

# “Barefoot Running versus Training Shoes”

## (A Grade)

### Introduction

Evidence was submitted for the five stages of the project using SQA templates (a Gantt chart was attached to the Plan), and included both the Assessor’s comments and the completed Assessor Report.

There was no identified Internal Verifier within the delivering centre but internal verification took place through the collegiate discussion of a team of three assessors. A deputy head teacher and two science teachers acted as assessors for all candidates and met with them once a week.

Other teachers became involved at the presentation stage, where they were invited to make comments to the candidates, using the Assessor’s Report framework as a guide to the grade criteria. The three Assessors met to discuss submitted work and agree on a final grade.

### Proposal

The project title “Barefoot Running Versus Training Shoes” gave a clear guide to the focus of the research, and was an original idea, which engaged the interest of the reader from the outset.

The project provided a suitable vehicle through which the candidate was able to draw upon her knowledge of Human Biology, Physics and sport to engage in meaningful research which could perhaps have an economic impact on both training shoe design and the sports performance of athletes. The choice of project has also enabled the candidate to develop new research skills in preparation for the study of a degree in Sports Medicine.

Within this project, the candidate has successfully utilised and combined knowledge of Higher Human Biology, Physics and Mathematics using an overarching approach through the study of Biomechanics.

How this interdisciplinary knowledge is to be applied within the project is clearly explained within the Proposal.

The candidate intended to contact named research scientists at Glasgow University whose specialist field is barefoot running. She also indicated within the

proposal her intention to contact the “Runner’s World” magazine, a local athletics club, and the “Footworks” sports company in Edinburgh.

The section on ‘skills development’ within the Proposal, provided factual concise information in the form of bullet point notes beneath each heading.

This information provided clear evidence of the candidate’s reflective thinking during the proposal stage of the project. The identification of areas where scientific knowledge could be applied, appropriate research methodologies, dependencies and the identification of personal skills development were clearly stated in this section of the Proposal. The candidate has satisfied all the A grade and C grade criteria.

## **Plan**

Detailed information regarding project tasks and timescales was provided by the candidate in the form of a Gantt chart. The project began in August with the collection of research data taking place in October. The project was completed by January of the following year, before prelim examinations and the possible offer of a University place.

The candidate had taken into account when considering time management, school holiday periods where no specific tasks relating to the project were undertaken. However, the candidate did indicate that the evaluation of the project together with personal skills, would be ongoing over a period of ten weeks between October and January.

The objectives of the project and how the candidate intended to meet them were clearly stated within the Plan, and were in line with the project objectives stated within the Proposal.

The candidate had considered a range of research methods within the planning stage of the project which included internet research, the construction of a questionnaire to generate data for analysis from local athletes. Semi-structured interviews were also used to gather information from representatives from the ‘Footworks’ company, and a sports physiotherapist.

It was clear from the Plan that the candidate had considered carefully the type of information required for analysis before choosing the appropriate research methodologies.

Dependencies identified by the candidate, reflected the learning environments that the candidate intended to access outwith the centre. Key professionals

within the sports industry were identified, and recognised by the candidate as underpinning the success of both the questionnaire and interview methodologies.

Anticipated problems focused on the lack of availability of key individuals. Alternative strategies were considered, such as the requesting of information indirectly by e-mail. The candidate also mentioned the lack of time to work on the project due to exams and extra curricular commitments. It would perhaps have been helpful if this information had appeared in the Gantt chart.

Although plans for overcoming anticipated problems were clearly stated, perhaps a little more detailed information would have strengthened this section. For example, if research scientists were unable to provide information, the contingency was “Do more research using internet.” This statement could perhaps have been expanded to include specific aspects of the project to be researched, such as the identification of useful websites and key information to include within the project.

The candidate indicated that skills development would be addressed by keeping a detailed ‘log book’ or diary throughout the project, which would begin with an initial self analysis of those skills identified within the template for candidates. Development of these skills was tracked and recorded throughout the project, together with the identification of those skills which required further development. Again all A and C grade criteria have been comfortably met.

