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METHODOLOGICAL GUIDELINES FOR DISSERTATION PREPARING TO DOCTOR OF PHILOSOPHY (PHD) AND DOCTOR BY PROFILE DEGREE CANDIDATES

1. GENERAL PROVISIONS

1.1 The goal of Methodological Guidelines development shall be installing general demands for Doctor of Philosophy (PhD) and Doctor by Profile degree candidates’ dissertation papers (hereinafter - dissertation) at al-Farabi Kazakh National University (hereinafter - the University).

1.2 Methodological Guidelines for Dissertation Preparation and Defence (hereinafter - Methodological Guidelines) shall define general demands for writing, formatting, and presenting order for dissertation defence, as well as defining order for dissertations’ independent execution.

1.3 Methodological Guidelines is an in-house standard document of the University. It shall serve as an obligatory guideline for Doctor of Philosophy (PhD) and Doctor by Profile scientific degrees doctoral candidates, the University’s Teaching staff, and the interested parties.

2. REFERENCE DOCUMENTS

2.1 Methodological Guidelines are developed in accordance to the following documents:

- The No. 319-III “On Education” Law of the Republic of Kazakhstan dated 27 July, 2007;
- The No. 103-VIII “On Science and Technology Policy” Law of the Republic of Kazakhstan dated July 1, 2024;
- The State General Obligatory Standard for Higher and Postgraduate Education (the Ministry of Science and Higher Education of the Republic of Kazakhstan Order No. 2 dated July 20.2022);
- Rules for the Conferment of Academic Degrees (the Ministry of Science and Education of the Republic of Kazakhstan Order No. 127 dated March 31, 2011);
- On Approval of the Model Rules for the Activities of Organisations of Higher and Postgraduate Education (the Ministry of Science and Higher Education of the Republic of Kazakhstan Order No. 595 dated October 30, 2018);
- Regulations on the Plagiarism Review of Students’ Written Works (approved by the decision of the “al-Farabi Kazakh National University” NPJSC Scientific Council; Protocol No. 2 dated October 30, 2023);

- Regulations on the Use of Artificial Intelligence Technologies at the "al-Farabi Kazakh National University" NPJSC (approved by the decision of the "al-Farabi Kazakh National University" NPJSC Scientific Council; Protocol No. 6 dated September 6, 2024);

- Regulations on the Qualification Requirements for Scientific Advisers of Doctoral Students at al-Farabi Kazakh National University (approved by Order No. 575 of the Chair of the Board – Rector of NPJSC "al-Farabi Kazakh National University" dated 22.12.2021);

- Instruction on the Dissertation and Author's Abstract Formatting (Order of the Higher Attestation Committee of the Ministry of Education and Science of the Republic of Kazakhstan dated 28 September 2004 No. 377-3zh);

- Publication Manual of the American Psychological Association, Seventh Edition, 7th Edition APA Style https://apastyle.apa.org/products/publication-manual-7th-edition

- Order of the Minister of Education and Science of the Republic of Kazakhstan on the Approval of the Model Regulations on the Dissertation Council dated 31 March, 2011, No. 126.

3. GENERAL DISSERTATION DEMANDS (DOCTOR OF PHILOSOPHY (PHD), DOCTOR BY PROFILE)

3.1 Dissertation is a qualifying scientific paper performed independently by a student (including advisory of local and foreign scientific consultants), and defended at the Republic of Kazakhstan or abroad. It shall be presented in manuscript form and be relevant to an exact specialty of the Doctor of Philosophy (PhD) and Doctor by Profile educational training programme in the framework of a relevant scientific field.

3.2 The topic of a dissertation (on its approval date) shall correspond with scientific development directions formed by the Higher Scientific and Technical Committee of the Government of the Republic of Kazakhstan in accordance with "On Science and Technological Policy" Law of the Republic of Kazakhstan and/or state programmes.

3.3 A dissertation shall be written in compliance with principles of inner integrity, scientific novelty, authenticity, practical value, academic honesty, and independent execution.

3.3.1. The principle of independent execution implies that a dissertation paper shall be written by a student and be an evidence of an author's own contribution to science, technique, and technology development. The use of Artificial Intelligence (AI) is permitted for statistical sampling of variable data. While AI might be used for dissertation preparation, the paper's general provisions, recommendations, conclusions, and scientific results shall be formulated independently by an author.

3.3.2. The principle of inner integrity implies that a dissertation is innerly integral, its chapters and provisions are logically interconnected. Dissertation's scientific provisions, obtained results, and recommendations shall comply with the paper's goals and objectives. New solutions (principles and methods) proposed by an author shall be well argued and evaluated in comparison with the previous solutions.

3.3.3. The principle of scientific novelty implies that a dissertation's scientific results, provisions, recommendations, and conclusions are new. It also implies that a dissertation shall contain:

- new and scientifically valid theoretical and/or experimental results, a compilation of which is qualified as a new scientific achievement or has importance for development of certain scientific fields;
- or scientifically valid technical, technological, economic or management decisions, an integration of which greatly benefits the country's economy.

3.3.4. The principle of authenticity implies that the results of a dissertation paper are obtained with the use of modern methods of scientific research, data processing and interpretation (with the use of computer and/or AI technologies if applicable). For dissertations in natural sciences, technical, medical, and agricultural specialties, theoretical conclusions, models, discovered connections and regularities shall be proven by experiment research. The experiment results shall be replicable and/or statistically valid. For the "Education" specialties group such results shall be proven by pedagogical experiment (if applicable).

3.3.5. The principle of practical value implies that a practically valuable dissertation shall provide data about the practical use of scientific results given by an author. It shall be proven by Certificates of Authorship, Patents, Certificates of Intellectual Property, Certificates of Implementation, and other official documents. For theoretically valuable dissertations, recommendations on using scientific conclusions shall be provided.

3.3.6. The principle of academic honesty implies that an author shall respect other authors' rights and legal interests. An author shall not:

- use and/or assign to themselves any text, ideas, hypotheses, conclusions, methods, research results, graphs, codes, images, or other authors' works without citing the original source and author's name. Additionally, plagiarism, i.e. the use of other authors' texts with synonymic word and phrase substitution with no change in meaning (including texts translated from foreign languages) is forbidden;
- use AI technologies without citing them. The citation shall include the name of AI technology, its producer (or copyright holder), its version, and the date of address (or use);
- use own material, factual and numerical data without self-citation and/or citing the source of own citation (autoplagiarism);
- cite non-existent sources, provide invalid data and/or results, as well as records or messages about them (fabrication);
- do manipulations with research materials, research equipment, images, illustrations or processes that can invalidate the dissertation research material (falsification).

3.3.7. The conjunction of legal documents and pieces of legislation names, names of state and other official bodies and organisations, as well as universally recognised terms, definitions, and concepts in a certain scientific field shall not be viewed as plagiarism. The same principle shall be applied to texts of pieces of legislation and other writings under research, as long as their volume and the way of

their application do not bring into question the independent execution of a dissertation paper.

