

## SPORTS EXERCISE AND HEALTH SCIENCE (SEHS)

### Overall grade boundaries

<b>Grade:</b>	E	D	C	B	A
<b>Mark range:</b>	0-7	8-15	16-22	23-28	29-36

### General comments

#### The range and suitability of the work submitted

As you would expect from such a wide reaching subject, there were many diverse areas chosen as fields of study. The majority tended to focus on physiological aspects of athletes or performance outcomes. Many included experiments conducted by the candidate. There were some good examples of movement analysis essays, although these were few. The essays written in the sports psychology field were also very diverse, ranging from 'stress and sports performance' to 'self-efficacy and injury rehabilitation'. There were a number of essays that tended to focus on head injuries, concussion and protective headwear. With the rare exception these tended to focus too much on the equipment itself (which is more a technical and manufacturing issue) and not enough on the physiological and sporting effects that the protection provides. Great care needs to be taken with this area if the candidates choose to look into this field of study, as it can too easily lead away from the field of SEHS. Sadly there were a very few essays that were submitted in the SEHS category that were not subject related. When supervising it is advisable to ensure that the proposed research question and ensuing focus of the candidate's essay will fit the nature of the subject as outlined in the EE guide. The EE forum on the OCC can be consulted where there is the need for further guidance.

#### Candidate performance against each criterion

##### Criterion A: research question

Developing a research question for SEHS proved to be very challenging for many candidates. The large field of study and diverse topic choices led to too many questions being far too broad to be treated within the word limit and were thus deemed unsystematic. Training routines, rate of play, new workouts and soccer in the 21<sup>st</sup> century were all broad fields that needed to be defined further. A further problem was the use of the term 'performance' when used as an indicator of outcome. This needs further defining. Supervisors are advised to look at the question carefully and guide the candidate towards a focused process and outcome.

### **Criterion B: introduction**

The key criteria for the introduction are to explain the significance of the essay, define the scope and explain why the topic is worthy of investigation. The weaker candidates failed to establish why the topic was worthy of investigation beyond their own personal motivation or opinions. When establishing the worthiness of the research question, reference to literature and the investigation undertaken should be mentioned. Many essays failed to score full marks for criterion B as one or more of these elements were missing. It is also helpful, though not essential to label the introduction clearly and separately from the main body of the essay.

### **Criterion C: investigation**

Criterion C covers both data collected from published sources and data collected by the candidate through direct experimentation. It is not essential to conduct a direct experiment in every SEHS extended essay. There are many topics that will be better served by finding and analysing a range of appropriate resources. This is often the case in extended essays in the Sports Psychology area. A caveat to this is that candidates who conducted their own experiments and supported/contradicted with appropriate resources generally performed better in later sections, especially criteria E and F. This is mainly due to having more statistics and data to hand to discuss. It is important when conducting a field study to avoid bias and predetermined results. Some experiments were obvious in outcome even before commencement. This gives the candidates little scope for a reasoned argument.

An area of concern when conducting experiments in the area of sports science is in dealing with human subjects, which form the vast majority of field study. Variables can be numerous and very hard to control for reliable results. It should be noted that many candidates do not have access to sports science laboratories or sophisticated testing equipment, this is understandable and whilst attempts to control variables should be stated and made, examiners will understand the difficulties in this area and make allowances accordingly.

### **Criterion D: knowledge and understanding of the topic studied**

This is an area that candidates performed well in. It was clear that the topics held genuine interest for the majority of candidates. This was well-guided and noted by supervisors who were for the most part impressed by the enthusiasm for study. There were a few essays that tended to be too long in the background information; often this was included in the introduction which made this area far too lengthy. Taking a large body of text directly from sources or the syllabus is to be avoided. The establishment of understanding comes from the insight provided when discussing the topic area and findings.

### **Criterion E: reasoned argument**

There should be a continued reference to the research question. Where this is done the reasoning has a clear thread between the introduction and the conclusion. The weaker candidates often made small points of individual arguments. It is always advisable to present both sides of a view or opinion and guide the reader to a balanced conclusion. Essays that had a direct experiment by the candidate performed less well in this area, too much focus was on the outcome and the determination to prove their hypothesis. Some essays had no reasoned argument.

