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**Академические кейсы для научного исследования  
на английском языке  
Academic Cases for a Scientific Research in English**

Методические материалы для практических занятий  
и самостоятельной работы аспирантов

Рекомендовано учебно-методической комиссией  
направления подготовки

5.8.7 Методология и технология профессионального образования  
в качестве электронного издания  
для использования в образовательном процессе

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**Академические кейсы для научного исследования на английском языке. Academic Cases for a Scientific Research in English** : методические материалы для практических занятий и самостоятельной работы аспирантов всех направлений подготовки и форм обучения / Кузбасский государственный технический университет имени Т. Ф. Горбачева, кафедра иностранных языков ; составитель Н. Ю. Мамонтова – Кемерово : КузГТУ, 2025. – 1 файл (613 КБ) – Текст : электронный.

Представлены актуальные академические кейсы для формирования лингвистической основы для описания научной работы, расширения научного мировоззрения и подготовки к научной самопрезентации аспирантов. Включают комплекс текстов, упражнений, письменных и устных тренажеров, ориентированных на отработку умений и навыков академического научного чтения, письма, научной речи. Ориентированы на развитие аналитических способностей и критического отношения к научному тексту; направлены на оценку понимания связности, технической точности и ясности использования научного языка. Предназначены для практических занятий и самостоятельной работы аспирантов всех направлений подготовки и форм обучения.

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## **Предисловие**

Методические материалы по дисциплине «Иностранный язык (английский)» разработаны для аспирантов первого года обучения направления 5.8.7. «Теория и методика профессионального образования» как методический ресурс для подготовки к кандидатскому экзамену по английскому языку. Рекомендованы для практической и самостоятельной работы аспирантов всех направлений подготовки.

Цель методических материалов – формирование академической лингвистической базы для описания научного исследования на иностранном (английском) языке, развитие научно-стилевого, в том числе педагогического, мировоззрения на примере конкретных научно-значимых тем и ситуаций.

Методические материалы состоят из семи научно-академических кейсов и двух приложений, каждый из которых автономен и может быть использован аспирантом в соответствии с запросом и академической задачей. Академические кейсы представляют собой комплекс разработанных на развитие определенных навыков текстов, упражнений, письменных и устных тренажеров, предназначенных для отработки умений академического научного чтения (Кейсы I, II, III), умений и навыков академического научного письма (Кейсы IV, V), навыка академического научного письма и умений академической научной речи (Кейс VI), навыка академической научной речи (Кейс VII).

Задания и упражнения, представленные в методических материалах, ориентированы на развитие аналитических способностей и критического отношения к научному тексту; направлены на оценку понимания связности, технической точности и ясности использования научного языка.

Методические материалы дополнены приложениями, в которых представлены коммуникативные образцы для научной самопрезентации на английском языке, англоязычные фразы-активаторы для оформления научной, методологической и исследовательской базы научной статьи.

Мы надеемся, что методические материалы помогут развить критико-аналитические и лингвистические способности аспирантов в практических и академических контекстах научной коммуникации. Успехов в освоении учебных материалов!

## **The preface**

Methodological materials on the discipline “Foreign Language (English)” have been developed for the first-year graduate students of the direction 5.8.7. “Theory and Methodology of vocational education” as a methodological resource for preparing for the candidate’s examination in the English Language and are recommended for practical and independent work as a self-study materials.

The purpose of the methodological materials is to form an academic linguistic base for describing scientific research in a Foreign (English) Language and to develop a scientific and stylistic, including pedagogical, worldview using the example of specific scientifically significant issues and situations.

The methodological materials consist of seven scientific and academic cases and two appendices; each of them is autonomous and can be used by a graduate student in accordance with the request and a scientific and academic task.

Academic cases are a set of texts, exercises, written and oral simulators designed to develop certain skills, aimed at developing academic scientific reading skills (Cases I, II, III), academic scientific writing skills (Cases IV, V), academic scientific writing skills and academic scientific speech skills (Case VI), academic scientific speech skills (Case VII).

The tasks and exercises presented in the methodological materials are aimed at developing analytical abilities and a critical attitude to a scientific text; they are aimed at assessing the understanding of coherence, technical accuracy and clarity of the use of the scientific language.

The methodological materials are supplemented with appendices, which present communicative samples for scientific self-presentation in English, English-language activator phrases for the design of the scientific, methodological and research base of a scientific article.

We hope that the methodological materials will help develop the critical, analytical and linguistic abilities of graduate students in the practical and academic contexts of scientific communication. Good luck in mastering the educational materials!

## **Case I. Research theory (academic reading)**

**Task 1. Read the text below to understand its general meaning.**

### **Research theory**

Research is about acquiring knowledge and developing understanding, collecting facts and interpreting them to build up a picture of the world around us, and even within us. It is fairly obvious then, that we should hold a view on what knowledge is and how we can make sense of our surroundings. These views will be based on the philosophical stance that we take.

Despite this, some people maintain that a study of the philosophy of the natural or human sciences is irrelevant to researchers. They remark that the study of philosophy consists of learning about how theory after theory has been erected, only to be torn down by the subsequent one, and that it has little bearing on the day-to-day practice of research and only causes confusion. So why should you find it necessary to know something about philosophy as a background to your research? Because everyone is a philosopher – everyone has a concept of the world. In fact, the alternative to having a philosophy is not having no philosophy but having a bad philosophy. The ‘unphilosophical’ person has an unconscious philosophy, which they apply in their practice – whether of science or politics or daily life.

All philosophical positions and their attendant methodologies, explicitly or implicitly, hold a view about reality. This view, in turn, will determine what can be regarded as legitimate knowledge. Philosophy works by making arguments explicit. You need to develop sensitivity towards philosophical issues so that you can evaluate research critically. It will help you to discern the underlying, and perhaps contentious, assumptions upon which research reports are based even when these are not explicit, and thus enable you to judge the appropriateness of the methods that have been employed and the validity of the conclusions reached. Obviously, you will also have to consider these aspects in regard to your own research work. Your research, and how you carry it out, is deeply influenced by the theory or philosophy that underpins it.

There are different ways of going about doing research depending on your assumptions about what actually exists in reality and what we can know (metaphysics) and how we can acquire knowledge (epistemology).

Metaphysics is concerned with questions such as what it is to be, who we are, what is knowledge, what are things, what is time and space. At one extreme there is Idealism and at the other extreme is Materialism (or reductionism). Epistemology is the theory of knowledge, especially about its validation and the methods used. It deals with how we know things and what we can regard as acceptable knowledge in a discipline. It is concerned with the reliability of our senses and the power of the mind.

As for the methods of acquiring knowledge, there are two basic approaches: 1) empiricism – knowledge gained by sensory experience (using inductive reasoning); 2) rationalism – knowledge gained by reasoning (using deductive reasoning). The relative merits of these approaches have been argued ever since the Ancient Greeks – Aristotle advocating the first and Plato the second.

An efficient scientific research in pedagogics is characterized by features that ensure it is rigorous, relevant, and impactful in improving educational practices and outcomes. Here are five key features of efficient pedagogical research: Clear Research Question and Hypothesis; Appropriate Research Design and Methodology, Ethical Considerations and Data Integrity, Theoretical Framework, Practical Impact and Dissemination.

<https://distancelearning.institute/research/educational-research-scientific-perspective/>

**Task 2. Complete the tasks to assess your comprehension, analytical skills, and critical engagement with the text about research theory and philosophy and apply the information in your PhD research.**

***1. What is the central argument presented in the text regarding the relationship between philosophy and research?***

- a) Philosophy is irrelevant to the practical conduct of research.
- b) Only trained philosophers can conduct meaningful research.

c) All research is underpinned by a philosophical stance, whether consciously or unconsciously.

d) Empirical research methods are superior to philosophical inquiry.

**2. Match the following philosophical terms with their definitions as presented in the text.**

*Terms:*

- a) metaphysics,
- b) epistemology,
- c) idealism,
- d) materialism,
- e) empiricism,
- f) rationalism.

*Definitions:*

1) The theory of knowledge, especially its validation and methods.

2) Knowledge gained by sensory experience and inductive reasoning.

3) Concerned with questions of existence, being, time, and space.

