Designing a Question for Research or Investigations: Guidelines for Teachers

Many subjects within the SACE have an investigation or other assessment type which involves research. This research can be in the form of practical or technical investigations, formal research, or exploratory enquiries. The design and development of a research question is an important element of all investigations in that it helps to:

* define the investigation
* set the parameters
* provide opportunities for a wide range of research methodologies
* provide structure and direction for the student.

adapted from O’Leary (2004)

## Getting started

Some students find it difficult to get started on an investigation. It is useful for them to initially decide on a topic before developing a research question from this area of interest. When identifying an appropriate topic it is important for students to consider broad topics which interest them and they would like to know more about. In the initial search for a topic, depending on the subject, students may be encouraged to think about:

* learning and activities at school (subjects, extra-curricular activities)
* activities outside school (hobbies, sports, part-time job, volunteering, interests)
* contemporary issues
* personal experiences
* creative arts (music, film and other forms of entertainment).

Students may find it useful to do some preliminary reading and research about areas that interest them. Reading will help students gauge the level of information already available and identify gaps which their investigation could attempt to address. Visualising a topic in a mind map can help students to develop their ideas for a topic and focus on a particular element that can be developed into a question.

Problems – crime, drug and alcohol use

Boarded up, graffiti

Impact on the environment

Empty housing

Lack of services in the community

Environmental Issues

Flooding

Impact on the people

**What interests me?**

Low quality housing

Unemployment

Flood management strategies

In my community

Social Issues

Cost

## A framework for developing the question

There are some important factors which students should consider when making decisions about an initial topic. These will become significant as the students begin to develop a research question from their broad area of interest. It is essential that:

* the chosen topic provides opportunity for students to provide evidence of their learning at the highest possible standard for each of the applicable assessment design criteria
* the topic is sufficiently narrow to develop into a question
* the topic meets each of the criteria identified in the flowchart below.

Some initial investigation through reading or researching about the topic may give rise to questions that students want to answer.

**TOPIC**

**Feasible**

* Can it be researched?
* Can it be managed in the time available?

Students can use these questions as a basis for developing the main question for investigation.

**Interesting**

* Is it challenging?
* Will it provide opportunity for new learning?

**Novel**

* Will it reveal key findings?

Students can apply this checklist to each question to test for validity. They should ask themselves if it is a FINER question. (Hulley et al. 2013)

**Ethical**

* Is it safe and ethical?

**Relevant**

* Is it relevant and does it meet the learning requirements?

Students should give careful consideration to the wording of their questions

Students should be encouraged to refine and clarify the question throughout the investigation process.

**QUESTION**

## Question design, wording and stems

The wording of a question is paramount in determining the direction of, and providing a focus for, an investigation. A well designed research question should define the types of data which need to be collected and the methods used for its collection and analysis. The question provides a framework and structure for the students in which to build and develop their research and it should identify the boundaries for what is relevant to their investigation. Good questions allow students to investigate different perspectives and opinions and then analyse these to formulate their own informed perspective and opinion. It may also be appropriate, dependent on the subject, for students to have a local perspective to their question which helps to provide additional focus. As suggested by Hulley et al. (2013, p.10), and illustrated in the previous diagram, students may find it useful to test their question using the acronym FINER, which denotes, is it feasible, interesting, novel, ethical, relevant?

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| --- | --- |
| **Tips for good question design and wording** | **Things to avoid in question design and wording** |
| Clear, unambiguous language leads to a focussed research process | “what’ questions – these lead to descriptive or narrative responses |
| Open ended questions allow investigation of different perspectives | Closed or simplistic questions which invite short responses and limit the research |
| Use question stems which incorporate higher order thinking skills | Broad questions which are difficult to research and lead to a small amount of information on many things |
| Use a hypothesis to examine relationships between variables | Questions which are self-evident and students already know the answer. |

## Refining

As the investigation proceeds it is important for students to reflect on and review the wording of the research question. In the first instance the question provides direction and determines the data to be collected but the analysis of this data may in turn lead to changes and refinement of the original question. Students may be unaware that they can adapt their question at any point throughout the investigation process, or they may be reluctant to make any changes. Students should be actively encouraged to allow their question to change in response to their inquiry, and evolve with the analysis and synthesis of data.

**Topic**

**Data collection**

**Question**

## Bibliography

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