

Knowledge claims and knowledge questions

Knowledge claims

In TOK there are two types of knowledge claims.

- Claims that are made within particular areas of knowledge or by individual knowers **about the world**. It is the job of TOK to examine the basis for these first-order claims.
- Claims that are made **about knowledge**. These are the second-order claims made in TOK that are justified using the tools of TOK which usually involve an examination of the nature of knowledge.

Here are some examples:

- "There are an infinite number of prime numbers." This is a first-order knowledge claim because it resides firmly inside the area of knowledge mathematics. It is established using the method of mathematical proof.
- "Mathematical knowledge is certain." This is a second-order knowledge claim because it is about mathematical knowledge. We establish this by examining the methods of mathematics themselves using the tools of TOK.

Both types of knowledge claims might be found in TOK. The first type will feature in examples offered in the essay and presentation illustrating the manner in which areas of knowledge go about the business of producing knowledge. The second type will constitute the core of any piece of TOK analysis.

Knowledge questions

TOK is primarily concerned with knowledge questions. This phrase is used often in describing what is seen in a good TOK presentation or a good TOK essay. An essay or presentation that does not identify and treat a knowledge question has missed the point. It also occurs in the assessment descriptors that examiners use to mark the essay and that the teacher uses to mark the presentation. To put it briefly, the whole point of the presentation and essay tasks is to deal with knowledge questions.

Knowledge questions are questions about knowledge, and contain the following features.

- Knowledge questions are questions **about** knowledge. Instead of focusing on specific content, they focus on how knowledge is constructed and evaluated. In this sense, knowledge questions are a little different from many of the questions dealt with in the subject classrooms. In this way, they are considered second-order questions in TOK.
- Knowledge questions are **open** in the sense that there are a number of plausible answers to them. The questions are contestable. Dealing with open questions is a feature of TOK. Many students encountering TOK for the first time are struck by this apparent difference from many of the other classes in their school experience. Many find the lack of a single "right" answer slightly disorienting. Nevertheless, knowledge questions underlie much of the knowledge that we take for granted. Much of the disagreement and controversy encountered in daily life can be traced back to a knowledge question. An understanding of the nature of knowledge questions can allow a deeper understanding of these controversies.

- Knowledge questions should be expressed in **general** terms, rather than using subject-specific terms. For example, instead of a question focusing on a specific model in development economics, such as the Harrod-Domar model, a knowledge question might focus on the reliability of modelling as a method of gaining knowledge in economics.

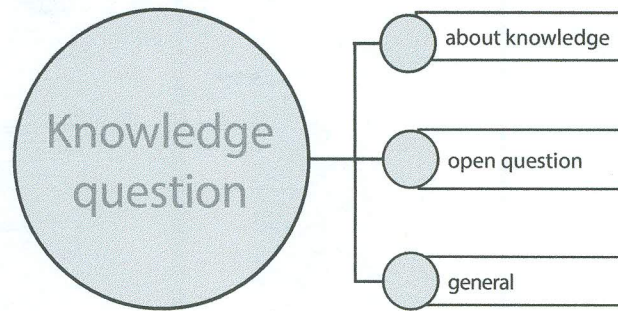


Figure 3

It might be worth considering and discussing with students why questions of knowledge are open and therefore so interesting. Why is it that the typical TOK question does not have one straightforward correct answer? Students might find themselves facing this sort of question in class. Perhaps a typical response might start with "it depends what we mean by ...". In other words, the first task in trying to answer a TOK question is to establish an understanding of the key concepts involved. There may be a number of different ways of thinking about these concepts. Each might give rise to a different analysis and ultimately a different answer to the question.

It is inevitable that personal perspectives will play a part in the judgments made in any analysis. The intellectual resources that each of us has to draw upon might well be different and lead us to different or even diametrically opposed conclusions.