4) The philosophical view that physical matter is the only reality.

5) Knowledge gained by reasoning and deductive methods.

6) The philosophical view that reality is fundamentally mental or spiritual.

**3. According to the text, researchers who dismiss philosophy are actually operating without any underlying philosophical assumptions. Justify your answer with specific references to the text. (Brief written justification required).**

- a) true
- b) false

**4. Complete the gaps with the suitable choices.**

The text suggests that understanding philosophical issues is crucial for researchers because it allows them to critically \_\_\_\_\_ research, identify underlying \_\_\_\_\_, and judge the \_\_\_\_\_ of research methods.



- a) design, hypotheses, subjectivity
- b) evaluate, assumptions, appropriateness
- c) conduct, limitations, cost
- d) publish, biases, originality

**5. Explain in your own words what the author means by “the ‘un-philosophical’ person has an unconscious philosophy”. Give an example of how this might affect a researcher's choices in a study. (Short answer, approximately 100–150 words).**

**6. According to the text, developing sensitivity towards philosophical issues helps researchers primarily to:**

- a) Impress other academics with their knowledge of philosophical concepts.
- b) Obtain funding for research projects.
- c) Critically evaluate research and ensure the validity of conclusions.
- d) Develop complex theoretical models.

**7. Briefly explain the difference between empiricism and rationalism as methods of acquiring knowledge, and provide an example of a research method that aligns with each approach. (Short answer, approximately 100–150 words).**

**8. How might a researcher’s metaphysical assumptions (e. g., idealism vs. materialism) influence their choice of research methodology (e. g., qualitative vs. quantitative)? Give a specific example. (Short essay format: 200–300 words).**

**9. Think of a research topic you are familiar with in your field. What philosophical assumptions might a researcher be making, consciously or unconsciously, when studying that topic? Discuss potential biases that might arise from these assumptions. (Short essay format: 200–300 words).**

**10. Which of the following best describes the author's tone or perspective on the value of philosophy in the research process?**

- a) Indifferent; philosophy is a distraction from practical research.

- b) Skeptical; philosophy is often too abstract to be useful.
- c) Supportive; philosophy is essential for rigorous and insightful research.
- d) Neutral; philosophy has some limited value, but is not crucial.

## **Case II. Types of scientific research (academic reading)**

**Task 1. Read the text below to understand its general meaning.**

### **Basic and applied scientific research**

Basic scientific research can be defined as fundamental, investigative research, theoretical or experimental, to advance knowledge without a specifically envisaged practical applications. It is the quest for new knowledge and the exploration of the unknown. Basic research is driven purely by curiosity and a desire to expand our knowledge. On the contrary, applied research is used to answer specific questions that have direct applications to the society. Basic and applied research is a continuum and they are interdependent. The demarcation between basic research and applied research is not at all clear cut. Most scientific research (whether in the academic world or in industry) is a hybrid leading to new knowledge generation and subsequent exploitation. The integration of basic and applied research is crucial to problem-solving, innovation and development of products and processes.

Major innovations are rarely possible without prior generation of new knowledge founded on basic research. Strong scientific disciplines and strong collaboration between them are necessary both for the generation of new knowledge and its applications. New scientific knowledge is essential not only for fostering innovation and promoting economic development, but also for formulating good national development policies and policies for education and training. Even a successful transfer of scientific knowledge cannot be achieved without having well-trained scientists. However, excessive dependency on scientific progress in other countries is rarely likely to lead to the resolution of local problems. Countries need to be able to generate their own scientific knowledge through research and adapt this to their own local needs.

As the move towards a global knowledge economy accelerates, the necessity of having a thriving scientific community to generate new knowledge and to exploit it, both in the academic world and industry, becomes irrefutable. Adequate public investment in science education and research is a critical factor under-pinning socio-economic development in any country. Therefore, every country needs to develop long term and sustainable strategies for investment in scientific research.

Research scientists and funding agencies are often pressed by governments to quantify the economic value of scientific research. Any attempt to quantify basic scientific research in terms of expected short term economic benefits is extremely short-sighted and will have an adverse effect on true innovation. However, a majority of economists agree that scientific research plays a substantial role in fostering innovation leading to new technologies, products, processes and services. The problem is that innovation is not a simple, linear system in which one finds that research leads direct to advanced technology, and technology leads to innovation. Innovation is a complex, highly non-linear ecosystem, full of interdependencies and feedback loops that aren't even completely mapped yet, never mind ripe for quantification.

The difference between Basic and Applied Scientific Research lies primarily in their goals, scope, and practical orientation. Here are five key features to consider: Purpose; Nature; Scope and Applicability; Outcomes; Time Horizon and Impact.

<https://keydifferences.com/difference-between-basic-and-applied-research.html>

**Task 2. Complete the tasks to assess understanding, critical analysis, and application of the concepts of basic and applied scientific research in your PhD research.**

***1. According to the text, basic scientific research is primarily characterized by:***

- a) A focus on solving immediate practical problems.
- b) The pursuit of knowledge for its own sake, without specific applications in mind.
- c) The development of new technologies and products.

d) The translation of existing knowledge into practical applications.

**2. Match each research type with an example that best illustrates it:**

*Research Type:*

- a) Basic Research.
- b) Applied Research.
- c) Hybrid Research (Integration of Basic and Applied).

*Examples:*

- 1) Developing a new vaccine to combat a specific disease.
- 2) Investigating the fundamental properties of a newly discovered material.
- 3) Studying the effectiveness of a new teaching method in a classroom setting.

**3. The text suggests that applied research is always more valuable to society than basic research.** Justify your answer with specific evidence from the text. (Brief written justification required).

- a) true
- b) false

**4. Complete the gaps with the suitable choices.**

The text argues that innovation is not a \_\_\_\_\_ system, but rather a complex \_\_\_\_\_ with interdependencies and feedback loops.

- a) simple; market
- b) linear; ecosystem
- c) predictable; science
- d) costly; endeavor

**5. Explain in your own words how basic and applied research are interdependent.** Provide a specific example, *different from those in the text*, to illustrate this relationship. (Short answer, approximately 100–150 words).

**6. According to the text, which of the following is NOT a benefit of having a strong scientific community?**

- a) Fostering innovation and promoting economic development.

- b) Formulating good national development policies.
- c) Ensuring a country's independence from scientific advancements made elsewhere.
- d) Developing policies for education and training.

**7. Why does the text argue against attempting to quantify the value of basic scientific research in terms of short-term economic benefits?** (Short answer, approximately 100–150 words).

**8. Discuss the implications of the text's statement: “However, excessive dependency on scientific progress in other countries is rarely likely to lead to the resolution of local problems”.** What strategies can countries employ to address this issue? (Short essay format: 200–300 words).

**9. Imagine you are a government official responsible for allocating research funding.** Consider the questions below. (Short essay format: 200–300 words).

- How would you balance investments in basic and applied research, considering the arguments presented in the text?
- What factors would you take into account?

**10. Which of the following BEST captures the argument made about the importance of public investment in science education and research?**

- a) It's only important for wealthy, developed nations.
- b) It's a critical factor underpinning socio-economic development in any country.
- c) It should be prioritized over private sector investment.
- d) It's primarily important for training scientists to work in other countries.

**Task 3. Extra reading. Read the text and express your own opinion on the issue under consideration.** Give some specific example if possible. (Short essay format: 100–150 words).

## **Honesty in your work**

Honesty is essential, not only to enable straightforward, above-board communication, but to engender a level of trust and credibility in the outcomes of the research. This applies to all researchers, no matter what subject they are investigating. Although honesty must be maintained in all aspects of the research work, it is worth focusing here on several of the most important issues.

***Intellectual ownership and plagiarism.*** Unless otherwise stated, what you write will be regarded as your own work; the ideas will be considered your own unless you say to the contrary. The worst offence against honesty in this respect is called plagiarism: directly copying someone else's work into your report, thesis etc. and letting it be assumed that it is your own. Using the thoughts, ideas and works of others without acknowledging their source, even if you paraphrased into your own words, is unethical. Equally serious is claiming sole authorship of work which is in fact the result of collaboration or amanuensis ('ghosting').