4. GENERAL DEMANDS TO USING ARTIFICIAL INTELLIGENCE (AI) INSTRUMENTS

4.1 When preparing a dissertation paper, an author might use AI technologies if given preliminary consent from both local and foreign academic advisers, as well as from members of a local Kazakhstani Ethics Committee of a Higher and Postgraduate Educational Body (hereinafter HPEB) in which a dissertation is written.

Dissertation authors, scientific advisers, and members of local ethics committees must take into account the potential implications and consequences arising from the use of AI in dissertation preparation.

The dissertation author, when using AI technologies in their work, shall be guided by these recommendations, Paragraph 5 of the Rules for the Conferment of Academic Degrees, the university's ethical norms and regulations, and the Regulations on the Use of Artificial Intelligence Technologies.

The use of AI is permitted for the statistical sampling of variable data. When using AI technologies in the preparation of a dissertation, its scientific results, theses, recommendations, and conclusions shall be formulated independently by the author.

4.2 The dissertation author shall inform about the use of AI technologies by means of reference formatted in accordance with the requirements of Chapter 3 of these Recommendations, including a description of research stages at which, and the manner in which, the author used AI technologies, as well as a description of the methods and procedures employed to verify the reliability of the data thus obtained and/or their processing and interpretation. The absence of such information in the dissertation shall prove that the author did not use AI technologies in the dissertation.

4.3 The dissertation author shall take the necessary measures to prevent the disclosure of restricted-access personal data without the consent of the data subject or their legal representative, the disclosure of confidential or other legally protected information without the consent of the copyright holder, as well as any violation of other rights and legitimate interests of third parties. Dissertation authors shall adhere to the reliable, safe, and ethical use of information obtained with the help of AI technologies.

4.4 The use of technical means and methods, including AI technologies, for the purpose of reducing or eliminating the possibility of detecting plagiarism is forbidden.

The use of AI in empirical research methods involving children under the age of 13 is forbidden. Likewise, the use of AI technologies is not allowed when preparing works classified as "for official use only" or "secret".

5. REQUIREMENTS FOR THE DISSERTATION WRITING PROCEDURE AND THE DISSERATION CONTENT

5.1 The preparation of a doctoral dissertation is carried out during the period of the Doctoral Candidate's Research Work. The doctoral dissertation constitutes the final outcome of this research work.

The dissertation shall be carried out under the supervision of local and foreign academic advisers (with the exception of the "National Security and Military Science" education group) who hold either scientific (Candidate of Sciences, Doctor of Sciences, Doctor of Philosophy (PhD), Doctor by Profile) or academic degrees of Doctor of Philosophy (PhD) and Doctor by Profile. They shall be specialists in the doctoral candidate's field of research and meet the relevant qualification requirements. The academic supervisors ensure the completion of the doctoral dissertation, compliance with the principles of academic integrity, and the timely submission of the dissertation for defence.

5.2 A dissertation containing state secrets shall be carried out under the supervision of two local academic advisers who hold scientific degrees (Candidate of Sciences, Doctor of Sciences, Doctor of Philosophy (PhD), Doctor by Profile) or academic degrees of Doctor of Philosophy (PhD), Doctor by Profile. They shall be specialists in the doctoral candidate's field of research, or hold a military (special) rank of at least colonel, have no less than five (5) years of research and teaching experience, and be actively engaged in scientific research in the doctoral candidate's field of study.

5.3 The content of a dissertation research shall be oriented towards implementation of national priorities and fundamental or applied research. The dissertation contains new and original material, including the description of new factors, phenomena, and regularities, or the generalization of previously known propositions from other scientific viewpoints or in a new aspect. The dissertation sets out the initial premises of the research, its progress, and the results obtained. The content of the dissertation must provide convincing arguments in support of the chosen concept, while opposing viewpoints must be subjected to comprehensive analysis and critical evaluation. Materials of a discursive and polemical nature are inherent elements of the dissertation.

5.4 The topic of a doctoral dissertation shall be determined and approved during the first semester by a Faculty/Research Institute Academic Council and the Academic Council of a HPEB, and formalized by an order of the Head of a HPEB. When the content of a dissertation research includes information for official use, materials containing state secrets, or information constituting a commercial secret, the topic and the dissertation research shall be assigned the appropriate classification marking in the manner prescribed by law.

5.5 With regard to results of a Doctoral Candidate's Research Work and/or scientific (experimental) findings obtained, or a renewed approval of the scientific reasoning for a dissertation research (research proposal), it is permitted to adjust the topic of a doctoral dissertation.

5.6 The main results of a doctoral candidate's research shall be published in scientific, scientific-analytical, and scientific-practical journals in accordance with the Rules for the Conferment of Academic Degrees (the Ministry of Science and Education of the Republic of Kazakhstan Order No. 127 dated March 31, 2011).

5.7 The content of a dissertation research is oriented towards implementation of national priorities, state programs, and programmes of fundamental or applied research. The topic of a dissertation, as of the date of its approval, must correspond to the priority areas of scientific development determined by the Higher Scientific and Technical Commission under the Government of the Republic of Kazakhstan and/or to state programs and the relevant educational programme/specialty.

5.8 An author should adhere the following principles as their guideline when choosing a dissertation topic:

- to take into account the relevance of the topic and its consistency with the current state and future prospects of the science, engineering, and technology development;
- to take into account the degree to which the topic has been developed and covered in the literature;
- to overview the possibility to obtain experimental data in the course of working on the dissertation;
- to take into account and prioritise the interests and needs of the enterprises and organizations whose materials will be used in the dissertation.

5.9 The graduating department shall be responsible for any mismatch between the topic of a doctoral dissertation and the qualifications of an academic adviser, which resulted in the replacement of an approved adviser and/or an adjustment of a dissertation topic.

5.10 Before the documents are accepted for defence at the HPEB where the doctoral candidate has studied, a dissertation project shall undergo a preliminary discussion at an expanded meeting of the department or at a meeting of the Academic council of a relevant structural unit of the HPEB.

5.11 One (1) month before the extended meeting, a dissertation shall be sent for review to two (2) experts who hold a scientific degree (Doctor of Sciences, Candidate of Sciences, Doctor of Philosophy (PhD), or Doctor by Profile) or an academic degree of Doctor of Philosophy (PhD) or Doctor by Profile in the doctoral candidate's area of research. The reviewers shall submit their reviews in written form, which must include the following points:

- the relevance of the research topic (including its correspondence to the priority areas of scientific development and/or state programs), the scientific results, their substantiation and novelty;
- the practical and theoretical significance of the research findings;
- the degree of their reliability;
- the personal contribution of the doctoral candidate to obtaining the scientific results;
- the soundness of the propositions submitted for defence;
- the completeness of the publication of the dissertation materials in print;
- the presence or absence of improper borrowing in the text of the dissertation and in the doctoral candidate's publications, as well as comments and suggestions.