### **Criterion F: application of analytical and evaluative skills**

Where candidates conduct their own experiment there is ample scope to demonstrate analytical and evaluative skills. This is a benefit of this type of essay and the evaluative skills of SEHS candidates in particular tend to be very strong. This is most likely due to the difficulty of controlling variables in human testing and practice. Results from studies should be linked to the research question and discussed in that context. Where there was no experiment, the analysis tended to be weaker as these skills appeared less developed. The superficial nature of analysis in these essays lacked both depth and insight into the research. However it should be noted by supervisors that there is no requirement to include statistical analysis and it is still possible to attain the top level of marks for criterion F without the use of statistics.

### **Criterion G: use of language appropriate to the subject**

A good extended essay with a well-defined research question should provide ample opportunity to demonstrate good terminology and subject-specific language. This was often the case with sports psychology essays and most exercise physiology essays. Essays that had little or no connection to the subject area inevitably proved to perform less well with regards to demonstrating adequate subject-specific language. This was often the case with investigations into safety headwear. In order to reach the higher levels, candidates need to be consistent and precise in their language. The weaker essays tended to have good terminology in the background information, but this was not necessarily continued throughout the text

### **Criterion H: conclusion**

In order to write an effective conclusion the candidate should restate and revisit the research question, outline the extent to which it has been answered and address the issues that could not be resolved. As is often the case at this level of study a number of candidates appeared to rush the conclusion, evidenced by summing up findings in abbreviated terms. This was a pity for well-written pieces. The better essays looked forward and suggested further areas of study.

### **Criterion I: formal presentation**

When presenting processed statistics, these should be included in the main body of the text where the information is central to understanding the EE. Material not central to the EE should be included in an appendix. Too many essays had numerous pages of raw data as part of the main body which is unnecessary. Some essays have little or even no structure.

### **Criterion J: abstract**

This is an area where full marks should be attained. The research question and conclusion must be included together with how the essay was to be carried out. This is the area that needs to be carefully addressed and should include a more detailed description including the type of data gathered, quantity, method of collection and how test groups were selected etc. Supervisors should also make sure the word count is under 300, as a word count above 300 automatically receives a mark of 0 for this criterion.

## **Criterion K: holistic judgement**

Examiners carefully read the comments provided by the supervisors as they give a valuable insight into the process and progress of the candidate and the writing of the essay. It should be noted that to achieve the highest mark candidates need to show some evidence of intellectual initiative, depth of understanding and insight.

## **Recommendations for the supervision of future candidates**

SEHS will undoubtedly increase in popularity as a choice for the extended essay. Supervising an essay in this area can require a great deal of work in helping candidates in terms of equipment, space and time. This supervision is crucial and the better essays all appeared to have supervisors who seemed interested and knowledgeable in the subject area. This is a requirement of the supervisor as outlined in the EE guide.

The main problems tended to be in helping the students produce a focused and systematic research question, this in turn will be a deciding factor in the outcome of the essay. This is an area that needs some development which is not surprising in a new subject, especially one that is so diverse. When advising on the research question, supervisors should remember to question the candidate on 'how' they intend to gather data and results and whether this will lead to good coverage of the proposed research question. It may be necessary to revisit the research question several times before settling on the final wording.

The most successful essays are those that are based on clearly defined independent variables and a quantifiable and easily measured dependent variable. The majority of field experiments can be conducted with equipment found in most schools. Recognised 'gold standard' sports tests are to be encouraged.

Poor essays were produced when there was no early intervention by the supervisor and the candidate was left to their own devices and were liable to follow the essay down the wrong path. This leads to endemic problems throughout the criteria and can be avoided.

There were a small number of supervisors who did not make comment at all, this is not helpful to the candidate or the examiner.

The keys areas to address are:

- Establishing a focused research question
- Writing an effective and succinct abstract which contains the relevant component parts
- Maintaining a reasoned argument
- Avoiding bias

- Writing a thorough conclusion.