***Acknowledgement and citation.*** Obviously, in no field of research can you rely entirely on your own ideas, concepts and theories. You can avoid accusations of plagiarism by acknowledging the sources of these features and their originators within your own text. This is called citation. Although there are several well established citation methods, they all consist of brief annotations or numbers placed within the text that identify the cited material, and a list of references at the end of the text that give the full publication details of the source material.

***Responsibility and accountability of the researcher.*** Apart from correct attribution, honesty is essential in the substance of what you write. You do have responsibilities to fellow researchers, respondents, the public and the academic community. Accurate descriptions are required of what you have done, how you have done it, the information you obtained, the techniques you used, the analysis you carried out, and the results of experiments – a myriad of details concerning every part of your work.

***Data and interpretations.*** Although it is difficult, and some maintain that it is impossible, to be free from bias, distorting your data or results knowingly is a serious lapse of honesty. Scientific objectivity should be maintained as much as possible. If you can see any rea-

son for a possibility of bias in any aspect of the research, it should be acknowledged and explained. If the study involves personal judgments and assessments, the basis for these should be given. Silently rejecting or ignoring evidence which happens to be contrary to one's beliefs, or being too selective in the data used and in presenting the results of the analysis constitutes a breach of integrity. The sources of financial support for the research activities should be mentioned, and pressure and sponsorship from sources which might influence the impartiality of the research outcomes should be avoided.

### **Case III. From theory to practice (academic reading)**

**Task 1. Read the text below to understand its general meaning.**

#### **Pedagogical Experiments**

The steps of a pedagogical experiment generally include the following stages:

**1. *Identifying the Need for the Experiment.*** Determine whether an experimental study is necessary to investigate a particular pedagogical problem or to test a new teaching method or tool.

**2. *Formulating a Scientific Hypothesis.*** Develop a clear, research-based hypothesis that predicts the expected outcome or effect of the educational intervention being tested.

**3. *Choosing the Type of Experiment.*** Decide on the experimental design (e. g., formative, control group, longitudinal) based on the research goals, resources, and scope of the study.

**4. *Planning and Preparing Experiment Conditions.*** This involves selecting the location, participants (experimental and control groups), educational materials, instruments for measurement, and preparing the environment and facilitators (teachers or trainers) involved.

**5. *Conducting Observations and Data Collection.*** Use various methods such as direct observation, questionnaires, tests, interviews, and video recordings during the teaching process to gather data about behaviors, skills, attitudes, and performance.

**6. *Implementing the Experiment Program.*** Follow a detailed protocol that specifies what activities are conducted, when, how, and

by whom; how data is collected, measured, and recorded; and the criteria for assessing the outcomes.

**7. *Analyzing Results.*** After completing the experiment, analyze the data using qualitative and/or quantitative methods to evaluate the effectiveness of the intervention and test the hypothesis.

**8. *Drawing Conclusions and Reporting.*** Report findings with interpretations, implications for teaching practices, limitations, and recommendations for further research.

**9. *Replication and Dissemination.*** If results are promising, replicate the study in different settings or larger populations and share findings with the academic and educational community.

These steps ensure that pedagogical experiments are conducted systematically and scientifically, allowing researchers to obtain valid and reliable evidence to improve educational processes.

<https://grnjournal.us/index.php/AJSIHD/article/download/777/658/1307>

**Task 2. Complete the tasks to assess your understanding of the process and the ability to evaluate critically and apply the information in your PhD research.**

**1. *What is the primary purpose of conducting a pedagogical experiment, according to the text?***

- a) To confirm pre-existing beliefs about teaching methods.
- b) To demonstrate the superiority of one teaching method over another.
- c) To obtain valid and reliable evidence to improve educational processes.
- d) To fulfill a requirement for academic publication.

**2. *Match each step in the pedagogical experiment with the primary action associated with that step:***

*Steps:*

- a) formulating a scientific hypothesis,
- b) planning and preparing experiment conditions,
- c) conducting observations and data collection,
- d) analyzing results,



e) replication and dissemination.

*Actions:*

- 1) selecting participants, materials, and measurement instruments;
- 2) sharing findings with the educational community;
- 3) developing a testable prediction;
- 4) evaluating the effectiveness of the intervention;
- 5) gathering data about behaviors and performance.

**3. According to the text, the step of “Identifying the Need for the Experiment” is primarily driven by the researcher’s personal preferences.** Justify your answer with specific references to the text. (brief written justification required).

- a) true
- b) false

**4. According to the text, what is the correct order of the following steps in a pedagogical experiment?** (Rank 1–4, 1 being the first step and 4 being the last step).

- a) drawing conclusions and reporting;
- b) implementing the experiment program;
- c) choosing the type of experiment;
- d) analyzing results.

**5. Which of the following is the most important reason for including a control group in a pedagogical experiment?**

- a) To provide a basis for comparison to determine the effectiveness of the intervention.
- b) To ensure that all participants receive the same level of attention.
- c) To reduce the workload for the researchers.
- d) To comply with ethical guidelines.

**6. Discuss the ethical considerations that researchers must address when conducting pedagogical experiments, particularly concerning participant consent, potential harm, and data privacy.** (Short essay format: 200–300 words).

**7. Briefly describe how you would apply the steps outlined in the text to design a pedagogical experiment to test the effectiveness of a specific teaching method** (e. g., flipped classroom, inquiry-based learning) in a particular subject area. Be sure to identify each step.

**8. In the context of analyzing results in a pedagogical experiment, which of the following data collection methods would most likely yield qualitative data?**

- a) standardized test scores;
- b) student questionnaires with likert scale responses;
- c) teacher interviews exploring their experiences implementing the new method;
- d) number of students completing an assignment on time.

**9. How does the development of a clear, research-based hypothesis relate to the importance of a theoretical framework in guiding a pedagogical experiment?** (Short essay format: 200–300 words).

**10. Which of the following statements BEST describes the discussion in the text regarding the limitations of pedagogical experiments?**

- a) Pedagogical experiments are inherently flawed and unreliable.
- b) The text does not acknowledge any potential limitations of pedagogical experiments.
- c) Pedagogical experiments require careful consideration of factors such as sample size, setting, and generalizability of results.
- d) The limitations of pedagogical experiments can be easily overcome with advanced statistical techniques.

**Task 3. Extra reading. Read the text and express your own opinion on the issue under consideration.** Give some specific example if possible. (approximately 50 words).

### **Types of research methods: Interviews**

Interviews are usually carried out in person i. e. face-to-face but can also be administered more advance computer technology. The interviewer (which is not necessarily the researcher) could adopt a for-

mal or informal approach, either letting the interviewee speak freely about a particular issue or asking specific pre-determined questions.

When conducting the interview, the researcher might have a check list or a form to record answers. This might even take the form of a questionnaire. Taking notes can interfere with the flow of the conversation, particularly in less structured interviews. Also, it is difficult to pay attention to the non-verbal aspects of communication and to remember everything that was said and the way it was said. Consequently, it can be helpful for the researchers to have some kind of additional record of the interview such as an audio or video recording. They should of course obtain permission before recording an interview.

#### **Case IV. Innovative teaching and learning methods (academic writing)**

##### **Task 1. Read the text below.**

##### **Innovative learning methods**

###### ***The Ripple Method***

This method encourages students to engage gradually by responding first individually, then in small peer groups, and finally sharing with the whole class. It builds confidence and deeper participation by allowing learners time to formulate and discuss ideas before speaking out publicly.

###### ***Project-Based Learning (PBL)***

PBL involves students working on real-world problems relevant to the concepts they are studying. It promotes critical thinking, collaboration, and problem-solving skills while motivating learners through practical application rather than passive reception of information.

###### ***Virtual Reality (VR)***

VR immerses students in interactive virtual environments – such as historical sites or scientific phenomena – which enhances experiential learning. It is especially engaging by offering 360-degree exploration and virtual field trips, providing experiences otherwise inaccessible.

### ***Artificial Intelligence (AI) and Adaptive Learning***

AI helps tailor content to individual learners by adjusting the difficulty, pacing, and focus based on performance data. Adaptive learning platforms provide personalized pathways, allowing students to progress at their own pace and receive targeted support where needed.

