

Methodical recommendation

The structure of the PhD dissertation and requirements for content

Level of qualification	<u>Doctor of philosophy</u>
Mode of study	<u>All</u>
Fields of study	<u>All</u>

УДК:

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INTRODUCTION

After the program is finished PhD students get acquisition of the following competencies under the National Qualifications Framework: acquisition of in-depth knowledge of the specialty (group of specialties) for which the graduate student (adjunct) conducts research, including mastering basic concepts, understanding theoretical and practical problems, history of development and current state of scientific knowledge in the chosen specialty, mastering the terminology of the research area; mastering general scientific (philosophical) competencies aimed at forming a scientific worldview, professional ethics and general cultural outlook; acquisition of universal skills of the researcher, including oral and written presentation of the results of own research, application of modern information technologies in research, organization and training, management of research projects and / or preparation of proposals for research funding, registration of intellectual property rights; acquisition of language competencies sufficient to present and discuss the results of their research in a foreign language (English or other according to the specifics of the specialty) orally and in writing, as well as for a full understanding of foreign language scientific texts in the relevant specialty.

All mentioned skills are being aggregated in the PhD dissertation and being demonstrated during the final attestation for the PhD degree is in the form of PhD dissertation defence in front of the specially created single-defence specialized council

These Methodical recommendations aim to assist while preparing the PhD dissertation following the requirements by the Ministry of Education and Science of Ukraine. The strict following of these requirements is mandatory. The violation of the required format and layout leads to submission rejection. Some distinctions and peculiarities in a count of sections and their content exist for different PhD programmes, so please follow the additional instructions of your supervisors.

1 GENERAL REQUIREMENTS TO CONTENT AND STRUCTURE OF THE DISSERTATION

The dissertation prepared for defence, is being executed personally by the student and must contain the scientifically substantiated theoretical or experimental results, scientific novelty positions offered by the applicant, and also be characterized by unity of the maintenance and testify to the personal contribution of the applicant to science.

It is preferable the dissertation containing scientific and applied results must be accompanied by documents confirming the practical use of the results obtained by the applicant.

The dissertation must have the following main structural elements:

- Title page;
- Annotation (Summary);
- Content;
- List of symbols (abbreviation) if necessary;
- Main body;
- Conclusions;
- References;
- Appendices.

Each of these elements begins on a new page as well as sections of the main body and appendices.

THE TITLE PAGE

The title page of the dissertation is made out in the form given in Appendix A to these Requirements.

ANNOTATION

Annotation helps to get acquainted with the content and results of the dissertation. It is performed in the Ukrainian and English languages and generalize summary of its main content. The annotation of the dissertation should briefly present the main results of the study, indicating the topic relevance, scientific novelty and the presence of practical significance.

The annotation also indicates:

- surname and initials of the applicant;
- title of the dissertation;
- the type of dissertation and the scientific degree for which the applicant applies;
- specialty (code and name);
- the name of the higher educational institution where the preparation was carried out and the defence will take place;
- city, year.

A sample annotation is provided in Appendix B to these Requirements

The annotation is advised to be written at the very end, when the rest of the dissertation has been completed. In the abstract, make sure to:

- State the main topic and aims of your research
- Describe the methods you used
- Summarize the main results
- State your conclusions

The volume of the annotation is 0.2 - 0.3 Author's sheets. Considering 1 Author's sheet equals 40000 symbols or 24 pages in Times New Roman, 14pt., the annotation is about 8 pages.

The abstract may also be submitted in a third language related to the subject matter.

Keywords are given corresponding to the each language at the end of the annotation. The set of keywords should correspond to the main content of the dissertation, reflects the research topic and provide a thematic study to be found.

The number of keywords is from five to fifteen. Keywords are given in the nominative case, printed in a line divided with commas.

