# ABSTRACT

of the dissertation by Elmedira Baigulina entitled
"Formation of foreign language communicative competence among future biologists in the context of professionally oriented training"
submitted in fulfilment of the requirements for the degree of Doctor of Philosophy (PhD) in specialty 6D011900 – Foreign language: two foreign languages

**Relevance of the research**

The Concept for the Development of Higher Education and Science in the Republic of Kazakhstan for 2023-2029 emphasizes the need to prepare competent professionals capable of solving complex professional tasks and effectively performing their professional duties in a foreign-language environment.

This requirement highlights the necessity of ensuring a practical and professionally oriented focus in foreign-language instruction at non-linguistic higher education institutions. The addresses of the President of the Republic of Kazakhstan, Kassym-Jomart Tokayev, also emphasize the importance of training internationally competitive professionals proficient in several languages, which further reinforces the relevance of the present research.

This issue is particularly significant in the field of biology. Contemporary biological science is inherently international and encompasses rapidly developing areas such as genetics, molecular biology, biotechnology, ecology, and bioinformatics.

A substantial proportion of new research findings in these fields is published in English, while international scientific conferences, collaborative research projects, academic mobility programmes, and international databases predominantly operate in foreign languages. Therefore, the ability of future biologists to use a foreign language as a means of professional communication is an important prerequisite for developing their research potential, supporting their professional growth, and facilitating their integration into the international scientific community.

**Object of the research:** the process of professionally oriented foreign-language education of future specialists at non-linguistic higher education institutions.

**Subject of the research:** the content, model, linguodidactic conditions, methods and techniques, as well as the methodology for developing the foreign-language communicative competence of future biologists in the context of professionally oriented education.

**Purpose of the research:**

to determine the theoretical and methodological foundations for developing the foreign-language communicative competence of future biologists in the context of professionally oriented foreign language education;

to provide a scientific rationale for its structure and content;

to develop an effective model, linguodidactic conditions, and methodology for its formation;

to experimentally verify their effectiveness;

**Research objectives:**

- to clarify the essence, content, and structure of the concept of "foreign-language communicative competence of future biologists";
- to identify the specific features of its development;
- to develop a model for the formation of the foreign-language communicative competence of future biologists in the context of professionally oriented education;
- to identify the linguodidactic conditions necessary for developing the foreign-language communicative competence of future biologists;
- to develop a teaching and methodological package aimed at developing the foreign-language communicative competence of future biologists in the context of professionally oriented education;
- to develop a methodology for forming the foreign-language communicative competence of future biologists and to verify its effectiveness experimentally.

**Research hypothesis:** *If* the essence, structure, and specific features of the foreign-language communicative competence of future biologists are theoretically and methodologically substantiated within the context of professionally oriented education, a model and appropriate linguodidactic conditions for its formation are identified, and a scientifically grounded methodology is implemented systematically, *then* the effectiveness of developing this competence will increase, *since* the proposed system enables the comprehensive development of the professional foreign language preparation of future biologists on the basis of personality-activity, contextual-cognitive, and integrative-communicative approaches.

**Leading idea of the research:** the effective development of the foreign-language communicative competence of future biologists is based on aligning the content and methodology of professionally oriented foreign-language education with their future professional activities, ensuring the gradual and interrelated development of linguistic, pragmatic, and subject-specific professional subcompetences, and systematically implementing a scientifically grounded model and appropriate linguodidactic conditions.

**Theoretical and methodological framework of the research** is based on the works of Kazakhstani and international scholars in the following areas:

the theory of professional and communicative orientation in foreign-language teaching (I.I. Galimzyanova, N.D.Galskova, D.B.Gudkov, S.S.Kunanbayeva, O.A. Leontovich, E.I.Passov, E.R. Porshneva, V.L.Skalkin); system-activity and contextual approaches to determining the ultimate goals of professional training (A.A. Verbitsky, L.S.Vygotsky, I.Ya.Lerner); theoretical approaches to the formation and development of professional foreign-language competences of contemporary specialists (N.M.Gromova, O.O.Smirnova, S.F.Shatilov); theory and methodology of foreign-language teaching based on the communicative approach (I.M. Berman, G.A. Kitaygorodskaya, E.I. Passov); theories of designing and modelling the content of professional education (V.P. Bespalko, V.I. Zagvyazinsky, G.I. Ibragimov, V.V. Kraevsky); issues of professionally oriented foreign-language education (T.Hyland, D.Marsh, A.N.Shchukin, M.N.Vatyutnev, T.A.Kulgildinova, A.K.Sadykova, A.A.Golovchun, G.B.Zhumabekova, P.K.Yelubayeva, M.K.Akhmetova, U.K.Orynbayeva)

**Research methods:** in accordance with the purpose and objectives of the study, a combination of theoretical, empirical, and mathematical statistical methods was employed.

The theoretical methods included analysis, comparison, systematization, and synthesis of psychological, pedagogical, linguodidactic, and methodological literature.

The empirical methods comprised the examination of regulatory documents, curricula and teaching materials, pedagogical observation, questionnaires, testing, diagnostic procedures, and experimental work.

The obtained data were subjected to quantitative and qualitative analysis and were summarized using comparative and mathematical-statistical methods.