### ***Gamification and Interactivity***

Incorporating game-like elements like points, challenges, leaderboards, and scenario-based exercises fosters motivation and retention. Interactive content and activities make learning enjoyable and encourage active engagement through competition and achievement.

### ***Collaborative and Reflective Learning***

Group work, discussions, peer teaching, and reflective exercises encourage social learning and deeper cognitive engagement. These methods help learners construct knowledge together and develop self-awareness about their learning process.

### ***Use of Educational Apps and Technology Tools***

Tools that facilitate real-time feedback, quizzes, simulations, and multimedia presentations support learner engagement through varied, interactive modalities.

These innovative methods align learning with students' interests, promote active rather than passive engagement, and leverage technology to create personalized and immersive experiences. They respond to modern learners' needs for relevance, autonomy, and social interaction in education.

**Task 2. Complete the tasks to assess your understanding, critical analysis, and application of the concepts presented in your pedagogical practice and PhD research.**

***1. Match each learning method with the primary skill it is MOST likely to develop.***

*Learning Methods:*

- a) Ripple Method.
- b) Project-Based Learning (PBL).
- c) Virtual Reality (VR).
- d) AI and Adaptive Learning.
- e) Gamification and Interactivity.
- f) Collaborative and Reflective Learning.

*Skills:*

- 1) Personalized learning and targeted feedback.
- 2) Enhanced experiential understanding and contextual immersion.
- 3) Critical thinking, problem-solving, and real-world application.
- 4) Incremental confidence building and public speaking.
- 5) Increased motivation through game-like challenges and rewards.
- 6) Social knowledge construction and metacognitive awareness.

**2. Which of the following BEST describes the core benefit of using Virtual Reality (VR) in education as described in the text?**

- a) It is a cost-effective alternative to traditional field trips.
- b) It provides realistic simulations for physical skill development.
- c) It offers immersive and experiential learning experiences otherwise inaccessible.
- d) It allows students to create their own virtual environments.

**3. According to the text, “The primary advantage of all the listed innovative learning methods is to replace traditional teaching altogether”. Justify your answer with specific references to the text. Explain why you chose true or false and include textual evidence. (This part requires a short written justification).**

- a) true
- b) false

**4. Rank the following factors in order of importance in contributing to learner engagement, according to the emphasis placed on them within the passage (1 = most important, 4 = least important):**

- a) personalization,
- b) social interaction,
- c) technological integration,
- d) relevance to real-world problems.

**5. Based on the passage, which of the following conclusions is MOST likely regarding the implementation of AI and Adaptive Learning?**

- a) It is universally accessible to all students regardless of socio-economic background.
- b) It eliminates the need for teacher intervention and guidance.
- c) It requires careful design to ensure equitable access and avoid perpetuating biases.
- d) It is primarily effective for students who struggle with traditional learning methods.

**6. Imagine you are designing a lesson plan to teach postgraduate students about “Research Ethics”.** Briefly describe how you would incorporate TWO of the methods mentioned in the text to enhance engagement and learning. Be specific. (Brief written answer required).

**7. The text focuses primarily on the benefits of these innovative methods.** Briefly suggest ONE potential drawback or challenge associated with either PBL or Gamification in an educational setting. (Brief written answer required).

**8. How do the innovative methods outlined in the text address the changing needs and expectations of modern learners compared to more traditional pedagogical approaches?** (Short essay format: 200–300 words).

**9. Discuss the ethical considerations of using AI and adaptive learning platforms in education.** What are the potential biases or inequalities that educators must be aware of? (Short essay format: 200–300 words).

**10. Propose a brief research project (3–4 sentences) that could further investigate the effectiveness of one of the methods listed in the text.** Include a specific research question, target population, and potential data collection method.

**Task 3. Extra reading. Read the text and express your own opinion on the issue under consideration.** Which of these do you apply in your pedagogical practice?

These innovative teaching methods are widely recognized for enhancing student engagement and learning effectiveness:

1. Interactive Lessons. Active participation through group discussions, hands-on activities, and simulations.
2. Project-Based Learning – Real-world projects that develop critical thinking and collaboration.
3. Blended Learning – Combination of traditional face-to-face instruction with online learning resources.
4. Gamification – Use of game elements like points and badges to motivate students.
5. Flipped Classroom – Students learn new content at home and apply it in class through activities.
6. Personalized Learning – Tailoring teaching to individual learning styles and paces.
7. Collaborative Learning – Emphasizes group work for peer learning and communication skills development.

<https://piogroup.net/blog/20-innovative-teaching-methods-with-examples-how-to-implement-in-education-process>

### **Case V. Scientific language in use (academic writing)**

**Task 1. Read the text below.**

#### **The language of science**

The specific features and peculiarities of scientific language include:

- Clarity, conciseness, and coherence to provide information in a logically organized and unbiased way.
- Accuracy and objectivity are essential, avoiding emotionality or expressivity, emphasizing precise expression.
- Formality in language, with extensive use of bookish words, scientific terminology, and specialized vocabulary.

- Use of passive voice and impersonal constructions to suppress the author's personal presence and focus on facts.
- Complex syntactic structures, such as long sentences with many clauses and nominal groups.
- Frequent use of logical connectors or linkers to ensure logical flow and systematic presentation.
- Use of abbreviations, neologisms, internationalisms, and symbols (mathematical, chemical, physical).
- Inclusion of citations, footnotes, endnotes, and bibliographies to reference original sources.
- Avoidance of words with multiple meanings, contextual meanings, interjections, and colloquial vocabulary.
- Presentation adapted for both written and spoken scientific communication (e.g., conferences).

These features help maintain the style's key aims: clear, precise, objective, and systematic exposition of scientific knowledge for effective scholarly communication.

[studfile+3https://studfile.net/preview/7683691/page:7/](https://studfile.net/preview/7683691/page:7/)

ссылка открывается без выделенного фрагмента (с выделенным - не открывается. Если возможно, то лучше убрать то, что выделено)

### **Task 2. Answer the test questions based on the text above.**

1. What three qualities does scientific language emphasize to ensure information is presented in an unbiased and logically organized manner?
2. Why is passive voice frequently used in scientific writing?
3. What types of vocabulary are characteristic of scientific language?
4. Which types of linguistic elements are commonly used in scientific texts to maintain logical flow and systematic presentation?
5. Why are citations, footnotes, and bibliographies important in scientific communication?

### **Task 3. Read the text below.**

The lexical markers that most signal scientific language use include:



- Synonymy and repetition: Frequent use of synonyms and repeated key terms helps reinforce concepts and maintain lexical cohesion.

- Antonyms and hyponyms: Using opposite terms and hierarchical relationships to clarify distinctions and classifications.

- Collocations and equivalence: Established word combinations and terms with equal meaning in scientific contexts.

- Coordinative conjunctions: Words like "and," "or," "but" that logically connect ideas.

- Discourse markers signaling logical relations such as causality, contrast, condition, purpose (e. g., "because," "however," "if," "therefore").

- Precise use of terminology, often discipline-specific, to ensure technical accuracy.

- Avoidance of ambiguous or vague lexical items in favor of clear, univocal expressions.

These lexical signals support the clarity, coherence, and logical structure essential in scientific discourse.

<https://www.atlantis-press.com/article/55908001.pdf>

#### **Task 4. Answer the test questions based on the text above.**

1. How do synonymy and repetition function as lexical markers in scientific language?

2. What roles do antonyms and hyponyms play in clarifying scientific concepts?

3. Name some discourse markers that indicate logical relations in scientific writing and give examples.

4. Why is the precise use of discipline-specific terminology important in scientific language?

5. Why is the avoidance of ambiguous or vague lexical items critical in scientific discourse?

#### **Task 5. Language practice. Translate the following sentences. Check the results with the language supervisor.**

1. В связи с вопросом об эффективности нашего подхода к этой проблеме, полезно рассмотреть следующую аналогию.

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2. Анализируя свои результаты, необходимо оценивать их, исходя из новейших представлений о предмете.

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3. Большое внимание в будущем будет уделяться связи между экспериментальной работой и теоретическими исследованиями.

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4. Чтобы сделать исчерпывающим анализ этих данных, мы привлечем различного рода интерпретации, которые имеются в литературе, и рассмотрим вопрос с нескольких точек зрения.

