

# VCE Extended Investigation written examination report

## General comments

The 2016 Extended Investigation written reports demonstrated that students were familiar with the demands of the study. The wide scope of investigation topics was impressive, and many students had clear passion for their research. High-scoring reports contained innovative methods, interesting topics, meaningful findings and effective control of the research process.

Many students structured their investigations in a very analytical way, with clear reasoning, a logical structure (leading the reader through a process of development and thinking) and fluent, coherent expression. The highest-scoring reports were thoughtfully planned, clearly developed, well informed and well expressed.

This report presents generalised observations about research reports overall; due to the significant variety of topics and methods, it is necessary to discuss general trends. There were, however, a number of ways in which students met the assessment criteria, so exceptions exist for many of the points made.

## Specific information

### Understanding of the research process

Most reports had a clear focus and demonstrated that students had conducted a substantial amount of research. High-scoring investigations were carefully framed by consideration of the scope of the subject, the level of expertise of the student, the audience for the investigation and the resources to which the student had access.

A reason for research can be made for a range of purposes and positions. Higher-scoring reports illustrated an understanding of how the student's work connected productively with the work of others, without needing to describe a specific gap they were trying to fill. For example, a report might examine a 'reflection' or 'manifestation' of a particular issue or idea.

The majority of students who made claims about the vital significance and value of their own research within society or the research community were unable to support these claims. Many students need to more accurately understand the place of their investigation within the hierarchy of research, and to position their discussion as such. The highest-scoring reports simply framed the topic with respect to its value and how it contributed to the field of knowledge.

Likewise, students who claimed that there was a lack of research or knowledge about the topic they were investigating generally needed to research more thoroughly. There are very few areas of research or study where there is no knowledge. Scoping sources of information should form part of the student's work when developing their topic. If accessing information is a significant limitation then perhaps revision of the topic itself may be needed.

## **Use of reporting conventions**

The majority of students clearly attempted to adopt a formal and objective position with respect to their topics, and to address the features of the investigation in a systematic fashion. Generally most reports were presented in a formal 'report' structure that was logical and suited the content of the investigation. The highest-scoring students minimised repetition across sections, and only made use of sections of relevance for the investigation topic and methodology.

The highest-scoring reports used academic reporting conventions to meaningfully organise the presentation of their findings, and altered report components to suit their specific discipline and topic.

Although no marks were deducted for a particular formatting style, poor presentation sometimes affected the clarity of the writing and ideas; some items were not on the same page or near a point of discussion (for example, a graph and a label/caption) or the flow of reading was broken unnecessarily. This points to a need for some careful editing of the document design and formatting before submission. It is important that students use software with which they are familiar and spend time developing their document carefully.

## **Developing a clear and appropriate topic question**

The development of a focused and carefully worded topic question is the focus of Unit 3, Outcome 1. However, some final reports contained a topic question that was significantly flawed. Limitations ranged from questions that were too narrow to questions that were too broad; reports that featured multiple questions; inaccurate use of terminology; impenetrable technical terminology/phrasing; and expression, grammar and punctuation/spelling errors. Questions need to be straightforward and clear for the assessors, not a demonstration of linguistic complexity or esoteric knowledge.

Some students mistook inherently complex topics for complex, critical thinking; these were not necessarily the same thing. Topics that aimed for inherent complexity did not necessarily perform highly; students who wrote such papers often struggled to use communication strategies effectively for the required audience.

As the framing of the topic question affects the direction of the entire research, students should spend time on selecting the focus of their research area. It was evident at times that more consideration and refinement of the question was required.

## **Methodologies and methods**

Students experienced some difficulty with their understanding of research methodology and use of appropriate methods. Many students need a better understanding of what a methodology discussion contains. There must be a tight link between the topic and methodology; students with the highest-scoring reports demonstrated this. A noticeable number of reports used a survey, even if this was not the most appropriate option for the topic question.

Sometimes methodologies were long and detailed descriptions of the process of data collection, which were typically unnecessary and verbose; there is no need to include all the minutiae of the research process in the final report. More important is a need to demonstrate an understanding of how the data collection would address the question, but this was often missing.

