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GUIDELINES FOR WRITING THE DOCTORAL THESIS

The doctoral thesis is an original research paper, written by the doctoral student as part of the doctoral studies. The doctoral student bears the responsibility for the accuracy of the data and information presented in the thesis, as well as of the opinions and demonstrations it includes. The doctoral supervisor bears joint responsibility with the author of the thesis for the compliance with the quality or professional ethics standards, including ensuring the originality.

The content of the doctoral thesis shall be decided by the doctoral student after consultation with the doctoral supervisor, and shall comply with the standard framework and the limitations imposed by the doctoral school. The doctoral thesis shall include several sections (parts), depending on the doctoral field, and is usually consists of the following:

- Acknowledgements
- List of tables, figures, abbreviations, symbols
- Abstract
- Introduction, including State-of-the-art
- Aim and objectives
- Research methodology or Material(s) and methods
- Results
- Discussion
- Conclusions
- References
- Appendices
- List of publications

Acknowledgements

In this section the doctoral student may thank the people and/or organizations (agencies, companies, institutes) that facilitated the research and the completion of the doctoral thesis.

List of tables, figures, abbreviations, symbols



Each table/figure shall be accompanied by the number, title and page number on which it can be found in the thesis. The abbreviations and symbols used in the thesis are described and listed in alphabetical order.

Abstract

The structure of the abstract will reflect the entire structure of the thesis. Thus, it will begin with a short introduction of the topic of the thesis. Then, it will underline the need and importance of the research. It will specify the research aim and objectives. It will briefly present the methodology, focusing on the novelty elements. The most substantial part of the abstract must be devoted to the personal results. The abstract will end with a conclusion highlighting, if applicable, the consequences of the research. The abstract must be written in Romanian and in English.

Introduction

The doctoral students shall start by framing the topic within a larger context. In the beginning, they will present, based on the available bibliography, general aspects accepted by the scientific community in the field, so that the reader can understand better the research area. Then, they will identify the area (niche) in which no research has been conducted or in which the results of the existing research are contradictory. It is very important to conduct a critical analysis of the state-of-art and to identify new research directions. In other words, they must supply enough arguments to justify the necessity, novelty and importance of the research to be conducted. Presenting the state-of-the-art concerning the topic approached must include relevant information, but without details which will be supplied later as part of the interpretation of the results. The students will consult both reference works in the field and recently published works (if they exist) which approached similar problems. The introduction will also mention and shortly explain the theories/concepts/notions which are used throughout the paper and are necessary to understand the objectives of the thesis.

Aim and objectives

Formulating the research aim and the objectives must be based on the critical analysis of the current state-of-the-art in the field. The aim reflects the intention or general orientation of the research in order to solve the problem (problems) identified by the author. By contrast, the specific research objectives (the general and operational objectives) must be aimed at concrete and measurable results.

Research methodology or Material(s) and methods

This section mentions all the information necessary to repeat the observations/experiments/calculations. The work methodology can be described for each objective individually. The text must not include useless details, especially in the case of using well-known methods. For each separate objective, the doctoral student will formulate questions, develop concepts/models and issue working hypotheses. This section must also include, depending on the field of the thesis, information about the place of the research, the studied organisms, the sampling used, the materials used, the period of data collection, the description of the experiment, the equipment and the programmes used, the conditions for conducting the experiment and the analyses. The information can be presented under the form of tables and charts. The well-known methods, described in detail by others, will be presented based on the available bibliography. The choice of certain working methods must be supported by arguments, the doctoral student must also specify what type of tests, models, parameters was used in analysing and processing the data, as well as the software packages



used, including the versions and/or data of accessing the site, if the programmes are available online. Usually, this section is finalized after obtaining the results, because at that moment the doctoral student will know for certain what working methods will be preserved out of the multitude of methods tested during the research.

Results

This is the most substantial part of the thesis. This section presents the data obtained as a result of the doctoral student's own research, and it is recommended that the results for each objective be presented individually, in one or several chapters. The presentation under the form of charts and tables, accompanied by references and explanations in the text, is preferred but without repeating all the information in the table/chart. In this part of the paper, the doctoral student will quote from other authors only exceptionally, because this section is dedicated to the student's own results. The doctoral student must not report on all the data obtained as a result of the observations or experiments, but only on those which are relevant and representative, which help support the objectives/answer the questions mentioned at the beginning of the research. At the same time, the unexpected results should not be omitted, even though they may not, for example, support the hypothesis or lead to the expected result.

Discussion of results

Usually, the interpretation (discussion, comment) of the results is done in a separate section, but in certain cases it can be performed when the results are presented, in a section entitled *Results and discussions*. The discussion entails an overview of the initial objectives (questions, hypotheses) and supplying answers based on personal data. The results do not have to be repeated in detail, only to the extent that they support the important ideas of the discussion. The personal ideas must be supported by data from the specialized literature, especially by reference works in the field. However, in certain cases, they may be considerably different from the results of previous research. These differences/deviations or different points of view must be highlighted and discussed. The doctoral student will try to provide an explanation, without speculating too much, identifying possible causes (for example, the size of the sample, the conditions in which the experiment was conducted). The critical analysis of the previous studies must be done with objectivity and caution, because the student might not have fully grasped the meaning of what was reported in the literature. Any research has certain limitations, which the author should acknowledge, and thus not give the adviser (evaluator) the chance to identify them and formulate critical observations about them, especially if they are evident.

Conclusions

The conclusions represent a synthesis of the main results obtained and of their consequences. This section should not include any new information in addition to what was mentioned previously in the discussion of results. This is a somewhat repetitive section because the answers to the questions were already provided in the discussion part. However, because many readers consult mainly the final part of the thesis, the main results and their importance should be highlighted. In some cases, the final part of the thesis underlines the most important *original* or *personal contributions*. These contributions should be mentioned in detail. Nevertheless, it should be pointed out that the thesis as a whole is an original work.



Bibliography and References

All the references in the text must be included in a final list located at the end of the thesis, according to the citation style specific for each doctoral field. Considering the high number of resources consulted in writing a doctoral thesis, it is very useful to use reference management software. There are free of charge software programmes, such as Mendeley, which allow you to choose the citation style (for example, APA, Harvard) or even to define a personal style. Irrespective of the choice, it is important to use the chosen style in the entire paper.

Appendices

They can include tables with primary data, methodological details, input files for programmes, detailed results of simulations, etc. Each appendix shall have a number and a name.

List of publications

The doctoral title is granted depending on the fulfilment of certain minimal standards at national level, which consist mainly in publishing scientific articles resulting from the doctoral research. For this reason, it is mandatory to include a list of publications written during the doctoral studies along with all the details necessary to identify them (including the link and the international database in which they were indexed). Participating in specialised conferences may be another mandatory condition, this is why the papers presented at scientific manifestations must also be mentioned. The name of the author of the doctoral thesis shall be highlighted (for example, in bold) to distinguish it from the names of the other co-authors, if applicable.

Writing recommendations

It is recommended to write the thesis using the UT Sans font (which can be downloaded from <https://intranet.unitbv.ro/Intranet/Identitate-vizuala/Fonturi>), 11 pt, one line spacing, Justified alignment, no paragraph indentation. The chapters will always begin on a new page. The doctoral students shall comply with the academic writing recommendations at the university level (see the Guide of good practices in academic research, available on the university e-learning platform). At the same time, the thesis will use all the visual identity elements of the university/faculty and the writing templates available on the intranet page of the doctoral school, at the address <https://intranet.unitbv.ro/Cercetare/Scoala-Doctorala-Interdisciplinara/Doctorat/Sustinere-teza>.