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5. Все большее число выпускников вузов вовлекается в сферу научно-исследовательской работы, и сам характер работы меняется.

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6. Когда мы говорим, что решили какую-то научную проблему, мы, по-видимому, делаем неизбежную ошибку, так как решение одной проблемы, как правило, является началом более глубоких исследований.

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7. Четкая постановка целей и задач облегчает проведение исследования. При написании статьи или чтении доклада нужно уметь выражать свои мысли в сжатой и ясной форме.

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8. В этом разделе мы сосредоточим внимание на преимуществах данного метода и на возможных областях его применения.

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9. Настоящая работа является результатом исследований, которые провела группа сотрудников центральной лаборатории.

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10. Поскольку эта статья касается в основном экспериментальных наблюдений, здесь уместно привести сопоставление результатов двух серий исследований.

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11. Первый раздел будет посвящен обсуждению некоторых общих проблем исследования.

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12. Во втором разделе будет дан подробный анализ результатов наблюдений и сделана попытка интерпретировать их с точки зрения современной теории.

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13. Прежде чем приступить к разбору достоинств и недостатков данного метода, полезно дать краткую историческую справку о его появлении.

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14. Мне трудно сейчас ответить на ваш вопрос, так как у меня еще нет результатов анализа последних измерений.

15. Те сведения, которые имеются в литературе по данному вопросу, не позволяют сделать вывод о какой-то определенной взаимосвязи между описываемыми явлениями.

16. Современный исследователь действительно нуждается в глубоком знании своего предмета и в умении правильно оценить полученные результаты.

17. Наука не только накопила новые сведения о явлениях природы, но и заставила человека пересмотреть многие из его прежних представлений о них.

18. Я должен был бы включить в этот обзор все наиболее значительные исследования, проведенные у нас и за рубежом в течение последних двух-трех лет, но, к сожалению, я не мог этого сделать из-за слишком короткого времени, отведенного на (allotted for) мой доклад.

19. Результаты настоящего исследования, возможно, не заслуживали бы здесь большого внимания, если бы они не указывали на определенную закономерность проявления описываемых изменений.

20. Перед началом опыта обычно проверяется вся аппаратура и отбираются образцы материалов.

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21. А теперь я перехожу к обсуждению некоторых результатов последних наблюдений, которые дают нам иное представление об этих процессах.

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22. Полученные результаты не подтверждают эту теорию, и мы можем сделать вывод о том, что в данном процессе могут участвовать неизвестные нам факторы.

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23. Результаты, которые можно ожидать от этих исследований, вероятно, внесут некоторую ясность в этот довольно запутанный вопрос.

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24. При пересмотре старой программы мы учитывали многие факторы, которые могут помочь в повышении эффективности наших исследований.

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25. Вопрос, который мы сейчас обсуждаем, слишком сложен, чтобы на него можно было так быстро найти ответ.

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## Case VI. Summarizing scientific sources (academic writing and speaking)

**Task 1. Read the explanation for what a scientific summary means.**

### Summary description

A summary of a scientific text is a brief restatement of a main message of the text using pattern phrases and without misinterpreting the original author's ideas. It objectively combines the core elements (typically the research question, methodology, key findings, and conclusion) into a concise format, often around 10–20 % of the original length. An efficient summary is characterized by:

- **accuracy:** representing the author's arguments and evidence without distortion;
- **objectivity:** presenting the data objectively, without adding personal views, criticism, or assessment;
- **completeness:** including all essential points necessary to understand the author's main message;
- **conciseness:** eliminating redundant examples, illustrations, and minor details;
- **original wording:** using **paraphrasing** (restating ideas in your own words) rather than copying phrases from the source, though it must still be properly cited to avoid plagiarism.

The goal of writing a correct summary is to provide a reader with a clear understanding of the text's purpose and most significant contributions.

**Task 2. Study the recommendations for writing an efficient summary of a scientific text.**

### Writing and Style Recommendations

- **Be Concise:** Eliminate redundant words and examples. A summary is typically 10–20% of the original length.
- **Use Your Own Words (Paraphrase):** Do **not** copy sentences from the original text. Rephrase the ideas to demonstrate your understanding. *Warning:* Even when paraphrasing, you must cite the source to avoid plagiarism.

- **Maintain an Objective Tone:** A summary should report the author's findings and conclusions, not your opinion. Avoid phrases like "I think" or "This is a great study."

- **Use Present Tense:** Typically, summaries use the present tense when describing the text (e.g., "The article *discusses*...", "The authors *conclude*...").

- **Focus on the Main Points:** Omit minor details, statistical nuances (unless they are the central point), background information, and anecdotes.

- **Use Authoritative Reporting Verbs:** *state, describe, discuss, explain, investigate, find, report, argue, conclude, suggest.*

### What to Avoid

- **Avoid Direct Quotations:** A summary should be a synthesis, not a copy-paste job. If you *must* use a direct quote because the wording is unique and critical, ensure it is in quotation marks and cited properly.

- **Avoid Adding New Information:** Your summary should only contain information that is present in the original text. Do not inject your own analysis, criticism, or ideas.

- **Avoid Judgmental Language:** Do not write "This was a flawed study..." or "Their amazing discovery...". Just present the facts as the authors did.

- **Avoid "Meta-Comments":** Don't waste space writing "This paper is about..." or "In this summary, I will...". Just state the information directly.

**Task 3. Study the Useful Language Speech Patterns used to make up a good summary.**

### Summary Arrangement Vocabulary

#### 1. Model constructions

This is an excerpt from the book ... by... (en)titled ...	Это – отрывок из книги ... (автор) ... озаглавленный ...
This article is (en)titled ... The book (monograph) is headed...	Эта статья озаглавлена ... Книга (монография) названа ...

<p>The paper bears the heading...</p> <p>The passage (article) under the heading...</p> <p>This scientific report...</p> <p>This excerpt (passage)...</p>	<p>Работа носит название ...</p> <p>Отрывок (статья) под заголовком ...</p> <p>Этот научный доклад ...</p> <p>Этот отрывок ...</p>
<p>The passage examines ...</p> <p>The article deals with the problem of ...</p> <p>The excerpt comments on...</p> <p>It carries the description of ...</p> <p>The passage covers the state-of-the-art of</p>	<p>В отрывке анализируется ...</p> <p>В статье рассматривается проблема...</p> <p>Отрывок содержит комментарии по...</p> <p>Он(а) содержит описание ...</p> <p>Отрывок освещает достижения...</p>
<p>The report is devoted to the analysis of...</p> <p>The paper considers...</p> <p>The paragraph reviews material on...</p> <p>It concerns...</p>	<p>Доклад посвящен анализу...</p> <p>В работе рассматривается...</p> <p>В этом параграфе – обзор материала ...</p> <p>Он(а) касается ...</p>
<p>The first lines give...</p> <p>The following paragraph contains...</p> <p>The next section goes on with...</p>	<p>В первых строках дается ...</p> <p>В следующем параграфе содержится...</p> <p>В следующем разделе продолжается...</p>
<p>The author / writer... (The book...)</p> <p>begins with the analysis of ....</p> <p>analyzes, examines...</p> <p>describes ...</p> <p>points out ...</p> <p>considers, reviews, discusses...</p> <p>presents..., reports on...</p> <p>shows..., illustrates...</p> <p>shows by graphical display...</p> <p>demonstrates ...</p> <p>draws our attention to ...</p>	<p>Автор... (Книга...)</p> <p>начинает(ся) с анализа ...</p> <p>анализирует...</p> <p>описывает...</p> <p>отмечает ...</p> <p>рассматривает, обсуждает ...</p> <p>представляет..., содержит отчет о...</p> <p>показывает, иллюстрирует ...</p> <p>показывает графически ...</p> <p>демонстрирует ...</p> <p>обращает наше внимание на ...</p>