The possibility of a lack of unanimity in answering TOK questions can be initially challenging for students. After all, in mathematics a student getting a different answer to his or her neighbour can be a cause for concern, prompting the thought that one or other has made a mistake. In a TOK question it is perfectly conceivable that the answers differ. What is important is that the analysis is thorough and that there are good reasons to back it up. It is possible that both conclusions are true. It is tempting to explain the plurality of good answers to knowledge questions in terms of a type of truth relativism: "it is just a matter of perspective". A more likely explanation is that different interpretations of key ideas account for the different conclusions or that the weighting of different factors in the argument differ.

Knowledge questions are general questions about knowledge

Another challenging aspect of TOK is the requirement that a knowledge question is somehow more general than the particular examples which illustrate it. This requirement springs from the idea that TOK deals with second-order questions.

For example:

- In physics, one deals with questions about the material world. In TOK, we ask questions about knowledge in physics. How can the physicist be sure of his or her conclusions given that they are based on hypothesis and experiment? The student in TOK is not talking in physical terms because he or she is not talking about the physical world but the discipline of physics. Therefore, it is necessary to use a different, more generalized vocabulary. The physicist uses terms like particle, energy, mass and charge. In TOK, the student uses terms such as hypothesis, experimental data, interpretation, anomaly, induction, certainty, uncertainty, belief and knowledge. So knowledge questions should employ these terms, not the terms of physics.

This distinction can be seen in the following diagram.

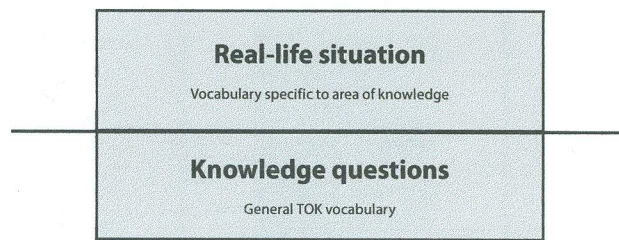


Figure 4

Examples of knowledge questions

You can find knowledge questions underlying almost any issue. They are sometimes difficult to formulate precisely but they often lurk underneath popular and often controversial subjects that are discussed in the media, for example. It is a very useful exercise to try to tease out knowledge questions underlying articles in the media.

Here are two examples of a topic that has been discussed in newspaper articles and possible knowledge questions associated with the topic.

Example 1: Future population growth in Africa

- Not a knowledge question: "How can we predict future population growth in Africa?" This is not a knowledge question because it is a technical question within the discipline of population studies.
- Good knowledge question: "How can a mathematical model give us knowledge even if it does not yield accurate predictions?" This is now sufficiently general and explores the purpose and nature of mathematical modelling.

Example 2: The placebo effect and its impact on the medical profession

- Not a knowledge question: "How does the placebo effect work?" An answer to this might involve a technical explanation in psychology. This therefore sits above the line in figure 4.
- A good knowledge question: "How could we establish that X is an 'active ingredient' in causing Y?" This question is actually a rather general one about how we can know about causal links. It is a classic knowledge question.

Knowledge questions and assessment

Knowledge questions are at the heart of the assessment of TOK. The presentation and the essay both deal with knowledge questions.

The diagram in figure 4 can help explain the two assessment tasks in TOK. The TOK presentation starts above the line with a real-life situation described in "real-life" terms. At a certain point in the presentation the student is required to identify the underlying knowledge question (below the line). This is then explored using the language of TOK and a conclusion is reached which is translated back into real-life terms.

The TOK essay follows a path that is in some sense a mirror image of this. The prescribed titles for the essay are expressed in rather general TOK language; they sit below the line. The student is required to identify knowledge questions connected to the prescribed title. The student must then give them some concrete form by finding examples (above the line) which illustrate them. These examples are explored using the tools of TOK (which might require some excursions back below the line). Finally, a general conclusion to the essay will be located in TOK language below the line.

More details and guidance on the assessment tasks can be found in the section "Assessment details".