List of the applicant's publications on the topic of the dissertation goes after the keywords. Publications are indicated in following order:

a. Publications that reflect the main scientific results of the dissertation;

- at least one article in periodical scientific journals of other states (that are members of the Organization for Economic Cooperation and Development (OECD) and / or the European Union) in the scientific direction of the dissertation.

or

publication in journals included in the list of scientific professional journals of Ukraine ranked category "A"

or

in a foreign journals (! not conferences) Web of Science Core Collection and / or Scopus indexed;

- articles in scientific journals included in the list of scientific professional journals of Ukraine ranked category "B" (in substitution of one article, a monograph or a chapter in the monograph published in co-authorship may be accepted).

b. Publications that certify the approbation of the dissertation materials;

- Conference papers

c. Publications which additionally reflect the scientific results of the dissertation.

- other articles prepared in the scientific direction of the dissertation but don't fit the paragraph №1 of the publication requirements;

- patents, practical recommendations etc.

TABLE OF CONTENTS

Table of contents must contain the names of all structural elements, sections and subsections with the numbering and numbers of their initial pages.

The table of contents sample annotation is provided in Appendix C

THE LIST OF SYMBOLS

The list of symbols, units of measurement, abbreviations is given, if necessary, in the form of a separate list. Additionally, their explanation is given in the text at the first mention. Abbreviations, symbols, that are repeated no more than twice are not included in the list.

MAIN BODY

The volume of the main text of the dissertation is calculated by pages (the author's sheets) - 100-155 pages. (4,5-7 author's sheets), and for the social and humanity sciences - 155-200 pages. (7-9 author's sheets)

The main body of the dissertation must contain:

Introduction. Reveals the essence and state of the scientific problem (task) and its relevance, justification of the need for research.

Introduction perform to the reader what to expect in the rest of the dissertation. The introduction should:

- Establish research topic, giving necessary background information to contextualize your study.
- Narrow down the focus and define the scope of the research
- Discuss the state of existing research on the topic.
- Clearly state established research questions and objectives
- Give an overview of your dissertation's structure

Introduction must contain.

Relevance of the topic. By critical analysis and comparison with known solutions to the problem (scientific problem) substantiate the relevance and feasibility of work for the development of the particular field of science or production. Coverage of relevance should not be verbose. It is enough to briefly

express the main thing in a few sentences - the essence of the problem or scientific task.

Connection of work with scientific programs, plans, topics (if any, ask you supervisor)

The connection of the chosen dissertation topic with plans of the Sumy national agrarian University, and also with branch and (or) state plans and programs is briefly stated.

The Aim and Objectives of the study. Formulate the aim of the work and the objectives that need to be solved to achieve this aim. The aim should not be formulated as "Research ...", "Study ...", because these words indicate the means or actions to reach the aim but not the aim itself. The object of study is a process or phenomenon that creates a problem situation and is selected for study. The subject of research is located within the object. The object and subject of research as a category of scientific process are correlated as general and partial.

Research methods. The list of the used research methods for achievement of the objectives of research is given. They should not be listed in isolation from the content of the work, but briefly and meaningfully determining what exactly was studied by one method or another.

Scientific novelty of the obtained results. Give a brief annotation of new scientific provisions (solutions) proposed by the applicant personally. It is necessary to show the difference between the obtained results and the previously known ones, to describe the degree of novelty (first obtained, improved, further developed). Each scientific position is clearly formulated, highlighting its main essence and focusing on the level of novelty achieved. The formulated scientific position should be read and perceived easily and unambiguously. It is inappropriate to simply state that the dissertation has done one thing or another, but it is impossible to reveal the essence and novelty of what is written. Avoid to perform the *Scientific novelty* in the form of annotation. It cannot include a description of new applied (practical) results obtained in the form of methods, devices, techniques, schemes, algorithms, etc. All scientific provisions, revealed as novelty achieved, are the theoretical basis

(foundation) of the scientific problem or scientific problem solved in the dissertation.

Practical significance of the obtained results. It is necessary to provide information on scientific use of research results or recommendations on their use, and in the dissertation, which has applied value - information on practical application of obtained results or recommendations on how to use them. Noting the practical value of the obtained results, it is necessary to provide information on the degree of their readiness for use or scale of use. It is necessary to give brief information on the implementation of research results, indicating the names of the organizations in which the implementation is carried out, the forms of implementation and details of the relevant documents.