<p>gives a thorough treatment of ...</p> <p>gives a thorough consideration of reasons, hypothesizes, theorizes that...</p> <p>concentrates on... , focuses on...</p>	<p>подробно обсуждает...</p> <p>подробно рассматривает ...</p> <p>размышляет о том, что</p> <p>сосредоточивает внимание на ....</p>
<p>highlights, emphasizes, stresses, gives a thorough treatment of ...</p> <p>suggests / proposes a new concept of ...</p> <p>suggests that we should consider ...</p> <p>proposes, offers ...</p> <p>puts forward the idea of ...</p> <p>comes up with an idea that...</p> <p>introduces the conception of ...</p> <p>mentions the fact that ...</p> <p>touches on the issue of ...</p> <p>outlines...</p> <p>gives us a rough sketch of...</p> <p>advocates, argues for / against ...</p> <p>favours, is in favour of ....</p> <p>supports....</p> <p>questions, criticizes...</p> <p>denounces...</p> <p>raises objections against...</p> <p>is opposed to...</p> <p>continues with...</p> <p>goes on to say that....</p> <p>proceeds to explain ...</p> <p>sums up, summarizes...</p> <p>concludes, makes a conclusion that...</p> <p>finishes (by) saying that...</p>	<p>подчеркивает ...</p> <p>подробно анализирует ...</p> <p>предлагает новую концепцию ...</p> <p>предлагает нам рассмотреть ...</p> <p>предлагает...</p> <p>выдвигает идею...</p> <p>выступает с идеей о том, что ...</p> <p>вводит понятие ...</p> <p>упоминает о том, что ...</p> <p>касается вопроса...</p> <p>кратко описывает...</p> <p>дает примерное представление о...</p> <p>защищает, выступает за / против</p> <p>высказывается в пользу...</p> <p>поддерживает ...</p> <p>ставит под вопрос, критикует...</p> <p>осуждает, отказывается от ...</p> <p>выступает с возражениями против...</p> <p>настроен против...</p> <p>продолжает ...</p> <p>продолжает мысль о том, что ...</p> <p>продолжает разъяснять ...</p> <p>подводит итог ...</p> <p>делает заключение о том, что ...</p> <p>завершает, высказываясь о том, что</p>

The main idea... The problem, issue, matter ... The subject... The topic ... The point ... The discussion ... The experience ... The case study...	Основная идея... Вопрос/проблема... Предмет... Тема... Момент... Обсуждение Опыт... Практический анализ...
The issue concerning / regarding ... of how to deal with... associated with... under consideration (here) at (in) hand... in question... involving this issue... covered in ... by the example of ... of great importance...	Вопрос, касающийся... ... о том, как рассматривать... связанный с ... который здесь поставлен... рассматриваемый здесь... интересующий нас/автора ... связанный с этим вопросом... который освещается в ... на примере... имеющий большое значение...
The problem is discussed... is...  is dealt with... is treated... is covered...	Проблема обсуждается... состоит (заключается) в том, что касается... рассматривается... освещается...
is touched upon... is caused by.. is defined... is discussed... is considered to be... is worth considering... refers to ... seems to be ... can be solved ... is defined...	затрагивается... вызвана ... определяется... обсуждается... считается (какой-либо)... заслуживает рассмотрения ... относится к ... по-видимому, является... может быть решена ... определяется...
in particular...	в частности...

briefly... in many ways according to... in relation to... in the context of... within the framework of ... later on ... further on....	вкратце... во многих аспектах... в соответствии с... в связи с... в контексте ... в рамках... позже ... в дальнейшем ...
As the name of the (article, chapter, excerpt, passage) suggests, ... Judging from the content of this passage (article, chapter, excerpt) ...	Как видно из названия (статьи, главы, отрывка),... Судя по содержанию (статьи, главы, отрывка),...
It is believed that... It is pointed out that... It is said that... It is assumed / suggested that... It is stressed that... It appears from this that... It follows from what has been said that...	Считается (считают), что ... Отмечается, что ... Говорится о том, что... Предполагается, что... Подчеркивается, что... Из этого очевидно, что... Из сказанного следует, что...
We may conclude that ...  In conclusion one may say that  One might reasonably draw the conclusion that... Briefly speaking... / To put it briefly...	Можно сделать вывод о том, что...  В заключение можно сказать, что...  Можно обоснованно сделать вывод о том, что ... Если говорить кратко...

## 2. Organizing words, introducing a logical context

<i>Words confirming the above considerations:</i>	
therefore / consequently / hence / so / thus.... in this way / in this manner ....	поэтому, следовательно, таким образом

thus / thereby...	тем самым
as a result / as a consequence in consequence...	в результате этого
accordingly / in agreement / in line / in keeping with...	в соответствии с этим
for that reason...	по этой причине
similarly / in a similar manner / in much the same way...	аналогичным образом
here / then / thereby / by doing so	при этом
<b><i>Words that negate the above considerations:</i></b>	
however / but ...	однако
on the other hand...	с другой стороны
even so / nevertheless / none the less...	тем не менее
yet ...	все же
in contrast ...	и наоборот
contrary to this ...	в противоположность этому
<b><i>Words extending the above considerations:</i></b>	
also / in addition...	кроме того
again / in turn ...	в свою очередь
here / also / here again...	и в данном случае
for other reasons...	по другим причинам
<b><i>Words limiting the above considerations:</i></b>	
for the purpose...	для этой цели
for such purposes...	для этих целей
for our purposes...	для наших целей
for the purpose in view...	для поставленной цели
toward this end/to this end...	с этой целью
to do this / for doing this...	для этого
viewed in this way / from this point of view / on this view...	с этой точки зрения
in this respect...	в этом отношении
here / now / specifically...	в данном случае
in any case / in any event / if any-	во всяком случае

thing...	
<b><i>Words indicating the sequence of a narration:</i></b>	
First,... from the very beginning... from the first / initially... as a start... first of all / to begin with... so far / thus far / to this point... recently... until lately... in the last few years...	сначала с самого начала первоначально для начала прежде всего до сих пор недавно до последнего времени за последние несколько лет
at the time... for some time...  during that period... by the time... this time... since.. since that time...	в то время в течение некоторого времени  в течение, за это время к тому времени на этот раз с тех пор с того времени
then / next / now / hereafter... later / later on presently in what follows... subsequently / then...	далее позднее в настоящее время в дальнейшем затем
in the near future... in the following year...	в ближайшем будущем на будущий год
eventually / finally / ultimately... hence / ultimately / eventually...	и наконец, в конце концов в итоге
<b><i>Words indicating simplification, reduction, or detail:</i></b>	
for simplicity / for simplicity's sake	для простоты
for clarity / for the sake of clarity	для ясности
for convenience / for the sake of convenience	для удобства
for details	для детального ознакомления
otherwise expressed, or else	другими словами

that is to say, namely	а именно
<b><i>Words forming a subordinate relationship at the beginning of precise sentences:</i></b>	
который чей когда где при которых в которых среди которых из которых через которые в то время как в которых	– that, who, which – whose – when – where – under which – in which - among which - from which - through which - whereas - whereby - wherein
<b><i>Words that form a compositional connection in simple common and compound sentences:</i></b>	
и, а или, то есть а не; скорее, чем но как..., так и... или..., или... ни..., ни...	- and - or - rather than - but - both... and... - either... or ... - neither... nor...

**Task 4. Make a summary of the article using the recommendations above.**

English is certainly the language of science in the modern world, with an estimated 98 % of all scientific publications being written in the language. But it hasn't always been that way.

Before the 17th century, scientific publications were mostly written in Latin. For example, in 1687, Sir Isaac Newton wrote his book *Philosophic Naturalism Principia Mathematica*, which explained his laws of motion and gravity, in the Latin language. At the time edu-

cation wasn't accessible to the majority of the population, and so Latin was the language of the elite and intellectual classes. Even the name of 'gravity' reflects this, coming from the Latin word 'gravitas', which means heavy.

Gradually, more scientists began to publish their works in the vernacular in order to make their ideas accessible to the masses, and Latin lost its status as the scientific *lingua franca*. But since the primary reason for publishing scientific research was to share ideas and knowledge, there was concern that publishing scientific papers in so many different languages would hinder scientific communication and the understanding of important research being conducted abroad.

By the mid-19th century, there were three primary languages used to promote scientific thought: English, French and German. Professional scientists were expected to be proficient in all three of these languages and to publish exclusively in those languages. By 1900, the dominant language of science was German, and thanks to leading scientists like Einstein, Planck, Heisenberg and others, it remained that way until World War I led to boycotts of German scientists who were often barred from publishing in Western European journals.