The reviews shall be provided to the doctoral candidate no later than five (5) working days before the department meeting.

5.12 The dissertation discussion at department meeting of the place where the dissertation is written shall include the following:

- presentation by the department meeting chairman, which shall cover the dissertation topic and academic advisers approval dates, the terms and location of scientific internships within the framework of a doctoral program, and the completeness of publication of the dissertation materials;
- presentation by a doctoral candidate;
- questions from department meeting members and responses from a doctoral candidate;
- presentations by the academic advisers, and, in the absence of the foreign adviser, reading of their written review;
- presentations by reviewers;
- responses of a doctoral candidate to the reviewers' comments and conclusions based on their recommendations;
- discussion among the participants of the departmental meeting;
- the conclusion is made by open or secret voting via a simple majority of votes.

Any comments on a dissertation recommended for defence shall be addressed by the doctoral candidate, if agreed upon, prior to the dissertation submission to the Dissertation Council.

5.13 The conclusion regarding the recommendation or non-admission of a dissertation for defence shall be prepared in the form of an extract from the protocol of an extended department and/or structural unit meeting. It is signed by a chairman of the meeting, certified by the Head of the Training and Scientific Personnel Certification Office, and approved by the respective vice-rector.

The conclusion shall include the following:

- the relevance of the research topic;
- the scientific results, their validity and novelty;
- the practical and theoretical significance of the scientific results;
- the degree of their reliability;
- the doctoral candidate's personal contribution to obtaining the scientific results;
- the substantiation of the theses submitted for defence;
- the completeness of the publication of dissertation materials in scientific journals in accordance with the Rules for the Conferment of Academic Degrees (in cases where the dissertation is presented in the form of a dissertation work);
- the presence of any improper borrowings; comments and suggestions;
- and a final statement on whether the dissertation is recommended or not recommended for defence.

5.14 The recommended volume of a dissertation for the degree of Doctor of Philosophy (PhD) or Doctor by Profile shall be 80 pages (approximately 34,000 words or more) for natural sciences and technical fields programmes, and not less than 120 pages (approximately 51,000 words or more) for educational programs for social sciences and humanities programmes. As a rule, the total volume of the

dissertation should not exceed 300 pages. The abstract, Appendix, and Reference List are not included in the specified volume of the dissertation.

6. STRUCTURE OF A DOCTOR OF PHILOSOPHY (PHD) OR DOCTOR BY PROFILE DISSERTATION

6.1 A doctoral student, with an agreement from an academic adviser, may choose the structure of the dissertation for the degree of Doctor of Philosophy (PhD) / Doctor by Profile in accordance with the selected style of the Instruction on the Dissertation and Author's Abstract Formatting (Order of the Higher Attestation Committee of the Ministry of Education and Science of the Republic of Kazakhstan dated 28 September 2004 No. 377-3zh) or the Publication Manual of the American Psychological Association, Seventh Edition (APA Style).

6.2 The STRUCTURAL elements of a dissertation for the Doctor of Philosophy (PhD) / Doctor by Profile degree shall be the following:

- title page;
- table of contents;
- normative references;
- definitions;
- symbols and abbreviations;
- introduction;
- main part;
- conclusion;
- reference list;
- appendix.

6.3 The title page is the first page of a dissertation and serves as a source of information necessary for the processing and search of the document (Appendix 2). It shall contain the following:

- name of the institution where a dissertation was written;
- Universal Decimal Classification (UDC) index;
- restrictive marking (if required);
- surname, first name, and patronymic of a doctoral candidate;
- the title of a dissertation;
- code and title of an educational program (specialty);
- degree sought;
- surname and initials of an scientific adviser (consultant);
- country;
- city and year.

The title page is included in the overall volume of a dissertation, but the page number is not printed on the title page.

The title page must bear the candidate's personal signature, executed in black ink or drafting ink.

6.4 The dissertation sections shall be assigned sequential numbers throughout the entire work, indicated by Arabic numerals without a full stop and written with a paragraph indent. Each subsection shall be numbered within the corresponding section. The subsection number shall consist of the section number and the subsection number separated by a full stop. No full stop is placed at the end of the subsection number. Sections, as well as subsections, may consist of one or several items.

The dissertation table of contents shall include the introduction, the sequential numbers and titles of all chapters, sections, and subsections, the conclusion, the list of references used, and the titles of the appendices, indicating the page numbers on which these elements of the dissertation begin (Appendix 3)

6.5 The "Normative references" structural element contains a list of standards cited in the text of a dissertation. The list of referenced standards shall begin with the words: "In the present dissertation for the degree of Doctor of Philosophy (PhD) / Doctor by Profile, references are made to the following standards." The list shall include the designations of the standards and their titles, arranged in ascending order of their registration numbers.

6.6 The "Definitions" structural element contains the definitions necessary to clarify or establish the terms used in a dissertation. The list of definitions shall begin with the words: "In the present dissertation, the following terms with corresponding definitions are used."

6.7 The "Symbols and abbreviations" structural element contains a list of the symbols and abbreviations used in a dissertation. The symbols and abbreviations are listed either in the order of their appearance in the text of a dissertation or in alphabetical order, with the necessary explanations and clarifications. It is permitted to present definitions, symbols, and abbreviations together in a single structural element entitled "Definitions, symbols and abbreviations."

6.8 The introduction must contain an assessment of:

- the current state of the scientific or scientific-technological problem (task) being addressed, the grounds and initial data for the development of the topic;
- the justification of the necessity of the given research work;
- information on the planned scientific and technical level of the development, on the patent research conducted and the conclusions drawn from it, as well as information on the metrological support of the dissertation.

The introduction must demonstrate the relevance and novelty of the topic, the connection of a given work with other research projects, must state the aims, object, subject, and tasks of the research, indicating their place within the overall research work, and reflect the methodological basis and the propositions submitted for defence. **The main propositions submitted for defence** shall be **proven scientific hypotheses**, concepts, or conclusions that constitute **new knowledge** in the corresponding field (Recommendations on the formulation of the main propositions submitted for defence are given in Appendix 1).

6.9 The main part of a Doctor of Philosophy (PhD) / Doctor by Profile degree dissertation must consist of at least three chapters and shall include:

- the choice of a research direction, including the justification of the chosen research direction, the methods for solving the problem and their comparative

evaluation, and a description of the selected general methodology for conducting the research work;

- the process of theoretical and/or experimental studies, including the determination of the nature and content of the theoretical research, the research methods, calculation methods, the justification of the necessity of experimental work, the operating principles of the developed objects, and their characteristics;
- the compilation and evaluation of the research results, including an assessment of the completeness of the solution to the stated problem and proposals for further directions of work, along with an assessment of the reliability of the obtained results, and their comparison with similar results of local and foreign studies.