Applicant's personal contribution. In case of using in the dissertation ideas or developments belonging to co-authors with whom scientific works were published, the applicant must note this fact in the dissertation and in the abstract with a mandatory personal contribution to these works or developments. Approbation of dissertation results It is indicated at which scientific congresses, conferences, symposiums, meetings the results of research presented in the dissertation are published.

Indication the number of authors publications articles, monographs, conference papers, author's certificates, patents of the dissertation are published.

Main body's sections can be divided in subsections (number of sections depends on the specialty and defined by the scientific and educational programme)

The sections of the dissertation should comprehensively and fully set out the content of the applicant's own research, reference is made to all the scientific works of the applicant, given in the annotation. A list of these works should also be included in the list of sources used.

The sections of the dissertation can be divided into subsections (numbering consists of section number and serial number of the section separated by a dot), items (numbering - from the section number, serial number of the section and serial number of the item separated by a dot), sub-items (numbering - from the section

number, serial number). subdivision numbers, serial number of the item and serial number of the sub-item, separated by a dot). Sections, subsections, paragraphs and sub-paragraphs are numbered in Arabic numerals. Many small subsections (less than 3-4 pages) are not allowed.

Avoid constructing a dissertation as a set (combination) of your previously published articles as they are. Remember, the dissertation is a separate scientific paper with its own logic which goes through the whole paper and is revealed in the following manner: *Literature review (Theoretical framework) – Methodology (Methods) – Results and Discussion – Conclusion* (Note, those are not the title of sections)

Literature review

The literature review is assumed not to be just description of the existing studies but to develop a coherent structure and argument that leads to a clear basis or justification for your own research and show existing gap in the literature, new theoretical or methodological approach to the topic, approaches to a solution to an unresolved problem, theoretical debates

The literature review must become the basis for establishing the list of key theories, concepts and models that frame your research

Methodology

The methodology describes how research was being conducted, allowing to assess its validity. Methodology generally includes:

- The overall approach and type of research (e.g. qualitative, quantitative, experimental, ethnographic)
- Methods of collecting data (e.g. interviews, surveys, archives)
- Details of where, when, and with whom the research took place
- Methods of analyzing data (e.g. statistical analysis, discourse analysis)
- Tools and materials you used (e.g. computer programs, lab equipment)

Results and Discussion

Results include tables and figures to show results obtained in order to substantiate results' relation to the question or whether the hypothesis was supported. It is important to report all results that are relevant to the research questions, including any that show numbers opposite to expectations. Additional data (including raw numbers, full questionnaires, or interview transcripts) can be included as an appendix.

The discussion is supposed to explore the meaning and implications of the results in relation to the research questions, discussing whether they met the research hypotheses

Conclusion

The dissertation conclusion should concisely answer the main research question, leaving the reader with a clear understanding of your central argument and emphasizing what your research has contributed. Conclusion often also includes recommendations for future research or practice.

CONCLUSIONS

The conclusions set out the most important scientific and practical results of the dissertation, indicate the scientific problems to which the results of the study can be used, as well as possible areas for further research on the topic of the dissertation.

If there are a practical value and employment of the obtained results, information on the use of research results or recommendations for their use is provided. If the results of the research are implemented, the information is submitted with the names of the organizations in which the implementation is carried out. In this case, the annexes may contain copies of relevant documents.

REFERENCES

The references list is formed by the author at his choice (optionally - at the end of each section of the main part of the dissertation) in one of the following ways:

- in the order of appearance in the text;
- in alphabetical order the of the first authors' surnames or titles;
- in chronological order .

Allowed styles for the list of scientific publications:

- DSTU, State Standard of Ukraine 8302:2015 (**Recommended**)
- APA- (American Psychological Association) style (**Recommended**)
- MLA (Modern Language Association) style.
- Chicago/Turabianstyle.
- Harvard style.
- ACS (American Chemical Society) style.
- AIP (American Institute of Physics) style.
- IEEE (Institute of Electrical and Electronics Engineers) style.
- Vancouver style.
- OSCOLA.
- APS (American Physics Society) style.
- Springer MathPhys Style.