**Main stages of the research**

The study was conducted in three stages:

– *at the first stage* (2017-2018), a theoretical analysis of the research problem was carried out, the conceptual framework of the study was defined, and relevant theoretical, methodological, and instructional materials were collected and systematized. The research programme was developed, and materials for the experimental work, elective course, and teaching manual were selected;

– *at the second stage* (2018-2019), the collected materials were systematized, and the programme of the elective course *Communicative Practicum*, its syllabus, and teaching manual were developed. The diagnostic and formative stages of the experimental work were conducted; the model, forms, and methods for developing foreign-language communicative competence were determined; and the interim results were analysed according to the relevant criteria and levels;

– *at the third stage* (2019-2020), the formative and control stages of the experimental work were completed, and the obtained results were systematized, analysed, and summarized.

On the basis of these results, methodological recommendations were developed, a teaching manual and research articles were published, and the dissertation was finalized in accordance with the established requirements.

**Scientific novelty of the research:**

– the essence, content, and structure of the concept of "foreign-language communicative competence of future biologists" were clarified, and the specific features of its formation in the context of professionally oriented education were identified;

– a model for developing the foreign-language communicative competence of future biologists in the process of professionally oriented education was developed, scientifically substantiated, and experimentally validated;

– the linguodidactic conditions ensuring the effectiveness of the formation of the foreign-language communicative competence of future biologists were identified;

– a teaching and methodological package for the elective course *Communicative Practicum*, based on interdisciplinary integration and aimed at developing the foreign-language communicative competence of future biologists, was developed, together with an author-developed teaching manual;

– a methodology for developing the foreign-language communicative competence of future biologists in the context of professionally oriented education was

developed, and its effectiveness was demonstrated through a staged experimental study comprising cognitive-adaptive, operational-modeling and functional applied stages.

**Theoretical and practical significance of the research** the theoretical significance of the study lies in clarifying the essence, structure, and specific features of the development of the foreign-language communicative competence of future biologists, as well as in providing a scientific rationale for the structural-content model and the linguodidactic conditions required for its formation.

The practical significance of the research is determined by the development and implementation of the teaching and methodological package for the elective course *Communicative Practicum* and an author developed teaching manual.

The research findings can be applied in professionally oriented foreign-language instruction at non-linguistic higher education institutions and in improving the foreign-language preparation of students in natural science programmes.

**Main provisions submitted for defense:**

1. The foreign-language communicative competence of students at non-linguistic higher education institutions is developed within professionally oriented education through interdisciplinary integration and is understood as their ability and readiness to solve communicative tasks in professional settings, search for and analyse information, and work with scientific literature and documents in a foreign language relevant to their chosen field of specialization. The structure of the foreign-language communicative competence of future biologists comprises linguistic, pragmatic, and subject-specific professional subcompetences. The linguistic subcompetence enables students to understand and produce scientific and professional texts and to communicate effectively in professional contexts through mastery of lexical, grammatical, and phonetic language resources. The pragmatic subcompetence includes the ability to select and use language resources appropriately when working with scientific texts and to adapt to various professional and communicative situations. The subject-specific professional subcompetence ensures the ability to apply foreign-language knowledge, skills, and abilities in professional activities.
2. The model for developing the foreign-language communicative competence of future biologists in the context of professionally oriented education reflects the integrity and interrelationship of the following components: the target, conceptual, content-and-activity, and assessment-and-outcome components. The target component includes the purpose and objectives; the conceptual component comprises approaches and principles; the content-and-activity component includes subcompetences, stages, methods, tools, and technologies of professionally oriented education, as well as the teaching and methodological package for the elective course *Communicative Practicum*; and the assessment-and-outcome component comprises criteria and levels of competence development. The interrelationship of these components ensures the comprehensive achievement of the stated purpose and objectives.
3. The effectiveness of developing the foreign-language communicative competence of future biologists is ensured by a set of linguodidactic conditions: selecting and structuring the content of foreign-language instruction in accordance with the Biology educational programme and qualification requirements; systematically

applying professionally oriented teaching methods, including elements of Content and Language Integrated Learning (CLIL), Task-Based Learning (TBL), Problem-/Project-Based Learning (PjBL), information and communication technologies, and digital educational resources; and developing and applying scientifically grounded criteria, indicators, and diagnostic tools to assess the level of foreign-language communicative competence. These conditions make it possible to systematically examine the dynamics of competence development, evaluate the effectiveness of the instructional process, and identify changes occurring throughout the learning process.

4. The teaching and methodological package for the elective course *Communicative Practicum*, comprising the course programme, syllabus, methodological guidelines, a system of exercises and tasks, and a glossary, together with the author-developed teaching manual based on the course programme, ensures the systematic and sequential development of the foreign-language communicative competence of future biologists within professionally oriented education.

5. The effectiveness of the methodology for developing the foreign-language communicative competence of future biologists in the process of professionally oriented education is confirmed by the results of the staged experimental work comprising cognitive-adaptive, operational-modeling, and functional-applied stages.

**Approbation and dissemination of the research results.** The research findings are presented in 11 scientific publications, including 1 teaching manual, 1 article published in a journal indexed in the Scopus database, 3 articles published in journals recommended by the Committee for Quality Assurance in Science and Higher Education, 3 articles published in journals indexed in the Russian Science Citation Index (RSCI), and 3 papers published in the proceedings of international and national scientific conferences.

**Structure of the dissertation.** The dissertation consists of an introduction, three chapters, a conclusion, a list of references, and appendices.