Conflicts throughout the 21st century, including both World Wars and the Cold War, transformed the way scientists around the world communicated with each other, and by the mid-1990-s English had firmly established itself as the language of science. Nowadays, anyone who wants to share their ideas must publish their work in English. Even many scientific textbooks aimed at students in non-English speaking countries are written in English, and these students are required to have proficient English in order to pursue degrees and eventually careers in the sciences.

This definitely poses problems for scientists and students who do not speak English as their first language. Considering that just 15 % of the world's population speaks English, with just 5 % speaking English as their mother-tongue, the fact that the latest scientific discoveries are mostly written about in English can make the whole profession seem inaccessible.

It's difficult enough to read a scientific paper in a foreign language, but the requirement to write a scientific paper in English can seem an impossible task when it's not your mother-tongue. It involves explaining complex theories and using nuanced language to ensure the

reader thoroughly understands the concept, which requires another skill-set entirely.

The fact that English has become the language of science isn't likely to change any time soon. But having an awareness of the ways in which scientific papers can be made more accessible to those who speak English as a second language can optimize communication and level the playing field to ensure scientists around the world can be heard.

### **Case VII. Scientific self-presentation (academic speaking)**

**Task 3. To prepare for the speaking part (the third part) of the exam study, the requirements for a scientific research presentation. In brief, write down the key notes under the headings.**

#### **The Third Exam Assignment**

*A report on a scientific paper in a foreign language should include a brief description of the following aspects:*

1. The relevance of the problem under study. \_\_\_\_\_
2. The research topic. \_\_\_\_\_
3. The subject of the study (which is the subject of the analysis).  
\_\_\_\_\_
4. The object of the research (on what basis or on what material it is conducted). \_\_\_\_\_
5. The working hypothesis of the study. \_\_\_\_\_
6. Goals and objectives of scientific work. \_\_\_\_\_  
\_\_\_\_\_
7. Research methods. \_\_\_\_\_
8. Research program. \_\_\_\_\_
9. Novelty. \_\_\_\_\_
10. Theoretical and practical significance of the work. \_\_\_\_\_  
\_\_\_\_\_
11. Further research prospects. \_\_\_\_\_



**Task 2. Look through a recommended framework for the scientific self-presentation. Underline the statements and ideas which will suit your future presentation.**

**A model for reporting Scientific Work  
in a self-presentation in English:**

- First, let me introduce myself. My name is... I am a post graduate student (doctoral student) at the department of ...
- My scientific advisor is Prof....
- To begin with I'd like to give you a brief description of my background, that is my previous studies and work.
- I graduated from this University (e. g., T. F. Gorbachev Kuzbass State Technical University) in ..... (year).
- I received my diploma in Civil Engineering (Environmental Engineering / Architecture / Culture Studies / Economics... ) at the department of ...
- My major (specialization) was...
- My course work and major design were dedicated to...
- I had a period of practical training in (the field of ) ... at ....
- During my final year at university I did my graduation thesis in the area of ....
- It was entitled...
- It was a very interesting topic for me to investigate because...
- After graduation I started my full time (part-time) work as a faculty member (student teaching assistant / instructor / assistant professor / laboratory assistant / programmer) at ..
- Last year I applied for a job as a ..... at ...
- I was offered a position of ... at the department of (laboratory of / business firm called "...")
- I decided to combine my work and research in ... and was supported by ...
- The topic / theme I have chosen is "..."
- My scientific advisor suggested the study of ...
- My interest was motivated by ....
- Prof. N ... advised / prompted me studying ....
- The topic of my thesis is "..."
- It deals with exploration (investigation / analysis / development / integration) of ...

- The subject of my research is ...
- Let me now go into some detail regarding my research guided by the subject I have mentioned.
- I began with the study of literature on the subject including some basic works written by...
- These problems ... are widely discussed (treated) in literature.
- There are many papers reviewing the state of the art of ...
- There are many articles in scientific journals and special periodicals such as ... in particular.
- These problems are very relevant today are widely discussed in the works by a number of prominent scientists (scholars) such as ...
- In recent years the issues involving ... have received considerable attention of ... in ...
- The theory of ... was constructed and developed by ...
- The object of my research is the operation (behavior / processes) of ...
- The immediate aim (goal / objective) is to examine the function (behavior / dynamics ) of ...
- A current study in our laboratory is addressing the question of ...
- The focus of my research is on the relationship between ... and ...
- It is very important and interesting to examine (analyze / evaluate / describe) the complex interaction between ... and ....
- This is one of the points that strongly motivate my work dedicated to...
- Typically, we assume that the object (group / value / characteristic / parameter) in question is ...
- Another aspect of the interaction is ...
- For example, if we take ... then ...
- We may therefore assume that ...
- Similarly, if one takes X to be ... then ... is related to ...
- One may ask the question as to the nature of ...
- A very interesting question which I am actively pursuing is...
- I am interested to know...
- In our joint work with ...
- I explore (test/ examine) ...

- To this end, we study ...
- The methods and techniques we apply in this research include experiments (observations, laboratory tests, field and pilot plant study ...)
- The experimental part of my research will mostly consist of tests to be conducted on ...
- It is therefore quite encouraging that these methods may be used to solve a number of problems in this instance and get an insight in ...
- Some of most recent results of the research in ... make use of the ... and the theory of ...
- The results may be constructed into a theoretic framework that I am going to describe by systemizing the data obtained in the experiments (observations).
- As to the practical output of my study, I think they will be of considerable practical significance, because ...
- The list of my published papers includes ...
- Some of the general issues that I studied last year include: first, ... second, ... and third...
- I remain actively involved in several other projects.
- I have analyzed the ... of this ... and tried to show that there are ...
- It is becoming clear that ... plays a crucial role in the operation of ...
- In my paper I will try to give a simple description / definition of ...
- That makes it possible to calculate (identify / establish / develop) ... with the help of ...
- Since ... is a ... , these results may be applied to solving a wide range of problems in ...
- We may hope that the results of our study will be of practical significance because ...
- It may have good potential to improve (enhance / alleviate the problem / eliminate the need for / increase)...

**Task 3. The final step of a PHd exam in the English language will include the Interview with the members of the examination committee. To be successful, study the Sample list of questions to use it as a Self-Check Guide. Answer them in writing even if they duplicate the info in the general part of your scientific self-presentation.**

- 1) What educational institution did you graduate from? When?
- 2) What is your speciality?
- 3) Why did you decide to take a post-graduate course?
- 4) What is the subject of your future scientific research?
- 5) Who is your scientific supervisor?
- 6) Have you ever participated in any scientific conferences?
- 7) Do you have any publications?
- 8) What methods are you going to use in your investigation?
- 9) What will your scientific research give the world? In what way can your investigation / research be useful to ... science?
- 10) Who is your scientific supervisor and what is his / her contribution to science?
- 11) What does your scientific work deal with? Or: What problem do you investigate?
- 12) What can you say about your scientific work?
- 13) Do you need any special equipment for fulfilling your investigation?
- 14) What illustrations are you going to prepare to demonstrate the results of your investigation?

- 15) What conclusions will you make if the results of your research are positive / negative?
- 16) How do you plan your research?
- 17) What have you already managed to do?
- 18) Who are the best informed scientists in the field of your research?
- 19) How long can it take you to complete your research?
- 20) By what time / by when will you have completed your research?
- 21) What contribution may your research make into science?
- 22) Did you take part in scientific conferences?
- 23) Did you make any reports? What were they devoted to? Were your re-ports a success?
- 24) Are you going to take part in scientific conferences in the future?
- 25) Have you got any publications?
- 26) What is the purpose of your publications?
- 27) What do you think the social role of your investigation is?
- 28) Why are you interested in such a problem?
- 29) Could you speak about the historical background of your problem?
- 30) Can you say now what structure of your dissertation will be? How many chapters will it consist of?
- 31) What kind of sources do you prefer to use for the theoretical substantiation / grounds of your research?
- 32) What is your opinion of the ethic of using AI? Do you use AI? Is it helpful?

