

# Methodology and Statistics in Sports Sciences (e059)

*Mgr. Michal Bozděch, Ph.D. (teacher, guarantor)*

*11:00–11:50 (B11/236) - lecture*

*12:00–12:50 (B11/236) - seminar*

## Instructions for Students

*Updated:14.02.2022*

### GUIDELINES AND EVALUATION METHODS

**Table 1.**

*Overview of Requirements*

<b>Requirements</b>	<b>Evaluation</b>
- Required participation in classes - seminars	≥ 85 %
- Presentation of the thesis project	Pass / Failed
- Written part (exam, 30 questions)	A–F
<b>Test Evaluation</b>	<b>Points</b>
- Pass	≥ 60,0 %
- Fail	< 60,0 %
- A	30–29
- B	28–27
- C	26–25
- D	24–23
- E	22
- F	< 22

## PROJECT GUIDELINES (Structure)

**Thesis title:**

**Author's name:**

**Supervisor's name (if known):**

**Year of submission (envisaged):**

### 1. Introduction (length 0,5 to 1,0 page)

introduction to the issue.

It states the author's motivation to choose the issue, its topicality, a brief formulation of the problems.

It contains and explains basic information about what the study solves its importance or urgency and why.

It is based on the general (and historical) basis of the problem, it can mention existing scientific research findings as a basis for research.

We do not quote in this chapter.

### 2. Systematic review (length 1 to 3 pages)

Literary and research review.

An overview of the literature on the issue. Write it in, the format of the final thesis, i.e in paragraphs, not points.

Critical evaluation in relation to the researched issue of work. Proceed from general to specific terms.

*Examples of citations (in-text):*

- Meadows (2008) characterizes ...
- ... (Meadows, 2008).
- ... (Hendl & Remr, 2017) ...
- Hendl and Remr (2017) focus on ...
- ... (American Psychological Association, n.d.; Merriam-Webster, n.d.; Zalta et al. 2005).
- ... as they state American Psychological Association (n.d.), Merriam-Webster (n.d.), and Zalta et al. (2005).

The last paragraph in this chapter can be the formulation of the research problem e.i, the

transition between systematic review and project objectives. For example, it is obvious from the above-mentioned literature search, that the issue of \_\_\_ is widely researched at \_\_\_, but not at \_\_\_. Therefore, I have decided to take a closer look at this issue, to find out the associations between the selected variables.

In the project, cite at least 5 sources.

We quote every (major) information

### **3. Research objectives, research questions, hypotheses** (length 1 to 2 pages)

Research objective (or the aim of the research): brief, concise, and understandable formulation (can contain partial goals). It is based on the formulation of a research problem. Note: the title of the thesis, the research objectives, and the methodology of the project must be closely related.

For example, the research aims to analyze/assess the relationship between \_\_\_ and its consequence on \_\_\_.

#### **Research question/hypothesis**

Formulation of one or more questions to solve the research problem (what do we want to find out).

Common mistakes: research questions are not related to the objectives of the project; research questions cannot be answered according to the established methods (in the next chapter).

Hypothesis (optional). Hypotheses must be in accordance with the definition and criteria of good hypotheses. It is a logical mathematical / statistical relationship between variables.

### **4. Methods**

#### **An Example of the Structure of Quantitative Research** (length 1 to 3 pages)

- *type of research*: quantitative research, variant (see at ppt. presentation)
- *characteristics of the research sample*: define research population, random/non-random selection, method of selection, sample size, sex (M/F), age
- *measurement procedures* (description of methods leading to the acquisition of research data, including instruments)
- *data collection*: description of a place, course, and schedule
- *data types*: quantitative/qualitative, dependent/independent variables, types of measuring scales

-*data analysis methods*: descriptive and analytical methods that help answer your research questions

**An example of the structure of Qualitative research** (length 1 to 3 pages)

- *type of research*: qualitative research, variant (see at ppt. presentation)
- *characteristics of the research sample*: define research population, random/non-random selection, method of selection, sample size, sex (M/F), age
- *theoretical approach*:
  - o method of grounded theory: the creation of theory without pre-prepared hypotheses
  - o Phenomenological conception: a deep understanding of the studied phenomenon,
  - o ... (more in ppt. presentation)
- *data collection technique*:
  - o narrative interview (open, in-depth)
  - o standardized interview (questionnaire reading)
  - o non-standardized observation (data type)
- *Data categorization*:
  - o Coding: search for repetitive similar terms -> categorization of terms
  - o Cutting the text and its grouping according to individual categories
- *Test analysis*: Grounded theory - the researcher creates a theory and looks for relative material in the text, from which he forms a hypothesis during the reading of the test

*Note*: to avoid subjective approach when interpreting data. Your feelings (about your results) can be expressed in a discussion and the results of other authors.

**Literature** (APA 7<sup>th</sup> edition)

Examples of citations (in reference):

Book

Hendl, J., & Remr, J. (2017). *Metody výzkumu a evaluace*. Portál.

Chapter in the book

Iwamasa, G. Y., Hsia, C., & Hinton, D. (2019). Cognitive behavior therapy with Asian Americans. In G. Y. Iwamasa & P. A. Hays (Eds.), *Culturally responsive cognitive behavior therapy: Practice and supervision* (pp. 129–159). American Psychological Association. <https://doi.org/10.1037/0000119-006>

Academic journal

Gimunová, M., Bozděch, M., Skotáková, A., Grün, V., & Válková, H. (2021). Comparison of forward and backward gait in males with and without intellectual disabilities. *Journal of Intellectual Disability Research*, 65(10), 922–929. <https://doi.org/10.1111/jir.12873>

#### Web

World Health Organization. (2021, 1. October). *Advice for the public: Coronavirus disease (COVID-19)*. <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/advice-for-public>

Eurostat. (n.d.). *Health statistics at regional level*. Retrieved January 12, 2022, from [https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Health\\_statistics\\_at\\_regional\\_level](https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Health_statistics_at_regional_level)

#### Thesis

Vodička, T. (2018). *Využití izokinetické dynamometrie pro diagnostiku silových schopností závodních juniorských tenistů* [Disertační práce, Masarykova univerzita]. Thesis.cz. <https://theses.cz/id/v45xpo/?isslret=Tom%C3%A1%C5%A1%BVodi%C4%8Dka%3B;zpet=%2Fvyhledavani%2F%3Fsearch%3DVodi%C4%8Dka%20Tom%C3%A1%C5%A1%26start%3D1>

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