Apply your learning!

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Introduction and learning outcomes

Having worked through the last five units, do you feel better equipped when approaching non-fiction texts or talks? Recall your learning about

- What critical thinking means and how to develop your questioning skills (Unit 1)
- How to approach different types of non-fiction text and analyse the author's purpose (Unit 2)
- How to recognize and produce arguments (Unit 3)
- How to tell facts from opinions, identify cause–effect relations and fallacies (Unit 4)
- How to recognize biases and assumptions, and reflect on your own biases and assumptions (Unit 5)

If you want to become a good critical thinker, you need to use the knowledge gained and practise the skills you have learned. Therefore, this last unit encourages you to apply your learning by preparing you to analyse and evaluate argumentative text and speech, as analysis and evaluation are essential skills for a critical thinker. You will be asked to revisit the major concepts learned in the previous units and rely on the knowledge and skills you have learned there.

At the end of the unit, a set of questions will guide your reflection on your overall learning in this course.

  Energizer

Before you jump into your first text analysis and evaluation, we want you to reflect again on the usefulness of questioning and critical thinking to your life and work as a student. Watch the following video about a presentation by Dr Fisher-Katz, who is speaking here at a science communication workshop about her research to undergraduate students who are taking part in the 2012 Research Experiences for Undergraduates (REU) programme at a US university.

First watch this short video sequence in which Dr Fisher-Katz is introduced to the audience. Please note that you shouldn't watch the whole video for now, but just the sequence (duration approx. 30 sec) we have preselected for you.

Video 'Undergraduate Students Unwittingly Subjected to World's Worst Research Presentation' (1)

What do you think is the purpose of Dr Fisher-Katz's talk? What do you expect the students want to learn from this talk? Make short notes about your thoughts!

Now watch this next sequence that again has been preselected (duration approx. 1.5 min).
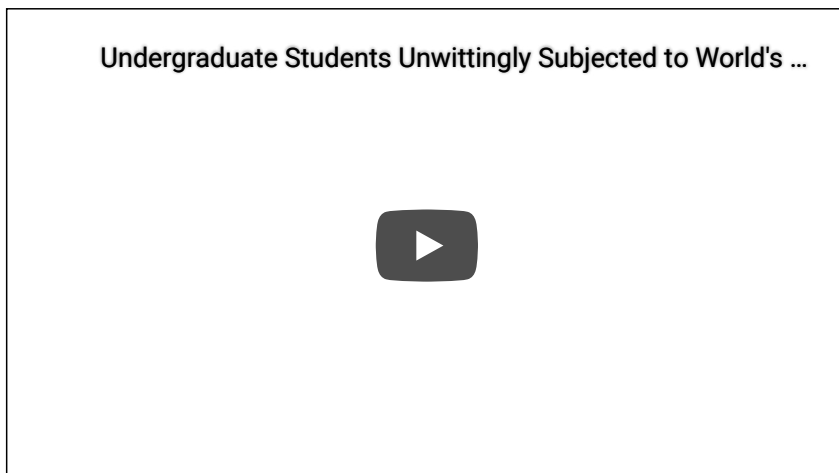
Did you get the gist of the talk? Do you think the students 'got it' as Dr Fisher-Katz assumed? What kind of question did the student ask about MOSFETs? How do feel about Dr Fisher-Katz's response to it? Do you think the presentation satisfied the reasons why the students went to the science communication workshop?

Now watch this last sequence (duration approx. 1 min)!

Undergraduate Students Unwittingly Subjected to World's ...

We hope you enjoyed this short warm-up exercise and you don't feel as lost in our course as the students in the video. And please be assured – **your** questions are always welcome!

Find arguments in support and against a statement

Practical activity

Consider the following statement: *Online learning is preferable to face-to-face learning.*

Do you agree? Do you disagree? Do you feel that it depends on the context or situation? How many good arguments in support of the statement can you find? How about counterarguments (arguments against this statement)? If you aren't sure how good arguments look like, revisit Unit 3.