Some students included unnecessary discussions of standard features of research methodology. For example, some students who completed a literature search included detailed discussion of the process of undertaking the search; other students discussed the need to cite in order to avoid plagiarism. Extensive discussions that the research was ethical were often unnecessary (unless ethics was a particular concern for the research topic, design or approach); ethical research approach is expected.

### **Adaptation for the educated, non-specialist audience**

The majority of reports were clearly written with the educated, non-specialist audience in mind, although there were reports where this adaptation had not been made adequately.

Broadly, with respect to communication, the more esoteric, specialised and technical the subject matter of the investigation, the more difficulties students experienced with communicating effectively to the non-specialist audience. There were exceptions to this, where clever use of language and communication strategies enhanced the audience's understanding.

Some students seemed to have two significant, interrelated misunderstandings: that they could investigate any topic they liked, no matter how complex and esoteric, and that communicating in complex, technical ways demonstrates the complexity of their thinking. Methodology/method-technical concepts (as well as subject-specific technical concepts) must be explained in a way that the assessor can understand and appreciate. Students must be mindful at all times of the identified educated, non-specialist audience.

### **Formulaic report structures**

It was evident that some students' reports were prepared using a set template. This was not generally seen as a deficit, except when the structure did not suit the topic of the investigation. The structure ensured key features were explicitly addressed, although students needed to be wary of giving irrelevant information just to fill a section.

There was some imbalance with the number of words devoted to sections; the abstract, introduction, rationale and methodology were often too long and literature reviews were at times too short. Some sections on discussion, analysis, data and conclusions were too brief and others were too long.

Other issues with respect to structuring included:

- Some reports placed the methodology before the literature review. This was only appropriate for some types of investigations.
- Including consent forms or explanatory statements in appendices was unnecessary.
- It was important to include copies of survey questions (generally in an appendix), especially if they were being discussed and referred to in detail.

### **Other comments**

It was evident that some students did not spend enough time developing their reports. Such reports tended to include features such as superficial research, a lack of critical thinking, basic grammatical errors, incomplete sections or disjointed discussions.

Sometimes much background context for the topic was provided, but key ideas or arguments central to the question were either not explained or only briefly explained. Key terms and concepts should be defined using reputable research and theory, not just a definition from a dictionary (which provided an unproblematic and uncritical definition).

## **Assessment criteria**

Broadly, the first four criteria (criteria 1–4) related to the ideas within the investigation, and were often met through particular sections of the report; the last two criteria (criteria 5 and 6) related to the execution of the report, including communication strategies.

Overall, students need to ensure that their question, research, method, data and conclusion are congruent.

### **Criterion 1 – Knowledge and understanding of the research area**

Generally, this criterion concerned student knowledge of the field and engagement with research literature of relevance to the topic, typically met through a review of relevant literature and published research. Many students performed particularly well in this area. The depth of knowledge was demonstrated through the use of multiple authoritative sources of information, with a clear understanding of how different pieces connected. Where not enough research had been done there was a tendency for the student to be overly reliant upon certain reports or literature (sometimes uncritically). High-scoring reports developed a good balance between breadth and depth.

Students should make clear which ideas are drawn from the work of others in literature review discussions, including using direct quotations, and discussing ideas, arguments and findings explicitly as coming from specific researchers or reports.

### **Criterion 2 – Analysis and evaluation of argument and evidence**

This criterion related to the student's ability to manage literature and research relevant to their field, in a way that created a space for their own investigation. This is where links with and between key concepts, theories, arguments or ideas relevant to the topic of investigation needed to be clearly drawn out. Students demonstrated how deeply they understood the research associated with their field of investigation. It was also here where a lack of consideration of the audience was of particular detriment, particularly where effective communication strategies were lacking.

The highest-scoring reports clearly identified key researchers, key ideas, research trends or theories and the relationship with the investigation topic; productive connections and meanings were drawn out from the established research and this created relevance for the student's own investigation. Medium-level reports often reported or grouped research, without effectively drawing out the key ideas or issues. Lower-level reports often found it difficult to identify the key ideas and arguments necessary for the investigation to make sense.

