

Critically evaluating scientific posters

Advice to teachers

This module has been designed to meet key knowledge and key science skills for VCE Biology.

Unit 1 key knowledge

Area of Study 3

- Ethics and issues of research including identification and application of relevant health, safety and bioethical guidelines
- Methods of organising, analysing and evaluating primary data to identify patterns and relationships including sources of error and limitations of data and methodologies

Unit 4 key knowledge

Area of Study 3

- Independent, dependent and controlled variables
- Ethics and issues of research including identification and application of relevant health, safety and bioethical guidelines
- Methods of organising, analysing and evaluating primary data to identify patterns and relationships including sources of error and limitations of data and methodologies
- The nature of evidence that supports or refutes a hypothesis, model or theory
- The conventions of scientific report writing and scientific poster presentation including biological terminology and representations, standard abbreviations, units of measurement and acknowledgement of references

VCE Biology key science skills

- Analyse and evaluate data, methods and scientific models
- Draw evidence-based conclusions
- Communicate and explain scientific ideas

Students will compare and contrast two scientific research posters on the same topic. One is designed to showcase a substandard study and poster, and the other to showcase a high quality study and poster. Students critically evaluate each poster with the help of a scientific evaluation tool and make recommendations for improving the substandard study and poster.

Students then evaluate a number of scientific posters to discuss strengths and limitations of the study and poster communication for each.

This task is designed to stimulate students to recognise elements of strong and weak studies and poster communications so that they can be empowered to complete their own practical investigation and poster. It also helps them to understand how aspects of their work will be assessed.

All resources used in this module can be found on the GTAC website at:
Students > Online courses > Critically evaluating scientific posters

The sequence of activities is as follows:

1. Students use an evaluation tool to analyse and score the Title of Poster 1 (low quality poster) and offer suggestions for improvement
2. Students use an evaluation tool to analyse and score the Title of Poster 2 (high quality poster) and see if their suggested improvements are reflected
3. Students repeat steps 1 and 2 for each subsequent section of the posters: Introduction, Methodology, Results, Discussion, Conclusion and References
4. Students continue to practice their critical evaluation skills by downloading a range of GTAC scientist mentor designed posters and analysing them