Regardless of where you yourself stand on this issue at the moment, think of what someone would give as reasons in support of the statement or against it. If your arguments or counterarguments are only valid in a certain context, it's useful to describe the factors which support or counter the argument. This activity can help you whenever you want to make informed decisions.

Now try to find reasons for both positions. Take about 10 minutes to write down your arguments and counterarguments in the table below.

Online learning is preferable to face-to-face learning.

Arguments for: *I agree with this statement for the following reasons:*	Counterarguments / Arguments against: *I disagree with this statement for the following reasons:*

Now look at the reasons below, and compare them to what you have written. Are there any reasons you didn't think of on either side of the table? How would you choose now if you had to make up your mind between enrolling on an online course or a face-to-face course on the same subject?

Reveal   Hide

Online learning is preferable to face-to-face learning.

Arguments for:
I agree with this statement for the following reasons:

- I can access the lesson from wherever I can connect to the internet (depending on internet connectivity)
- I can be flexible in terms of time – no pressure to be somewhere at a given time
- I can save resources – time, fuel, money – by not having to travel to the school
- I can repeat the lesson as often as I want
- I will learn to be autonomous

Counterarguments / Arguments against:
I disagree with this statement for the following reasons:

- I would feel isolated from other co-learners and the tutors
- I will be on my own with my computer and I will have no human contact
- I have to figure out things on my own – if I struggle to understand something, there is no prompt help from tutor or peers
- I won't get prompt feedback
- I may never be sure of my knowledge or abilities without face-to-face feedback

Reflect on your arguments

Reflective activity

Go back to your list of arguments on online versus face-to-face learning and your comparison with the list of reasons we gave you. Think the following questions through:

- How do you think your experience of learning with this self-study programme influenced your stand on the issue raised above?
- How do you think someone's preferred learning mode could influence their argumentation? Consider different modes such as learning individually or in a group, by reading and making notes, by listening to others or debating ideas.
- How could someone's lifestyle affect the opinion on the issue - where they live, ease of or preference for travel, coping with deadlines, punctuality, etc.?
- Could you decide clearly whether you are for or against the statement? Or is your opinion on the issue not so clear-cut since the preference for online or face-to-face depends on the context?

Recall what you learned in Unit 5 about biases as you reflect on the above questions.

Note your thoughts down. Post your ideas in the discussion forum if you'd like to share them with your fellow students.

Tackling a complex argument

Read the text below. First read it quickly, without stopping, to get the gist of it. Decide how similar or different the author's thinking is from your thinking in the introductory activity.

You can download a handout if you prefer.

Online learning versus face-to-face education

Have you ever tried online education? If you have, did you find it effective? Nowadays, online courses are increasingly popular all over the world. Huge numbers of students take online courses. Universities and colleges offer online education. Should our college change from providing traditional face-to-face education to providing a modern online education? I think that students need a face-to-face education system. There are three reasons why face-to-face education is better than online study. Students can access their teacher easily, students can connect with classmates, and students can learn a sense of responsibility for their studies.

The first reason why face-to-face education is better than online education is that students can connect with the teacher easily. For example, students need to go to school, and meet their teacher continually. Therefore, if students have any questions, they can ask the teacher immediately, and they can figure out their answer easily. Also they can discuss and share their opinion and suggestions, so that the teacher can give them advice to improve their learning. Connecting easily with a teacher is important to studying effectively. Therefore, face-to-face education is a better system for students.

The second reason why face-to-face education is better for students than online education is that students can connect with classmates easily. Making friends is one of the benefits of studying inside a classroom. Working with friends makes a class more interesting. It's true that students can make friends online, but it's not the same. By doing it "person to person ", they can make a real friendship and they can know someone better than they do through the Web. In addition, students can learn from classmates. It's convenient to attend classes because they can improve their studies in a better way. Making friends and learning from classmates by taking face-to-face classes is important because it can improve the quality of study when compared to online learning.

