks

- Due to the lack of time, some teachers discussed the topics in the classroom and did not divide students in groups.

- Certain teachers chose to divide up to two additional lessons in order to implement the scenario.
- Due to the general interest about the topic, some teachers chose to add materials like infographics in order to inform the other students and teachers about the project.
- On some occasions, teachers had to dedicate more time reviewing the recommended resources in order to be more prepared and avoid losing time researching and explaining their content in class.
- Some teachers suggested that more time should be allocated to the Padlet and Kahoot activities specifically.

About 3Rs project

This Learning Scenario has been created in the framework of the 3Rs project. The 3Rs project is building learning activities for secondary schools to introduce the principles of the 3Rs - the Replacement, Reduction and Refinement of animal use in science. Students will develop their critical thinking and science literacy skills by exploring topics such as ethics in science, how the European Union is protecting the welfare of laboratory animals, and what high-tech non-animal tools are available as alternatives. The learning activities are available for teachers in a Massive Open Online Course (MOOC), organized by the European Schoolnet Academy.

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ANNEXES

Self -assessment: Critical thinking: Emotions vs. facts

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I can illustrate the relation between science and society on an ethical base.				
I can illustrate the importance of scientific research in a healthy lifestyle.				
I can create answers on sustainability problems concerning animal welfare.				
I can think critically about emotions vs facts in animals in science.				
I can formulate well-build arguments in a critical debate.				