Worksheet 9.3

Example answer to practice question 3 (Chapter 9)

This model answer is a guide for students in terms of structure and content. It represents above-average work.

3 Evaluate two research studies investigating skill development in sport. [22 marks]

One of the main activities of sports psychologists is to assist coaches, teams and individual athletes in improving their sporting performance by focusing on developing the skills involved in the sport, not just through practice but through the use of techniques whose effectiveness has been tested in research. Two studies testing such techniques are Marlow et al. (1988), who worked with water polo players on their penalty-taking by teaching them to use mental imagery, and Hatzigeorgiadis et al. (2009), who worked with young tennis players using self-talk to improve performance, reduce anxiety and boost confidence. This essay addresses strengths and limitations of the studies mostly in terms of their validity and usefulness.

Marlow’s study used a single-subject design with three participants who had said they had never used mental imagery before. They were taught a pre-performance ritual that included two forms of mental imagery: imagining themselves taking the penalty from their own perspective (internal imagery) and from an observer’s perspective (external imagery). They were prohibited from physically practising penalty taking for the duration of the experiment, so that it was clear to the researchers that the improvements they measured against a baseline measure were not a result of practice. Although this attempt to control an extraneous variable is clearly a strength, there are many limitations to the study. Because the research only used three participants, it may not generalize to a wider population of water polo players. However, it seems sensible that the researchers used a single-subject approach while the intervention is still relatively new: it is more useful to know that individuals show improvement in such an individual activity as penalty-taking rather than knowing about average changes in a group.

The major limitations are in terms of validity: it is very difficult to isolate cause and effect. The independent variable in this case, which was the training intervention, is too broadly defined. It is not clear how significant the individual parts of the ritual are: two types of imagery were used, as well as relaxation training and concentration focus. Although we know the whole ritual seems to have had an effect, we don’t know if all of its components are necessary or if one of them was more responsible for the change. In addition, there is no control group, so we can’t be certain that demand characteristics have not occurred. Demand characteristics include the placebo effect (where participants improve simply because of training, not because of the content of the training) and the Hawthorne effect (where participants improve because they guessed the purpose of the experiment, which was quite obvious in this case, and tried to obtain good results). A final weakness here is that we cannot be sure that participants genuinely carried out the ritual in their own time and that they were not affected by other thoughts or factors, such as their general performance in their games or the performance of other team...
members.

Even if we accept that the performance ritual itself is responsible for the change, the measurement of the dependent variable also has some limitations. Strengths of the design that the researchers used include the experimental before-and-after approach (using the same method of measuring performance twice) and the attempt to improve reliability by using a numbered rating system with more than one rater for the penalties. However, we cannot be sure that researcher bias was not a problem in rating the players after the training: they may have wanted to see improvement, and although the numerical system seems objective, it depends on the opinion of the researcher, and it seems a difficult thing to judge a penalty on a scale of 1 to 10, where 10 represents a specific shot without a goalkeeper present. It is also an artificial task and would need to be tested in the context of a real game, where numerous other factors could interfere.

Overall, Marlow et al.’s study suggests that the ritual may be an effective way to help with skill development in this context, but the study was not carried out well enough for us to be confident about the validity of its results.

Hatzigeorgiadis et al. (2009) had a number of similar problems because they were dealing with an intervention that is difficult to quantify. They asked tennis players to use self-talk to help them focus their attention on their performance of skills and to motivate themselves. This study used a control group to help clarify whether the intervention was genuinely responsible for performance improvements, training them in technical aspects of tennis without any psychological intervention. This reduces the possibility that demand characteristics were a problem, but as the control group naturally also used some self-talk, the power of the intervention might be under-estimated. It is, however, a strength that the researchers asked all participants about their use of self-talk as it became necessary to remove data from participants in the experimental group who hadn’t used self-talk.

Again, an artificial task was used to measure the success of the intervention, this time with participants asked to make a shot that went between the top of the net and a rope placed above it. Again, participants received points for their shots, but as only two points were available for each shot, it is unlikely that researcher bias was a problem, also points were awarded objectively according to how close the shot went to the opposing baseline. This means that we can be more confident that participants using self-talk performed better than participants who were not.

The validity of the researchers’ conclusions that self-talk reduces anxiety is made stronger by the use of a standardized measurement instrument: the Competitive State Anxiety Inventory. We can be less certain about their finding of increased self-confidence because this was measured after the task. The researchers themselves noted this concern: the use of self-talk correlates with self-confidence after the task, but the confidence may be a result of completing the task well, rather than being the mechanism by which self-talk works.

Thus, this study of tennis players has a number of methodological strengths and the researchers are cautious about their results, because there are significant methodological limitations. Coaches could have some confidence in trying out self-talk as an intervention as it appears to improve the specific skill studied, but further research could be used to tease apart the role of motivational versus skill-focused self-talk.