Opponents of face-to-face education say that students who are getting an online education don't have to go to the school. Therefore, it may be a convenient system because students can spend their time studying or working at home instead. However, students need to go to school to learn responsibilities similar to those in the workplace. The face-to-face option gives students a sense of responsibility to study. If a student studies online, he/she doesn't have to attend the class at a specific time. Keeping schedules is one of the most important features of the workplace. Students can learn about this responsibility by taking face-to-face classes.

In conclusion, there are many good reasons why face-to-face is better than online for study. Recently, many students have tried to choose the new type of education. However, the traditional face-to-face method makes our study more useful and helpful because students can not only connect with the teachers and classmates but also learn important responsibilities for their future in the workplace. The most advanced way is not always the best, and students should choose the way which is the best for them to study.

Now, re-read the text with a mind to answer the questions below, which will guide you to analyse and make judgements about the author's thinking. After you have provided your own answers to the questions, reveal the hidden answers proposed.

1. What kind of thinking does the author want us to engage in? What key questions does the text address?

Recall the text frames introduced in Unit 2, section 'Recognizing a text which fits my needs', to guide your thinking about the text's purpose.

[Reveal] [Hide]

The author wants us to think like a judge, and to accept his/her viewpoint on online education, which in the author's view is not as good as face-to-face education. The author is trying to convince us that students need face-to-face education.

The directly stated key question is whether the author's college should change from providing a traditional face-to-face education to providing a modern online education.

2. What claims does the author make? Are they well supported by the premises?

Recall or revisit Unit 3 'Arguments and reasoning' when you try to identify the claims and their related premises.

The author claims that face-to-face education makes studying more useful and helpful than online education. The author accepts that online courses are increasing in popularity all over the world, and that huge numbers of students take online courses. The author's premises based on which he/she concludes this claim are: in face-to-face education students can approach their teacher easily, students can connect with classmates, and students can learn a sense of responsibility to study.

No explicit claim is made concerning the key question: whether the college should change from providing a traditional face-to-face education to providing a modern online education. However, it can be inferred that the author would not support this change.

The author makes two new claims in the final paragraph:

1. The most advanced way is not always the best.
2. Students should choose the way which is the best for them to study.

However, these claims are unfounded (not well-supported by premises) and not clearly connected to the major claim.

3. What are the most important facts, experiences, and/or opinions the author uses to support his or her ideas?

Recall Unit 4, especially the section on 'Facts and opinions'.

The verifiable facts are that online courses are increasingly popular all over the world.

In the author's opinion, making friends is one of the benefits of studying inside a classroom; working with friends makes a class more interesting; keeping schedules is one of the most important requirements of a workplace; and students can learn about responsibility by taking face-to-face classes.

The author fails to provide any data or personal experiences to support any of these opinions.

4. What is the author's point of view, i.e. through whose eyes is the author viewing the topic? What may his/ her biases be?

Recall Unit 5 'Perspectives and biases'.

What assumptions does he/she seem to be making?

Assumptions are unstated beliefs which are not made explicit because they are thought to be widely-accepted views.

The author seems to be looking at the issue from a student's perspective; who values classroom interaction and preparing for the workplace. He/she probably does not have difficulty reaching the college, and is likely to be interested in making friends at college.

Some of the assumptions he/she seems to make are:

- When a student asks a question, if the teacher responds promptly, this helps the student understand better than a delayed answer provided online.
- Friendship is important for students.
- The time saved by not going to school is spent by students studying or working at home.
- Online courses do not teach students to be responsible for their study.
- Online courses do not necessitate online presence at a specified time, hence punctuality cannot be practised in online courses.
- One of the roles of attending school is to prepare learners for the workplace.

5. What logical implications are likely if people do or do not follow the author's line of reasoning?

If people follow the author's line of reasoning, then provided students want easy access to their teacher and real connections or friendship with classmates, as well as aim to learn a sense of responsibility, they would attend face-to-face courses rather than online courses. Also, the college would not change from providing a traditional face-to-face education to providing a modern online education.

If people do not follow the author's line of reasoning, face-to-face courses would probably not be given preference over online courses, and the college would probably change from providing a traditional face-to-face education to providing a modern online education, or at least a combination of the two forms of education.