6.10 The conclusion of a Doctor of Philosophy (PhD) / Doctor by Profile degree dissertation must contain:

- brief conclusions based on the results of a dissertation research;
- an assessment of the completeness with which the stated tasks have been solved;
- the development of recommendations and initial data for the particular application of the results;
- an assessment of the technical and economic efficiency of the implementation;
- an assessment of the scientific level of the work performed in comparison with the best achievements in the given field.

6.11 It is recommended to primarily use sources published within the last 10 years (unless otherwise dictated by the research topic specificity). This ensures the relevance and synchronism of the scientific review. The use of earlier sources is permitted in case of their fundamental nature or absence of more recent data available on the issue. The reference list must contain information on the sources used in the preparation of the dissertation (Appendix 4).

6.12 The “Appendix” structural element is recommended for materials related to a completed dissertation that, for various reasons, cannot be included in the main body of a text. The appendices may include:

- midline mathematical proofs, formulas, and calculations;
- tables of auxiliary numerical data;
- test protocols;
- descriptions of equipment and instruments used in experiments, measurements, and test;
- instructions, methodologies, descriptions of algorithms and software for computer-solved problems developed in the course of the dissertation research;
- illustrations (photographs) of an auxiliary nature;
- whole (or partial) dissertation review protocols by a Scientific and Technical Council;
- Dissertation Results Implementation Acts;
- and other materials.

All appendices must be referenced in the text. The appendices are arranged in the order in which references to them appear in a dissertation. Each appendix should

begin on a new page, with the word “Appendix,” its designation, and degree indicated at the top in the center of the page. The appendix must have a title, which is written on a separate line in capitalized form, symmetrical to the text.

The use of Latin capital letters is permitted to designate appendices, except for the letters I and O. After the word “Appendix,” the letter indicating its sequence follows.

6.13 A doctoral student, i.e. the dissertation author, and scientific advisers carry the responsibility for the decisions adopted, along with the accuracy and objectivity of all data.

7. DOCTORAL DISSERTATION FORMATTING RULES (VIA THE INSTRUCTION ON THE DISSERTATION AND AUTHOR’S ABSTRACT FORMATTING)

7.1 The dissertation must be prepared by any printed method, either using a typewriter or a computer and printer, on one side of A4-size white paper with **single line spacing**. The font shall be Times New Roman, 14.

7.2 Margins in the dissertation text shall be set as follows: right – 10 mm, top – 20 mm, left – 30 mm, and bottom – 20 mm. The paragraph indent shall be uniform throughout the entire text of the report and be equal to 1.25 cm.

It is permitted to use computer capabilities to highlight certain terms, formulas, and theorems by applying font styles.

7.3 Regardless of the method of preparation, the quality of the printed text and the formatting of illustrations, tables, and printouts must ensure clear reproduction.

7.4 When preparing the dissertation, it is necessary to maintain uniform density and clarity of the image throughout the entire volume. All lines, letters, numbers, and symbols must have consistent contrast across the full text of the dissertation.

7.5 Surnames, names of institutions, organizations, companies, product names, and other proper nouns in the dissertation shall be given in the original language. It is permitted to transliterate proper names and to provide the organisations’ names in translation into the dissertation language.

7.6 The names of the “Contents,” “Introduction,” “Conclusion,” and “Reference List” structural elements serve as headings of the structural elements of the work. These headings shall be placed in the middle of the line, without a full stop at the end, in capital letters, and without underlining. Each structural element of the dissertation shall begin on a new page.

7.7 The dissertation shall be divided into sections and subsections. Each section and subsection must contain complete, self-contained information. Taken together, the titles of the chapters must fully reflect the topic of doctoral dissertation. As for the sections’ titles, they must fully reflect the corresponding chapter when taken together.

7.8 The chapters and sections titles must clearly and concisely reflect their content. Chapter and section titles should be printed with a paragraph indent, starting with a capital letter, without a full stop at the end, not underlined, and in semi-bold type. If the title consists of two sentences, they are separated by a full stop.

7.9 Pages shall be numbered with Arabic numerals in continuous sequence throughout a dissertation, including the appendices. The page number is placed in the center of the bottom margin, without a full stop.

7.10 The title page is included in the overall page count, but the page number is not printed on the title page.

7.11 Illustrations and tables placed on separate sheets are included in the overall page numbering. Illustrations and tables on A3-size sheets are counted as one page.

7.12 Subsections shall be numbered within each chapter. The number of a subsection consists of the chapter number and the subsection number, separated by a full stop. No full stop is placed at the end of the subsection number. Chapters may consist of two or more subsections.

Example

1 TYPES AND BASIC SIZES
1.1
1.2 } first section subsection number order
1.3
2 TECHNICAL DEMANDS
2.1
2.2 } second section subsection number order
2.3

7.13 Each chapter should begin on a new sheet (page). Subsections within the same chapter are separated from each other by a two-line space from the main text.

7.14 Illustrations (drawings, maps, graphs, diagrams, charts, photographs) should be placed immediately after the text in which they are first mentioned or on the following page. Illustrations may be prepared using computer graphics, including in-color. All illustrations must be referenced in the text.

7.15 Drawings, graphs, diagrams, schemes, and other illustrations must comply with the requirements of the state standards of the Unified System for Design Documentation (USDD).

7.16 Illustrations, with the exception of those included in the appendices, should be numbered consecutively with Arabic numerals. If there is only one figure, it is designated as “Figure 1”; the word “Figure” and its caption are centered on the line (Appendix 5).

7.17 It is permissible to number illustrations within each chapter. In this case, the illustration number consists of the chapter number and the sequential illustration number, separated by a full stop, e.g. “Figure 1.1”.

7.18 Illustrations may, where necessary, have a title and explanatory information (a caption). The word “Figure” and its title are placed after the explanatory information and arranged as follows: “Figure 1 – Structure of the banking system.” If the title of a figure consists of several lines, it should be typed with single line spacing between the lines. The title of the figure is written with an initial capital letter with no full stop at the end.

7.19 When referring to illustrations, the phrases “in accordance with Figure 2” should be used for continuous numbering throughout the whole work and “in accordance with Figure 1.2” when numbering within a chapter.

7.20 Tables are used to improve clarity and to facilitate indicators comparison. The table title must reflect its content and be precise and concise. The title of the table should be placed above the table, aligned to the left, without a paragraph indent, after the words “Table 1,” in the following format: “Table 1 – Structure of the banking system.” The title of the table is written with an initial capital letter with no full stop at the end.

7.21 Tables should be placed immediately after the text in which they are first mentioned or on the following page.

7.22 All tables must be referenced in the dissertation, with the word “Table” and its number indicated in the reference.

7.23 A table containing a large number of rows may be continued on another sheet (page). When a table is continued, the word “Table,” its number, and its title are indicated only once, to the left above the first part of the table; above subsequent parts, the word “Continuation” and the table number are written, e.g.: “Continuation of Table 1.” When a table is continued, the bottom horizontal line delimiting the table is not drawn on the preceding part. It is recommended to place a table with a large number of columns in an appendix.