33) Do you have a job? What is your current post / position? Do you consider changing the job? What are you busy with now at your workplace?

34) How are you getting along with your colleagues?

## **Appendices**

### **Appendix 1**

#### **An approximate list of questions about the specialty and scientific activity of a post-graduate student with demonstrational answers for the *CONSTRUCTION SHERE***

##### **1. Who is your scientific supervisor and what is his / her contribution to science?**

My scientific supervisor is ... . (S)He is a doctor of technical science, professor, The Head of the Chair of Technology of Building Materials and Structures. He has many publications devoted to the problem of cellular concrete. My scientific supervisor is considered to be a competent specialist. He is the man to be relied on.

##### **2. What does your scientific work deal with? Or: What problem do you investigate?**

My scientific work deals with the problem concerning structure of cellular concrete. Or: I'm going to investigate the problem ... .

##### **3. What can you say about your scientific work?**

*While speaking about my scientific work it should be said that* it is very important for building industry.

*It is common knowledge that* cellular concrete is widely used in construction. But technology of cellular concrete has not fully investigated several operations that result in some variable properties of concrete.

*It should be stressed that* it is the density that determines the properties of cellular concrete.

*The aim of my research is* to control the characteristics of cellular concrete structures. I will determine the possibilities of controlling the characteristics of cellular concrete structures by means of different factors.

*I'm going to carry out the theoretical analysis of experimental data. I will also deliver some recommendations for producing cellular concrete with better proper-ties and characteristics.*

*In conclusion I'd like to say that my recommendations will be useful for enter-prises producing products from cellular concrete.*

**5. Do** you need any special equipment for fulfilling your investigation? **НЕТ пункта 4. Что-то потеряно? Или ошибка в нумерации?**

For fulfilling my investigation I will use different measuring devices, plants, tools and computer programs.

**6. What illustrations are you going to prepare to demonstrate the results of your investigation?**

To demonstrate the results of my investigation I am going to prepare different tables, diagrams, graphs, drawings because they will help me to convincingly and precisely prove my conclusions.

**7. What conclusions will you make if the results of your research are positive / negative?**

If the results of my research are positive I will make the conclusion that I have managed to increase the quality of cellular concrete and to develop a new complex method for its estimation.

If the results of my research are negative I will make the conclusion that I have to further investigate the problem under other conditions and with other parameters.

**8. How do you plan you research?**

First of all, I make up the plan of my research. Then I analyse literature concerning the field of my research both in Russian and in English, sum up the information obtained, carry out my experiment, make conclusions and apply the results of my research in practice.

**9. What have you already managed to do?**

I have already managed to make up the plan of my research, to analyse some literature both in English and in Russian, and to prepare an article dealing with my research for publication.

**10. What points of your plan have you failed to fulfil?**

I have failed to make my experiment, to make conclusions and to apply the results of my research in practice.

**11. How will you continue your investigation?**

I will continue to analyse literature concerning my research. I will carry out my experiment, make conclusions and apply the results of my research in practice.

**12. How many English publications important for your research have you found?**

I have found about twenty English publications important for my research and I have already analysed all of them.

**13. How many key terms have you selected from the English publications?**

I have selected about 50 key terms from the English publications. The most important of them are: cellular concrete, foam generator, foam liquid concentrate and others.

**14. What points of view expressed in the publications do you criticize?**

It should be said that at present I only analyse literature and get acquainted with different points of view, so I don't criticize anything.

**15. Who are the best informed scientists in the field of your research?**

The best informed scientists in the field of my research are Ye. M. Chernyshov, A. N. Fedin, Ye. I. Shmitko, J. Gonsales, Sh. Wood and others.

**16. How long can it take you to complete your research?**

I think that it can take me about two years to complete my research.

**17. By what time / by when will you have completed your research?**

I hope that I will have completed my research by the end of 2015.

**18. What contribution may your research make into science?**

I think that the recommendations done by me will be useful for building industry.

**19. Did you take part in scientific conferences?**

Yes, I did. I took part in scientific conferences held in our University and in some other institutions.



**20. Did you make any reports? What were they devoted to? Were your reports a success?**

Yes, I did. I made some reports. They were devoted to the problem of my research. I think that my reports were a success because there were a lot of questions and I answered all of them.

**21. Are you going to take part in scientific conferences in the future?**

There is no doubt about it. I will certainly take part in scientific conferences and I will make reports devoted to the theme of my research.

**21. Have you got any publications?**

Not yet. But in the near future I am going to prepare some articles for publication. They will be devoted to the theme of my research.

Or: Yes, I have. I have got two publications devoted to the theme of my investigation. They were published in the proceedings of our University.

**22. What is the purpose of your publications?**

The main purpose of my publications is to attract attention of scientists to the problem of my research and to make a certain contribution to science.

**23. How long have you been working at your research?**

I have been working at my research for about two years / since 2010.

**24. By when had you completed your précis?**

I had completed my précis by the end of April / September.

**25. Speak about your précis?**

While speaking about my précis it should be said that I have analysed about 20 papers to prepare it. It consists of an introduction, seven main parts, professional vocabulary and references. The main parts deal with the history of cellular concrete and the technology of its production. Professional vocabulary contains 80 key-terms connected with problem being investigated. References have 10 names.

**26. What do you think the social role of your investigation is?**

In my opinion, my investigation will help to improve the quality of production, to reduce a total cost of housing construction and to provide people with harmless and safe houses to live in.

**27. Why are you interested in such a problem?**

I am interested in such a problem because I consider it to be urgent and timely but not thoroughly investigated yet.

**28. What kind of sources do you prefer to use for the theoretical substantiation / grounds of your research?**

For the theoretical grounds of my research I prefer to use some works of my scientific supervisor, different publications of Russian and foreign scientists and the materials presented by the Internet.

**29. Could you speak about the historical background of your problem?**

As far as I know some aspects of this problem have been already investigated both by Russian and foreign scientists but still some of them should be further studied. So, my task is to fill in this gap, and I will do my best to accomplish it.

**30. Can you say now what structure of your dissertation will be? How many chapters will it consist of?**

Now I can't exactly say anything about the structure of my dissertation. But I think that it will consist of three chapters, conclusions and Appendix. We will decide this problem with my scientific supervisor together. I am sure he / she will help me.

**Appendix 2**

**Phrases for writing scientific articles, reviews, essays**

*Translate the phrases if necessary*

**The beginning of the article – the problem statement**

Many people think ... but others do not agree.

Let us consider what the advantages and disadvantages of ... are.

Let's consider some pros and cons of it.

Let us start by considering the facts.

Let us start with the arguments for and against.

To begin with, ... .

**The arguments for and against**

One argument in support of ... .

The first thing that needs to be said is ... .

It is often said that ... .

It is undeniable that ... .

What is more, ... .  
Besides, ... because it is ... .  
Doubtless, ... .  
One cannot deny that ... .  
It is (very) clear from these observations that ... .  
On the other hand, we can observe that ... .  
The other side of the coin is, however, that ... .  
Another way of looking at this question is to ... .  
One should, nevertheless, consider the problem from another angle.  
One should, however, not forget that ... .  
If on the one hand it can be said that ... the same is not true for ... .  
On the other hand, ... .  
Although ... . Besides, ... . Moreover, ... .  
Furthermore, one should not forget that ... .  
In addition to ... .  
Nevertheless, one should accept that ... .  
However, we also agree that ... .

### **Experts' opinions**

Experts ... believe that ... say that ... suggest that ... are convinced that ... point out that ... emphasize that ... .  
According to some experts ...  
Perhaps we should also point out the fact that ... .  
It would be unfair not to mention that fact that ... .  
One must admit that ... .  
We cannot ignore the fact that ... .  
One cannot possibly accept the fact that ... .  
From these facts, one may conclude that ... .  
Which seems to confirm the idea that ... .  
Thus, ... / Therefore, ...  
The most common argument against this is that ... .

### **Conclusions and summing ups**

In conclusion, I can say that although ... , ... .  
To draw the conclusion, one can say that ... .  
So it's up to everybody to decide whether ... or not.  
The arguments we have presented ... suggest that ... / prove that ...  
/ would indicate that ... .

From these arguments one must ... / could... / might ... conclude that ... .

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