

## Teaching and Learning Critical Thinking

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At a job interview, I was asked how I would teach overseas pre-sessional students critical thinking and my reply was “riddles, jokes and games, with examples”. You will see some examples in the following “exercises.” I think I got that job but I can't remember for certain.

Thinking, is a very difficult to thing to teach. Perhaps I should say it is difficult to know I have taught it successfully. Thinking goes on in your brain, which is working quite literally, in total darkness, with input only from your five senses, from before your Mother gave birth to you. If you learn something it might have been our teaching or you may have done it all alone.

All the students need is examples and practice so these “lessons” are just silly, unusual or obscure and hopefully interesting questions which all students can practice on. They are not academic discipline specific, no correct answers are required and they could be named “performative research”. Performative research is close to Learning by doing and thinking, I think.

This is the first and **only “Lesson”**. It is a **pre-requisite for all the other lessons**. After students have successfully completed this lesson, that is they understand it, they will be able to critically think about any other topics.

#### The Only Lesson

**Part 1** What is critical thinking? Critical thinking is **questioning**, what we detect with our 5 senses and what we (our brain) calculates, and believes until it learns something else it believes.

#### Questions

- You are sitting in the train waiting to go to Paris and it starts to move. **Is it moving?**
- The new neighbours are very pleasant to you but you often hear lots of shouting. One day you hear a loud crash, a man shouting, the front door slamming and see the husband rush off. You go round and knock on the door and the wife answers it with tears on her cheeks and red eyes. **What happened?**
- Your supermarket starts to sell its own “budget brand” cereals so you decide to try them because they are 90 pence instead of a pound. Your friend tells you it is not worth it because they will not taste the same. When you put the shopping away, you notice the budget brand packet is slightly smaller so you look at the weight. Your usual brand in the slightly bigger box is 360 gm and the budget brand is 500 gm so the budget brand is over 25% cheaper. You think the budget brand tastes different, but when you give them to your ten-year old next day she doesn't notice the difference. Your and your friends family are going to your holiday home for the weekend, this evening. You put the budget brand into the pricier brand's box and you all have them for breakfast the next morning and nobody notices the different taste. **Is 25% a worthwhile saving?**

**Now find someone to discuss your answers, thoughts and ideas with.**

Chat to another student, your Mum or anyone else interested in what you are doing. Self-study does not mean you have to work in isolation. You don't even have to use English **although it helps if you are going to study in English.**

**Now you may look at the “model discussions.”**

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### Model Discussions

Did you ask more or fewer questions? Did you discuss any of the same ideas? Did you discuss any different ideas? Each matter can be given marks, just for fun. Repeat for each. The third model discussion ends with another question. This is normal in academia because answers usually lead to **further critical thinking**. This leads in to the next part of the “lesson”.

- **You are sitting in the train waiting to go to Paris and it starts to move. Is it moving?**
  - If the doors are still open or people are calmly talking we may instantly realize it is the train next to us that is moving. If it is the terminus and we have been waiting a long time, or if we are concentrating on a story or our i- phone, our reaction may be different. If there is a sound, such as an engine being connected, or a gust of wind our reaction may be different. **Or it may be moving** the woman talking on the platform is in love and she hasn't noticed.
  
- **The new neighbours are very pleasant to you but . . .**
  - If you are studying social care, or psychiatry, if your parents have quick tempers, whatever your past experiences, you may be wrong. The woman is cooking and dropped a nest of saucepans. The man shouted to see if she was alright. He slammed the door because he was going to meet their daughter coming home from university. The woman was crying because she was peeling onions. She may apologize for the shouting because her husband is a little deaf and forgets he is shouting. The front door may have slammed because the back door was open to let out the onion smell. The scenario you have been given may be trying to make you have “dramatic ideas” about a fight even though it is factually correct.
  
- **Your supermarket starts to sell its own “budget brand” cereals so . . .**
  - You are price conscious but you may be wealthier than your friend. She is going to **your** holiday home. Maybe your friend is concerned with quality or status or appearance. Neither of you noticed the small difference in the size of box in the supermarket. Some of these points may be subjective – there is so much we do not know. When you get home, you find that the cereal contents, does not match the boxes. The larger box has less cereal. Your friend mentioned the taste and when you tasted the cereal, it did taste different. You put the cereal in a different box, perhaps because you didn't want your friend to think you were giving her cheap cereal. Nobody else noticed the different taste, including your friend. Only you noticed the different taste and only you knew the cereal was different before you tasted it. Is the 25% saving worth having?

**Part 2** Now you know what critical thinking is do a little more practice with the following **WHY** questions.

**The brand of toilet roll** you buy is sometimes difficult to tear off, and difficult to find the perforations. One day you drop the roll (you do not have a holder on the wall) and it unrolls. When you are rolling it up, it is two-ply, you notice the perforations are in a different place on each ply. You are curious how this could happen. Weeks later, you find the paper easy to tear off. When you look at the roll you see that the perforations are in exactly the same place on both plies. **Why can this happen?**

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Which is the heavier of these two; a ton of coal or a tonne feathers and **why?** From a school teacher?

### The accident

A man was driving along the motorway with his son when a lorry jack knifed causing a multiple car crash. The man's car somersaulted into a wooden fence beside the motorway and he was killed outright. The child was impaled to the seat by a long piece of wooden fence but it didn't hit any vital organs. The emergency services removed the boy, still pinned to the seat and the air ambulance flew him to hospital to be removed from the seat. When he was carried into the operating theatre the surgeon look at him and gasped "my son". **Why?**

### Part 3 Now here is a question which is closer to a "university style" question.

Read about **one** of the famous historical characters named in the list below and answer the following question.

**Consider if the person/people deserve their fame or not and give the reasons why stating if they should be famous for some other achievement and/or why?**

Write your answer as an essay of more than 470 words (read "essay writing" on this website if you haven't already). It is **strongly recommended** you concentrate on reading, critical thinking and making notes of your ideas and questions. When you know "~~your opinion~~" what you think, **then** start to write.

You can use any source such as an encyclopedia or on line search for *this* task. I use Wikipedia or "wiki".

### Your list of famous historical characters

Alan Mathison Turing	Charles Babbage	Christiaan Neethling Barnard
Edward Jenner	Florence Nightingale	Frank Whittle
John Logie Baird	Otto Lilienthal	Philo Taylor Farnsworth
Sir Alexander Fleming	The Wright Brothers	Werner von Braun

If you find this activity helps you critical thinking, choose another person and repeat the practice.

**A more than 470 word essay about the person (Helen Keller, not on your list) is available as a sample see Critical Thinking 01 sample.pdf**