7.24 If a text repeated in different rows (columns) of a table consists of a single word, it may, after the first instance, be replaced by quotation marks; if it consists of two or more words, it is replaced upon first repetition by the words “the same,” and thereafter by quotation marks. If the preceding phrase is part of the subsequent one, it may be replaced by the words “the same” with the additional information added.

Quotation marks may not be used in place of repeated numbers, grades, symbols, or mathematical and chemical notation. If numerical or other data are not provided in a particular row of the table, a dash is inserted in that cell.

7.25 Tables, with the exception of those in the appendices, shall be numbered consecutively with Arabic numerals.

7.26 It is permitted to number tables within each chapter; in this case, the table number consists of the chapter number and the sequential table number, separated by a full stop.

7.27 The table columns and rows headings shall be written with an initial capital letter in the singular form, while column subheadings are written with a lowercase letter if they form a single sentence with the heading, or with a capital letter if they have an independent meaning. No full stops are placed at the end of headings or subheadings.

7.28 Tables are generally bounded on the left, right, and bottom by lines. It is permitted to use a smaller font size in tables than in the main text. Column headings are normally written parallel to the rows of the table; where necessary, they may be arranged perpendicular to the rows. The table must be separated by a line from the rest of the text.

7.29 The word “Note” should be typed with an initial capital letter, with a paragraph indent, and without underlining.

Notes are provided when explanatory or reference information is required for the text, tables, or graphic material.

Notes should be placed immediately after the text or graphic material, or within the table to which they relate. If there is only one note, a dash is placed after the word "Note," and the note itself is printed with an initial capital letter; a single note is not numbered.

When there are several notes, they are numbered consecutively with Arabic numerals with no full stop. A note relating to a table is placed at the end of the table, above the line indicating the end of the table.

7.30 Formulas and equations shall be set off from the text on a separate line. At least one blank line must be left above and below each formula or equation. If an equation does not fit on one line, it shall be carried over after the equals sign (=) or after the plus (+), minus (-), multiplication (×), division (:) signs, or other mathematical symbols, and the sign is repeated at the beginning of the next line.

Explanations of the values of symbols and numerical coefficients shall be given directly below the formula, in the same order in which they appear in the formula. The meaning of each symbol and numerical coefficient is given from a new line. The first line of the explanation begins with the word "where" without a colon and with a paragraph indent. Formulas shall be centered and numbered consecutively throughout the work with Arabic numerals in round brackets, placed at the far right on the same line.

7.31 References in the text to formulas are given in brackets, e.g.: "in formula (1)."

7.32 It is permitted to number formulas within each chapter; in this case, the formula number consists of the chapter number and the sequential formula number, separated by a full stop, e.g.: (3.1).

7.33 References to the sources used should be given in square brackets.

7.34 Information about the sources should be arranged in the order in which they are cited in the text, numbered with Arabic numerals with no full stop, and typed with a paragraph indent.

7.35 Appendices are formatted as a continuation of the dissertation on its subsequent pages. In the text, all appendices must be referenced, and the appendices are arranged in the order in which they are cited.

7.36 Each appendix should begin on a new page, with the word "APPENDIX" and its designation indicated at the top in the center of the page. An appendix must have a title, which is typed in semi-bold, with an initial capital letter, on a separate line, centered, and with no full stop at the end. If a dissertation has only one appendix, it may remain undesignated.

7.37 Appendices must share continuous page numbering with the rest of a dissertation.

8. DOCTORAL DISSERTATION FORMATTING RULES (APA STYLE)

8.1 In accordance with the International APA Style citation format requirements, a Doctor of Philosophy (PhD) / Doctor by Profile degree dissertation

must be prepared in printed form using a computer and printer, on one side of A4-size white paper with double line spacing. The font shall be Times New Roman, regular, 12.

8.2 The text must be typed with the following margin settings: left – 25.4 mm, top – 25.4 mm, right – 25.4 mm, and bottom – 25.4 mm, with left-aligned text and a paragraph indent of 1.27 cm.

8.3 Regardless of the method of preparation, the quality of the printed text and the formatting of illustrations, tables, and printouts must ensure clear reproduction.

8.4 When preparing the dissertation, it is necessary to maintain uniform density and clarity of the image throughout the entire volume. All lines, letters, numbers, and symbols must have consistent contrast across the full text of the dissertation.

8.5 Surnames, names of institutions, organizations, companies, product names, and other proper nouns in the dissertation shall be given in the original language. It is permitted to transliterate proper names and to provide the organisations' names in translation into the dissertation language.

8.6. The names of the "Contents," "Introduction," "Conclusion," and "Reference List" structural elements serve as headings of the structural elements of the work. Structural elements headings shall be placed in the center of the line, in capital letters, with no full stop at the end and without underlining. Each structural element of the dissertation shall begin on a new page. Chapter titles are typed in bold and centered on the page, while subsection titles are aligned to the left margin and typed in bold.

8.7 The dissertation shall be divided into sections and subsections. Each section and subsection must contain complete, self-contained information.

8.8 Taken together, the titles of the chapters must fully reflect the topic of doctoral dissertation. As for the sections' titles, they must fully reflect the corresponding chapter when taken together.

8.9 The page number is placed in the upper right corner of the sheet, with no full stop.

8.10 The formatting of tables, figures, and graphs is carried out in accordance with the recommendations of the APA Style, 7th edition https://apastyle.apa.org/.

8.11 A figure in the text shall contain the following elements:

- number: the figure number (e.g., Figure 1) appears above the figure title and the image in bold type, and figures are numbered in the order in which they appear in the work;
- title: the figure title is given on a single line, double-spaced, below the figure number; it must be brief and informative and written in italics with an initial capital letter;
- image: graphs, charts, photographs, drawings, or other illustrations; if text appears within the figure (for example, axis labels), use Calibri, Arial, or Lucida Sans Unicode fonts, 8- to 14 size;
- legend: a legend, where present, should be located within the figure boundaries and should explain any symbols used in the image.

8.12 Figures must be clear, use simple units of measurement, have clearly labeled axes, and all elements in the figure must be clearly identified or explained.

Graphic software should be used to create figures in APA Style papers, for example, the built-in charting tools of a word processor (such as Microsoft Word or Excel) or specialized programs such as Photoshop or Inkscape.

8.13 Tables may be placed within the main text or moved to the Appendix.

8.14 A table in the dissertation text shall contain the following elements:

- number: the table number (e.g., Table 1) appears above the table title and the table itself in bold type, and tables are numbered in the order in which they appear in the work;
- title: the table title is given on a single line, double-spaced, below the table number; it must be brief and informative and written in italics with an initial capital letter;
- headings: tables may include various headings depending on the nature and arrangement of the data, and all tables must include column headings, which should be centered and written with an initial capital letter.

8.15 In a table, single, 1.5, or double line spacing may be used, and the text is left aligned. As a rule, data in the table are centered; however, left alignment is permitted where it improves readability, especially when cells contain large amounts of text.