APPENDICES

The appendices may include additional supporting material necessary for the completeness of the dissertation:

- intermediate formulas and calculations;
- auxiliary digital data tables;
- protocols and acts of tests, implementation, calculations of economic effect, letters of support of results of dissertation work;

- instructions and methods, description of algorithms that are not the main results of the dissertation, descriptions and texts of computer programs, which are developed in the process of the dissertation;
- auxiliary illustrations;
- other data and materials.

The mandatory appendix to the dissertation is a list of the applicant's publications on the topic of the dissertation and information on approbation of the dissertation results (the names of the conference, congress, symposium, seminar, school, place and date, form of participation are indicated).

2 GENERAL FORMAT AND LAYOUT

Paper format: Use the standard A4 format and set the following margins left - not less than 20 - 25 mm, right - not less than 10 mm, upper - not less than 20 mm, lower - not less than 20 mm

Size & line spacing: The text should be in 14 point character and 1.5 spaced lines. Footnotes are not allowed. Text should be justified

Font: Times New Roman

Indent the first line of each paragraph of text 1,25cm from the left margin. Use the tab key or the automatic paragraph-formatting function of your word-processing program to achieve the indentation (the default setting is likely already 1,25cm). Do not use the space bar to create indentation.

Tables & pictures: Insert tables, graphs and other images directly where they belong in the text. Do not use colours in tables or graphs: use instead bold, punctuated or dashed lines for graphical images. Should it be necessary to introduce coloured pictures, approve it by your supervisor

The page numbering starts on the title page and goes through the whole world including appendices. The number on the title page is not being indicated.

While numbering formulas and figures, if there are references to them in the text of the dissertation, the section number and the formula number (figure) are affixed through a dot. The first number reflects the number of section and the number after dot is sequence number within the section. The same is the numbering of tables and figures.

The first number reflects the number of the section and the number after the dot is the sequence number within the section. The same numbering is for the tables and figures.

Appendices denote with letters, not numbers (Appendix A, Appendix B ...) Numbering of the formulas figures and tables within the appendices contains the

letter of Appendix the sequence number within the appendix following the dot (e.g. "A.2" - means appendix A and formula 2)

The numbered formula is given in the middle of a new line (numbering - on the right side in parentheses). The number and title of the figure are given at the bottom / right of the figure.

Example of figures' format and layout

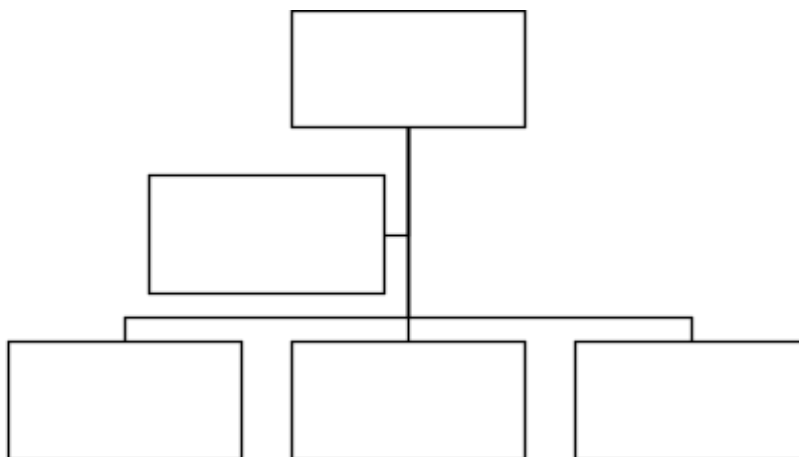


Figure 2.3 – Name of the figure (*centred*)

Source: prepared by the author based on Duckworth et al. (2019)

Example of tables' format and layout

Table 2.4 – Name of the table (*left -side alignment*)

Heading	Heading	
	Heading	Heading

Source: prepared by the author

APPENDICES

Ministry of Education and Science of Ukraine
Sumy National Agrarian University

Qualifying scientific work on the
rights of the manuscript

Surname Name

UDC: _____

DISSERTATION

(Title)

(Speciality)

(Field of study)

Submitted for a scientific degree of Doctor of philosophy

The dissertation contains the results of own research. The use of ideas, results and texts of other authors have references to the relevant source

(signature, name and surname of the applicant)

Scientific supervisor (consultant) _____
(name and surname of the supervisor, scientific degree, scientific title)

Sumy 2021

ANNOTATION (*sample*)

Sorokina NV Formation of professional foreign language competence of future philologists by means of multimedia technologies. - Qualifying scientific work on the rights of the manuscript.

