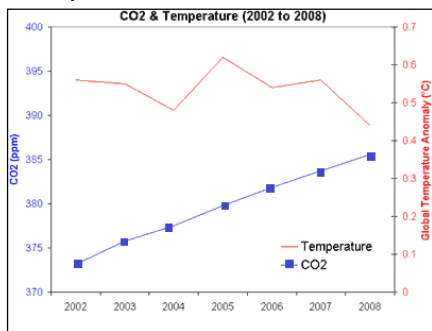


## A teacher's reflection on cultivating students' critical thinking skills

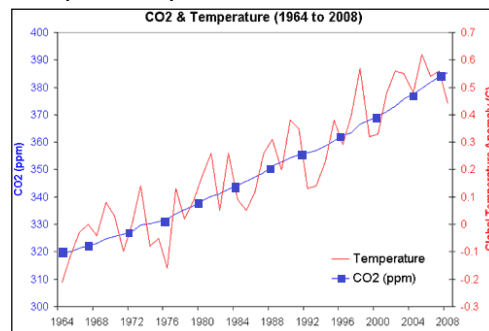
As a teacher, developing students' critical thinking skills is one of my main concerns. With the help of information technologies, I can incorporate in the learning and teaching process different kinds of data and information (such as graphs, statistics, current affairs programs, news articles and animated news clips from newspaper websites) to increase students' engagement and motivation to learn. In an Integrated Humanities test, an answer script on one of the data-based questions triggered my reflection on my pedagogical practices.

### Test Question

The two graphs below show CO<sub>2</sub> ppm and global temperature anomaly changes for the years 2002-2008 and 1964-2008, respectively.



Graph 1



Graph 2

In your opinion, what messages do these graphs send to a responsible citizen? How would these messages influence his/her lifestyle?

### A student's answer script

There are many explanations for global warming. Human activities are negligible. As shown in graph one, there is no correlation between CO<sub>2</sub> and global temperature changes. There are many reasons for global warming. CO<sub>2</sub> emission from factories is just one of them. As displayed in graph two, CO<sub>2</sub> increases, and there are ups and downs in the temperature. While there is a general trend of rising temperatures, the span of years shown is very short. Obviously, this is a conspiracy put forward by developed countries to restrain developing countries from sharing the resources of the earth. We will fall into their trap if we impose unnecessary restrictions on ourselves. Economists say that consumption is good for development and that extravagance can boost the economy!

Obviously, the answer shows that the student has placed more emphasis on interpreting the information favourable to his/her viewpoint, and tended to distort information that is unfavourable. There are diverse views on the causes of global warming. Some people hold the view that global warming has nothing to do with human activities, whereas many others hold opposite views on the issue.

I found myself asking the following questions;

- Does my teaching help students grasp different facets of the issue?
- Is it possible that I might have taught them to look for information that favours their viewpoints?
- Should more time be spent teaching students to review their viewpoints when new sources of information emerge?
- Are group discussion and debate good pedagogies for cultivating critical thinking skills?
- Like many experts, should I emphasise that “most of the time, we know just a portion of the issue but not all of it”?
- How is “open-mindedness” nurtured?
- Have I provided adequate and appropriate feedback to students’ answer to help him/her enhance critical thinking skills?

After sharing my reflections with the subject team, we considered that we need to return to the basics of critical thinking, that is, reminding students to ask, whenever appropriate, some fundamental questions relating to the information and data. These questions help cultivate critical thinking in the learning process and provide a framework for students to assess the trustworthiness of information before making further enquiry into the issue:

- What claim(s) does(do) the information provider want to make with the information?
- What evidence supports the claim(s)?
- Is the evidence solid and sound? Are there any counter examples?
- What are the assumptions behind the claim(s)?
- How do personal perspectives, including those of students, affect the selection and deployment of information?

If you are interested in generic skills and their integrative use, read also Examples 6, 11 and 12.