### **Criterion 3 – Response to the research question**

This criterion related to how the student undertook their investigation and the appropriateness of the selected methodology for the topic being assessed. Students experienced difficulty with developing a methodology and methods that were relevant for answering the topic question. Some students conducting literature reviews as a method struggled to explain their methodologies. There were a number of reports where the method adopted had limited value for answering the topic question; surveys were a particularly frequent default method for many reports, even if they were not appropriate. The highest-level reports developed a methodology that was particularly suited for answering their investigation topic within the time frame specified; lower-level reports adopted methods with different degrees of arbitrariness.

### **Criterion 4 – Synthesis of findings and evaluation of the investigation**

This criterion concerned the way in which the student answered their topic question, and if they understood the meaning, significance and limitations of the work that they had undertaken. This was typically met through the analysis, discussion and conclusion sections of the report. Higher-level responses drew connections between the student's findings and other research and theories related to their field (explained earlier in their report). Analysis of data or findings was clearly used to answer the topic question. Some reports provided formulaic answers, vague responses or did not address their topic question at the lowest level.

### **Criterion 5 – Clarity and effectiveness of writing**

This criterion concerned the control of writing that the student demonstrated throughout their report. It also concerned how well the student used communication strategies for the audience.

A number of reports did not adequately consider the nature of the educated, non-specialist audience. For example, mathematical equations were often not understood or explained in a way accessible for the audience.

Students are advised to also proofread their work carefully and not just rely on spellchecking software. Some students misused words that changed meaning; for example, 'economical' and 'economic' as adjectives have different meanings.

### **Criterion 6 – Observance of report writing conventions, including citations and bibliographic referencing of sources**

This criterion related to the elements of putting together a research project, using appropriate academic conventions. There was no preferred form, structure or referencing convention as long as it was logical and consistent. Most reports performed well in this respect, though at times more care should have been taken with citation and referencing. Students are reminded that all references used in the report should appear in the reference list at the end of the report.

Students needed to be judicious when selecting representations of data to include in their investigation reports. They should not represent, for instance, simple or straightforward data in multiple ways. The highest-quality reports represented key data, and drew meaningful representations in order to answer the topic.

## **Levels of achievement**

This section offers a generalised discussion of reports at particular levels of achievement. They are generalisations only, and there was a range of ways in which students achieved particular scores through meeting the different assessment criteria.

### **60–50 marks**

Reports that scored above 50 were characterised by a clear focus, insightful examination and analysis of relevant knowledge, appropriate methodology, an answer to the topic question, and control and complexity. The highest-scoring reports were professional, and indicated deep and sustained engagement by the student with their topic.

### **50–40 marks**

Reports that scored above 40 were confident and detailed. They typically drew from a range of relevant pieces of research, though often favoured some key items, creating a narrow focus. A relevant methodology was often used, though a detailed understanding of why this was the best method was often not evident.

### **40–30 marks**

Reports that scored above 30 had a clear direction for research. There was a good understanding of the field of research, and a methodology that had some relevance but lacked refinement for the investigation focus. Students may have engaged with a range of sources, but often there was more summary than analysis.

### **30–20 marks**

While reports scoring between 20 and 30 sometimes featured complex ideas and relevant research, they were characterised by a lack of control and/or detail. Investigations that did not have a clear focus, selected an arbitrary methodology or methods, or did not engage with numerous, authoritative sources of information had difficulty scoring beyond this level.

### **20–10 marks**

Reports were characterised by a lack of detail or complexity. Many reports of this level were well below the expected word limit; where a report fell within the word limit, it was typically characterised by repetition, as well as a level of disorganisation.

### **Below 10 marks**

Reports that scored fewer than 10 marks did not demonstrate a year's worth of investigation and study. Some reports were incomplete, lacked basic knowledge or suggested that the student had little understanding of how to conduct research in their selected topic area. Some were also characterised by a lack of control of language and the conventions of report writing.