The dissertation on competition of a scientific degree of the candidate of pedagogical sciences (doctor of philosophy) on a specialty 13.00.04 "Theory and a technique of professional education" (012 - Preschool education). - Institute of Pedagogy of the National Academy of Pedagogical Sciences of Ukraine, Kyiv, 2016.

Annotation content

Keywords

List of publications

- 1.
- 2.

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APA style examples

- Journal Article References

Grady, J. S., Her, M., Moreno, G., Perez, C., & Yelinek, J. (2019). Emotions in storybooks: A comparison of storybooks that represent ethnic and racial groups in the United States. *Psychology of Popular Media Culture*, 8(3), 207–217. <https://doi.org/10.1037/ppm0000185>

Paranthetical citation: (Grady et al., 2019)

Narrative citation: Grady et al. (2019)

- Book/Ebook References

Jackson, L. M. (2019). *The psychology of prejudice: From attitudes to social action* (2nd ed.). American Psychological Association. <https://doi.org/10.1037/0000168-000>

Sapolsky, R. M. (2017). *Behave: The biology of humans at our best and worst*. Penguin Books.

Svendsen, S., & Løber, L. (2020). *The big picture/Academic writing: The one-hour guide* (3rd digital ed.). Hans Reitzel Forlag. <https://thebigpicture-academicwriting.digi.hansreitzel.dk/>

Paranthetical citations: (Jackson, 2019; Sapolsky, 2017; Svendsen & Løber, 2020)

Narrative citations: Jackson (2019), Sapolsky (2017), and Svendsen and Løber (2020)

- Conference proceedings published in a journal

Duckworth, A. L., Quirk, A., Gallop, R., Hoyle, R. H., Kelly, D. R., & Matthews, M. D. (2019). Cognitive and noncognitive predictors of success. *Proceedings of the National Academy of Sciences, USA*, 116(47), 23499–23504. <https://doi.org/10.1073/pnas.1910510116>

Paranthetical citation: (Duckworth et al., 2019)

Narrative citation: Duckworth et al. (2019)

- Monograph as part of a journal issue

Ganster, D. C., Schaubroeck, J., Sime, W. E., & Mayes, B. T. (1991). The nomological validity of the Type A personality among employed adults [Monograph]. *Journal of Applied Psychology*, 76(1), 143–168. <http://doi.org/10.1037/0021-9010.76.1.143>

Parenthetical citation: (Ganster et al., 1991)

Narrative citation: Ganster et al. (1991)

- Doctoral dissertation

Zambrano-Vazquez, L. (2016). *The interaction of state and trait worry on response monitoring in those with worry and obsessive-compulsive symptoms* [Doctoral dissertation, University of Arizona]. UA Campus Repository. <https://repository.arizona.edu/handle/10150/620615>

- Webpages

National Institute of Mental Health. (2018, July). *Anxiety disorders*. U.S. Department of Health and Human Services, National Institutes of Health. <https://www.nimh.nih.gov/health/topics/anxiety-disorders/index.shtml>

Parenthetical citation: (National Institute of Mental Health, 2018)

Narrative citation: National Institute of Mental Health (2018)

Bologna, C. (2019, October 31). *Why some people with anxiety love watching horror movies*. HuffPost. https://www.huffpost.com/entry/anxiety-love-watching-horror-movies_1_5d277587e4b02a5a5d57b59e

Parenthetical citations: (Bologna, 2019)

Narrative citations: Bologna (2019)

You can find some more examples:

<https://apastyle.apa.org/style-grammar-guidelines/references/examples>