8.16 The use of lines or borders in a table should be minimized. A top and bottom border and a border beneath the column headings should be used, and an additional horizontal border may be used to separate a row containing conclusions or other summary information from the rest of the table. Vertical borders separating data and borders around each individual cell are not used; spacing between columns and rows and strict alignment should be employed to clarify the relationships among the table elements.

8.17 If a table extends beyond one page, the table function of a word processor should be used so that the header row is repeated on the second and subsequent pages. If a table is too wide to fit on a portrait-oriented page, landscape orientation may be used for a page containing the wide table.

8.18 The reference list is presented in alphabetical order, and only those works that are cited in the text are included in the list. Citations to referenced works in the text shall be given in parentheses. In-text citations and the reference list are formatted in accordance with the requirements of the selected citation style manual. In-text citations and the dissertation reference list are formatted in accordance with the APA Style 7th edition requirements.

9. PLAGIARISM DETECTION SYSTEM-BASED INDEPENDENCE-ENSURING PROCEDURES FOR DOCTORAL DISSERTATIONS

9.1 A dissertation shall be written independently by the doctoral candidate under the supervision of academic advisers.

9.2 Plagiarism (borrowing) is understood as the use in a doctoral dissertation of another person’s text, published on paper or in electronic form, without reference to the source, or with references, but where the borrowings’ volume and nature call into

question the independent execution of the work as a whole or of any of its sections.

9.3 Plagiarism is deemed to include both the word for word reproduction of the main text and a paraphrased presentation of another person's text with substitution of words and expressions without changing the content of the borrowed text.

9.4 The dissertation shall contain references to:

- sources of cited materials or individual results, with full bibliographic details indicated;
- intellectual property protection documents for developments obtained by the doctoral candidate independently or in co-authorship;
- scholarly works on the dissertation topic written by the doctoral candidate independently or in co-authorship;
- the artificial intelligence technologies used.

If plagiarism is detected in the dissertation, the Dissertation Council shall issue a negative decision with no right for a second defence.

9.5 The dissertation is submitted for plagiarism checking prior to the extended department meeting. The dissertation plagiarism checking procedure is regulated by the Regulations on the Plagiarism Review of Students' Written Works.

9.6 After a doctoral candidate submits an admission application to a dissertation defence to a Dissertation Council, an academic secretary or the chair of the Dissertation Council shall check the dissertation for the presence of borrowed material. No authorship is attributed to the work during that review. The critical minimum originality (uniqueness) level of the dissertation is set by each Dissertation Council and shall be not less than 75%.

9.7 Within 10 (ten) working days after a dissertation is accepted for defence, the Dissertation Council sends a dissertation for verification of a doctoral candidate's use of plagiarism in comparison with national and international databases to the "National Center for State Scientific and Technical Expertise" JSC (hereinafter – NCSTE). The title page and the list of references are not checked for plagiarism.

NCSTE ensures that the full dissertation text is made openly available on its online resource within 10 (ten) working days from the date of receipt, and the dissertation can be accessed on a permanent basis.

Verification of dissertations containing state secrets or information for official use for the presence of borrowed material used by the doctoral candidate (without reference to the author and source) is carried out at NCSTE or jointly in military and specialized educational institutions and/or research organizations subordinate to the national security bodies of the Republic of Kazakhstan, the Ministry of Internal Affairs of the Republic of Kazakhstan, the prosecution authorities of the Republic of Kazakhstan, and the Ministry of Defence of the Republic of Kazakhstan.

9.8 A dissertation that failed to pass verification in accordance with the Regulations requirements is not allowed to be defended.

9.9 If instances of plagiarism are indicated in the NCSTE official note, in the reviews of official opponents, or in informal reviews posted on the Dissertation Council's online resource, the Dissertation Council commission conducts an

additional dissertation plagiarism check. The conclusion on the results of this verification is submitted to the Dissertation Council no later than 8 (eight) working days before the dissertation defence.

APPENDIX 1

Recommendations for Formulating Key Provisions Submitted for Defence
The main propositions submitted for defence shall be **proven scientific hypotheses**, concepts, or conclusions that constitute **new knowledge** in the corresponding field.

The key provisions submitted for defence must:

- be complete sentences (statements) containing a verb (predicate);
- be verifiable;
- allow for the possibility of experimental falsification;
- be entirely comprehensible to a specialist in the corresponding field, even when considered independently from the dissertation;
- where necessary, include the essential information required for verification, including the specification of the particular research object to which the proposed statement applies (i.e., under which conditions the statement holds true).

It it best to avoid the following when formulating provisions for dissertation defence:
- merely repeating the aim, topic, or objectives of the study (e.g., "The study examines…");
- using general or vague statements lacking specificity (e.g., "The technological scheme for producing syngas from coal");
- providing lists of results without corresponding conclusions;
- including excessive technical details without explaining their significance.

Provisions examples for dissertations in various scientific fields:

Scientific field	Example
Natural and Technical Sciences	
Chemistry	The average annual concentration of benzo(a)pyrene in the air of Almaty in 2021 was 15 ng/m³.
Mathematics	A numerical method based on the combined application of the finite element algorithm and the Galerkin method for solving the Navier–Stokes equations under third-type boundary conditions increases calculation accuracy by 17% compared with classical second-order schemes.
Physics	Under laser irradiation of thin zinc oxide films with a pulse duration of less than 10 ns, nanostructures with crystallite sizes of 30–50 nm are formed, resulting in a 40% increase in photoluminescence intensity in the visible range.
Biology	The addition of Rhodiola rosea extract to the culture medium of rat liver cells increases the activity of the antioxidant enzyme catalase by 25%, confirming the adaptogenic properties of the compound at the cellular level.
Geography	The boundary of arid landscapes in Kazakhstan has shifted northeastward by an average of 110 km, which is associated with a 1.3 °C increase in mean annual temperature and a decrease in precipitation in the southern regions.
Engineering	An adaptive control algorithm for a direct current electric drive based on fuzzy logic has been developed, which reduces the transient process time by 30% and decreases overshoot under load variation.

Social Sciences and Humanities	
Economic science	An increase in tax decentralization across regions contributes to a 15% rise in the innovative activity of enterprises.
Judicial science	The recognition of digital assets as objects of civil rights enhances the legal protection of transactions conducted through smart contracts.
Philology	A comparison of Kazakh proverbs translated into Russian revealed that literal translation distorts the cultural and semantic meaning in 70% of cases.
Pedagogy	The implementation of a blended learning model based on individualized educational trajectories increases the academic motivation of students in pedagogical specialties by 28%.
Sociology	The participation of non-governmental organizations in the public discussion of draft laws in Kazakhstan raises citizens' perception of the legitimacy of adopted decisions by 20%.
History	The analysis of archival sources demonstrates that the 1965 economic reforms in the USSR contributed to the decentralization of industrial management at the regional level.
Medicine	Conducting a structured intervention among patients with tobacco dependence increases the likelihood of successful smoking cessation by 50% after one year.