6. How relevant are the author's points? Does he/she stay focused on the purpose or the question being addressed? Is the information presented clearly connected to the purpose or question?

Provided we accept that the author mainly argues in favour of face-to-face education as opposed to online education, the premises are relevant. The author stays focused on proving his/her point most of the time. However, in the last paragraph, he/she concludes something that has not been discussed: 'The most advanced way is not always the best, and students should choose the way which is the best for them to study'. These claims are not clearly connected to the major claim, and no premises are presented for them.

Further practice

Practical activity

Use the questions above (1–6) to analyse and evaluate the thinking in this video (duration approx. 2 min) which showcases the Executive Secretary of the UN Framework Convention on Climate Change (UNFCCC) Christiana Figueres talking about attitude changes towards climate change at the World Economic Forum.
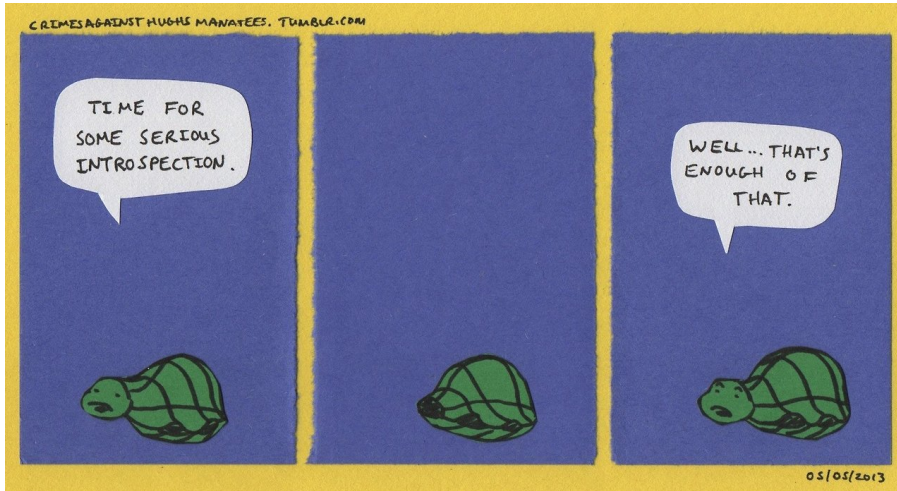
Note your thoughts down. Post your ideas in the discussion forum if you'd like to share them with your fellow students.

Video 'How do we change our attitude towards climate change? | Christiana Figueres' (1)

Final reflections

Comic from Crimes Against Hugh's Manatees by Hugh D. Crawford (1)

 Reflective activity

Use the following questions to guide your reflection on your learning in this course. Write your thoughts down. Your lecturer might even prepare some space to discuss your and your fellow students' thoughts in the classroom.

Thinking back

- How much did I know about critical thinking before I started the course?
- What were my goals for this course? Did my goals change on the way? Did I achieve my goals?
- What processes did I go through to complete the tasks?
- In what ways have I improved from one unit to the next?
- What challenges did I encounter and how did I overcome them?
- What resources did I use in addition to what was provided in the course on the platform? Which ones were helpful?

Thinking about feelings

- How do I feel about this course? What parts of it did I particularly like or dislike, and why could that be?
- What was satisfying about either the process (going through each activity of each unit, step by step) or about the products (the completed tasks)?
- What did I find frustrating?
- What did I learn about myself during this course based on my emotional responses? What does completing this course reveal about me as a learner?

Thinking about others

- Did I do my work the way other people did theirs? In what ways did I do it differently or similarly?
- What is something I particularly want people to notice when they look at my completed tasks?
- What did my classmates particularly notice about my work when they looked at it or listened to me share it?
- If someone else were looking at my completed tasks, what might they learn about who I am?
- If I were the tutor, what comments would I make about my completed tasks? How would I grade them? Why?

