

Chemistry extended essay

Contents

Extended essay

3

For grade boundary information, please refer to the Grade boundaries for Diploma programme coordinators document available on the PRC.

Extended essay

Candidate performance against each criterion

Most of the essays submitted were suitable. The range included experimental work, literature-based, or computer simulation investigations.

Schools still need to make sure their students understand that extended essays in chemistry must deal with chemical reactions, chemical bonding or chemical analysis. Those which simply measure physical properties or observe changes without considering the underlying chemistry are self-penalising.

Criterion A: focus and method

Sharply focused research questions remain a challenge to the candidates. If the research question is not narrow and sufficiently focused, it becomes difficult to formulate a hypothesis. Some reverted to a null hypothesis which in most cases does not work well. There are still a number of research questions which compare brands and where results are very rarely explained from a scientific point of view.

Criterion B: knowledge and understanding

Sources were generally well used and applied to support the communication of knowledge and understanding. Some students made errors with the use of significant figures and to a lesser extent with chemical formulae and equations. Chemistry knowledge should be shown by providing chemical formulae, chemical equations, mechanism of reactions, etc, but these were not consistently presented.

Criterion C: critical thinking

Practical work was generally well carried out. Good literature-based essays used multiple sources to answer the research question. Most students were able to analyse the data collected and present it in a suitable format. The best students were able to produce a critical evaluation.

Critical thinking involves critical evaluation of results. Some candidates provide statistical analysis for the graphs and curves by stating a linear correlation, strong correlation etc, but they do not progress to provide an explanation of what it means in terms of chemistry and their specific research question.

Criterion D: presentation

There were usually not major problems for criterion D, but for the fact that there are still EEs that resemble long lab reports with an overuse of tables, list of materials, risk and environmental assessment, etc is problematic. The extended essay is not a lab report.

Criterion E: engagement

Almost all reflections demonstrated interest and engagement, some did not give clear evidence of solving problems or learning skills, but rather provided a description of the discussion with the supervisor. A small number exceeded the 500-word limit, and examiners do not read or assess beyond 500 words.

Recommendations for the supervision of future candidates

- Write focused research question with defined variables.
- Make sure that the introduction is used to frame the topic within the context of the subject.

- Do not use statistical analysis unless it adds to the chemistry aspect of the question.
- Use the appendix to show materials, unsuccessful trials, risk assessment, preparation of solutions, etc.
- In the RPPF, give an account for process and decisions, state what has been learnt from the experience.