APPENDIX 2

DISSERTATION TITLE PAGE

(organisation name)

UDC as manuscript

SURNAME, NAME, PATRONYMIC

Dissertation title
Specialty code and title
(as specified in the Nomenclature of Scientific Workers Specialties)

Dissertation for the degree of
Doctor (Candidate of) sciences

Scientific adviser

the Republic of Kazakhstan

city, year

APPENDIX 3

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APPENDIX 4

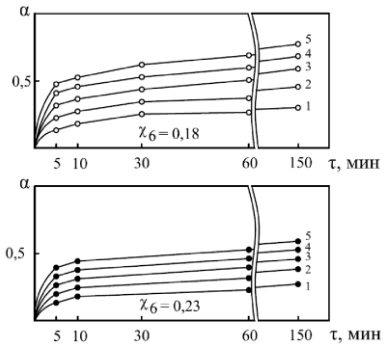
REFERENCE LIST

1 Tulegenova G.S. Biologiya transplantirovannykh opukholei [Biology of Transplanted Tumors]. Almaty: Nauka; 2003. 216 p.

2 Efimov M.L., Askarova G.S. Sutochnye biologicheskie ritmy i zlokachestvennyi rost [Circadian biological rhythms and malignant growth]. Usp. sovr. biologii. 2003;103(2):255–270.
3 Ivanov M.I., Maldybaev N.K. Sposob pererabotki syr'ya [Method for processing raw materials]. Patent USSR No. 72931. Published 30 Mar 1983; Bull. No. 12. 2 p. ill.
4 Akataev A.G., Petrov B.I. Sposob izvlecheniya metallov [Method for extracting metals]. Author's certificate USSR No. 386018. Published 17 May 1981; Bull. No. 15. 2 p. ill.
5 Georgieva R.S. Izmeneniya v sisteme svertyvaniya krovi u bol'nykh zlokachestvennymi opukholyami [Changes in the blood coagulation system in patients with malignant tumors]. In: Voprosy eksperimental'noi i klinicheskoi onkologii: sbornik nauchnykh trudov Instituta onkologii i radiologii [Problems of Experimental and Clinical Oncology: Collected Scientific Papers of the Institute of Oncology and Radiology]. Almaty; 2004. p. 214–217.
6 Bazhenov L.G., Kulinskaya L.L., Sorochinskaya I.N. Sezonnye izmeneniya soderzhaniya immunoglobulinov v krovi klinicheski zdorovykh lits [Seasonal changes in immunoglobulin levels in the blood of clinically healthy individuals]. In: Abstracts of the III All-Union Conference on Chronobiology and Chronomedicine. Tashkent; 1990. 320 p.
7 Sadykov L.P., Berezovskaya I.V. Sezonnye izmeneniya pokazatelei svertyvaniya krovi u krys i krolikov [Seasonal changes in blood coagulation parameters in rats and rabbits]. Institut veterinarii. Moscow; 1989. 210 p. Deposited in VINITI 13 Sep 1989, No. 5853-V89.
8 Izuchenie kinetiki i khimizma protsessov: otchet o NIR [Study of the kinetics and chemistry of processes: research report]. IMiO, Academy of Sciences of the Kazakh SSR. Almaty; 1985. 240 p. Inv. No. 81047478.
9 Omarova G.P. Eksperimental'naya terapiya sarkomy T-1 v zavisimosti ot ee mitoticheskoi aktivnosti [Experimental therapy of sarcoma T-1 depending on its mitotic activity] [dissertation abstract]. Moscow: Moscow State University; 2004. 16 p. (Cand. Biol. Sci., specialty 03.04.04).
10 Vaobaspati T., Videnkin A. Evolution of cosmic nets //Phys, Rev,-2003. - Vol. 46, No. 2. - P. 1133-1140.
11 Paustovskii K.G. Zolotaya roza [The Golden Rose]. In: Sochineniya: v 7 t. [Collected works: in 7 vols.]. Moscow; 1984. Vol. 3. p. 287–528.
12 GOST R 51771–2001. Apparatura radioelektronnaya bytovaya. Vkhodnye i vykhodnye parametry i tipy soedinenii. Tekhnicheskie trebovaniya [Household radio-electronic equipment. Input and output parameters and types of connections. Technical requirements]. Introduced 2002-01-01. Moscow: Gosstandart Rossii; Izd-vo standartov; 2001. IV, 27 p. ill.

APPENDIX 5

Figure formatting reference



1 - 600^{0}C; 2 - 650^{0}C; 2 - 700^{0}C; 3 - 700^{0}C; 4 - 750^{0}C; 5 - 800^{0}C.

Figure 1 – Kinetics of the interaction of iron phosphide with soda at various temperatures

APPENDIX 6

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APPENDIX 7

Kabir, J. M. (2016). *Factors influencing customer satisfaction at a fast food hamburger chain: The relationship between customer satisfaction and customer loyalty* (Publication No. 10169573) [Doctoral dissertation, Wilmington University]. ProQuest Dissertations & Theses Global.

Miranda, C. (2019). *Exploring the lived experiences of foster youth who obtained graduate level degrees: Self-efficacy, resilience, and the impact on identity development* (Publication No. 27542827) [Doctoral dissertation, Pepperdine University]. PQDT Open. https://pqdtopen.proquest.com/doc/2309521814.html?FMT=AI

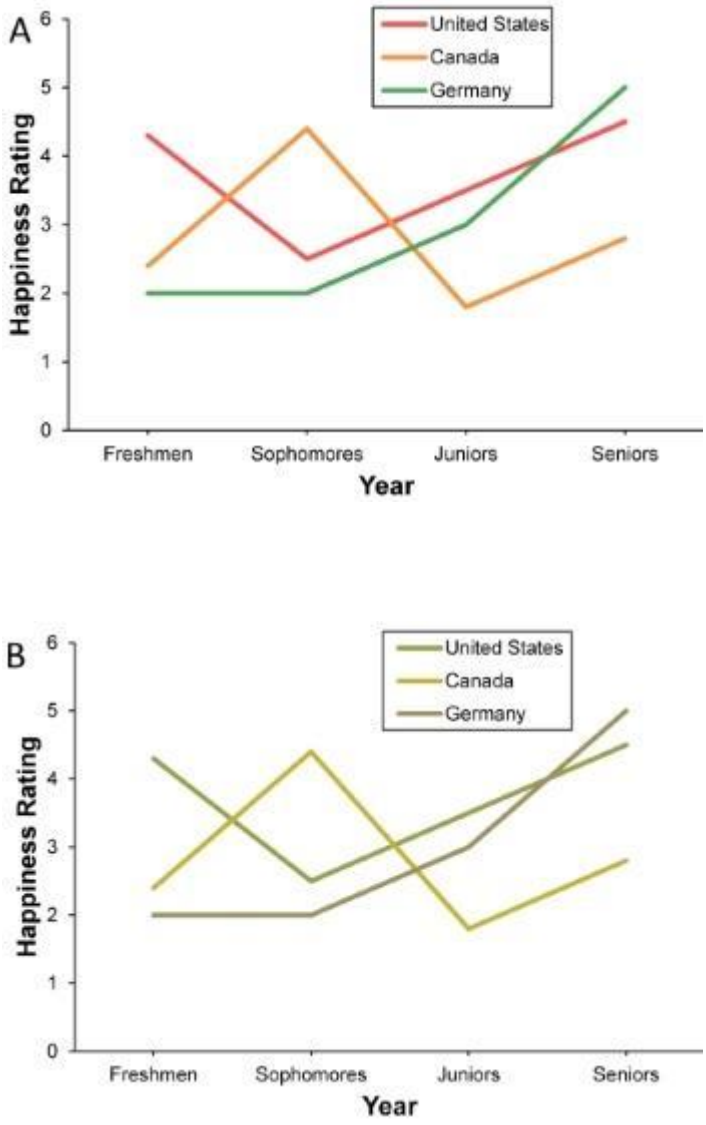
Zambrano-Vazquez, L. (2016). *The interaction of state and trait worry on response monitoring in those with worry and obsessive-compulsive symptoms* [Doctoral dissertation, University of Arizona]. UA Campus Repository. https://repository.arizona.edu/handle/10150/620615

