
EXTENDED ESSAY REPORTS - MAY 2002

Environmental Systems

The range and suitability of the work submitted

There was a wide range of topics identified by candidates, although "global warming" showed a notable surge in popularity, perhaps in response to the recent orientation taken by President Bush. Again this year, there were many examples of candidates rising very impressively to the challenges of the extended essay and producing some outstanding pieces of academic research. Overall, however, there is still a disturbing proportion of candidates selecting a broad topic and simply presenting a descriptive account derived directly from a few secondary resources. Such essays are generally devoid of any independent analysis or argument on the part of the candidate. Indeed, the whole experience of primary research, which the extended essay is designed to provide, is often greatly diluted or lost altogether. As reported in previous years, the greatest challenge to candidates still remains the identification of a suitable research question or hypotheses with which to approach the subject matter. One cannot emphasise this factor too much. The quality of the overall essay stands or falls on the quality of this starting point. A significant percentage of the essays failed to reach a good standard because the initial question did not allow for meeting the requirements of the remaining criteria.

Candidate performance against each criterion

General assessment criteria

Criterion A Research question

The great majority of candidates generally stated the research question or hypothesis in an early part of the essay. A few, however, are still failing to do this. In these cases questions are sometimes implied but not categorically stated, or they only emerge well after the opening paragraphs of the essay. The main cause for loss of credit on this criterion was through questions being too broad for effective treatment.

Criterion B Approach

The quality of approach was variable and, as usual, was generally better in those essays not dependent on secondary sources. Candidates researching literature often explored too limited a biography and/or depended heavily upon popularised, journalistic sources with little scientific or academic credibility. Some practical investigations were too limited in the scope of their data collection, but generally these approaches were more carefully chosen and appropriate.

Criterion C Analysis/Interpretation

Most candidates did reasonably well, but only a few gained maximum credit for this criterion. Candidates whose essays were based on secondary sources most frequently failed because their essay contained little or no further analysis than was available in the source texts. There was a disappointing lack of rigorous quantitative analysis. Graphical representations of data were infrequent.

Criterion D Argument/Evaluation

Where the initial question was appropriate and actually demanded an argument, rather than simply a description, candidates frequently performed well against this criterion. A significant number failed to give due weight or attention to counter-arguments, leaving their evaluation rather subjective and insubstantial.

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Criterion E Conclusion

The quality of conclusions were almost directly dependent on the quality of the research question – if the latter was not clear or focused then, naturally, nor was the former. Many candidates would have benefited from highlighting a specific section of their essay to address the conclusion.

Criterion F Abstract

The great majority of candidates included a reasonable abstract, although some did not clearly demonstrate inclusion of the three required components. Only a minority rashly lost credit through completely omitting one of these components or exceeding the word limit.

Criterion G Formal presentation

For the most part, candidates showed an impressive mastery of the formal requirements for presenting a research paper of this sort. There were two outstanding areas of weakness, however, in a significant number of essays. Firstly, some candidates seem to have the impression that the extended essay should be an uninterrupted length of prose. Subheadings, sections, diagrams etc., beneficial, and sometimes essential, to the essay, are avoided to the detriment of the overall quality. The contents page for such essays often lists simply: abstract, body of text and bibliography – which must leave the candidate wondering why a contents page is required in the first place. The second major source of lost credit for this criterion was the quality of diagrams and illustrations downloaded from the Internet, which were often poor and unacknowledged.

Criterion H Holistic judgement

A full range of scores were obtained for this criterion. A rewarding few showed remarkable personal initiative and engagement in their research. Those that had just assembled information from a limited range of secondary sources, with little or no personal commentary or analysis, gained no credit.

Subject assessment criteria

Criterion J Understanding the environment...

Virtually all essays addressed an environmental issue, although a few concentrated on too fine a perspective (e.g. technological, human health etc.) so that the essay included no recognition of the holistic and interactive nature of the environment. Many essays failed to make any overt use of systems concepts even when these were clearly appropriate, which was disappointing.

Criterion K Valid scientific techniques...

Again, those candidates carrying out primary, experimental research tended to score better. There were some excellent and imaginative experimental and fieldwork investigations carried out. Occasionally such research was flawed by inappropriate techniques, lack of controls or more commonly, by insufficient data collection. Of the candidates depending on secondary sources, some identified exciting and genuinely scientific sources, while others utilised sources that were very dubious, and clearly had little scientific foundation.

Criterion L Appreciation of causal links...

The majority of essays included some reflective component evaluating the limitations of the research, but a great deal of these were rather cursory in their approach and would have gained further credit with more rigour.

Recommendations for the supervision of future candidates

- Above all, a great deal of guidance should be given in the formulation of the research question or hypothesis under investigation.
- Guide candidates to a research question that lends itself to fresh and independent analysis by the candidates themselves...and would not simply involve recording the analyses of others.

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- Guide candidates to a research question that is sufficiently narrow and sharp for the candidate to draw personal and reasonable conclusions based on *their own* limited experimentation, or research of literature.
- Guide candidates to a research question that can be addressed from scientifically valid and reliable resources available to the candidate...and will not depend simply on popularised, journalistic opinion gained from the literature and Internet.
- Some candidates would benefit from far more training in the formal presentation of the essay; particularly in the use of sections and subheadings and appropriate inclusion of illustrations.
- Some candidates would benefit from including in their approach, or altering their approach to, the gathering of primary rather than secondary data (since the analysis and evaluation of secondary data proved very challenging for the weaker candidates in particular, and rarely shows any personal input).
- Many candidates would benefit from far more rigorous quantitative analysis and graphical representation of data.