Thinking ahead

- In what ways do I need to improve? What would be the one thing I would like to improve?
- If I were to do this or a similar course again, what would I do differently?
- What is one goal I would like to set for myself as a follow-up to this course?
- What is the one thing that I noticed in my colleagues' work or learning process that I would like to try in the future?
- What things might I want more help with from my tutor? How would I present my work to a tutor so that they understand where I need help?

 Note your thoughts down. Post your ideas in the discussion forum if you'd like to share them with your fellow students.

References and further resources

References by course pages

Introduction and learning outcomes

1. Video 'Undergraduate Students Unwittingly Subjected to World's Worst Research Presentation' by NanoNerds (2012), licensed under Standard YouTube License, accessed 30 January 2018
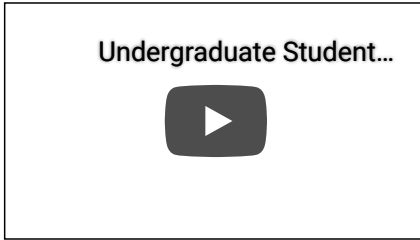
Further practice

1. Video 'How do we change our attitude towards climate change? | Christiana Figueres' by World Economic Forum (2016), licensed under Creative Commons Attribution license (reuse allowed), retrieved 30 January 2018
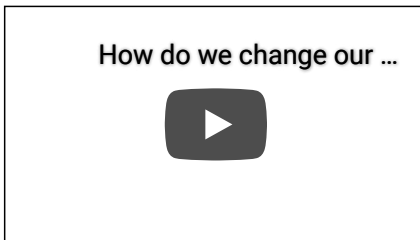
Final reflections

1. Comic from Crimes Against Hugh's Manatees by Hugh D. Crawford, http://crimesagainsthughsmanatees.tumblr.com/image/160353870952, licensed under CC BY-NC-ND 3.0, retrieved 16 March 2018

End of the course

1. Comic 'Probably all in the mind' by Luke Surl, http://www.lukesurl.com/archives/comic/565-probably-all-in-the-mind, licensed under CC BY-NC-SA 4.0, retrieved 16 March 2018

## Further resources

Face to face education, http://gwr3fall2009.wikispaces.com/Blue+Group%27s+FINAL+DRAFT (accessed on 12 Jan 2018)

Edutopia's 40 Reflection Questions - Section 3: Reflection, https://betterlesson.com/lesson/resource/3047109/edutopia-s-40-reflection-questions (accessed on 12 Jan 2018)

End of the course

Congratulations you have reached the end of the course! We want to thank you for your ongoing commitment to learning and improving your skills. We hope you enjoyed this course and it will help you with your studies, in your daily life and your work.
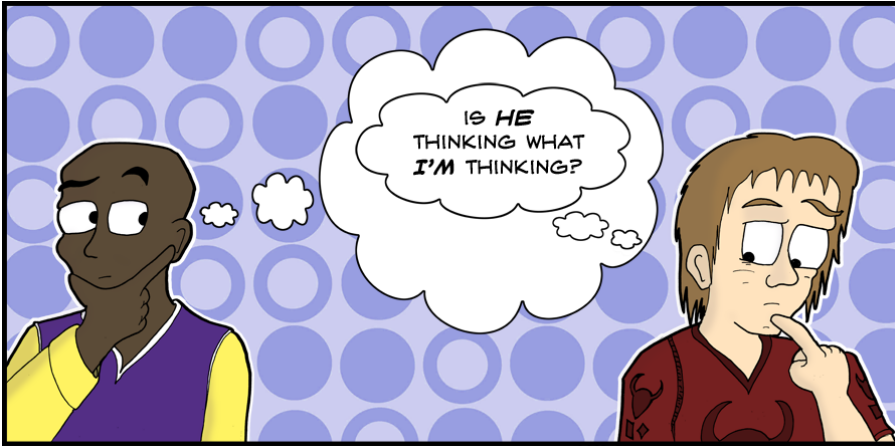
'Probably all in the mind' (1)

And don't forget to practise your critical thinking skills! There are more than enough opportunities for a student and responsible citizen.

All the best!

Your INASP online course development team