- ***Parenthetical citations***: (Kabir, 2016; Miranda, 2019; Zambrano-Vazquez, 2016)
- ***Narrative citations***: Kabir (2016), Miranda (2019), and Zambrano-Vazquez (2016)

APPENDIX 8

Figure 1

Student Happiness Ratings as a Function of Year and Country of Origin

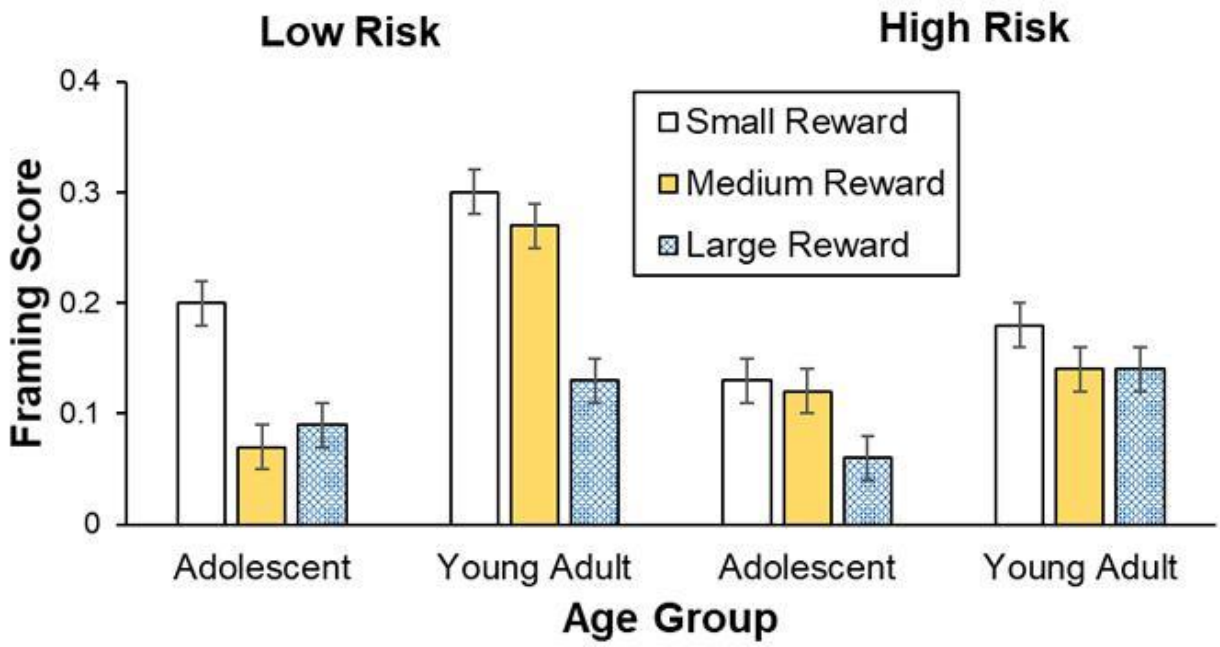


APPENDIX 9

Sample bar graph

Figure 1

Framing Scores for Different Reward Sizes



Note. Framing scores of adolescents and young adults are shown for low and high risks and for small, medium, and large rewards (error bars show standard errors).

APPENDIX 10

Sample demographic characteristics table

Table 1

Sociodemographic Characteristics of Participants at Baseline

Baseline characteristic	Guided self-help		Unguided self-help		Wait-list control		Full sample	
	n	*%*	*n*	*%*	*n*	*%*	*n*	*%*
Gender								
Female	25	50	20	40	23	46	68	45
Male	25	50	30	60	27	54	82	55
Marital status								
Single	13	26	11	22	17	34	41	27
Married/partnered	35	70	38	76	28	56	101	67
Divorced/widowed	1	2	1	2	4	8	6	4
Other	1	1	0	0	1	2	2	1

APPENDIX 11

The most common issues and generic questions raised by the Dissertation Council

1. **Vaguely formulated propositions submitted for defence**
- What propositions are you submitting for defence?
- What is the scientific novelty of each of these propositions?
- Why do you consider these particular results to be key ones?

2. **Absence of research questions and hypotheses**
- What research questions were posed at the beginning of the study?
- Formulate the working hypotheses and indicate how they were tested in the course of the research.
- Which hypotheses were confirmed and which were not?

3. **Insufficiently detailed description of the experimental methodology**
- Which methods did you use in the experimental part?
- How do you justify the choice of these methods?
- How were the experimental conditions controlled?

4. **Experiments not replicated, no statistical processing**
- How many times did you repeat each experiment?
- Was any statistical processing of the results carried out?
- Which statistical methods and criteria were used?

5. **Measurement errors and standard deviations not taken into account when reporting results**
- Were measurement errors taken into account in the analysis of the results?
- Which standard deviations were calculated, and how did they affect the conclusions?

6. **Presence of plagiarism, including self-plagiarism, in individual works**
- Did you use other researchers' data or texts, and how were they referenced?
- Was the thesis checked using an anti-plagiarism system?
- Were there any cases of self-plagiarism (republication of your own results)?
- Does the description of the author's contribution in the dissertation and in the articles correspond to reality?

7. **Mismatch between the thesis topic and the specialty code (educational program)**
- **Do the works submitted for defence under technology-oriented educational programs contain technological aspects?**

8. **Mismatch between the topic submitted for dissertation pre-defence and the topic indicated in the official order**
- Have the topics and advisers been updated, and is this reflected in the official order?
- Is the official order available?