

## JAZYKOVÁ KOMPETENCE I Session I

### Task 1 The scientific method

a) The scientific method is a process in which experimental observations are used to answer questions. Complete the collocations for describing the stages in the scientific method using the words and phrases in the list below.

*a hypothesis an experiment (x2) conclusions data (x3) the question*

Analyse \_\_\_\_\_  
Collect \_\_\_\_\_  
Conduct (run) \_\_\_\_\_  
Define \_\_\_\_\_  
Design \_\_\_\_\_  
Draw \_\_\_\_\_  
Interpret \_\_\_\_\_  
Form \_\_\_\_\_

b) Number the stages above in the order you would normally do them.

c) Read this extract from a student website and check your answers to ex. 2.

The scientific method is a process in which experimental observations are used to answer questions. Scientists use the scientific method to search for relationships between items. That is, experiments are designed so that one variable is changed and the effects of the change observed. While the exact methodologies used vary from field to field, the overall process is the same. First, the scientist must define the question – what exactly they are trying to find out. Next comes the formation of a hypothesis, which is an idea or explanation for a situation based on what is currently known. The next stage of the method is the design of an experiment which will allow this hypothesis to be tested. Usually a primary run of the experiment is conducted, and any changes to the experimental set-up made. In each experimental run, data collection takes place, followed by data analysis. Finally the data is interpreted and from this, the scientist is able to draw conclusions.

d) Read the extract again to find the nouns forms of the verbs below. Which word/s use/s the same form for the verb and the noun?

*analyse – collect – design – explain – form – observe – relate – run – vary*

## Task 2 Doing research - vocabulary

### a) Choose the correct option:

1. *Qualitative / Quantitative* research studies large samples with the intention of generalizing to populations.
2. Because of its nature, *qualitative / quantitative* research is appropriate to develop information about the values, beliefs, and behaviours of e.g. sport consumers and uncovers much richer information regarding their motivations and needs.
3. “Is there any gender difference in the extent to which sport fans identify with their favourite team?” is an example of a *research design / research question*.
4. “To determine and apply a suitable operationalisation of fan identification” is an example of a *research objective / research method*.
5. Case studies are a form of qualitative *predictive / descriptive* research that is used to look at individuals, a small group of participants, or a group as a whole.
6. *Dependent / Independent* variables are the presumed cause of the effect being researched, e.g. if gender influences attitudes towards violent sports, then it is gender that has the presumed effect.
7. *Dependent / Independent* variables are those that can be explained by the effect of the other variable, which in the above instance is the attitude towards violent sport.
8. *Reliability / Validity* means the extent to which measurements actually reflect the phenomena being studied.
9. *Reliability / Validity* (in quantitative research) refers to the extent to which findings would be similar if the research were to be repeated.

(Adapted from Gratton, C., Jones, I. (2010). Research Methods for Sports Studies. Routledge.)

**c) Complete the gaps in the paragraph:**

‘Can you compete under pressure?’ aims to be the biggest ever \_\_\_\_\_ of the psychology of pressure. By \_\_\_\_\_ the data from those who take part, the scientists who \_\_\_\_\_ it aim to shine unprecedented light on what \_\_\_\_\_ performance under pressure. In doing so, they’ll \_\_\_\_\_ something new about pressure in sport and in everyday life.

**What kind of research design would you use to explore pressure in sport?**

**Task 3 Expressing cause and effect**

**A) Educational attainment and obesity**

*Read the article on educational attainment and obesity and answer the questions below:*

1 Some research suggests that there may be a relationship between obesity and poor educational attainment. It is likely that obesity and poor school performance are elements of a broader picture of inequalities in health and education, whereby disadvantaged socio-economic groups tend to have poorer health and lower levels of education. It is also possible that other factors influence obesity and attainment, such as gender, discrimination, and poor mental and emotional well-being.

2 Twenty-nine studies on the link between obesity and educational attainment were reviewed. While often conflicting, an overall pattern emerges from the research evidence suggesting that there is a weak negative association between obesity and educational attainment in children and young people; i.e. that higher weight is associated with lower educational attainment. However, obesity appears to be associated with other variables, such as socio-economic status, and when these other variables are taken into consideration, the association between obesity and attainment becomes still weaker, and often loses statistical significance. Specifically, place of residence, ethnicity, occupation, gender, religion, education, socio-economic status and social capital were all explored as potential moderating variables in the included research. The most commonly explored moderating variable was socio-economic status, which was tested in 23 of the 29 studies.

3 Most studies explored the influence of obesity upon attainment. Only two studies examined the influence of attainment upon obesity. Many authors suggested multiple causal pathways, many of which remained untested in their studies. The moderating variables used in statistical analyses of the relationship between obesity and attainment were not consistent with the causal pathways proposed, which is probably a reflection of the constraints imposed upon authors conducting secondary analyses of pre-existing datasets (i.e. they made use of existing variables, rather than collecting their own, tailored data). The most frequently cited factors resulting from obesity and impacting upon educational attainment were poor mental health, stigmatisation and discrimination, disordered sleep, decreased time spent in physical activity and socialising, and absenteeism.

4 In sum, various factors appear to be associated with obesity which contribute to low educational attainment to some extent. Given the variation in definitions, analyses and quality of data, it is impossible to point to any causative or definite risk factors.

(Paper by the EPPI – Centre: The Evidence for Policy and Practice Information and Co-ordinating Centre, part of the Social Science Research Unit at the Institute of Education, University of London. Available at <http://eppi.ioe.ac.uk/cms/Default.aspx?tabid=2957>)

**Are the following statements true or false?**

1. The author believes that obesity is the major cause of low school performance. *True/False*
2. There was some disagreement in the reviewed studies on the relationship between attainment and obesity. *True / False*
3. In association with educational attainment, other variables, such as socio-economic status were found more significant than obesity. *True / False*
4. The author states that the existing studies have not explored all the intervening factors and causal pathways. *True / False*

**Find synonyms to the following expressions in the text:**

1. probable or expected (par. 1)
2. examined (par. 2)
3. the regular way in which sth. happens (par. 2)
4. things that limit sth., restrictions (par. 3)
5. made or adapted for a particular purpose (par. 3)
6. mention sth. that is important (par. 4)

**B) Speaking**

**In the previous task we looked at intervening/ moderating variables, that is the variables which affect the relationship between dependent and independent variables.**

**Look at the examples below, suggest which of the two is the dependent and which the independent variable, then think of possible moderating / intervening variable.**

1. Leadership skills in basketball – performance
2. Sport preferences - gender

### C) Vocabulary

Find collocations expressing relationships in the above article.

Fill in the prepositions which normally accompany the verbs. Then use the expressions to fill the gaps in these sentences. You may have to change the form of the verb.

compare ....  
react ....  
associate ....  
contribute ....  
correlate ....  
refer ....  
rely....

1. The study shows that high eating deviancy \_\_\_\_\_ high body dissatisfaction.
2. Some sports \_\_\_\_\_ stamina and in other sports it is an advantage.
3. The media representation of sport also \_\_\_\_\_ the construction of the hegemonic masculine image.
4. The term reliability \_\_\_\_\_ whether the statistics are replicable.
5. The results of the experimental group were significant when \_\_\_\_\_ the established normative values.
6. This shows that babies know whether their mother is \_\_\_\_\_ their actions, and they prefer it when their mothers are being responsive.
7. Type two diabetes is generally \_\_\_\_\_ older, overweight individuals and develops when the body cannot use insulin.

#### Extra task:

Consider eating dark chocolate and stress levels. Formulate a hypothesis about the effect, suggest an experimental/ descriptive; qualitative/quantitative study and predict the results.