### **Presentation of Project Findings/Product**

The candidate provided a very clear description of the written report which was further enriched by the Assessor’s comments. The justification for presenting a written report as a method of presenting the project findings was to avoid disrupting the training schedule of participants by asking them to attend a talk, or focus group meeting. The participants would be able to read and consider the report in their own time.

The candidate decided to present the report to members of a local athletics club, as she felt that the benefits of barefoot running was most relevant to them as a possible part of their training regime. It was also hoped that by drawing barefoot running to their attention, local athletes might consider trying this method of training perhaps for the first time.

Helpful comments on the final report were made by the Assessor, specifically regarding the depth of content, effective collaboration with research scientists and the excellent use of data generated by the questionnaire.

Athletes were requested to pass on comments about the final report to their training coach, who subsequently e-mailed the information to the candidate. All A and C grade criteria have been met.

### **Evaluation of Project**

The evaluation section began by clearly addressing the aims of the project, which were stated in both the Proposal and Plan sections.

The evaluation of the project was reflective throughout, where the candidate gave a detailed description of the contingencies used when key dependencies, such as a reply to enquiries made to a University, were not forthcoming.

The candidate clearly identified areas of weakness within the project, and most importantly, how these might be developed into strengths.

For example, when key academic researchers in the field of barefoot running did not reply to enquiries, a physiotherapist, podiatrist and running shop owner were approached instead. This new approach generated rich information which led the candidate to include a greater depth of biology content within the final report.

It was clear from the evaluation section, that the candidate had used a wide range of communication methods at each stage of the project. These included interviews, contact with professionals by e-mail and telephone, speaking to focus groups, construction of a questionnaire and regular weekly meetings with the Assessor.

### **Self-Evaluation**

The candidate provided strong evidence within the self evaluation section of both critical thinking and self reflection. She provided detailed information on each of the specified generic and cognitive skills in turn, drawing on supporting evidence from each stage of the project. For example, evidence for the development of the interpersonal skills of negotiation and collaboration, were to be found in the following statement,

*“Initially, when he sent me the information on the physics behind barefoot running, some of the physics was too advanced, and far above Higher level. I therefore had to ask for help, and for him to simplify the physics so that I understood fully and so that I could put it into my own words in the report.”*

Within this section, the candidate clearly identified and explained both weak areas and development needs, based on information received from all participants throughout the project, including the Assessor. However, the candidate seemed less confident in recording significant strengths within the project, of which there were many!

Throughout the project, there was evidence that the candidate had carefully considered comments from all participants and acted upon them where appropriate to improve the outcomes of the project. Evidence of acting on information from participants may be found in the following statement,

*“Initially, I had planned to send out a second questionnaire along with the report to a group of athletes. However, I did not want to interrupt or take up any more of their time. As a result, we agreed that after they had read the report, they would tell their coach if they were considering barefoot running, and their coach would get back to me using e-mail.”*

The self evaluation undertaken by the candidate was both reflective and insightful. Detailed information was provided under each heading within the section, drawing on supporting evidence from all stages of the project. The candidate gave careful consideration to her own personal skills development, including those of self organisation, problem solving skills and self confidence. The high standard of work done by the candidate at both evaluation stages of the project clearly satisfies all A and C grade criteria.

## **Overview**

The candidate’s performance throughout all five stages of the project was outstanding. Key aims of the Scottish Baccalaureate in Science, together with all Grade A criteria on the Assessor’s report, were met successfully and supported by evidence from the candidate’s log book.

It was evident throughout the project that the candidate had a genuine interest in barefoot running and was able to work independently using her own initiative to develop the research at each stage.

The Assessor’s comments were informative and very helpful to the candidate. They confirmed that ideas and solutions to problems were proposed by the candidate herself.

Consistent self reflection throughout all stages of the project resulted in a rich, detailed final self evaluation section.

It was very pleasing to see how the candidate had clearly benefited through the development of personal skills, as a direct result of undertaking the Interdisciplinary Project.